AQUIND Limited

AQUIND INTERCONNECTOR

Road Safety Technical Note

The Planning Act 2008

Document Ref: RSTN

PINS Ref.: EN020022

AQUIND Limited

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Road Safety Technical Note

PINS REF.: EN020022

DOCUMENT: 7.9.27

DATE: 23 DECEMBER 2020

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DOCUMENT

Document	Document Name
Revision	001
Document Owner	WSP UK Limited
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Date	November 2020
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Date	17/11/20

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1. INTRODUCTION

1.1. INTRODUCTION

1.1.1.1. This Technical Note has been produced by WSP on behalf of AQUIND Limited (the 'Applicant') following the submission of the application for a Development Consent Order (DCO) in respect of the UK elements of AQUIND Interconnector (the 'Proposed Development') in November 2019 (the 'Application', APP-004).

1.1.1.2. This document has been produced in response to post-application discussions held with Portsmouth City Council (PCC) at a meeting dated 11/08/20 to discuss the Applicant's submission of the Eastern Road Further Traffic Assessment Technical Note (Appendix E of the Supplementary Transport Assessment (STA) (REP1-142) which provided additional analysis of SRTM traffic modelling and impacts of traffic management being installed on the A2030 Eastern Road. At this meeting, whilst PCC noted that the scope of SRTM modelling and estimates of traffic redistribution were robust, there was a residual concern that the impacts of traffic redistribution and increased queueing on road safety had not been fully assessed for the extent of the highway network for which this authority is responsible. This residual concern was also raised by PCC in their Local Impact Report (REP1-173). Paragraph 4.6 of the PCC LIR submitted in October 2020 stated that the documents submitted to date did not consider:

> "*The potential road safety implications of increased congestion along the cable route or identified diversion routes.*"

1.1.1.3. This Technical Note seeks to address the comments made by PCC with regard to the temporary road safety implications of the traffic management measures required to facilitate construction of the Onshore Cable Route and resultant traffic redistribution through further detailed analysis of traffic flow increases across the PCC highway network.

1.1.1.4. The structure of this Technical Note is as follows:

- Section 1.2 of this Section provides a summary of the work completed to date;
- Section 2 includes further assessment of the impact of increased temporary queueing at junctions which may occur as a result of the proposed works;
- Section 3 further assesses the impact of temporary increased traffic flows on links in the study area which are anticipated to experience an increase in traffic flows as a result of vehicles redistributing away from the proposed construction works on the Onshore Cable Corridor;

- Section 4 includes an assessment of the possible road safety implications at traffic management locations on the Onshore Cable Corridor; and
- Section 5 provides a summary of the Technical Note and sets out the conclusions drawn.

1.2. BACKGROUND AND CONTEXT

1.2.1.1. This Section will provide a summary of the work which has been completed to date on the topic of road safety in respect to the construction of the Onshore Cable Route.

1.2.2. TRANSPORT ASSESSMENT AND SUPPLEMENTARY TRANSPORT ASSESSMENT

1.2.2.1. The temporary highway safety implications on both links and at junctions which are associated with the construction of the Onshore Cable Route were initially assessed within Section 1.7 of the submitted Transport Assessment (TA) (APP-448) and have since been updated in Section 4 of the STA (REP1-142). The updated analysis submitted in Section 4 of the STA (REP1-142) was taken to supersede that which had previously been submitted in the TA (APP-448).

1.2.2.2. Section 4 of the STA (REP1-142) assesses the temporary highway safety implications of the proposed construction of the Onshore Cable Route through a review of recorded collision data obtained from Hampshire Constabulary for the study area for the period between 1st October 2014 – 30th September 2019.

1.2.2.3. Analysis of recorded collisions was undertaken for the on-highway extents of the Onshore Cable Corridor, the construction traffic route between the proposed Converter Station Area and the A3 (M), as well as for any links within the wider study area which were identified as being likely to be utilised by traffic redistributing away from the works. The methodology for identifying links taken forward for assessment on the basis that they would likely be used by redistributing traffic is set out in paragraph 4.1.1.5. of the STA (REP1-142).

1.2.2.4. The STA (REP1-142) provided an overview of collisions previously recorded on assessed links, with particular focus on any identifiable patterns or clusters which were present. This assessment found no clear repetitions of causation factors for recorded collisions on any assessed links. Furthermore, it was noted that the severity and frequency of the collisions reviewed were typical for the road types and traffic volumes of the assessed links. The STA (REP1-142) therefore concluded that the temporary impacts of the proposed works would likely have a neutral impact upon highway safety, and that there were no locations which raised concern about a worsening impact due to the temporary works.

The Solent Transport Sub-Regional-Transport-Model (SRTM)

1.2.2.5. The Solent Transport Sub-Regional-Transport-Model (SRTM) has been used to assess the temporary impact of the traffic management proposals associated with the installation of the Onshore Cable Route, which will be constructed in 100m sections at up to six locations simultaneously on the highway. To assess this scenario, it was agreed with HCC and PCC during pre-application scoping discussions for the TA that the following six areas of Traffic Management tested together would be a robust assessment:

- Shuttle working traffic signals on the B2150 Hambledon Road between Soake Road and Closewood Road;
- Temporary traffic signal operation of the B2150 Hambledon Road / A3 Maurepas Way / Houghton Avenue roundabout in Waterlooville;
- Shuttle working traffic signals on the A3 London Road between Poppy Fields and the roundabout with Ladybridge Road;
- Single lane closure on Havant Road between Farlington Avenue and the A2030 Eastern Road;
- Single lane closure on the A2030 Eastern Road between Airport Service Road and Burrfields Road; and
- Shuttle working traffic signals on Henderson Road between Bransbury Road and Fort Cumberland Road.

1.2.2.6. The SRTM modelled the impacts of the proposed traffic management across the following scenarios:

- **2026 Do Minimum (DM) Scenario**: the future baseline without the Proposed Development;
- **2026 Do Something 1 (DS1) Scenario**: traffic management to facilitate the construction of the Onshore Cable Route is in place at the six specified locations but on the A2030 Eastern Road lane closures apply to the southbound carriageway only; and
- **2026 Do Something 2 (DS2) Scenario**: traffic management is in place at the six specified locations but with lane closures applied to the A2030 Eastern Road northbound carriageway only

1.2.2.7. Further details regarding the SRTM modelling undertaken can be found in the Section 1.10 '*Traffic Assessment Methodology*' in the originally submitted TA (APP-448). The SRTM model has been used to inform all assessment work contained within the TA, STA, Environmental Statement (ES) and ES Addendum.

1.2.3. ENVIRONMENTAL STATEMENT AND ENVIRONMENTAL STATEMENT ADDENDUM

1.2.3.1. Further to the analysis undertaken in both the TA (APP-448) and the STA (REP1-142), an assessment of road safety was also included in the Traffic and Transport Chapter of both the 2019 Environmental Statement (ES) and within the 2020 ES Addendum. The information included in Section 15.5.9. of the ES Addendum supersedes that which is included in the 2019 ES in respect to assessment of accident and safety impacts both on links and at junctions.

1.2.3.2. The assessments undertaken of the predicted impacts of accidents and safety presented in the ES Addendum are broadly aligned with the more detailed analysis which is presented in Section 4 of the STA (REP1-142). As with the assessment in the STA (REP1-142), the assessment of predicted impacts in the ES Addendum includes both links of the Onshore Cable Corridor and across the wider study area. The predicted impacts set out in the ES Addendum present negligible impacts only, with no significant effects reported.

1.2.3.3. The temporary impact of increased traffic flows upon the safety of pedestrians and cyclists has also been assessed within the ES Addendum, through the assessment of the predicted impacts of the proposed works on pedestrian and cycle amenity. The assessment of pedestrian and cycle amenity undertaken within the ES takes into account factors including increased traffic flows, or HGV percentage of traffic flows, as well as a variety of other magnitude of change descriptors which can be seen in Table 22.3 of the Chapter 22 of the ES (APP-137).

1.2.3.4. The temporary impact of the redistribution of traffic and increased congestion on road safety was also assessed within the ES (APP-137) with respect to severance. The severance assessments undertaken within the ES (APP-137) identified links that were anticipated to see increases in traffic flow or heavy goods vehicle (HGV) traffic flows, to an extent which would materially impact upon the ability of pedestrians to cross the road. The analysis undertaken with the ES (APP-137) also took into account a variety of local factors which may heighten or lessen the level of severance experienced by pedestrians, for example the presence of signalised pedestrian crossings.

1.2.4. FRAMEWORK CONSTRUCTION TRAFFIC MANAGEMENT PLAN

1.2.4.1. Section 7 of the Framework CTMP (APP-450 Rev002) details the strategy and measures that will be taken to ensure road safety is maintained during the Construction Stage.

1.2.4.2. The Framework CTMP (APP-450 Rev002) includes details regarding the liaison and monitoring which is to be undertaken and the mitigation measures which are associated with the Construction Stage of the proposals. This includes details regarding the provision for a road safety officer, who will be responsible for the continual monitoring of the road works for the Onshore Cable Route to ensure the proactive management of road safety. The appointed road safety officer will ensure there is sufficient road signage to warn the public as to when the works will take place and inform construction related traffic to ensure compliance and route choice.

1.2.5. FRAMEWORK TRAFFIC MANAGEMENT STRATEGY

1.2.5.1. Section 2 of the FTMS (APP-449 Rev002) sets out the overarching traffic management principles which are to govern the Construction of the Onshore Cable Corridor. Section 2.5 of the FTMS (APP-449) sets out the Traffic Management Methodology for the construction of the Onshore Cable Route, including all provisions for road safety. In all cases, the proposed traffic management methodology put forward within the FTMS (APP-449) aligns with the relevant road safety guidance as set out in the following:

- Traffic Signs Manual Chapter 8: Traffic Safety Measures and Signs for Roadworks and Temporary Situations (Department for Transport, 2009);
- Safety at Streetworks and Roadworks: A Code of Practice (Department for Transport, 2013); and
- New Roads and Street Works Act 1991: Code of Practice of Co-ordination of Street Works and Works for Road Purposes and Related Matters (Fourth Edition) (Department for Transport, 2012).

1.2.5.2. Specifically, with regards to road safety implications of streetworks, the ‘Safety at Street Works and Roadworks’ document states the following:

“under the Health and Safety at Work etc. Act 1974, employers have duties to protect their employees from dangers to their health and safety and to protect others who might be affected by the work activity (for example pedestrians, cyclists, equestrians and motorists). These include proper arrangements for design (including planning and risk assessment) and management (including supervision) of the works. Under the Equality Act 2010, works promoters also have a duty to have regard for the needs of disabled people and older people in the planning and execution of works. This guidance places onus upon workers at traffic management locations to ensure that works are carried out safely, in a way which does not place either the workers themselves, or the public at risk.”

1.2.5.3. It is therefore noted by the Applicant that all streetworks required during installation of the Onshore Cable Route will be completed under this guidance, which places a duty on the contractors to manage road safety risks of construction works to all members of the traveling public and specifically have regard to the needs of the elderly and those with disabilities.

1.2.5.4. The FTMS also includes details of programme restrictions for all sections of the Onshore Cable Corridor, which mitigate the impacts associated with traffic management through avoiding construction works at certain times (e.g. during major events or school term time) and at multiple locations in the same area.

1.2.5.5. Furthermore, Section 2.13 of the FTMS (APP-449) provides details regarding the protocol for providing a responsive traffic management strategy as secured in the draft Development Consent Order (dDCO) (APP-019) by Paragraph 10 of the protective provisions. These protective provisions secure the ability of the highway authority to provide directions in the relation to the following:

- Where an emergency occurs or where necessary to secure the safety of the public;
- Where works are being carried out in any manner which constitutes or is likely to constitute a danger to any person or class of persons or to affect the stability or integrity of any structures or apparatus including the public highway; and
- Where, as a consequence of unforeseen circumstances, in the reasonable opinion of the relevant highway authority any part of the works being carried out or to be carried out within the public highway are causing or are likely to cause serious disruption to traffic that will endanger the safety of the public; and

1.2.5.6. In relation to this, Paragraph 4(2) of the protective provisions for the protection of the highway provides for any detailed traffic management strategy to be revised where necessary in the event of unforeseen circumstances.

FTMS Signing Strategy

1.2.5.1. Further to discussions with Hampshire County Council, the Applicant has agreed to develop an overall signage strategy for inclusion within the FTMS. This signage strategy is proposed to communicate proposals to road users who may otherwise be unaware of the construction works and associated traffic management.

1.2.5.2. On the highway network itself, the provision and location of signage will be an important factor in notifying road users of programmed construction works, with provision of signage at appropriate locations encouraging traffic to reassign away from the Onshore Cable Corridor and onto other appropriate routes. An example of this could be for the provision of signs on routes towards Portsea Island that state

‘A2030 Eastern Road Roadworks. Please use M275’.

1.2.5.3. While there will be ‘Advanced Warning’ signs placed on the highway before the works detailing start-date and periods of works, it is also intended that mobile Variable Message Signs (‘VMS’) are provided at key locations along the Onshore Cable Corridor. These will be installed at least one week prior to commencement of the construction works along each section of highway. An example of a mobile VMS and the type of message that can be displayed is presented below.

1.2.5.4. The use of mobile VMS signs is proposed as these are considered more conspicuous than standard Advance Warning' signs and can be easily updated to reflect the intended programme of works. Other uses of mobile VMS signage could be to provide live traffic updates, information on known/likely congestion hotspots, or guidance relating to upcoming temporary traffic management.

1.2.5.5. Other aspects of the signage strategy include the provision of temporary signs (such as white on red or black on yellow) to encourage positive user behaviour to mitigate possible safety problems. Examples include 'Keep Clear', 'Do Not Block Junction', 'Merge in Turn' and Do Not Overtake Cyclists'.

1.2.5.6. The Applicant will share this signage strategy with PCC for discussion as soon as possible. In the meantime, however, this Technical Note provides further details of where such measures could be employed to reduce the road safety implications of the construction work.

2. ROAD SAFETY IMPACTS AT JUNCTIONS

2.1. OVERVIEW

2.1.1.1. The purpose of this Chapter is to provide an assessment of the impact of predicted temporary increases in queue lengths at junctions within the study area assessed within the TA and STA, with respect to the subsequent impact on upstream receptors. These are inclusive of locations where queues are anticipated to block back through junctions and / or pedestrian crossings, in areas where increased queueing is forecast on links which form cycle routes, or where queueing is exacerbated in the vicinity of GP surgeries, schools, or other upstream receptors.

2.1.1.2. The analysis within this Chapter builds upon junction capacity assessment work already completed within Sections 10 and 12 of the TA (APP-448) and STA (REP1-142) (respectively).

2.1.1.3. Traffic surveys undertaken in 2019 were used to build calibrated junction capacity models, which then formed the basis for the 2026 Do Minimum (DM) and Do Something (DS) assessments. Separate assessments were completed for the AM and PM peak hours of 0800 - 0900 and 1700 - 1800. The junctions have been disaggregated according to whether they are located on the Onshore Cable Corridor or are away from the Onshore Cable Corridor but are affected by redistributed traffic.

2.1.1.4. In determining which junctions have been taken forward for further analysis a threshold of a 50m increase in queue length (or approximately ten car lengths) on any one junction approach has been applied when comparing queuing results between the DM and DS1 and DS2 assessments. Junctions that have experienced an increase in queuing below the 50m threshold, or a decrease in queuing, have not been analysed further for impact on upstream receptors, as this is considered to be within the normal day to day variations in junction operation. Utilising a 50m threshold ensures a robust analysis will made be of the impact of queuing on upstream receptors.

2.1.1.5. The impact on upstream receptors will enable a determination of how increased queuing may impact on road safety within the study area. It is important to note that this traffic management and associated traffic redistribution is temporary and all reported queue lengths will not be permanent.

2.1.1.6. As is noted in Section 1, Section 7.3 of the FCTMP includes proposals for the Applicant to appoint a road safety liaison officer for the duration of the construction of the Onshore Cable Corridor. The road safety liaison officer will be responsible for monitoring traffic management measures, the proactive management of road safety and responding to road safety problems and queries as they arise in a timely manner.

2.1.1.7. The road safety liaison officer will also oversee the implementation of all measures which aid road safety management, including the implementation and review of the signage strategy together with capturing feedback / lessons learned in relation to traffic management operation and signage at sites. This will enable a consistent review and implementation process during the operation of all sites and areas of traffic management as they come online.

2.2. JUNCTIONS ASSESSED

Based upon analysis completed within the TA (APP-448) and STA (REP1-142), the following section provides a summary of junctions within the study area that experience increases in vehicle queues on any one approach that are above the 50m threshold between the DM and DS scenarios, and that are in PCC's jurisdiction. The junctions meeting these criteria are as follows and are illustrated in Figure 1 overleaf.

1. A2030 Eastern Road / Anchorage Road Traffic Signal Junction;
2. A2030 Eastern Road / Airport Service Road Traffic Signal Junction;
3. A2030 Eastern Road / Burrfields Road Traffic Signal Junction;
4. A2030 Eastern Road / Hayling Avenue Priority T-Junction;
5. Copnor Road / Burrfields Road Traffic Signal Junction; and
6. A3 Mile End Road / Church Street / Hope Street / Commercial Road Signalised Roundabout.

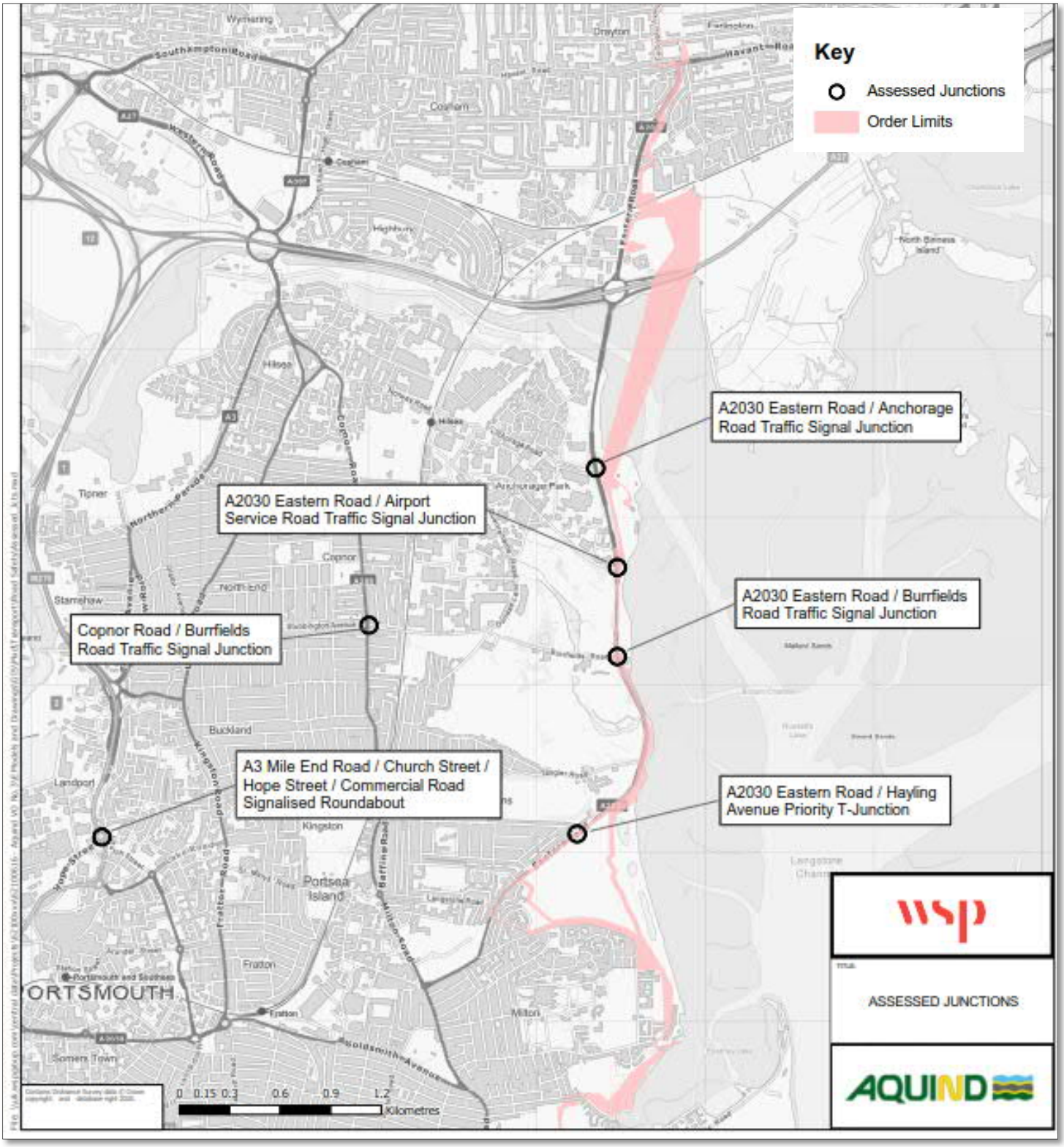


Figure 1. Assessed Junction Location Plan

2.2.1. QUEUE LENGTH ESTIMATES

2.2.1.1. Modelled queuing data for each approach arm to each junction, for both the DM and DS1 and DS2 scenarios, has been presented in separate Tables within this section of the report. In addition to this the increase in queuing between the DM and DS1 and DS2 scenarios has been included.

2.2.1.2. Junction modelling outputs included within the TA and STA provide queuing in terms of Passenger Car Units (PCU) to standardise the assessment of modelling results. Different types of vehicles (cars, HGVs buses etc) can be represented in terms of PCUs with a car being equal to one PCU, and other types of vehicles being represented by different standard numbers of PCUs (for example, one HGV is typically considered to be 2.5 PCUs). The PCU can also be used as a unit to measure how much road space will be occupied by a queue of vehicles; one PCU is approximately 6m.

Traffic Signal Junctions

2.2.1.3. For the purposes of assessment within this report, queuing data has been provided in two separate but related forms. In all cases these queues are presented in metres (m) through multiplication of the PCU queue by 6.

Back of Uniform Queue at end of Red (UQ Red End)

2.2.1.4. For additional analysis within signalised junctions to that contained within the TA and STA, queue lengths have been presented in respect to the Back of Uniform Queue at the end of Red (UQ End Red). UQ Red End queue lengths represent the extent of the uniform queue on a lane at the end of the lane's controlling phase's red period. It therefore represents the maximum stationary queue that will form on an approach whilst the signals are red, noting that vehicles at the end of that queue may be able to disperse as soon as the signals turn green.

2.2.1.5. It should be noted that the UQ Red End allows only for the variation of the queue within a typical cycle and does not include random and oversaturation queues, or queues occurring from random traffic arrival variations (according to the Linsig User Guide), which are assessed as part of the Mean Maximum Queue.

Mean Maximum Queue (MMQ)

2.2.1.6. In traffic modelling, the MMQ refers to the maximum length of a queue within a typical cycle, averaged over all the cycles within the modelled time period. Where a lane is oversaturated with traffic, the maximum queue within each cycle will grow progressively over the modelled time period. It includes traffic joining the back of a queue as the signals turn green and therefore includes an element of 'rolling queue' that may partially or fully disperse from the traffic signal during that signal stage.

Roundabouts and Priority Junctions

2.2.1.7. In priority junction modelling results, queues are presented as the highest queue in PCU values that has occurred during each respective time segment of that run of modelling, averaged over the modelled time period. This has been multiplied by 6 to convert the average queue into metres. Whilst additional queue analysis can be undertaken for signalised junctions in the form of UQ End Red, this is not possible within priority junctions and within the Junctions 9 ARCADY (roundabouts) software.

2.2.2. KENDALLS QUAY / A2030 EASTERN ROAD / ANCHORAGE ROAD

2.2.2.1. Table A1 and Table A2 summarise the modelled queuing in UQ End Red and MMQ, as well as the increase, between the DM and DS1 and DS2 scenarios for the Kendalls Quay / A2030 Eastern Road / Anchorage Road signalised junction.

2.2.2.2. A review of the modelling output for the A2030 Eastern Road / Anchorage Road Traffic Signal Junction has identified an increase in queuing of 30-54m on the Anchorage Road (right/left/ahead). The review of UQ End Red queue lengths however shows that these are generally similar to MMQ values, which suggests that queueing is mainly limited to the red stage of the traffic signals. There was no increase from the DM assessment on the A2030 Eastern Road ad approach to the junction beyond 30m, which is considered to be within normal daily variations of junction operation. The impact of increased queuing has been analysed in further detail below.

Increased queuing Impact

2.2.2.3. An analysis of the queue length increases has identified the following upstream receptors that may be impacted in either the AM or PM peak:

- Anchorage Road– this is classified as a low traffic route and a signed cycle route which may be impacted by increased traffic queuing. The increased queuing may discourage some cyclists from using the route. For cyclists who continue to use this route, it may also increase the potential for collisions between vehicles and cyclists.

2.2.2.4. It is noted however that the A2030 Eastern Road contains shared-use paths on each side of the carriageway. Therefore, there is an alternative available for cyclists to avoid the carriageway through this junction from Anchorage Road. The potential for increases in collisions between vehicles and cyclists is therefore considered to be low.

2.2.2.5. Tables containing both the UQ End Red and MMQ data for all assessed junctions is included in Appendix A.

2.2.3. A2030 EASTERN ROAD / AIRPORT SERVICE ROAD SIGNALISED JUNCTION

2.2.3.1. Table A3 and Table A4 summarises the UQ End Red and MMQ modelled queuing and increase between the DM and DS and DS2 scenarios for the A2030 Eastern Road / Airport Service Road signalised junction.

2.2.3.2. A review of the modelling output for the A2030 Eastern Road / Airport Service Road Traffic Signal Junction has identified an increase in queuing for all approaches to the junction. The largest increase occurred on the A2030 Eastern Road North (ahead) approach with an increase in queuing 14-107m in the AM peak for the DS1 assessment. Minor increases in queuing is also experienced on the A2030 Eastern Road (2-24m) and Airport Service Road (3-29m) but these can be considered to be within normal day-to-day variations in junction operation.

2.2.3.3. The impact of increased queuing has been analysed in further detail below.

Increased queuing Impact

2.2.3.4. An analysis of the queue length increases has identified the following upstream receptors that may be impacted in either the AM or PM peak:

- A2030 Eastern Road Northern approach – no impact on upstream receptors identified in either the DS1 or DS2 scenario.

2.2.3.5. There may be an existing pedestrian desire line between Airport Service Road and the eastern footway of A2030 Eastern Road, particularly due to the Langstone Harbour Sports Ground beyond. There are currently no pedestrian crossing facilities provided on the northern approach between the Airport Service Road and the shared footway eastern side of A2030 Eastern Road. An uncontrolled crossing is provided across Airport Service Road and controlled crossing facilities provided across the southern arm of the A2030 Eastern Road.

2.2.3.6. With the increased queuing on the northern approach to the junction, pedestrians may consider crossing at this location via the central island. This could result in conflict with cyclists and motorcyclists who may be filtering through the queuing traffic approaching the signals.

2.2.3.7. However, the combination of the wide carriageway in both directions, the free-flowing nature of the northern exit of the junction and proximity to formal crossing facilities mean that pedestrians are sufficiently discouraged from crossing via the northern approach. As a result, the potential for collisions between pedestrian and other vehicles on the northern approach is considered to be low.

2.2.4. A2030 EASTERN ROAD / BURRFIELDS ROAD TRAFFIC SIGNAL JUNCTION

2.2.4.1. Tables A.5 and A.6 summarise the UQ End Red and MMQ modelled queuing and increase between the DM and DS1 and DS2 scenarios for the A2030 Eastern Road / Burrfields Road Traffic Signal Junction.

2.2.4.2. The review of the modelling output in Table A5 and A6 for the A2030 Eastern Road / Burrfields Road Traffic Signal Junction has identified an increase in queuing for the

A2030 Eastern Road south approach, and related movements, to the junction with the largest increase in queuing recorded being an MMQ increase 88-103m in the PM peak of the DS1 assessment. These increases however are not reflected in the UQ Red End for the A2030 Eastern Road south approach, which shows that the modelled increase relates to traffic joining the back of the queue as the traffic signals turn green.

2.2.4.3. The impact of increased queuing has been analysed in further detail below.

Increased queuing Impact

2.2.4.4. An analysis of the queue length increases has identified the following upstream receptors that may be impacted in either the AM or PM peak:

- A2030 Eastern Road (south) – No impact on upstream receptors identified in either the DS1 or DS2 scenario.

2.2.4.5. At this junction, the main attractors are on the southern side of the junction. There are currently signal controlled crossing facilities for A2030 Eastern Road on the southern side of the junction which cater for any pedestrian demand at this location. Therefore, it is considered that the additional queuing at this junction will not lead to any impacts on road safety.

2.2.5. A2030 EASTERN ROAD / HAYLING AVENUE PRIORITY T-JUNCTION

2.2.5.1. Table A7 contains the modelled queue lengths for the priority junction of A2030 Eastern Road / Hayling Avenue. A review of the modelling outputs for this junction has identified an increase of 72m on the Hayling Avenue arm of the junction within the PM peak within the DS2 assessment, albeit in comparison with a queue of nearly 500m in the DM scenario. This reflects that junction is forecast to operate significantly over capacity in each of the DM, DS1 and DS2 scenarios. The impact of increased queuing has been analysed in further detail below.

Increased queuing Impact

2.2.5.2. An analysis of the queue length increases has identified the following upstream receptors that may be impacted in either the AM or PM peak:

- Hayling Avenue – This is a residential road with on-street parking on both sides of the carriageway. Whilst the forecast increase in queue lengths is not anticipated to impact on upstream receptors identified these queues may exacerbate congestion as a result of two-way traffic flow being impeded.

2.2.5.3. The forecast queue length increases on Hayling Avenue occur despite a predicted increase in traffic flow of only 21 vehicles in the DS2 PM peak (as discussed in Section 3) as a result of the junction operating significantly over capacity. Such a scenario however is unlikely to occur in reality due to availability of alternative routes onto the A2030 Eastern Road, such as Stride Avenue, which are not included within the SRTM. Such routes provide legitimate alternatives for traffic routing between Milton Road, Copnor Road and A2030 Eastern Road and therefore reassigned traffic is likely to disperse across these routes at a lower level than that forecast on Hayling Avenue.

2.2.5.4. Taking this into account, the additional queuing forecast at this junction will not lead to any impacts on road safety, and the 21 vehicles which are redistributed on to other side roads are unlikely to be of a magnitude which presents indirect safety issues on those routes either.

2.2.6. COPNOR ROAD / BURRFIELDS ROAD TRAFFIC SIGNAL JUNCTION

2.2.6.1. Table A8 and Table A9 summarise the UQ End Red and MMQ modelled queuing and increase between the DM and DS1 and DS2 scenarios for the Copnor Road / Burrfields Road Traffic Signal Junction. A review of the modelling output for this junction has identified an increase in queuing on all approaches in either the DS1 and DS2 scenarios. The maximum increase in queuing has been recorded on the A288 Copnor Road South approach of 11-66m in the AM peak of the DS2 scenario. This shows that across all scenarios the queue length during the red stage remains at approximately 100m (UQ End Red) on the A288 Copnor Road South approach while congestion on the approach will extend for approximately 1km (MMQ). Increases in queue length are also forecast on the Burrfields Road and A288 Copnor Road north approach but these are considered to be within normal day-to-day variations in junction operation.

2.2.6.2. The impact of an increase in queuing on the A288 Copnor Road South approach has been further analysed below.

Increased queuing impact

2.2.6.3. An analysis of impact on upstream receptors has identified the following risk factors that may be exacerbated by additional vehicles queuing:

- A288 Copnor Road Southern approach – In the DM scenario the UQ End Red queue will block back through side-road junctions of Tokio Road, Copythorn Road and past a row of local shops. In the DS1 scenario, this queue will extend to Mayhall Road and Laburnum Grove side-road junctions. In comparison the MMQ and general congestion from the junction extends beyond Copnor Bridge and junction with A288 Milton Road in the AM peak in all of the DM, DS1 and DS2 scenarios. This therefore extends through multiple side-road junctions and pedestrian crossings, with the extension of queue in the DS1 scenario having a negligible impact on the forecast DM situation.

2.2.6.4. Overall the increase in queue lengths forecast in the DS1 and DS2 scenarios at the A288 Copnor Road / Burrfields Road traffic signal junction is not considered to lead to a material impact on road safety. This is due to the limited increase in queueing in the DS scenarios when compared to the DM, and the existing infrastructure in place which facilitates the safe crossings of pedestrians.

2.2.6.5. Where pedestrian crossings are at risk of being blocked by queueing traffic, signage will be implemented, as is deemed appropriate by the appointed road safety liaison officer, advising queueing traffic not to block back through crossings.

2.2.7. CHURCH STREET / COMMERCIAL ROAD / HOPE STREET / A3 MILE END ROAD.

2.2.7.1. Table A10 and Table A11 summarise the modelled UQ End Red and MMQ queuing and increase between the DM and DS1 and DS2 scenarios for the junction of Church Street / Commercial Road / Hope Street / A3 Mile End Road.

2.2.7.2. A review of the modelling output for the Church Street / Commercial Road / Hope Street / A3 Mile End Road signalised roundabout has identified the following queue length increases:

- Church Street: Queue length increases of 38-135m in the DS1 PM peak, with the UQ End Red queue extending to just over 400m and congestion associated from the junction (MMQ) increasing to just over 1.2km. In the DS2 AM peak, the UQ End Red increases by 50m to 557m while the MMQ increases by less than 50m to approximately 2.6km
- Commercial Road circulatory: The UQ End Red will increase by 66m to 112m in the DS2 AM scenario, leading to an increase in MMQ of 226m to 292m which will block back onto Commercial Road.
- A3 Mile End Road: Increases in UQ End Red queue lengths of between 23-41m which translate into MMQ increases of 99-139 in the DS1 and 99m in The impact of an increase in queuing has been further analysed below.

2.2.8. INCREASED QUEUING IMPACT

- Church Street – In the DS1 PM peak the UQ End Red queue is forecast to worsen and block back through the Church Street / Lake Road / Holbrook Road roundabout, although it is noted that this situation is forecast to occur in the DM AM peak also. This could increase the potential for vehicle collisions and conflicts with cyclists as traffic seeks to navigate through the congestion to other exits. The increases in MMQ on this approach are not considered to have a material impact on road safety given the minimal increases in comparison with the forecast DM scenarios
- Commercial Road – The increase in UQ End Red will block back past the Fitzherbert Street junction which provides an exit from Sainsbury's supermarket and All Saints Petrol Filling Station. The increase in MMQ in the DS2 AM peak will also extend congestions associated with the junction through the Marketway roundabout. This may result in additional risk of collisions between vehicles queuing on Commercial Road with vehicles on the circulatory of the Marketway Roundabout.
- A3 Mile End Road – As existing queue lengths extend back to the M275 no impact on upstream receptors has been identified as being impacted by the increase in queuing in the DS1 and DS scenarios. These increases are not considered to have a material impact on road safety given the minimal increases in comparison with the forecast DM scenarios.

2.2.8.1. Overall the assessment of queue lengths at the Church Street / Commercial Road / Hope Street / A3 Mile End Road junction has showed that there will be some temporary adverse impacts on road safety during the construction period. This is a result of forecast queue lengths extending back through upstream junctions on Church Street and Commercial Road approaches which may increase risks of collisions between vehicles using these junctions.

2.2.8.2. It is therefore recommended by the Applicant that temporary signage and markings are installed at the impacted junctions advising drivers not to block junctions when queueing.

2.2.8.3. Where pedestrian crossings are at risk of being blocked by queueing traffic, signage will be implemented, as is deemed appropriate by the appointed road safety liaison officer, advising queueing traffic not to block back through crossings.

2.3. SUMMARY AND CONCLUSIONS

2.3.1.1. This section of the report has provided an assessment of the impact of increased queuing, between the DM and DS1 and DS2 scenarios, for junctions situated on the Onshore Cable Corridor and wider study area. An assessment has been completed for each junction, within both the AM and PM peaks, of the impact that increased queuing may have on upstream receptors (e.g. cycle routes, blocking back through upstream junctions, blocking access to schools, GPs and hospitals) and the potential implications this may have for road safety.

2.3.1.2. Based upon the analysis within this section of the report, it can be determined that generally the increase in queuing at junctions within the On-Shore Cable Corridor, and wider study area, will have a minimal impact upon upstream receptors with no significant impacts identified.

2.3.1.3. The exception to this statement is at the Church Street / Commercial Road / Hope Street / A3 Mile End Road signalised roundabout, where increases in queue lengths on Church Street and Commercial Road may block back through upstream junctions. Whilst the Applicant notes that the such congestion is predicted to occur in some form during the DM scenario, it is recommended that mitigation is provided at upstream junctions in the form of temporary signage and markings. This is discussed in further detail in Section 5 of this report.

2.3.1.4. It should be noted that continual monitoring of traffic management measures at junctions directly impacted by the construction of the Onshore Cable Corridor will be undertaken by an appointed road safety liaison officer. The appointed road safety liaison officer will directly oversee the implementation of mitigation measures associated with road safety, together with reviewing and capturing lessons learned for implementation at other locations and to ensure continuous improvement.

3. ROAD SAFETY ON LINKS

3.1. BACKGROUND

3.1.1. PURPOSE OF LINK ASSESSMENT

3.1.1.1. This chapter considers the impact on road safety on highway links separately from junctions, as there are certain issues that are unique to the links between junctions that do not apply (or do not apply in the same way) to junctions. These issues are discussed below.

3.1.1.2. This is an additional approach to assessment that should be read in conjunction with the TA (APP-448) and STA (REP1-142), which has been completed specifically at the request of PCC, to provide give greater confidence that the road safety issues have been carefully considered across the entirety of the study area.

3.1.2. TA ASSESSMENT OF LINKS

3.1.2.1. This chapter builds upon the work already undertaken in Chapter 11 of the TA (APP-448), which provided an overview of the results of the SRTM scenarios (as described in Section 1.2.2) used to assess the impacts of construction of the Onshore Cable Route. The results provide a forecast of the routes and links where traffic will redistribute away from areas of traffic management and an assessment of the relative impacts of the redistributed traffic during the temporary works.

3.1.2.2. In the TA (APP-448) a series of links that could be subject to traffic redistribution were identified and assessed. These links were identified by the following process:

- For the baseline conditions, a list of 2,481 links across the entire 5km study area were identified as potential sites that could be subject to traffic redistribution, based on local knowledge, site visits, desktop studies, an analysis of surveyed traffic flow and base year outputs from the SRTM.
- This list was then refined using a three-stage sifting process based on traffic flow outputs from the SRTM for the two Do-Something Scenarios, to highlight those links that would be subject to the greatest impact from traffic distribution. Links that warranted further assessment were identified if they satisfied the following criteria:
    - **Stage 1** – The percentage change in traffic flow on a link increased by 10% or more;
    - **Stage 2** – The increase in hourly passenger car unit (PCU) numbers was greater than 60 (one per minute); and
    - **Stage 3** – The Volume-to-Capacity (V/C) Ratio increased by over 10%.

3.1.2.3. The three stages specified above, were applied sequentially to the sifting process. If a link failed to satisfy the criteria for a stage, it was immediately discounted from further analysis. Where links met all three stages in either the DS1 or DS2 scenarios (AM or PM peak), they were included for further analysis of potential impacts. This three stage analysis was defined on the following basis:

- A 10% increase in traffic flow (as specified in Stage 1) was considered significant as such a measure aligns with guidance within the IEMA document entitled "*Guidelines for the Environmental Assessment of Road Traffic*" ('GEART') for links that contain sensitive receptors;
- An hourly increase of 60 PCUs or more (Stage 2) was deemed appropriate as this amounts to an increase in traffic flow of one per minute. This rule was devised to take account of lower utilised roads where traffic volumes are typically lower and where spare capacity resides; and
- Consideration of the volume-to-capacity ratio (Stage 3) was given to quantify how the forecast traffic flow increases would impact upon the operation of a link and its capacity utilisation. Again a 10% change was considered significant in line with the principles applied for Stage 1.

3.1.2.4. Stage 1 of the sifting process reduced the number of assessed links to 471. Stage 2 condensed the number of links to 221. Finally Stage 3 reduced the number of links down to 68 (in each case, some roads have multiple links, so the number of roads is less than the number of links).

3.2. SELECTION OF ROADS FOR FURTHER ASSESSMENT

3.2.1.1. Further to the assessment contained within Chapter 11 of the TA (APP-448) described in Section 3.1.2, this section provides additional analysis of links by identifying sensitive receptors and providing an assessment of traffic flow increases and potential associated road safety implications. This has been completed specifically in response to PCC's LIR comment that that the potential road safety implications of increased congestion have not been fully considered.

3.2.2. LINK SELECTION PROCESS

3.2.2.1. The selection of links for further assessment has initially been based upon which passed Stages One and Two of the TA (APP-448) sifting process. These have been grouped together if links form part of the same road, for simplicity, as the characteristics tend to be the same along the same road; although where there are evident differences between one part of a road and another, these have also been considered.

3.2.2.2. Of those roads, this additional assessment includes links considered to be 'sensitive' to changes in traffic flows and therefore in road safety terms, which are any roads satisfying either Selection Process 1 and/or 2 below:

1. **Selection Process 1:** Roads that satisfy both of these criteria:
    - Stages One and Two of the TA (APP-448) sifting process; *and*
    - Are determined to be **High** or **Medium** Sensitivity in the ES Chapter 22 – Traffic and Transport (APP-137), **or in the Environmental Statement Addendum, October 2020** (REP1-139), where the Addendum updates the road in question. These roads were determined to be High or Medium Sensitivity if they satisfied any of the criteria given in Table 22.5 of the ES Chapter 22 (APP-137), which were as follows (excluding criteria for junctions and any criteria unrelated to road safety):
        - High: colleges, schools, playgrounds, retirement homes, hospitals and GP surgeries;
        - Medium: shops / businesses, pedestrians / cyclists, public transport users, residential properties close to the carriageway.
2. **Selection Process 2:** Roads that satisfy both of these criteria:
    - Stages One and Two of the TA (APP-448) sifting process; *and*
    - Roads satisfying any of these additional criteria:
        - Cycle routes, particularly any identified as a 'low traffic route / cycle lanes' on the PCC Active Travel Map (https://www.portsmouth.gov.uk/wp-content/uploads/2020/05/trv-actitvetravelmap-2014.pdf);
        - Roads with nurseries; or roads which clearly would provide access to a nursery (even if a nursery is not on the road itself);
        - Roads which clearly would provide access to a school even if a school is not on the road itself. (Schools themselves are covered in Selection Process 1);
        - Roads with community facilities;
        - Roads where two-way traffic flow is prevented or hindered by on-street parking (judged from observation of Google Maps Satellite View and Streetview).

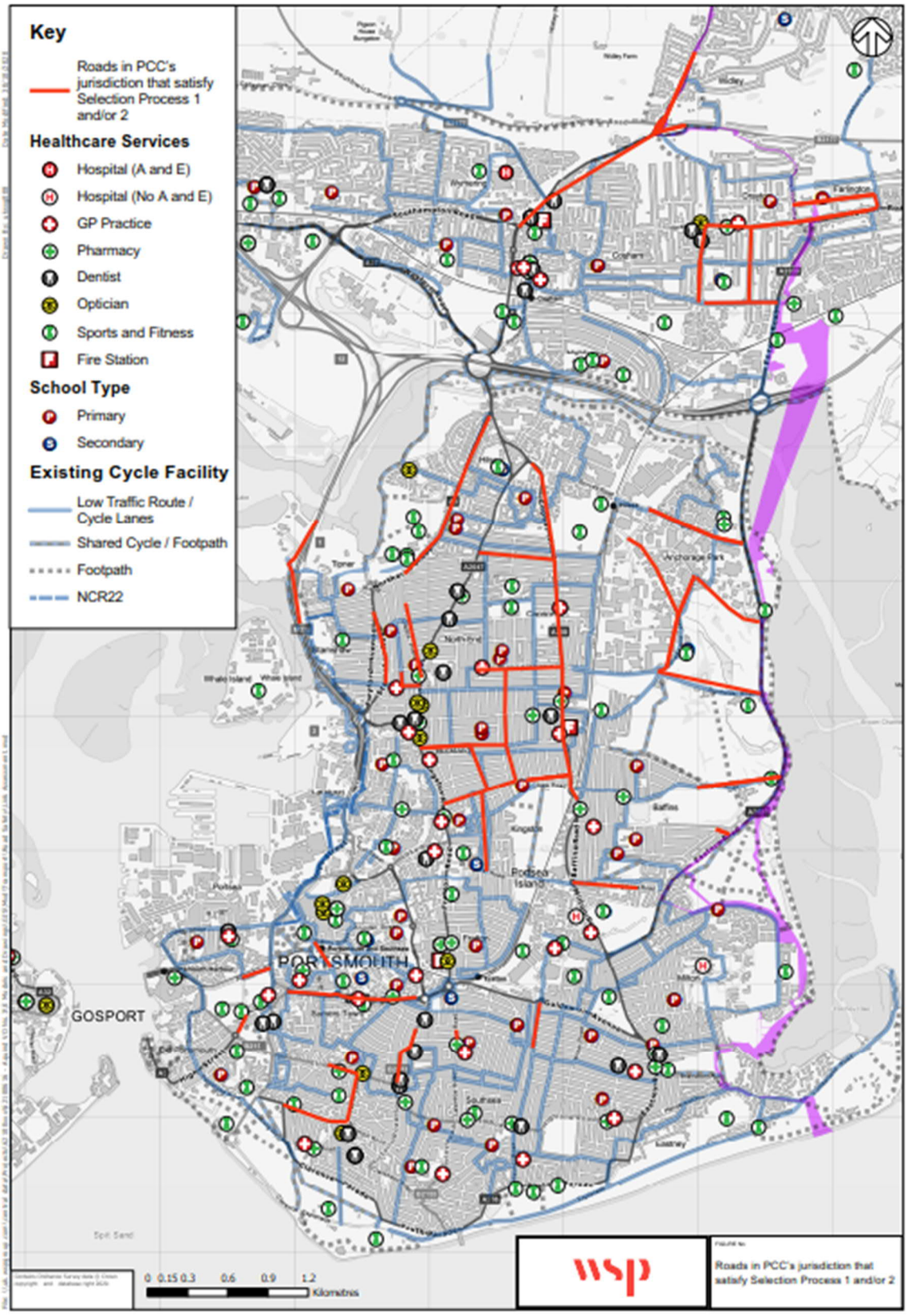
3.2.2.3. Selection process 1 above ensures consistency with the definition of sensitivity in the ES.

3.2.2.4. Selection Process 2 used a GIS plot of cycle routes, schools and community facilities. As this could not be relied upon for up-to-date details of nurseries, these were searched for separately using Google Maps. Similarly, roads where two-way traffic flow is prevented or hindered by on-street parking were judged from observation of Google Maps Satellite View and Streetview,

3.2.2.5. The GIS plot used for part of the Selection Process 2 is shown in Appendix B.

3.2.2.6. Following the selection processes detailed above, 51 roads are to be assessed. The roads to be assessed are summarised in **Figure 3** and which is also provided to the rear of this document.

Figure 2: Roads Taken Forward for Assessment



3.3. ASSESSMENT OF IMPACTS

3.3.1.1. This additional assessment provides an assessment of the impacts of forecast increased traffic volumes on road safety. In doing so, the assessment considers the following quantitative and qualitative factors that influence road safety:

- Traffic flow changes, absolute and proportional, in each of four scenarios: Do-something 1 (DS1) AM; Do-something 1 (DS1) PM; Do-something 2 (DS2) AM; and/or Do-something 2 (DS2) PM;
- Capacity constraints, such as on-street parking that hinders two-way traffic;
- Pedestrian and/or cycle facilities;
- Nurseries / schools; and
- Shops / other community facilities.

3.3.2. GENERIC ASSESSMENT – ALL ROADS

3.3.2.1. A few general points can be made regarding the above factors:

- While some of the proportional increases in traffic may appear very high, the highest volume in a Do-something scenario is forecast to be 24 vehicles per minute (A288 Copnor Road, DS1 PM, busiest single direction), which allows more than a two-second headway between vehicles, even for a single lane. Such a headway would not be expected to give rise to driver frustration and impatient driving behaviour.
- Similarly, the highest *increase* is forecast to be 6 vehicles per minute (Dundas Lane, DS2 AM, busiest single direction); while this is a 77% increase in volume, it will still leave more than four seconds headway between vehicles.
- The extensive provision of cycle routes in PCC ensures that during the temporary disruption, alternative routes are generally available a short distance from the impacted cycle routes, so minimal diversion would be required should cyclists wish to avoid the Onshore Cable Corridor, or the roads affected by diverted traffic, whilst works are being undertaken. However, if a cyclist's destination is affected by diverted traffic or the Onshore Cable Corridor itself, it is also noted they may not be able to avoid such affected routes completely. However, in the majority of cases the cyclists would be able to find alternative routes for most of their journey.
- On roads where on-street parking that could hinder two-way traffic it was observed that there is either sufficient width to allow two-way traffic to pass with one vehicle stopping and waiting; and/or many locations without car parking so that one vehicle could pull over to allow another one past.

- The programme constraints contained within the FTMS permits construction work on the A2030 Eastern Road on Portsea Island for only six weeks per year during the school term (June and early July), with all other work restricted to school holiday periods only; and
- All impacts will be temporary.

3.3.3. ROAD-SPECIFIC ASSESSMENT

3.3.3.1. These quantitative and qualitative factors have been summarised in a Table in Appendix C below for all roads meeting the defined assessment criteria. For clarity each assessed road in Appendix C has two rows of data. The first row gives the traffic increases in different times and scenarios, in absolute values and percentage changes; the second row of each road entry gives the qualitative factors listed above.

3.3.3.2. It should also be noted that some roads appear as more then entry in the original traffic volume increase data. In Appendix C, only the highest changes of each scenario are shown, which in some cases are different sections of roads in different scenarios; they may also be different sections of roads in the percentage changes compared with the absolute changes. In each case, the highest increase is shown so the data is robust.

3.3.3.3. Some traffic 'increases' are negative, i.e. decreases, as the SRTM predicts reassignment of traffic, in some cases causing reductions on some links.

3.3.3.4. While the full details are in Appendix C, a brief summary of the key points of the Road-Specific Assessment are set out below. Overall the appraisal of links has shown that temporary increases in traffic will generally not significantly alter the road environment.

General Points

3.3.3.5. The majority of impacted roads will experience only minor proportional changes in volumes, which could be expected to be within the usual day-to-day variation of traffic volumes. While some roads are forecast to experience increases in volumes that are more than the usual day-to-day variation, such volume increases are rarely, if ever, of such a degree that they would be surprising or unexpected. This is particularly the case on distributor roads (particularly A Roads) which are intended for the movement of relatively large volumes of traffic. On many such distributor roads, the buildings are set back from the road which further reinforces the impression of a road intended for high-volume traffic movement.

3.3.3.6. Many routes are well provided with formal pedestrian crossing points – many of which are controlled crossings. In such cases, an increase in traffic volumes is not expected to alter road safety significantly, if at all.

3.3.3.7. Where non-motorised routes cross or run alongside an impacted road, there could be increased conflict between road-user groups, or pedestrians and cyclists may take greater risks when attempting to cross at uncontrolled crossings. Such impacts are not readily monitored or identifiable through traffic and collision data. Through liaising with the community, project reporting and feedback channels, social media and designated community liaison officers, the road safety officer may be able to introduce more immediate mitigation measures, identify common problems and identify suitable mitigation for implementation at future locations. When combined with a broader signing and information strategy, such risks are mitigated as far as practicably possible, and systems are in place to ensure continuous improvement.

3.3.3.8. The majority of increases on routes designated as 'low traffic routes' are forecast to be 1-2 vehicles per minute, which is not considered to have a significant impact on road safety. Where there are more significant increases in traffic flow, these are often forecast on routes with cycle facilities (cycle lanes / shared-use paths) or on routes with wide carriageways which will allow adequate space for vehicles to overtake cyclists. As noted in 3.3.2.1 in the majority of cases there are also alternative cycle routes available to avoid those where increases in traffic is forecast.

3.3.3.9. Many of the affected roads have straight alignments allowing good forward visibility between traffic, pedestrians and cyclists

3.3.3.10. Many routes have alternative roads, many of which were not modelled in the SRTM, leading to over-estimation of the traffic reassignment to the modelled roads. In practice, traffic will be dispersed over the wider road network particularly if one parallel road experiences significant traffic increases. This is particularly the case in the close grid systems of streets in many locations, where alternative routes have similar characteristics to those linked assessed in this section. The grid-based nature of the road network also enables regular signage and information to be provided to traffic, identifying works areas, likely congestion hotspots and live traffic information so that drivers can make strategic decisions on route choice. The basis of this is outlined in the overall signage strategy.

3.3.3.11. Additional mitigation is secured as part of the Framework Traffic Management Strategy (FTMS, REP1-068); in relation to the issues identified in this Road Safety Note – further details of such mitigation is summarised within Section 5 of this report.

Roads where Mitigation is Required

Dundas Lane

3.3.3.12. Dundas Lane is forecast to experience a significant increase in traffic flow as a result of construction of the Onshore Cable Route. This has also been identified as a road designated as a 'low traffic cycle route' and is the location of Admiral Lord Nelson School and Ocean Retail Park. It is also noted however that a signalised pedestrian crossing is available on Dundas Lane in proximity to the school and retail park, with the school also having a separate link road adjacent to Dundas Lane which may allow pick-up and drop-offs to occur away from the main carriageway.

3.3.3.13. Despite this, if construction work takes place on A2030 Eastern Road during the school term, it is proposed that school marshalling is employed as set-out in section 2.13 of the FTMS. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day and mitigate potential safety impact associated with increases in traffic flow on this link.

3.3.3.14. Regular/responsive communication between the traffic marshals and the designated road safety officer will ensure any issues can be identified and resolved as they arise, with any lessons learned are captured, enabling continuous improvement throughout the duration of the works.

Evelegh Road / Gilman Road

3.3.3.15. Evelegh Road and Gilman Road are forecast to experience significant increases in traffic flow as a result of the modelled construction work at the A2030 Eastern Road traffic signal junction which prohibited right turns at the junction. This also provides an estimate of potential impacts of closure to Farlington Avenue. Each of these roads are residential street, with 20mph speed limits and on-street parking while Solent Infant School is located on Evelegh Road approximately 50m east of Farlington Avenue.

3.3.3.16. Mitigation of impacts on Evelegh Road are partly already provided by the programme restrictions contained within Section 7.3 FTMS, which will permit construction on Farlington Avenue only during school holiday period.

3.3.3.17. In addition, the formal diversion routes provided during road closure of Farlington Avenue will be signed from the Portsdown Hill Road / Farlington Avenue junction in the north and Havant Road / Farlington Avenue junction from south, thereby preventing traffic diverting onto Evelegh Road / Gilman Road as an alternative route. Furthermore, it is proposed that Evelegh Road and Gilman Road are signed as 'Access Only' for the direction of construction works to discourage rat-running. This mitigation should also be applied to Drayton Lane, Portsdown Avenue and Solent Road to avoid traffic being displaced onto routes to the west of Farlington Avenue.

3.3.3.18. The above approach of phased construction, diversion routes and 'Access Only' signage form part of the mitigation options included as part of the overall signage and traffic management strategy.

Grove Road

3.3.3.19. Grove Road is a residential street, with a 20mph speed limit and on-street parking and provides access to Springfield School. The route is forecast to experience a significant increase in traffic flow as a result of the modelled construction work at the Farlington Avenue / Havant Road / A2030 Eastern Road traffic signal junction.

3.3.3.20. Whilst there are traffic calming features including coloured road surfacing in proximity to the school it is proposed that school marshalling is employed as set-out in section 2.13 of the FTMS should construction work take place in the vicinity during the school term.

3.3.3.21. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day. As outlined earlier, continued liaison between the marshals and the road safety officer will help provide a rapid response to any problems, drive a consistent approach and continuous improvement across all impacted areas.

3.3.3.22. In addition to traffic marshals, temporary signage and markings may be provided to encourage considerate behaviour, provide guidance to users and increased protection where needed.

Station Road

3.3.3.23. Station Road is a residential street, with a 20mph speed limit and on-street parking and adjoins Grove Road and is in the proximity to Springfield School. The route is forecast to experience a significant increase in traffic flow as a result of the modelled construction work at the Farlington Avenue / Havant Road / A2030 Eastern Road traffic signal junction.

3.3.3.24. To provide a comprehensive mitigation strategy with Grove Road it is recommended that the proposed traffic marshalling on Grove Road is also extended to include Station Road. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day. Additional temporary signs and markings may also be provided as required.

3.4. SUMMARY OF LINK ASSESSMENT

3.4.1.1. This chapter has considered road safety on links separately from junctions, as there are certain issues that are unique to the links between junctions that do not apply (or do not apply in the same way) to junctions.

3.4.1.2. This chapter has applied two Selection Processes to determine which roads are to be taken forward for further assessment, using a wide variety of criteria. This is considered a robust approach as the wide variety of criteria helps to ensure that any critical roads are included.

3.4.1.3. Qualitative assessments were made of the impact of increased traffic on pedestrian and cycle routes/facilities; schools, nurseries, shops and community facilities; and roads where two-way traffic is hindered by on-street parking. These qualitative assessments, together with the quantitative assessments of Do-something (DS) link volumes and volume increases, demonstrate that the temporary increases in traffic will generally not significantly alter the road environment. This is shown to be mainly because of these factors:

- The characteristics of the affected roads and the existing infrastructure available for users of these routes that mitigates impacts associated with increases in traffic flow;
- The predicted generally minor increase in traffic flows on cycle routes, availability of cycle facilities and availability of alternative cycle routes;
- The availability of alternative roads, many of which were not modelled in the SRTM. As such, the SRTM may over-estimate the traffic impact on the roads that are included in the model as reassignment is only modelled over a limited number of links. In practice, traffic will be dispersed over more different roads if one parallel road experiences significant traffic increases; and
- The headway between vehicles even in the DS scenarios.

3.4.1.4. Where additional mitigation is required of potential road safety implications, these will be secured as part of the Framework Traffic Management Strategy (FTMS, REP1-068). Further details of such mitigation is included within Section 5 of this report.

4. ROAD SAFETY AT TRAFFIC MANAGEMENT LOCATIONS

4.1. INTRODUCTION

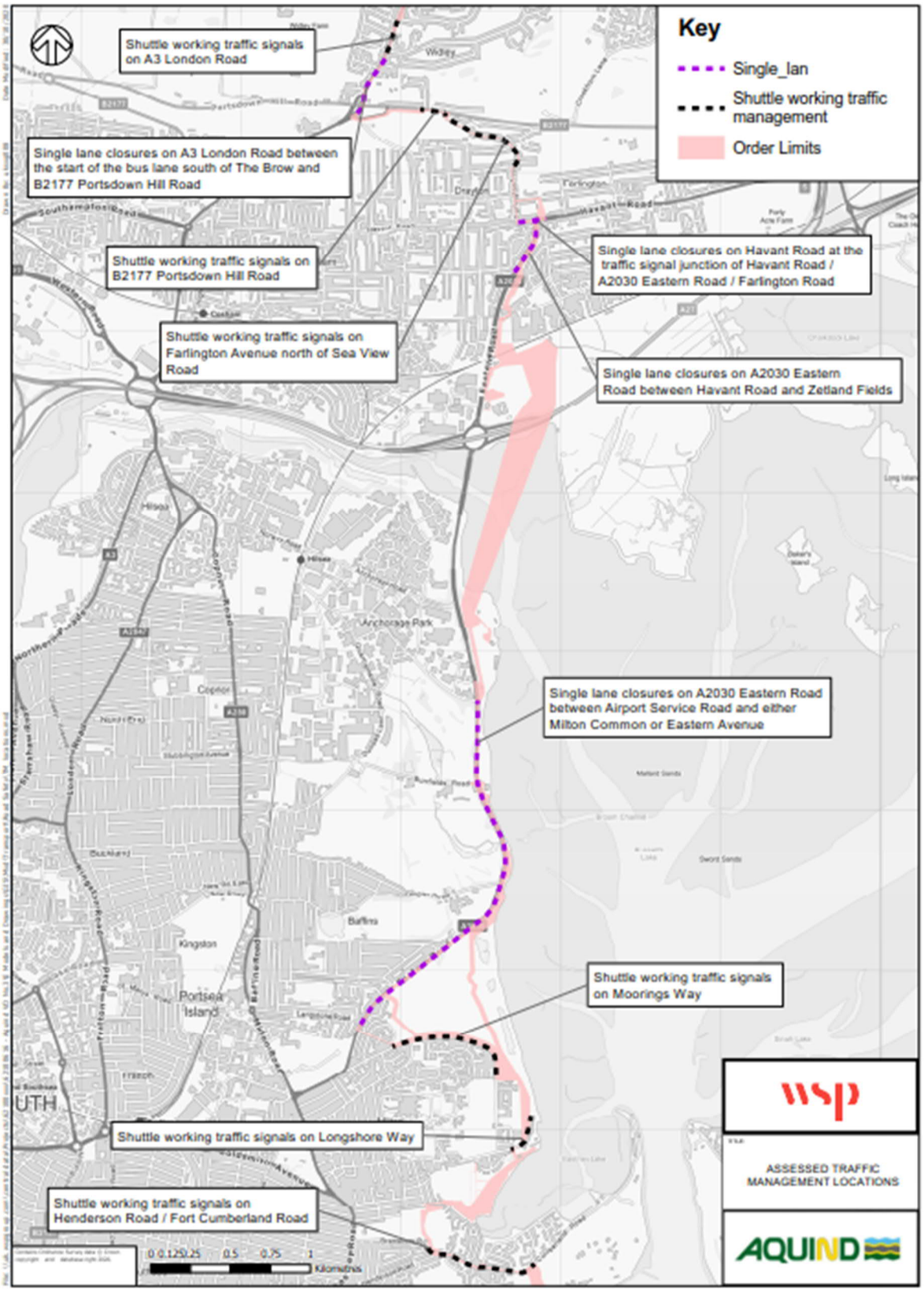
4.1.1.1. This section assesses the possible road safety implications of the traffic management measures which will be implemented during construction of the Onshore Cable Route and considers impacts associated with the use of shuttle working traffic signals together with lane closures within PCC, as set-out in the Framework Traffic Management Strategy (REP1-068).

4.1.1.2. As a worst-case assessment of shuttle working traffic signals, this section builds upon the sensitivity tests which were included in Section 5.5. of the STA (REP1-142) and includes roads that fall under the jurisdiction of PCC and shuttle working traffic signals likely to impact upon the PCC highway network. It provides further analysis of the highway capacity position, including vehicle queuing at the following locations:

- A3 London Road between Lansdown Avenue and Bus Lane (South of the Brow);
- Portsdown Hill Road between the Portsdown Hill Road car park access and Farlington Avenue;
- Farlington Avenue between Portsdown Hill Road and Sea View Road;
- Moorings Way;
- Locksway Road / Longshore Way between Thatched House Public House and Portsmouth University playing fields; and
- Henderson Road between Bransbury Road and Fort Cumberland Road.

4.1.1.3. The locations of these assessments can be seen in Figure 3.

Figure 3: Assessed shuttle working traffic management locations



4.1.1.4. For the links set out above, this section includes further detailed analysis of the impacts of predicted queue lengths in respect to their possible impacts upon road safety. The predicted queue lengths further assessed within this analysis are presented in two forms, as per Section 2 of this Technical Note, with information provided on Uniform Queue at the end of the Red Phase of the signal (UQ End Red) and Mean Maximum Queue (MMQ) values.

4.1.1.5. Given that the location of any queues will move as construction of the Onshore Cable Corridor (and traffic management) progresses, the implications of queue lengths at each location has been based on the assumption that construction is taking place at the northern end of a section when considering the implications to southbound traffic queues and the southern end of each section when considering the implications to northbound traffic queues.

4.1.1.6. Single lane closures are required to facilitate construction of the Onshore Cable Route within the PCC highway network at the following locations:

- A3 London Road between the start of bus lane South of The Brow and Portsdown Hill Road;
- Havant Road at the traffic signal junction of Farlington Avenue / Havant Road / A2030 Eastern Road;
- A2030 Eastern Road between Havant Road and Zetland Fields; and
- A2030 Eastern Road between Airport Service Road and either Milton Common or Eastern Avenue (depending on the chosen alignment of the Onshore Cable Route).

4.1.1.7. An assessment of the road safety implications associated with these traffic management requirements has been assessed individually for each location, noting that the general principles relating to queueing and merging of traffic from two lanes to one apply to all locations as the works progress along the Onshore Cable Route.

4.2. GENERAL ASSESSMENT - TRAFFIC MANAGEMENT LOCATIONS

4.2.1.1. Where there are works on or near a carriageway, cycleway or footway, there may be a potential impact on the safe and free movement of vehicles, cyclists and pedestrians (including those with a mobility or visual impairment).

4.2.1.2. For this reason, the process of designing, implementing and managing temporary traffic management is prescribed in Chapter 8 of the Traffic Signs Manual and the Safety at Street Works and Road Works Code of Practice.

4.2.1.3. This guidance outlines the reasonable steps that should be taken to ensure that the effects of the works are reduced to a minimum. The Code of Practice is directed at operatives, supervisors, managers, planners and designers who are responsible for making sure that all street and road works are safe for both operatives and the public.

4.2.1.4. All traffic management installed as part of the construction works will designed and implemented in line with Chapter 8 and the Code of Practice. This ensures that the impact of any temporary works is mitigated as far as possible.

4.2.1.5. The introduction of traffic management onto a section of carriageway, particularly where there is shuttle working or a reduction in the number of lanes, is likely to result in a natural reduction in the speed of passing vehicles. Chapter 8 states that a temporary speed limit should not be introduced where the length of restriction would be less than 800 m on dual carriageway roads and 400 m on single carriageway roads. Given the more rural areas impacted by the scheme, sections of dual carriageway, and existing 50mph speed limit in places, fixed and mobile VMS signage may be used to encourage drivers to take care through roadworks, or to indicate an advisory speed limit for the section of the works.

4.2.1.6. The combination of the traffic management with the overall signing strategy means that drivers and highway users will be provided with advanced notice to works, regular signage, information on likely congestion hotspots and live traffic information so that drivers can make strategic decisions on route choice.

4.3. ASSESSMENT OF SHUTTLE WORKING TRAFFIC SIGNALS

4.3.1.1. Included in **Table 1** are both the MMQ and UQ End Red lengths for the proposed shuttle working locations. For ease of comparison, the presented queue lengths have been converted from Passenger Car Units (pcu) into metres using the 6m conversion rate discussed above.

Table 1: Queue lengths at shuttle working traffic signal locations

Traffic Management Location	Location of assessment in STA	UQ End Red (metres)				MMQ (metres)			
		NB*		SB*		NB*		SB*	
		AM Peak	**PM Peak**	**AM Peak**	**PM Peak**	**AM Peak**	**PM Peak**	**AM Peak**	**PM Peak**
A3 London Road	Section 5.5.8	16	21	17	18	43	68	49	60
Portsdown Hill Road	Section 5.5.10.	108	138	90	120	264	414	174	348
Farlington Avenue (north of Sea View Road)	Section 5.5.11.	24	30	18	24	24	30	12	24
Moorings Way	Section 5.5.12.	24	24	18	24	24	24	18	24
Locksway Road	Section 5.5.13	6	6	6	6	6	6	6	6
Henderson Road	Section 5.5.14.	30	24	24	30	36	18	24	30

**Direction reported in respect to the Onshore Cable Corridor*

4.3.1.2. Further analysis of the possible road safety impacts of the predicted queue lengths is provided below. Where durations of impacts are reported below, it should be noted these are representative of duration of impact for construction of each circuit. As is discussed in paragraph 2.5.1.2. of the FTMS (REP1-068), duct installation will take place in 100m sections each taking approximately one week to complete.

4.3.1.3. It should also be noted that reported disruption in this assessment is in respect to queues forming as a result of the specified temporary shuttle working traffic signals only. By definition, once the works are complete, any disruption reported as a consequence would cease.

4.3.1.4. The implications of the reported queue lengths are now considered in the following sections. It should that the queue values presented in the text below provide details of the output obtained for each peak hour.

4.3.2. A3 LONDON ROAD BETWEEN LANSDOWNE AVENUE AND THE START OF THE BUS LANES (SOUTH OF THE BROW)

4.3.2.1. Shuttle working is proposed for A3 London Road between Lansdowne Avenue and the bus lane (south of The Brow) (FTMS sub-section 4.43, REP1-068). On the southbound carriageway, the UQ End Road is forecast to extend 17-18m whilst the MMQ is between 49-60m. This means that the queue at the end of the red stage would be relatively limited but would still block back to the priority junction with Park Avenue. The MMQ would also block back past the junction with Park Avenue, but would consist of traffic joining that shown to occur at the time of the signals changing from red to green.

4.3.2.2. To mitigate the impacts of traffic queueing through the junction with Farlington Avenue it is proposed that temporary signs such as 'Keep Clear' or 'Do Not Block Junction' are installed for the duration of construction works. If necessary, signs advising drivers not to overtake cyclists may also be provided to encourage cyclists to feel comfortable using the carriageway to pass the works area.

4.3.2.3. On the northbound carriageway, the UQ End Red is forecast to be between 16-21m and the MMQ is forecast to be between 43-68m. This means that the queue at the end of the red stage would be relatively limited and would not generate any road safety concerns. The nature of the carriageway on A3 London Road to the south of The Brow means that the longer MMQ lengths would also not pose an issue in respect to road safety.

4.3.3. B2177 PORTSDOWN HILL ROAD

4.3.3.1. Shuttle working is proposed on B2177 Portsdown Hill Road for 160m between the Car Park access and the junction with Farlington Avenue (FTMS sub-section 4.5, REP1-068). On the southbound carriageway the UQ End Red queue is forecast to extend to 90-120m while the MMQ is between 174-348m. This means that the queue at the end of the red stage would not block back to the spur road to A3 London Road.

4.3.3.2. The MMQ, which includes a rolling element of traffic arriving as the lights turn green, extends past this link to the overbridge of the A3 London Road. The MMQ is formed by traffic adding to the values shown at the end of the UQ End of Red queue. Therefore, the mean maximum queue value obtained is formed by traffic adding to the queue length whilst traffic discharges at the end of the red phase. The balance of queue lengths shown between the MMQ and the UE of Red Queue of 85 – 250 metres are effectively moving traffic approaching the temporary signals.

4.3.3.3. The balance of queueing vehicles between the MMQ and the UQ End Red in this direction is shown to block back to the junction of the A3 London Road spur road for the two weeks per circuit duration of construction on this link, however this would consist of slow moving vehicles. This is unlikely to present a road safety concern given the good visibility splays at the junction and ghost island right turn lane, however to encourage considerate road user behaviour, 'Keep Clear' or 'Do Not Block Junction' signs could be provided at this location.

4.3.3.4. In the northbound direction the UQ End Red queue is forecast to be 90-120m and the MMQ 264-414m. This means that for both queue values obtained, traffic would block back through the junction with Farlington Avenue for the duration of works on this link, albeit that around 150m – 290m of the queue lengths identified in respect of the MMQ values would consist of moving traffic. Despite its length the forecast MMQ would not impact on any upstream receptors beyond Farlington Avenue as there are no minor junctions joining this route therefore the traffic can be accommodated along its length.

4.3.3.5. To mitigate the impacts of traffic queueing through the junction with Farlington Avenue, it is proposed that 'Keep Clear' or 'Do Not Block Junction' signs are installed for the duration of construction works. Temporary traffic signals may also be installed at the junction with Farlington Avenue whilst construction of the Onshore Cable Route passes through this junction. This will be determined by the contractor during completion of detailed traffic management plans.

4.3.4. FARLINGTON AVENUE (NORTH OF SEA VIEW ROAD)

4.3.4.1. Shuttle working traffic signals are proposed for the entirety of Farlington Avenue to the north of Sea View Road (FTMS sub-section 5.1, REP1-068). On the southbound carriageway, the UQ End Red is forecast to be between 18 – 24m and the MMQ is between 12 – 24m. On the northbound carriageway, both the UQ End Red and the MMQ is forecast to be between 24 - 30m. This limited queueing is not anticipated to impact upon the operation of the traffic signal junction of A2030 Eastern Road / Havant Road / Farlington Avenue at any point during construction works on Farlington Avenue to the north of Sea View Road; therefore, there are unlikely to be road safety problems along this section.

4.3.5. MOORINGS WAY

4.3.5.1. Shuttle working traffic signals are proposed for Moorings Way both between Eastern Avenue and Godwit Road and between Godwit Road and Furze Lane Bus Link (FTMS sub-sections 9.11 and 9.12, REP1-068). On the both the southbound and northbound carriageways, queues are not anticipated to extend beyond 24m and would not interfere with adjacent junctions.

4.3.5.2. As queueing is limited it is considered that there would not be any road safety problems associated with shuttle working / traffic signals on this link.

4.3.5.3. Due to the limited length of modelled queues at shuttle working locations on this link, it is not anticipated that there will be any blocking back issues at the traffic signal junction of A2030 Eastern Road / A2030 Velder Avenue / Moorings Way.

4.3.6. LOCKSWAY ROAD

4.3.6.1. Shuttle working is proposed on Lockways Road between the access road to Milton Piece Allotments and Thatched House Public House (Section 9.21 of the FTMS, APP-449). Modelled queueing in respect to the MMQ and the UQ End Red is limited to 6m (one pcu) within the peak periods, and thus it is not anticipated that there will be any road safety problems associated with shuttle working traffic signals on this link.

4.3.7. HENDERSON ROAD

4.3.7.1. Shuttle working is proposed for Henderson Road between the junction with Bransbury Road and the junction with Fort Cumberland Road (FTMS sub-section 10.1, APP-449). The longest queue lengths predicted for this section are 36m in the northbound direction and 30m in the southbound direction (MMQ). This queueing is limited and therefore it is considered that there would not be any road safety problems associated with shuttle working traffic signals on this link.

4.4. ASSESSMENT OF SINGLE LANE CLOSURES

4.4.1.1. This section provides an assessment of the safety implications of single lane closure traffic management requirements within PCC (as per the locations identified at the start of this Section).

4.4.1.2. As with all of the assessments carried out, this presents outputs of a temporary position. When works are not required to be undertaken at the junctions whilst works are taking place at other locations along the Onshore Cable Route, then they will be fully open to traffic. However, this assessment presents details of the position whilst junctions are subject to lane closures.

4.4.1.3. Through the use of advanced signing, route choice to avoid single lane closures can be achieved. This is likely to help mitigate any potential road safety implications of

single lane closures. Discussion with transport providers, emergency services and key local businesses may also enable drivers to plan ahead and re-route as needed.

4.4.2. A3 LONDON ROAD BETWEEN THE START OF BUS LANE SOUTH OF THE BROW AND PORTSDOWN HILL ROAD

4.4.2.1. As noted in Section 6.12 of the FTMS (REP1-068), delivery of the Onshore Cable Route in this section will be completed through lane realignment, therefore maintaining two-way traffic flow through the entirety of the sub-section. Where the construction zone is located within the bus lane, general traffic lanes will merge from two lanes to one lane. If practicable, temporary bus priority traffic signals will be used to maintain bus priority over general traffic where the lane merge occurs. Where this is not possible, it is proposed that temporary 'Merge In Turn' signs are installed to encourage vehicles to allow buses to join the general traffic lane.

4.4.2.2. In either situation it is not anticipated that the proposals will generate road safety implications. This is because bus movements are limited along this route and by definition the instances of conflict would therefore be limited.

4.4.3. HAVANT ROAD AT THE TRAFFIC SIGNAL JUNCTION OF FARLINGTON AVENUE / HAVANT ROAD / A2030 EASTERN ROAD TRAFFIC SIGNAL JUNCTION

4.4.3.1. Construction work through this junction (between Farlington Avenue and A2030 Eastern Road) will be facilitated through single lane closures as detailed in Section 7.8 of the FTMS (REP1-068). As per the SRTM assessment, this is likely to involve the prevention of right-turns at the junction on the carriageway where construction is taking place and implementation of temporary traffic signals, both of which would be clearly signed in accordance with Traffic Signs Manual Chapter 8 guidance. As a result, it is not anticipated that the proposals at this junction will lead to any road safety implications.

4.4.4. A2030 EASTERN ROAD BETWEEN HAVANT ROAD AND ZETLAND FIELDS

4.4.4.1. As also detailed in Section 7.8 of the FTMS (REP1-068), construction of the Onshore Cable Route within this section will be facilitated by single lane closures for approximately four weeks per circuit. It is however anticipated that traffic disruption from such traffic management in this location is likely to be minimal because of upstream traffic flows to the north and south of this location being constrained to single lane capacity at the Farlington Avenue / Havant Road / A2030 Eastern Road and A2030 Eastern Road / Fitzherbet Road traffic signal junctions.

4.4.4.2. As a result of this, the merge from two lanes to one at the traffic management location should not lead to significant queueing on either the northbound or southbound carriageway of the A2030 Eastern Road. Traffic will already be in a single platoon and there will not be the need for merging to take place, which can lead to disruption. Therefore, no material safety concerns should arise from construction at this location.

4.4.5. A2030 EASTERN ROAD BETWEEN AIRPORT SERVICE ROAD AND EITHER MILTON COMMON OR EASTERN AVENUE. (DEPENDING ON THE CHOSEN ALIGNMENT OF THE ONSHORE CABLE ROUTE)

4.4.5.1. As it noted in Section 10 of the FTMS (REP1-068), construction work on the A2030 Eastern Road south of the junction with Airport Service Road will be completed through single lane closures, therefore maintaining two-way traffic flow on the entirety of this link. The proposed lane closures will also be in place through the following signal junctions located on this link:

- A2030 Eastern Road / Airport Service Road; and
- A2030 Eastern Road / Burrfields Road.

4.4.5.2. In order to assess the worst-case possible road safety implications of single lane closures through these junctions, LinSig modelling has been undertaken. A worst-case assessment has been undertaken as at these locations, by applying a reduction to the link capacity of the junction (through the removal of a traffic lane approaching the signal junction). The presence of opposing traffic signal stages serving minor arms presents a further capacity constraint. When the construction works are on a link (between the junctions) the capacity constraint will only be due to the lane closure and therefore the queue lengths will be shorter than those reported at each junction.

4.4.5.3. Within these assessments, the alignment of the junctions has been altered in the LinSig model so as the southbound approaches to the junctions have one lane removed in the DS1 scenario, and the northbound approaches have one lane removed in the DS2 scenario. The LinSig modelling has been undertaken using traffic flows taken from the directly from the SRTM outputs for these junctions.

4.4.5.4. An assessment of the possible road safety implications of the implementation of TM measures at the junction of A2030 Eastern Road / Tangier Road has also been undertaken. The assessment of the queueing at this junction has been undertaken using the results of the modelling undertaken in Section 5 of the 'Eastern Road Further Traffic Assessments Technical Note' (Appendix E of the Supplementary Transport Assessment (REP1-142)).

4.4.5.5. Full outputs of the LinSig modelling undertaken are included in Appendix D of this report, and the tables containing both the UQ End Red and MMQ data for each location is included in Appendix E.

4.4.5.6. The results obtained from this modelling are set out in the following sections.

A2030 Eastern Road / Airport Service Road

4.4.5.7. The LinSig modelling results for the junction of A2030 Eastern Road / Airport Service Road for the DS1 and DS2 scenario are set out in Table A12 and Table A13 respectively.

4.4.5.8. The results set out in Table A12 for the DS1 scenario forecast that for the A2030 Eastern Road (north) approach, the UQ End Red will extend for between 6 – 21 PCU (36 – 126m), while the MMQ for this approach is forecast to be between 34 – 134 PCU (204 – 804m). This means that the queue at the end of the red stage would not block back to the next junction, or through any pedestrian crossings. The MMQ, which includes a rolling element of traffic arriving as the lights turn green, extends north through the junction of A2030 Eastern Road / Anchorage Road. The MMQ is formed by traffic adding to the values shown at the end of the UQ End of Red queue. Therefore, the mean maximum queue value obtained is formed by traffic adding to the queue length whilst traffic discharges at the end of the red phase. The balance of queue lengths shown between the MMQ and the UE of Red Queue of 21 – 134 metres are effectively moving traffic approaching the traffic signals.

4.4.5.9. Furthermore, to the north of the TM location at the junction in this assessment, vehicles travelling on A2030 Eastern Road will have the use of two lanes, and thus queue lengths are likely to be shorter than those which are reported. Signage will be implemented to encourage drivers to queue in both lanes, and merge in turn, as per paragraph D6.23.8 of Traffic Signs Manual Chapter 8 guidance

4.4.5.10. The results set out for the DS2 scenario at the junction of A2030 Eastern Road / Airport Service Road show relatively limited queueing in comparison to the DS1 scenario. Neither the static element of the queue, nor the rolling element of forecast queueing is anticipated to block back to the next junction, or through any pedestrian crossings. As such, there are no road safety concerns associated with the implementation of traffic management at this location.

A2030 Eastern Road / Burrfields Road

4.4.5.11. The LinSig modelling results for the junction of A2030 Eastern Road / Airport Service Road for the DS1 and DS2 scenario are set out in Table A14 and Table A15 respectively.

4.4.5.12. The most extensive queueing at this junction in the DS1 scenario is forecast to be on the A2030 Eastern Road (north) arm. On this arm, the UQ End Red is forecast to extend for between 17 -36 PCU (102 – 216m) whilst the MMQ is between 69 – 212 PCU (414m – 1,272m). This means that the queue at the end of the red stage would not block back to the next upstream junction, or impact upon any pedestrian crossings. The rolling element of queuing traffic approaching the junction on this arm however is forecast to extend back through the junctions with both Airport Service Road and Anchorage Road to the north. As such, signage is proposed to advise drivers not to queue through the junctions as to prevent any possible road safety implications. Mitigation can also be provided by way of adjustments to signal timings as necessary in order to allocate more green time within a cycle to the A2030 Eastern Road approaches of the junction.

4.4.5.13. Furthermore, as with the junction with Airport Service Road, queueing to the north of this junction will have two lanes available. Given that the extent of the works is only required to be introduced within a 100m section of A2030 Eastern Road at any one time, queues will form in both lanes and are likely to be shorter than those reported. To mitigate any potential impact signage will be implemented to encourage drivers to queue in both lanes, and merge in turn, as per paragraph D6.23.8 of Traffic Signs Manual Chapter 8 guidance.

4.4.5.14. In the DS2 scenario, the most extensive queueing is forecast for the A2030 Eastern Road (south) approach of the junction. For this approach, the UQ End Red is forecast to extend for between 25 – 49 PCU (150 – 294m), while the MMQ is forecast to extend for between 75 – 264 PCU (450 - 1,584m). This means that the queue at the end of the red stage will not block back to the next upstream junction. This queue would however block through the pedestrian crossing on this arm. The MMQ, which includes a rolling element of traffic arriving as the lights turn green, is forecast to extend through both the signal-controlled junction with Tangier Road and the priority junction with Hayling Avenue. As such, signage is proposed to advise drivers not to queue through the junctions or pedestrian crossings, to prevent any possible road safety implications. Mitigation can also be provided by way of adjustments to signal timings as necessary in order to allocate more green time within a cycle to the A2030 Eastern Road approaches of the junction.

4.4.5.15. As with the A2030 Eastern Road to the north of the junction, the link to the south of the junction also has two lanes available for use by queueing traffic and thus queue lengths are likely to be shorter than those which have been stated in this assessment.

4.4.5.16. To mitigate any road safety issues arising from blocking back and queuing on all approaches, it is proposed that signage will be provided advising drivers not to queue through junctions or encouraging drivers to queue in both lanes and merge in turn, as per paragraph D6.23.8 of Traffic Signs Manual Chapter 8 guidance.

4.4.5.17. As with the DS1 closure, signage is proposed to encourage drivers to queue in both lanes, and merge in turn, as per paragraph D6.23.8 of Traffic Signs Manual Chapter 8 guidance.

A2030 Eastern Road / Tangier Road

4.4.5.18. The LinSig modelling results for the junction of A2030 Eastern Road / Tangier Road for the DS1 and DS2 scenario are set out in Table A16 and Table A17 respectively.

4.4.5.19. In the DS1 scenario, the most extensive queueing at this junction is forecast to be of the A2030 Eastern Road (north) arm. The approach is forecast to have a UQ End Red of between 12 – 21 PCU (72 – 126m), while the MMQ is forecast to be between 32 – 153 PCU (192 – 918m). This means that the static queue at the end of the red phase will not extend back through the next upstream junction, or through any pedestrian crossing facilitates. The MMQ however, which includes a rolling element of traffic adding to the values shown at the end of UQ End Red values, extends upstream past the junction with Burrfields Road. The balance of queue lengths between the MMQ and the UQ End Red of 21 – 153 PCU are effectively moving traffic approaching temporary signals. As it is possible that blocking back through junctions may occur signage is proposed to advise drivers not to queue through the junctions or pedestrian crossings, to prevent any possible road safety implications. Mitigation can also be provided by way of adjustments to signal timings as necessary in order to favour the A2030 Eastern Road.

4.4.5.20. In the DS2 scenario, the A2030 Eastern Road (south) approach is forecast to experience the most extensive queueing. This approach is forecast to experience UQ End Red lengths of between 14 – 18 PCU (84 – 108m), while the MMQ is between 27 – 68 PCU (162 – 408m). This level of queueing is not forecast to block back upstream through any adjoining junctions.

4.4.5.21. Furthermore, as with the other junctions assessed, queueing to the north and south of this junction will have two lanes available. Given that the extent of the works is only required to be introduced within a 100m section of A2030 Eastern Road at any one time, queues will form in both lanes and are likely to be shorter than those reported. Signage will be implemented to encourage drivers to queue in both lanes, and merge in turn, as per paragraph D6.23.8 of Traffic Signs Manual Chapter 8 guidance.

5. SUMMARY AND CONCLUSIONS

5.1. SUMMARY

5.1.1.1. This technical note has provided an assessment of the safety implications of increased traffic flow and queue lengths at junctions, increased traffic flows on links and the implications of traffic management measures which are to be implemented in association of the construction stage of the Onshore Cable Route. Where it has been identified that increased queuing against the DM scenario has occurred and impacts on upstream receptors, temporary measures may be required to mitigate against these impacts.

5.1.1.2. The measures to mitigate any road safety implications arising from the proposed works are contained in the Framework Construction Traffic Management Plan (CTMP) and Framework Traffic Management Strategy (FTMS), including the overall signing strategy.

5.1.1.3. The Framework CTMP (REP1-070) includes details regarding the liaison and monitoring which is to be undertaken, and the mitigation measures which are associated with the Construction Stage of the proposals. This includes details regarding the provision for a road safety liaison officer.

5.1.1.4. The FTMS (REP1-068) sets out the overarching principles and methodology to be used during the construction, with the aim of minimising disruption to all road-users, including pedestrians, cyclists, public transport users and car drivers.

5.1.1.5. The development of an overarching signing strategy will identify locations where static and variable information signs could be placed.

5.1.1.6. Where temporary traffic management is proposed, it is anticipated that all road safety implications will be mitigated as far as possible given the design, implementation and operation of temporary traffic management is governed by Chapter 8 of the Traffic Signs Manual and the Streetworks Code of Conduct.

5.1.1.7. Additional signage such as to encourage drivers to Keep junctions clear, merge in turn or not overtake cyclists in roadworks will be provided as needed.

5.1.2. ADDITIONAL MITIGATION MEASURES TO BE INCLUDED WITHIN THE FTMS

5.1.2.1. Through completion of this note, a number of additional measures have been identified to mitigate potential road safety impacts associated with construction of the Onshore Cable Route, in relation to either traffic reassignment across the PCC highway network or the installation of traffic management on the PCC sections of the Onshore Cable Corridor itself. These include:

- Development of an overall signage strategy for the construction period, which will communicate proposals to road users who may otherwise be unaware of the construction works and associated traffic management, thereby allowing them to divert away from the Onshore Cable Corridor and onto other appropriate routes. This will include the following:
    - Use of 'Advanced Warning' signs placed on the highway before the works detailing start-date and periods of works;
    - Use of mobile Variable Message Signs ('VMS') at key locations along the Onshore Cable Corridor. These will be installed at least one week prior to commencement of the construction works along each section of highway.
    - Other uses of mobile VMS signage could be to provide live traffic updates, information on known/likely congestion hotspots, or guidance relating to upcoming temporary traffic management.
- Additional signage at the Church Street roundabout, Copnor Road / Burrfields Road roundabout, A3 London Road and B2177 Portsdown Hill Road to discourage drivers from blocking across junctions. Additional locations may be identified by the Road Safety Liaison Officer as needed.
- Traffic marshals around the school at Dundas Lane and Grove Road as identified in Section 3
- Examples of where keep clear signage will be implemented to mitigate the impacts of TM along the cable corridor.
- 'Access Only' signage to prevent rat-running during the closure of Farlington Avenue. Formal diversion routes signed in advance to discourage rat-running through local or residential routes that may be less suitable. The use of 'Access Only' signage will discourage drivers from continuing towards the closure.

5.2. CONCLUSIONS

5.2.1.1. This document has been produced in response to post-application discussions held with PCC in which they raised concerns that the impact of traffic redistribution and increased queueing on road safety, along the cable route or identified diversion routes, had not been fully assessed.

5.2.1.2. This Technical Note seeks to address PCC's comments in respect to these temporary road safety implications on roads within the jurisdiction of PCC.

5.2.1.3. This Technical Note has built upon the assessment work undertaken in the TA (APP-448) and the STA (REP1-142).

5.2.1.4. This Technical Note has assessed the following areas:

- The safety implications of the temporary increases in queue lengths at junctions due to traffic reassignment away from the Onshore Cable Route, with respect to the subsequent impact on upstream receptors;
- The safety implications of increased traffic on links impacted by traffic reassignment away from the Onshore Cable Route; and
- The road safety implications of the traffic management measures which are to be implemented in association with the Construction Stage of the Onshore Cable Route.

5.2.1.5. The above assessments have demonstrated that – while there will be temporary impacts on various receptors – these will be manageable and not significantly different from normal conditions. Furthermore, the Framework Traffic Management Strategy (FTMS, REP1-068) provides for further mitigation as needed.

Appendix A – Queue length data for junctions

KENDALLS QUAY / A2030 EASTERN ROAD / ANCHORAGE ROAD

Table A1: Kendalls Quay / A2030 Eastern Road / Anchorage Road signalised junction (UQ End Red).

. Approach	UQ End Red (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Kendalls Quay (left/ahead/right)	0	0	0	0	0	0	0	0	0	0
A2030 Eastern Road (south) (left/ahead)	204	126	168	108	156	120	0	0	0	0
A2030 Eastern Road (south) (ahead)	198	126	168	108	156	120	0	0	0	0
Anchorage Road (left)	156	120	84	84	96	114	0	0	0	0
Anchorage Road (right/left/ahead)	42	48	90	84	96	42	48	36	54	0
A2030 Eastern Road (north) (ahead/left)	114	102	102	90	144	108	0	0	30	0
A2030 Eastern Road (north) (ahead)	114	84	102	90	144	108	0	6	30	0
A2030 Eastern Road (north) (right)	78	18	78	30	78	18	0	0	0	0

Table A2: Kendalls Quay / A2030 Eastern Road / Anchorage Road signalised junction - Junction Modelling Results

Approach	MMQ (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Kendalls Quay (left/ahead/right)	0	0	0	0	0	0	0	0	0	0
A2030 Eastern Road (south) (left/ahead)	220	241	178	182	164	211	0	0	0	0
A2030 Eastern Road (south) (ahead)	209	233	172	179	162	206	0	0	0	0
Anchorage Road (left)	170	209	88	115	101	187	0	0	0	0
Anchorage Road (right/left/ahead)	52	95	97	125	106	91	45	30	54	0
A2030 Eastern Road (north) (ahead/left)	119	229	103	169	146	239	0	0	27	10
A2030 Eastern Road (north) (ahead)	119	229	103	169	146	239	0	0	27	10
A2030 Eastern Road (north) (right)	82	23	89	36	88	23	7	13	6	0

A2030 EASTERN ROAD / AIRPORT SERVICE ROAD SIGNALISED JUNCTION

Table A3: A2030 Eastern Road / Airport Service Road signalised junction - Junction modelling results (Back of Uniform Queue).

Approach	UQ End Red (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
A2030 Eastern Road (north) (ahead)	22	30	36	22	22	29	14	0	0	0
A2030 Eastern Road (north) (ahead/right)	22	30	5	20	22	29	0	0	0	0
A2030 Eastern Road (south) (left/ahead)	36	33	49	52	30	39	13	19	0	0
A2030 Eastern Road (south) (ahead)	37	33	50	52	30	39	13	19	0	0
Airport Service Road (right/left)	5	26	7	35	14	44	14	0	0	18

Table A4: A2030 Eastern Road / Airport Service Road signalised junction - Junction modelling results.

Approach	MMQ (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
A2030 Eastern Road (north) (ahead)	47	87	153	45	45	84	107	0	0	0
A2030 Eastern Road (north) (ahead/right)	46	87	49	51	44	84	3	0	0	0
A2030 Eastern Road (south) (left/ahead)	69	59	93	81	49	61	24	22	0	2
A2030 Eastern Road (south) (ahead)	71	59	92	81	49	61	21	23	0	2
Airport Service Road (right/left)	6	32	9	46	17	61	3	14	11	29

A2030 EASTERN ROAD / BURRFIELDS ROAD TRAFFIC SIGNAL JUNCTION

Table A5: A2030 Eastern Road / Burrfields Road Traffic Signal Junction - Junction modelling results (UQ End Red)

. Approach	UQ End Red (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Great Salterns (left/ahead/right)	0	0	0	0	0	0	0	0	0	0
A2030 Eastern Road (south) (ahead)	21	15	21	14	23	14	0	0	2	0
A2030 Eastern Road (south) (left/ahead)	21	15	21	14	21	14	0	0	0	0
A2030 Eastern Road (south) (ahead/right)	21	15	21	14	23	14	0	0	2	0
Burrfields Road (right/left/ahead)	5	12	4	8	3	7	0	0	0	0
A2030 Eastern Road (north) (ahead/left)	19	21	9	16	16	19	0	0	0	0

Table A6: A2030 Eastern Road / Burrfields Road Traffic Signal Junction - Junction modelling results (MMQ)

. Approach	MMQ (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Great Salterns (left/ahead/right)	0	0	0	0	0	0	0	0	0	0
A2030 Eastern Road (south) (ahead)	15	11	4	11	11	10	0	0	0	0
A2030 Eastern Road (south) (ahead)	0	10	4	1	1	10	4	0	1	0
A2030 Eastern Road (south) (left/ahead)	223	135	230	223	223	120	7	88	0	0
A2030 Eastern Road (south) (ahead/right)	230	137	236	240	240	122	6	103	10	0
Burrfields Road (right/left/ahead)	46	136	40	33	33	76	0	0	0	0
A2030 Eastern Road (north) (ahead/left)	386	323	77	242	242	277	0	0	0	0

A2030 EASTERN ROAD / HAYLING AVENUE PRIORITY T-JUNCTION

Table A7: A2030 Eastern Road / Hayling Avenue Priority T-Junction - Junction Modelling Results

Approach	Queue (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Hayling Avenue (left/right)	710	473	522	287	582	545	0	0	0	72
A2030 Eastern Road north (ahead/right)	5	13	4	4	5	16	0	0	0	3

COPNOR ROAD / BURRFIELDS ROAD TRAFFIC SIGNAL JUNCTION

Table A8: Copnor Road / Burrfields Road Traffic Signal Junction - Junction Modelling Results (Back of Uniform Queue).

	UQ End Red (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
Approach	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Burrfields Road (left/ahead/right)	20	69	27	83	20	0	7	14	0	0
A288 Copnor Road (south) (left/right/ahead)	109	65	101	73	120	0	0	8	11	0
Stubbington Avenue (right/left/ahead)	23	26	22	26	24	0	0	0	1	0
A288 Copnor Road (north) (ahead/left)	161	108	159	122	167	0	0	14	6	0

Table A9: Copnor Road / Burrfields Road Traffic Signal Junction - Junction Modelling Results.

	MMQ (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
Approach	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Burrfields Road (left/ahead/right)	25	114	35	160	25	124	10	46	0	10
A288 Copnor Road (south) (left/right/ahead)	1086	131	1016	146	1152	130	0	15	66	0
Stubbington Avenue (right/left/ahead)	46	36	44	40	52	38	0	4	6	2
A288 Copnor Road (north) (ahead/left)	416	178	405	224	442	182	0	47	26	4

CHURCH STREET / COMMERCIAL ROAD / HOPE STREET / A3 MILE END ROAD.

Table A10: Church Street / Commercial Road / Hope Street / A3 Mile End Road - Junction Modelling Results (Back of Uniform Queue).

	UQ End Red (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
Approach	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Church Street	506	365	506	403	557	364	0	38	51	0
Church Street circulatory (ahead1)	18	17	17	17	18	17	0	0	0	0
Church Street circulatory (ahead2)	17	17	17	23	17	17	0	6	0	0
Commercial Road circulatory (ahead)	0	0	0	0	0	0	0	0	0	0
Commercial Road circulatory (ahead)	49	95	46	95	112	94	0	0	66	0
Commercial Road circulatory (ahead/right)	40	116	35	116	0	116	0	0	0	0
Commercial Road (ahead)	38	114	34	114	1	115	0	0	0	1
Commercial Road (ahead/right)	0	0	0	0	0	0	0	0	0	0
Hope Street (left)	0	0	0	0	0	0	0	0	0	0
Hope Street (left/ahead/right)	85	150	85	147	87	150	1	0	2	3
A3 Mile End Road circulatory (ahead)	86	152	86	150	89	153	1	0	2	4
A3 Mile End Road circulatory (right)	3	3	2	4	1	4	0	1	0	0
A3 Mile End Road (left)	1	0	1	0	1	0	0	0	1	0
A3 Mile End Road (ahead)	522	283	547	306	543	285	25	23	0	0
A3 Mile End Road (ahead/right)	524	231	529	224	569	232	4	0	41	8

Table A11: Church Street / Commercial Road / Hope Street / A3 Mile End Road - Junction Modelling Results.

	UQ End Red (m)						Increase from DM (m)			
	DM		DS1		DS2		DS1		DS2	
Approach	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Church Street	2566	1080	2568	1215	2612	1072	2	135	46	0
Church Street circulatory (ahead1)	41	42	40	42	40	42	0	0	0	0
Church Street circulatory (ahead2)	40	42	40	42	40	42	0	0	0	0
Commercial Road circulatory (ahead)	66	127	62	128	292	125	0	1	226	0
Commercial Road circulatory (ahead)	89	235	80	235	2	242	0	0	0	7
Commercial Road circulatory (ahead/right)	94	219	85	219	2	226	0	0	0	7
Commercial Road (ahead)	150	262	150	247	4	263	0	0	0	1
Commercial Road (ahead/right)	94	132	93	128	1	132	0	0	0	0
Hope Street (left)	104	237	106	230	109	237	2	0	5	0
Hope Street (left/ahead/right)	106	243	108	236	111	245	2	0	5	2
A3 Mile End Road circulatory (ahead)	2	4	2	4	1	4	0	0	0	0
A3 Mile End Road circulatory (right)	1	0	1	0	1	0	0	0	0	0
A3 Mile End Road (left)	1682	957	1777	1096	1691	968	95	139	8	11
A3 Mile End Road (ahead)	1686	641	1697	603	1785	644	11	0	99	4
A3 Mile End Road (ahead/right)	1844	767	1865	724	1781	770	21	0	0	4

Appendix B – Stage 2 Transport Assessment links

Date Modified: 30/10/2020

Drawn By: uksxg008

Key

Links taken forward for assessment within the Stage 2 of the TA

Healthcare Services

- Hospital (A and E)
- Hospital (No A and E)
- GP Practice
- Pharmacy
- Dentist
- Optician
- Sports and Fitness
- Fire Station

School Type

- Primary
- Secondary

Existing Cycle Facility

- Low Traffic Route / Cycle Lanes
- Shared Cycle / Footpath
- Footpath
- NCR22

0 0.15 0.3 0.6 0.9 1.2 Kilometres

FIGURE No:

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Appendix C – Assessment of roads

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
A2030 Havant Road, between Lower Drayton Lane and Lower Farlington Road	109	124	121	134	15.1%	14.8%	16.6%	16.6%
	Single-carriageway distributor road with housing set-back from the road or accessed from a service road. 30 mph and 40mph.	No obvious capacity constraints to two-way traffic flow	Not a signed cycle route but includes eastbound advisory cycle lanes for majority of section; Footways mostly set back from road. Controlled and uncontrolled pedestrian crossings are available.	Farlington Day Nursery is located in A2030 Havant Road (with off-street parking) Springfield Secondary School is located on Lower Drayton Lane. Drayton Daisy Chain Pre-School located on School Road.	Drayton local centre, including shops, services and GP surgeries	Minor. Whilst there are notable receptors the existing highways provision, combined with availability of formal pedestrian crossings and cycle lanes means that the predicted increases in traffic flow are unlikely to impact on the safety of road users.		
A2030 Winston Churchill Avenue	-7	75	-3	2	-0.8%	12.8%	-0.4%	0.3%
	Dual carriageway distributor road with bus lanes and bus/cycle lanes; non-residential. 30 mph	No obvious capacity constraints to two-way traffic flow	Shared bus / cycle lanes for part of the length. Wide footways to the west of junction with Isambard Brunel Road (and a short part of the section west of Victoria Road North).	Ark Ayrton Primary Academy and Ark Charter Academy are located on Somers Road and Isambard Brunel Road respectively which can be accessed via Winston Churchill Avenue	Somerstown Central Community Hub, Citizens' Advice and some shops are accessed from side roads	Minor. Low proportional increases in traffic (decreases in two scenarios). The Receptors are mostly set back from road or accessed from adjoining roads., which has the effect of reinforcing the distributor function of the road, i.e. a road that is primarily for the movement of large volumes of traffic rather than a place for locating properties. The key point here is that large volumes of traffic would not be surprising or unexpected and therefore traffic increases are unlikely to be a hazard to safety. Furthermore, the availability of formal pedestrian crossings and cycle lanes means that the predicted increases in traffic flow		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
			Controlled pedestrian crossings are available			are unlikely to impact on the safety of road users.		
	95	200	17	29	15.9%	15.8%	2.8%	2.6%
A288 Copnor Road	Single carriageway distributor road, largely residential but mostly set back from road. 30 mph	No obvious capacity constraints to two-way traffic flow	Limited cycle facilities – advance stoplines at junction with Stubbington Avenue; cycle lanes at southern end of the road (continuation of cycle lanes from Milton Road) . Wide footpaths or set-back footpaths.	Copnor Primary School	A Pharmacy, GP surgery, dentist and hospital	Minor. Low proportional increases in traffic. Receptors mostly set back from road which has the effect of reinforcing the distributor function of the road. It is designated as an A road and therefore intended to carry large traffic volumes. Pedestrians are protected by wide footways.		
	-1	84	-1	0	-0.2%	13.2%	-0.2%	0.1%
A3 Cambridge Road	Single carriageway, non-residential urban. Access to university, an Army Careers Centre and a car park; all set back from road. 30 mph	No obvious capacity constraints to two-way traffic flow	Footways plus a short section of shared footway/cycleway.	University but no schools	University and an Army Careers Centre	Minor. Low proportional increases in traffic (decreases in two scenarios). Few receptors. Receptors are set back from the road which has the effect of reinforcing the distributor function of the road. It is designated as an A road and therefore intended to carry large traffic volumes. While there will be pedestrian movements due to the presence of the University of Portsmouth library and Students Union, the small increases in traffic will not impact on their safety as there are several crossing points (including one signal-controlled		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						crossing at the northern end). Furthermore, the alignment of the road is very straight and as such does not obstruct visibility, either from a driver's viewpoint or a pedestrian's viewpoint.		
A3 London Road	79	78	79	77	61.5%	61.1%	61.5%	60.4%
	Single carriageway distributor road, partly residential but set back from road. 30 mph.	No obvious capacity constraints to two-way traffic flow	Shared bus / cycle lanes for part of the length. Wide footways and controlled pedestrian crossings	May be used as a route to nearby schools due to its distributor function. Nearest school is Portsdown Primary School on Southampton Road	No	Minor to Moderate. *Proportionally* fairly high increases in traffic. However, absolute increases are no more than 79 PCUs per hour, equating to 1.3 PCUs per minute. It is designated as an A road and therefore intended to carry large traffic volumes. Sections with residential frontage (set back) are four lanes wide and thus intended for large traffic volumes. Also refer to the "Generic Assessment – All Roads" above.		
A3 Northern Parade	28	124	12	12	3.2%	13.2%	1.4%	1.3%
	Single carriageway distributor road, residential. Some residential properties are accessed via a service road. 30 mph.	No obvious capacity constraints to two-way traffic flow	Cycle route with some provision of on-road and off-road cycle paths; wide footways and controlled crossing facilities	Northern Parade Infant and Junior Schools; Parade Community Pre-School; Carousel Pre-school; Portsmouth Grammar School Playing Field	Rehabilitation Centre; Co-operative Food shop. Both provided with car parks	Minor. Low proportional increases in traffic; some receptors. It is designated as an A road and therefore intended to carry large traffic volumes. There are signal-controlled pedestrian crossings close to the schools and to Alexandra Park. Together with the wide footways, cycle paths and shared-use paths, these help to mitigate against the traffic flow increases. Also refer to the "*Generic Assessment – All Roads*" above.		
Airport Service Road between A2030 Eastern Road and Dundas Lane	170	265	234	156	179.8%	4532.6%	155.4%	102.1%
	Single carriageway; 30mph; access to industrial estates	No obvious capacity constraints to two-way traffic flow	Designated as a low traffic route between Robinson Way and Dundas	No	Some retail units but all provided with car parks	Minor. Few receptors identified that are likely to impacted by increases in traffic flow.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
			Lane. Suitable Footway provision for industrial estate area			The characteristics of Airport Service Road – an access route to numerous industrial estates – also make it suitable to cater for the forecast increases in traffic flow, which at most are equivalent to 4-5 additional PCUs per minute.		
Anchorage Road	59	82	264	85	8.3%	55.3%	37.0%	16.1%
	Single carriageway distributor; connects to industrial and residential access roads. 30 mph	No obvious capacity constraints to two-way traffic flow	Identified as a low-traffic cycle route. Wide footways and verges	No	Some shops including a supermarket but none with direct frontage access. Access is either by a service road or an adjoining road	Minor. Moderate proportional increases in traffic. Receptors are accessed from adjoining roads and can be accessed by alternative routes. These alternative routes include roads not modelled in the SRTM, so the reassignment to these roads would not have been captured in the model. In practice, while we cannot determine how much traffic would use these alternative routes, it is reasonable a reasonable assumption that the modelled increase in traffic on Anchorage Road is an over-estimate as the SRTM reassigned traffic to Anchorage Road but not to other roads only because these other roads were omitted from the model. The traffic increases will not have a significant impact on the cycle route as the straight alignment of the road precludes sharp bends that would otherwise reduce forward visibility; and for much of the length, the carriageway is sufficiently wide that there would be minimal conflict over road space, i.e. a car would be able to pass a cyclist reasonably easily.		
Aylesbury Road/Queen's Road/Paulsgrove Road	8	144	15	-2	3.6%	42.1%	6.7%	-0.4%
	Single carriageway residential access roads; 20 mph. (Queen's Road refers only to the	On-street parking can hinder two-way traffic	Not a cycle route, apart from Queen's Road and a short section of Paulsgrove Road	Newbridge Junior School is on New Road, just south of its junction with Aylesbury Road	No	Minor to Moderate. Fairly high proportional increases in traffic. The presence of on-street parking could act as an informal traffic-calming feature, helping to enforce the 20mph limit. These roads are part of a grid of residential roads. Apart from		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	short section of Queen's Road linking Aylesbury Road to Paulsgrove Road)		(south of Powerscourt Road). Footways on both sides.			the residents of each road, other road users would be likely to divert to alternative parallel roads not included within the SRTM. Traffic increases are therefore likely to be lower than has been captured in the model. Similarly, while Queen's Road and a short section of Paulsgrove Road are identified as cycle routes, only short sections of these are impacted (approx. 75 metres in total). Also refer to the "*Generic Assessment – All Roads*" above.		
B2151 Victoria Road North	2 Single carriageway residential road with a distributor function also. 30 mph. Some on-street parking but adequate remaining width for two-way traffic	84 No obvious capacity constraints to two-way traffic flow	20 Not a cycle route. Footways on both sides. An uncontrolled pedestrian crossing is provided.	5 Rainbow Corner Day Nursery	0.3% Churches, a convenience store, a pub and a few B&Bs	10.6% Minor. Low proportional increases in traffic. Traffic increases (that passed Stages One and Two of the TA sifting process) only apply to very short section of this road. The characteristics of the road, and its position within the network, suggest it has a distributor function as well as access, and thus should be suited to reasonably high traffic volumes.	3.1%	0.6%
B2154 Elm Grove	-3 Single carriageway distributor road with retail and residential properties. 30mph	77 No obvious capacity constraints to two-way traffic flow	-5 Not a cycle route. Wide footways on both sides. Controlled and uncontrolled pedestrian crossings	-1 Monkey Puzzle Day Nursery. Also, Leapfrog Neighbourhood Nursery is on Yarborough Road, which turns off Elm Grove.	-1.5% Parade of several shops and other services (pubs, take-aways, launderette and similar). Marked on-street parking provide outside frontages, which	15.2% Minor. Low or negative proportional increases in traffic. Traffic volumes can be expected to be suitable for this type of road, i.e. distributor function with significant retail. Traffic increases are likely to be within the usual day-to-day fluctuations of such a road.	-2.6%	-0.2%

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
					does not encroach upon two-way traffic			
B2177 Portsdown Hill Road, between A3 London Road and Farlington Avenue	121	86	130	86	38.6%	14.0%	41.6%	14.0%
	Rural single carriageway road; distributor function; 40 mph Some residential properties on one side only, set back considerably from the road with large front driveway areas	No obvious capacity constraints to two-way traffic flow	Footways on both sides.	None on this stretch of B2177 Portsdown Hill Road itself; but as a distributor, it would be used as part of the journey to nearby schools and nurseries	No	Minor. Fairly high proportional increases in traffic but low overall volumes. This road is intended as an all-purpose distributor and the resultant DS volumes are likely to be within typical volumes of such a road. Furthermore, the characteristics of the road are such that these volumes would not be surprising or unexpected. Forward visibility is good and pedestrians would be expected to cross with care on a road of this type.		
Burrfields Road, east of Dundas Lane	66	128	176	32	25.8%	22.6%	37.7%	5.6%
	Single carriageway, 30 mph and 40mph. Mostly distributor function, though some property access via internal access roads	No obvious capacity constraints to two-way traffic flow.	Identified as a low-traffic cycle route. Some narrow footpaths on one side only. Controlled pedestrian crossing at the western end, with central island	No	A hotel, golf club, children's amusement centre, and a pet shop. All set back from Burrfields Road with internal access roads and car parks	Minor. Medium proportional increases in traffic. Receptors are set back from the road which has the effect of reinforcing the distributor function of the road. Mostly distributor function and unlikely to attract significant pedestrian usage, except perhaps at the western end just east of Dundas Lane where there is a controlled crossing with central island – the footways at this location link to perpendicular footways across parks and gardens.		
Cardiff Road	24	116	14	0	31.4%	45.3%	18.5%	0.1%
	Single carriageway	On-street parking	Identified as a low-	Stamshaw Infant	No	Minor to Moderate. Fairly high proportional increases in traffic.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	residential road, 20 mph	can hinder two-way traffic	traffic cycle route. Footways on both sides	School (accessed from North End Avenue)		However, the resultant DS volumes will be 6 per minute, which allows a 10-second headway between vehicles. This is unlikely to cause significant safety implications and would enable two-way traffic to pass with one vehicle stopping and waiting. The presence of on-street parking also acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Stamshaw Infant School is accessed from North End Avenue but school children may use Cardiff Road as a route to and from the school. The raised table at the junction with London Road however promote low traffic speeds where children may cross the road. Furthermore, apart from residents, other traffic would be able to use alternative routes as Cardiff Road is part of a dense grid of streets. These alternative routes include roads not modelled in the SRTM, so the reassignment to these roads would not have been captured in the model; the modelled reassignment of traffic to Cardiff Road is therefore likely to be an over-estimate. Also refer to the "*Generic Assessment – All Roads*"		
	10	111	-9	-4	2.1%	16.1%	-1.7%	-0.6%
Chichester Road	Single carriageway residential road, 20 mph	On-street parking on both sides of carriageway can hinder two-way traffic	Whilst it is not a designed low traffic route, Drayton Road and Kensington Road cycle routes cross Chichester Road Footways provided on each side of	Twinkle Start Day Nursery and Pre-School on corner of Havant Road. Copnor Primary School located 50m north of Chichester Road on A288 Copnor	Various local shops / convenience stores	Minor. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Chichester Road is one of the few east / west links included		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
			carriageway.	Road.		within the SRTM between the A2047 Kingston Road and A288 Copnor Road, with routes such Queens Road and Laburnum Gove, which have similar characteristics to Chichester Road, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Chichester Road.		
Commercial Road/Isambard Brunel Road	1	73	-7	10	0.2%	10.9%	-1.4%	1.5%
	Single carriageway town centre roads; access to offices, retail and some residential apartment blocks. 20 mph and 30 mph	No obvious capacity constraints to two-way traffic flow	Identified as a low-traffic cycle route . Wide footways on both sides; uncontrolled pedestrian crossings	No	Town centre retail area	Minor. Low proportional increases in traffic. Typical town centre streets; traffic volume increases are thus likely to be within normal day-to-day traffic variations. Also refer to the "*Generic Assessment – All Roads*"		
Derby Road	1	82	0	1	0.7%	26.1%	-0.2%	0.2%
	Single carriageway residential road; some retail. One-way section, but mostly two-way. 20 mph	On-street parking hinders two-way traffic	Identified as a low-traffic cycle route. Footways on both sides	No schools or nurseries on Derby Road itself, but it may be used as part of the journey to nearby schools and nurseries	Various retail units.	Minor. Fairly high proportional increase in traffic in one scenario. However, the resultant DS volumes will be 7 per minute, which allows more than an 8-second headway between vehicles. This is unlikely to cause significant safety implications and would enable two-way traffic to pass with one vehicle stopping and waiting. The presence of on-street parking also acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Refer to the "*Generic Assessment – All Roads*"		
Dundas Lane	216	333	338	246	422.3%	5209.4%	467.8%	109.5%

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	Single carriageway; access to commercial premises and industrial estates; 30 mph	No obvious capacity constraints to two-way traffic flow	Identified as a low-traffic cycle route. Shared-use path for part of the route. Footways on both sides, very wide in some places; one controlled pedestrian crossing.	Admiral Lord Nelson School, with access by its own service road, set back from Dundas Lane	Portsmouth Ocean Retail Park, with extensive off-road car park	**Moderate**. *Proportionally* high increases in traffic. The school and retail park are at the southern end of Dundas Lane where there is a shared-use path, controlled crossing and wide footways. Furthermore, the pick-up and drop-off at the school is likely to take place entirely on its extensive service road. Apart from these, the rest of Dundas Lane is occupied by industrial estates that would not be significantly adversely affected by the expected traffic volume increases. Should construction work take place in the vicinity of Dundas Lane during the school term, it is recommended that school marshalling is employed as set-out in section 2.13 of the FTMS. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day. Also refer to the “Generic Assessment – All Roads”		
Evelegh Road	185	71	186	90	1238.1%	85.5%	1241.6%	108.3%
	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Not a cycle route. Footways on both sides.	Solent Infant School located on Evelegh Road. Solent Junior School located on Solent Road 150m from Solent Infant School	No	**Moderate** (prior to FTMS mitigation already proposed) Increase in traffic flow is associated with the SRTM modelled construction works at the Farlington Avenue / Havant Road / A2030 Eastern Road traffic signal junction which prohibited right turns at the junction. This also provides a proxy for impacts of closure to Farlington Avenue. Construction at the Farlington Avenue / Havant Road / A2030 Eastern Road traffic signal junction to be accompanied by ‘Access Only’ signage on Evelegh Road to prevent rat-running. Full closure of Farlington Avenue to be accompanied by formal diversion routes signed prior to reaching Evelegh Road. Construction on Farlington Avenue which requires a full road closure is prohibited outside of school holiday periods to		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						mitigate impact on school users.		
Fawcett Road, north of the junction with Lawrence Road	3	63	-7	2	0.9%	23.1%	-2.4%	0.7%
	Single carriageway partly residential road, partly retail strip. 20 mph. Also serves a distributor function.	On-street parking can hinder two-way traffic	Not a cycle route. Wide footways on both sides. Controlled and uncontrolled pedestrian crossings	Priory School	Several shops and other local services	Minor. Maximum increase of one vehicle per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Traffic-calming is further enhanced by measures such as a raised table at the junctions with Lawrence Road and Goldsmith Avenue. Zebra crossing and a signalised pedestrian crossing is available in the vicinity of Priory School thereby mitigating the impacts of increased traffic flow on school children crossing Fawcett Road. As this section of Fawcett Road (north of the junction with Lawrence Road) also has a distributor function, its expected traffic increase is likely to be similar to normal day-to-day variation in volumes.		
Frensham Road	-4	66	-20	10	-0.5%	25.9%	-2.8%	3.8%
	Single carriageway residential road, 20 mph; cul de sac but with links to several other roads	On-street parking can hinder two-way traffic	Identified as a low-traffic cycle route. Footways on both sides	No	No	Minor. In both AM scenarios, a traffic reduction is forecast, while the PM scenario forecasts a very low increase for DS2 and an increase in DS1 that is *proportionally* medium at 25.9% but equates to only one additional vehicle per minute. Furthermore, as a cul de sac, with alternative parallel routes to access the same adjoining roads, the SRTM may be under-estimating the amount of reassignment from Frensham Road		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						to these alternative routes in the PM DS1 scenario. Clearly, the model recognises this in the other scenarios, but may be estimating conservatively in PM DS1, in part because some of these alternative routes are not included in the SRTM at all, such as Haselmere Road		
Gillman Road between Havant Road and Evelegh Road	174	66	174	84	69.5%	28.9%	69.7%	37.1%
	Single carriageway, partially residential road, 20 mph	No obvious capacity constraints to two-way traffic flow	Identified as a low-traffic cycle route. Footways on both sides	Solent Infant School on Evelegh Road may be accessed via Gillman Road	No	**Moderate** (prior to FTMS mitigation already proposed) The forecast traffic increases on Gillman Road are linked to the forecast increases on Evelegh Road, which is a continuation of Gillman Road. As such, the proposed FTMS mitigation for Evelegh Road (as detailed above) will also serve to limit the impact to a Minor impact on Gillman Road. .		
Gladys Avenue, Hilsea, Portsmouth	9	63	-3	12	1.8%	11.2%	-0.6%	2.1%
	Single carriageway residential road, 30 mph with 20 mph zone around the school	On-street parking can hinder two-way traffic	Not a cycle route. Footways on both sides	Corpus Christi R C Primary School	Various shops	Minor. Low or negative proportional increases in traffic. Maximum increase of less than one vehicle per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route. If pedestrians accessing Corpus Christi R C Primary School need to cross the road, it is a very straight alignment which enables good visibility and there is a 20mph zone around the school. Also refer to the "*Generic Assessment – All Roads*" above.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Grove Road	77	199	77	196	21.0%	42.6%	20.8%	41.9%
	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Identified as a low-traffic cycle route. Footways on both sides	Springfield School: while its main entrance is on Central Road, the school field has a gated pedestrian access on Grove Road, and as such, some pick up and drop off might happen there	A small number of shops are on Grove Road	**Moderate**. Grove Road has traffic-calming features – coloured surface markings – to further encourage adherence to the 20mph speed limit. Springfield School's main entrance is on Central Road and it is expected that some school traffic would divert there as needed, such that the net increase in traffic on Grove Road may be less than that shown in the model. Schoolchildren walking to Springfield School along Grove Road benefit from good forward visibility when crossing Grove Road. Schoolchildren would have good visibility of oncoming traffic and drivers would have good visibility of groups of schoolchildren. Furthermore, the traffic impact on Grove Road is likely to be largely caused by the works at the Farlington Avenue / Havant Road / A2030 Eastern Road traffic signal junction with traffic on Eastern Road (north of the island) diverting into Grove Road to avoid delay at this junction.. Should construction work take place in the vicinity of Grove Road during the school term, it is recommended that school marshalling is employed as set-out in section 2.13 of the FTMS. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day. Refer to the "*Generic Assessment – All Roads*" above.		
Hayling Avenue	1	71	-3	21	0.3%	52.2%	-1.2%	15.4%
	Single carriageway	On-street parking	Designated as a	No	No	Minor to Moderate.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	residential road, 20 mph	can hinder two-way traffic	low traffic route between Ascot Road and Neville Road. Footways on both sides.			As discussed in Chapter 2, the junction of Hayling Avenue with A2030 Eastern Road is expected to operate significantly over capacity in each of the DM, DS1 and DS2 scenarios, i.e. even without the impact of the Proposed Development. However, the SRTM has not included alternative routes onto the A2030 Eastern Road, to which traffic would be likely to divert due to the congestion at the Hayling Avenue junction. These include Stride Avenue. As such, traffic is expected to disperse across other routes besides Hayling Avenue and therefore the traffic impact on Hayling Avenue will have been over-estimated. Taking this into account, the additional is not expected to lead to significant impacts on road safety. Refer to the "*Generic Assessment – All Roads*" above.		
Kent Road	-3	99	29	4	-1.6%	40.4%	19.5%	1.5%
	Single carriageway residential road, with retail and services also. 20 mph. Due to continuity from Grove Road South and its links to other roads, Kent Road also has a distributor function.	No obvious capacity constraints to two-way traffic flow	Not a cycle route. Footways on both sides. Uncontrolled pedestrian crossing and guard railing in retail areas	Portsmouth High School; Portsmouth Pre- and Prep School	Various shops and professional services	Minor to Moderate. While Kent Road does have residential properties, it is largely a distributor and a commercial / retail link. This characteristic is further enhanced by many of the properties being set back from the road behind walls or trees and hedges. As such, these increases in volume are likely to within typical volumes of such a road and would not be unusual or unexpected. Furthermore, in locations where pedestrian activity is likely to be higher, safety features such as guard railings and crossings have been implemented. Refer to the "*Generic Assessment – All Roads*" above.		
Langley	0	71	0	7	0%	32.5%	0.0%	3.3%

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Road/Queen's Road/Pink Road	Single carriageway residential roads, 20 mph and 30 mph	On-street parking can hinder two-way traffic	Identified as a low-traffic cycle route. Footways on both sides	No	No	Minor to Moderate. Traffic increases are in the PM peaks only. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit in some sections. These roads – which together for a north-south link – are one route among several in dense grid of streets, many of which are not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Langley Road/Queen's Road/Pink Road. Potentially, any traffic apart from residents of these streets could feasibly reassign to alternative routes. Refer to the "*Generic Assessment – All Roads*" above.		
Langstone Road	21	77	4	28	7.9%	28.3%	1.6%	8.8%
	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Identified as a low-traffic cycle route to the west of Lichfield Road. Footways on both sides	No	A few shops and a hairdresser.	Minor to Moderate. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Langstone Road is one of several east / west links between Milton Road and A2030 Eastern Road, many of which are not included within the SRTM. Traffic re-assignment is therefore		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						likely to spread across these available links at a lower level than predicted by the SRTM for Langstone Road. =.		
Lower Drayton Lane	11	71	11	43	4.1%	18.4%	3.3%	11.9%
	Single carriageway residential road, 20 mph and 30 mph	On-street parking can hinder two-way traffic	Not a cycle route. Footways on both sides.	Links to Central Road and Grove Road on which Springfield School is accessed	Shop, café and take-away at the northern end	Minor. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit (in some sections). Lower Drayton Lane is one of the few north-south links included within the SRTM between the Grove Road and Havant Road, with routes such Court Lane and Tregaron Avenue, which have similar characteristics to Lower Drayton Lane, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Lower Drayton Lane. Refer to the "*Generic Assessment – All Roads*" above.		
Lyndhurst Road	1	68	-4	-2	0.5%	69.5%	-1.8%	-1.9%
	Single carriageway residential road, 20 mph. One-way northbound between Stubbington	On-street parking can hinder two-way traffic on the two-way sections	Not a cycle route. Footways on both sides.	Lyndhurst Junior School	No	Minor to Moderate. Absolute traffic volumes remain very low. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic		

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Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	Avenue and Kirby Road					calming feature along the route which is already limited to a 20mph speed limit. Lyndhurst Road is one of the few north-south links included within the SRTM between the Chichester Road and Mayfield Road, with routes such Kensington Road and Balfour Road, which have similar characteristics to Lyndhurst Road, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Lyndhurst Road. Refer to the "*Generic Assessment – All Roads*" above.		
	10	126	11	7	2.1%	27.4%	2.7%	1.6%
New Road	Single carriageway residential road, 30mph	On-street parking can hinder two-way traffic	Designated as a low traffic route between Ernest Road and Langley Road. Footways on both sides.	Newbridge Junior School	A few local shops.	Minor. Maximum increase of two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route. There is a zebra crossing on New Road almost directly outside the pedestrian entrance to Newbridge Junior School, which would mitigate the impact of increased traffic flows of school children wishing to cross New Road. New Road is one of the few east / west links included within the SRTM between the A2047 Kingston Road and A288 Copnor Road, with routes such Queens Road and Laburnum Gove, which have similar characteristics to New Road, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for New Road.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						Refer to the "*Generic Assessment – All Roads*" above.		
	12	138	8	3	6.1%	153.4%	5.8%	1.4%
New Road East	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Not a cycle route. Footways on both sides.	Newbridge Junior School	No	Minor to Moderate. Absolute traffic volumes remain low. Maximum increase of just over two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. There is a zebra crossing on New Road (just beyond the junction with New Road East) almost directly outside the pedestrian entrance to Newbridge Junior School, which would mitigate the impact of increased traffic flows of school children wishing to cross New Road. New Road East is one of the few east / west links included within the SRTM between the A2047 Kingston Road and A288 Copnor Road, with routes such Queens Road and Laburnum Gove, which have similar characteristics to New Road East, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for New Road East. Refer to the "*Generic Assessment – All Roads*" above.		
	-2	62	-2	0	-0.4%	18.9%	-0.4%	0.0%
Park Road, Portsmouth	Single carriageway road; access to retail centre	No obvious capacity constraints to two-	Identified as a low-traffic cycle route to the north of	No	Access to Gunwharf Quays	Minor. Medium traffic increases that would not be significant on a distributor road linking Gunwharf Quays to the A3.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	(Gunwharf Quays)	way traffic flow	Burnaby Road. Footways on both sides.					
Powerscourt Road	0	68	0	6	164.3%	28.3%	7.1%	2.7%
	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Designated as a low traffic route between Carnarvon Road and Kensington Road . Footways on both sides.	No	Various shops and services	Minor to Moderate. Absolute traffic volumes remain low. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Powerscourt Road is one of the few east / west links included within the SRTM between the A2047 Kingston Road and A288 Copnor Road, with routes such Queens Road and Laburnum Gove, which have similar characteristics to Powerscourt Road, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Powerscourt Road Refer to the "*Generic Assessment – All Roads*" above.		
Quartremaine Road	74	130	285	90	17.4%	33.5%	66.7%	23.1%
	Single carriageway industrial access road, 30 mph.	No obvious capacity constraints to two-way traffic flow	Not a cycle route Footways on both sides.	Part of a route to Admiral Lord Nelson School	No	Minor to Moderate. Absolute traffic volumes remain low. Few receptors identified that are likely to impacted by increases in traffic flow. The characteristics of Quartremaine Road, an access route to		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						numerous industrial estates, also make it suitable to cater for the forecast increases in traffic flow, which at most are equivalent to 4-5 additional PCUs per minute. While it is part of the route to Admiral Lord Nelson School, Quartremaine Road has good forward visibility which mitigates the risk to pedestrians. Refer to the "*Generic Assessment – All Roads*" above.		
Shearer Road	7	117	1	7	3.0%	40.2%	0.6%	2.4%
	Single carriageway residential road, 20 mph. One-way southbound	No obvious capacity constraints (one-way street)	Identified as a low-traffic cycle route. Footways on both sides	No	No	Minor to Moderate. Absolute traffic volumes remain low and as such tis road could still be a considered a low-traffic cycle route. In practice, traffic may be dispersed more than as indicated by the SRTM, so that the load is more evenly shared among other routes. This could be further encouraged by signage such as variable messages signs (VMSs) which could be included in the FTMS. Refer to the "*Generic Assessment – All Roads*" above.		
A3 Stamshaw Road	19	114	8	-1	2.9%	33.2%	1.2%	-0.2%
	Single carriageway residential road. Also has a distributor function. One-way southbound 30mph	No obvious capacity constraints (one-way street)	On-road cycle lane. Footways on both sides. Signalised pedestrian crossing.	Stamshaw Infant School is accessed from London Avenue which adjoins Stamshaw Road	Various shops and services	Minor to Moderate. Absolute traffic volumes remain low. The impacted section of Stamshaw Road is only a very short section between Angerstein Road and Meyrick Road. The A3 Stamshaw Road is a distributor road and the resultant volumes are therefore likely to be typical and expected. Schoolchildren crossing Stamshaw Road to access Stamshaw Infant School are assisted by a signalised pedestrian crossing		

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Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						very close to the school entrance on London Avenue. The on-road cycle lane mitigates the impact on cyclists. Refer to the "*Generic Assessment – All Roads*" above.		
Station Road (in Section 5 - Farlington), between Grove Road and Havant Road	80	217	82	209	82.3%	191.0%	76.8%	183.6%
	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Not a cycle route. Footpaths	No schools are directly accessed from this section of Station Road, but it is a route to Springfield School on Central Road	No	**Moderate**. Absolute traffic volumes remain low but high increase in traffic flows. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. This section of Station Road is one of the few north-south links included within the SRTM between the Grove Road and Havant Road, with routes such South Road, Court Lane and Tregaron Avenue, which have similar characteristics to Station Road, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Station Road. Due to its location in proximity to Springfield Road, should construction work take place in the vicinity of Station Road during the school term, it is recommended that school marshalling is employed as set-out in section 2.13 of the FTMS. These traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day. Refer to the "*Generic Assessment – All Roads*"		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Stubbington Avenue	0	70	1	0	-0.2%	189.8%	2.5%	1.2%
	Single carriageway residential road, 30mph	On-street parking can hinder two-way traffic	Not a cycle route. Footways on both sides	St Nicholas Pre School	No	Minor to Moderate. Absolute traffic volumes remain low. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route. Stubbington Avenue is one of the few east / west links included within the SRTM between the A2047 Kingston Road and A288 Copnor Road, with routes such as Kirby Road, Queens Road and Laburnum Gove, which have similar characteristics to Stubbington Avenue, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Stubbington Avenue. Refer to the "*Generic Assessment – All Roads*"		
Tangier Road	14	82	-61	-21	5.4%	23.3%	-23.1%	-6.1%
	Single carriageway residential road, 30 mph. Also has a distributor function.	No obvious capacity constraints to two-way traffic flow	Identified as a low-traffic cycle route. Advisory cycle lanes available in vicinity of Portsmouth College. Footways on both sides. An uncontrolled	Portsmouth College	Baffins local shops	Minor. Traffic volumes can be expected to be suitable for this type of road, i.e. distributor function. Traffic increases are likely to be within the usual day-to-day fluctuations of such a road.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
			pedestrian crossing.					
	3	78	0	32	1.9%	34.2%	0.1%	14.1%
Torrington Road	Single carriageway residential road, 20 mph	On-street parking can hinder two-way traffic	Not a cycle route. Footways on both sides.	No	No	Minor to Moderate. Absolute traffic volumes remain low. Maximum increase of less than two vehicles per minute in the DS1 PM scenario, which is unlikely to lead to adverse effects on road safety. Presence of on-street parking acts as an informal traffic calming feature along the route which is already limited to a 20mph speed limit. Torrington Road is one of the few east / west links included within the SRTM between the A2047 Kingston Road and A288 Copnor Road, with routes such Queens Road and Laburnum Gove, which have similar characteristics to Torrington Road, not included within the SRTM network. Traffic re-assignment is therefore likely to spread across these available links at a lower level than predicted by the SRTM for Torrington Road Refer to the "*Generic Assessment – All Roads*"		

Appendix D – LinSig outputs

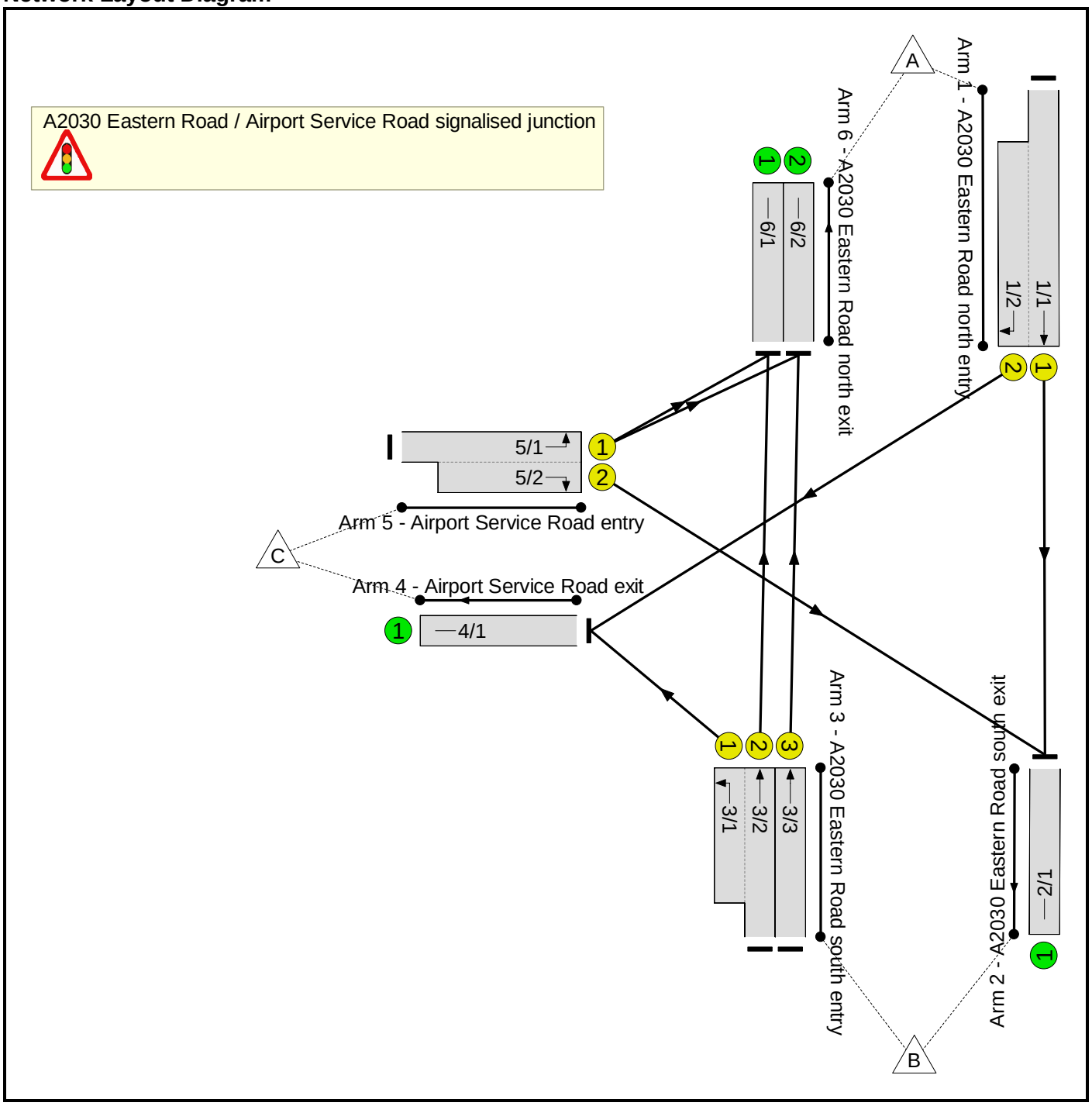
Full Input Data And Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	A2030 Eastern Rd_Airport Service Rd DS1 (SB Closure).lsg3x
Author:	
Company:	
Address:	

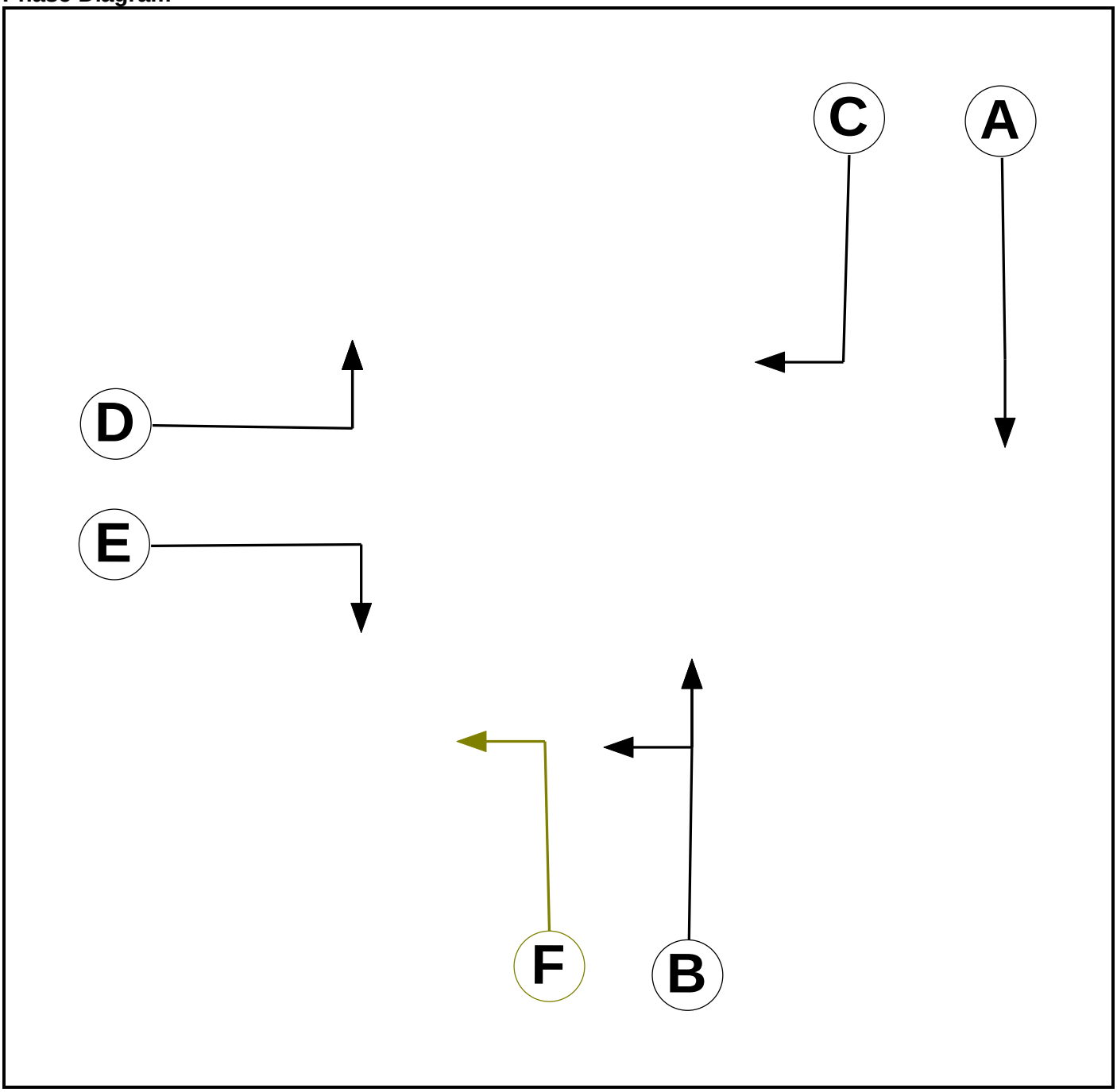
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Filter	B	4	0

Full Input Data And Results

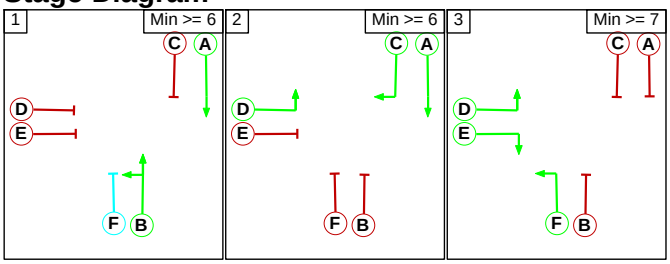
Phase Intergreens Matrix

		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		-	-	-	6	-
	B	-		5	6	5	-
	C	-	6		-	5	6
	D	-	5	-		-	-
	E	6	5	5	-		-
	F	-	-	5	-	-	

Phases in Stage

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

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	3
From Stage	1		6	6
	2	6		6
	3	6	X	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2030 Eastern Road / Airport Service Road signalised junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
1/2 (A2030 Eastern Road north entry)	U	C	2	3	17.4	Geom	-	3.20	0.00	Y	Arm 4 Right	12.00
2/1 (A2030 Eastern Road south exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A2030 Eastern Road south entry)	U	B F	2	3	7.8	Geom	-	3.00	0.00	Y	Arm 4 Left	12.00
3/2 (A2030 Eastern Road south entry)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
3/3 (A2030 Eastern Road south entry)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
4/1 (Airport Service Road exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Airport Service Road entry)	U	D	2	3	60.0	Geom	-	2.75	0.00	Y	Arm 6 Left	12.00
5/2 (Airport Service Road entry)	U	E	2	3	14.8	Geom	-	2.75	0.00	Y	Arm 2 Right	12.00
6/1 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'EMM - DS1 AM'	08:00	09:00	01:00	
2: 'EMM - DS1 IP'	13:00	14:00	01:00	
3: 'EMM - DS1 PM'	17:00	18:00	01:00	

Scenario 1: 'EMM - DS1 AM' (FG1: 'EMM - DS1 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1356	212	1568
	B	1519	0	53	1572
	C	52	4	0	56
	Tot.	1571	1360	265	3196

Traffic Lane Flows

Lane	Scenario 1: EMM - DS1 AM
Junction: A2030 Eastern Road / Airport Service Road signalised junction	
1/1 (with short)	1568(In) 1356(Out)
1/2 (short)	212
2/1	1360
3/1 (short)	53
3/2 (with short)	806(In) 753(Out)
3/3	766
4/1	265
5/1 (with short)	56(In) 52(Out)
5/2 (short)	4
6/1	779
6/2	792

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/2 (A2030 Eastern Road north entry)	3.20	0.00	Y	Arm 4 Right	12.00	100.0 %	1720	1720
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 4 Left	12.00	100.0 %	1702	1702
3/2 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
3/3 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
4/1 (Airport Service Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Airport Service Road entry)	2.75	0.00	Y	Arm 6 Left	12.00	100.0 %	1680	1680
5/2 (Airport Service Road entry)	2.75	0.00	Y	Arm 2 Right	12.00	100.0 %	1680	1680
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'EMM - DS1 IP' (FG2: 'EMM - DS1 IP', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1430	23	1453
	B	1323	0	1	1324
	C	0	0	0	0
	Tot.	1323	1430	24	2777

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: EMM - DS1 IP
Junction: A2030 Eastern Road / Airport Service Road signalised junction	
1/1 (with short)	1453(In) 1430(Out)
1/2 (short)	23
2/1	1430
3/1 (short)	1
3/2 (with short)	663(In) 662(Out)
3/3	661
4/1	24
5/1 (with short)	0(In) 0(Out)
5/2 (short)	0
6/1	662
6/2	661

Lane Saturation Flows

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/2 (A2030 Eastern Road north entry)	3.20	0.00	Y	Arm 4 Right	12.00	100.0 %	1720	1720
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 4 Left	12.00	100.0 %	1702	1702
3/2 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
3/3 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
4/1 (Airport Service Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Airport Service Road entry)	2.75	0.00	Y	Arm 6 Left	12.00	0.0 %	1890	1890
5/2 (Airport Service Road entry)	2.75	0.00	Y	Arm 2 Right	12.00	0.0 %	1890	1890
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'EMM - DS1 PM' (FG3: 'EMM - DS1 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1548	271	1819
	B	1189	0	1	1190
	C	286	0	0	286
	Tot.	1475	1548	272	3295

Traffic Lane Flows

Lane	Scenario 3: EMM - DS1 PM
Junction: A2030 Eastern Road / Airport Service Road signalised junction	
1/1 (with short)	1819(In) 1548(Out)
1/2 (short)	271
2/1	1548
3/1 (short)	1
3/2 (with short)	596(In) 595(Out)
3/3	594
4/1	272
5/1 (with short)	286(In) 286(Out)
5/2 (short)	0
6/1	738
6/2	737

Full Input Data And Results

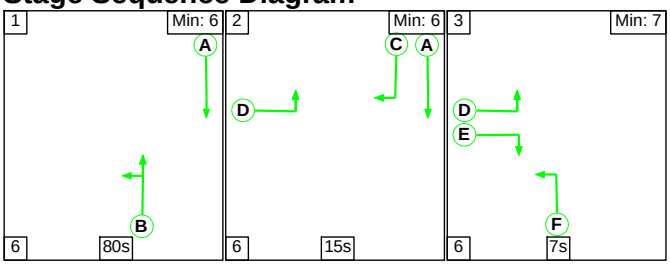
Lane Saturation Flows

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/2 (A2030 Eastern Road north entry)	3.20	0.00	Y	Arm 4 Right	12.00	100.0 %	1720	1720
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 4 Left	12.00	100.0 %	1702	1702
3/2 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
3/3 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
4/1 (Airport Service Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Airport Service Road entry)	2.75	0.00	Y	Arm 6 Left	12.00	100.0 %	1680	1680
5/2 (Airport Service Road entry)	2.75	0.00	Y	Arm 2 Right	12.00	0.0 %	1890	1890
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'EMM - DS1 AM' (FG1: 'EMM - DS1 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

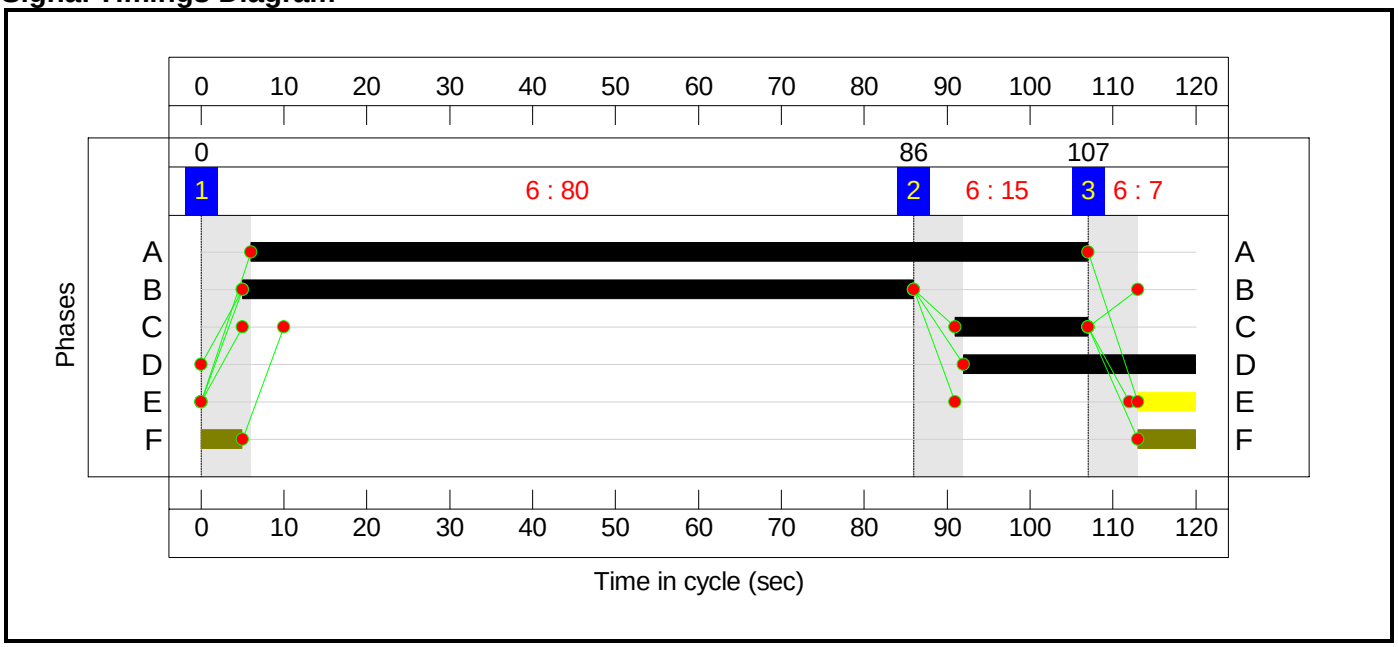


Stage Timings

Stage	1	2	3
Duration	80	15	7
Change Point	0	86	107

Full Input Data And Results

Signal Timings Diagram



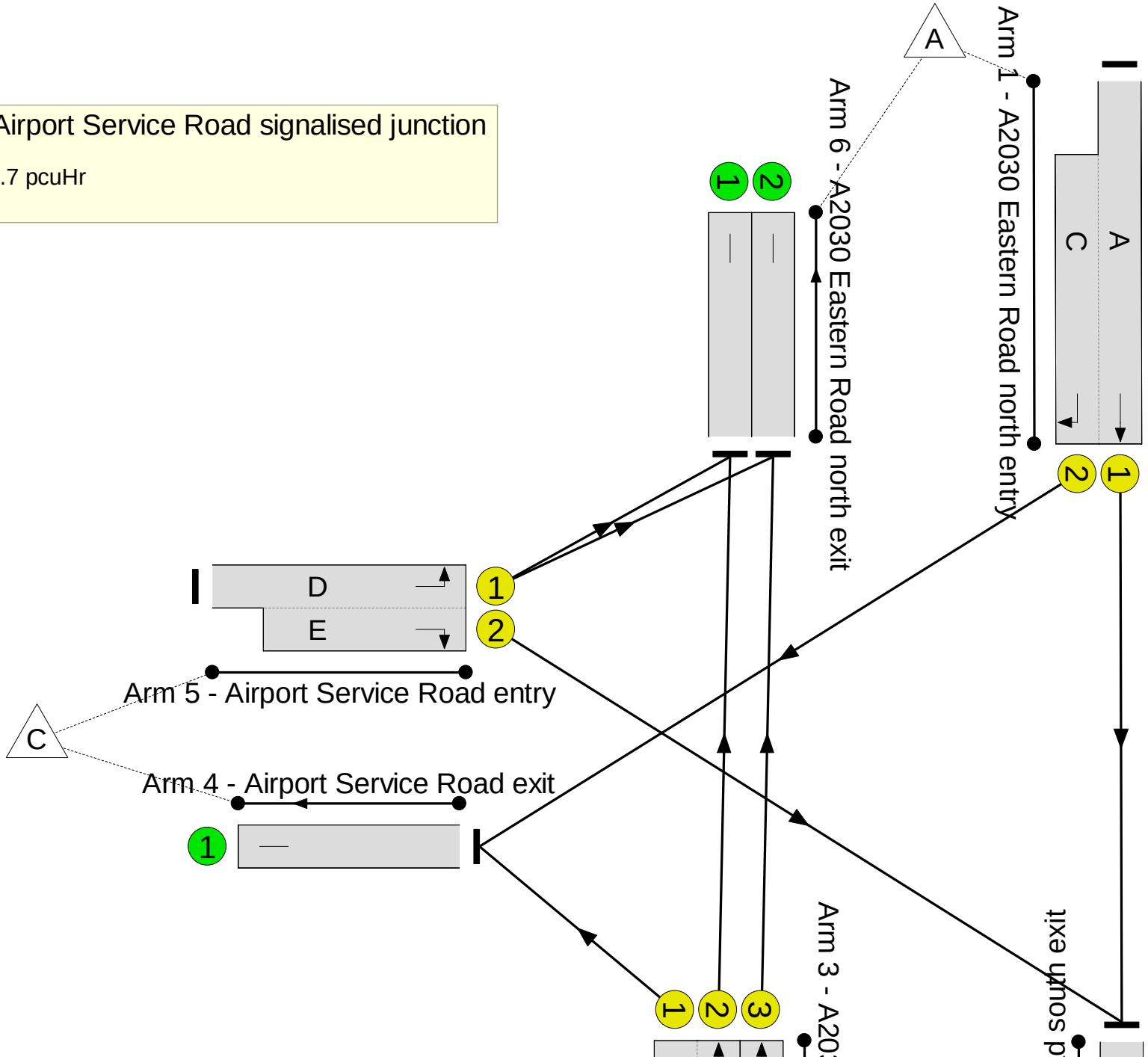
Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Airport Service Road signalised junction

PRC: -2.6 %

Total Traffic Delay: 16.7 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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.3%**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.3%**
1/1+1/2	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	101:16	-	1568	1915:1720	1698	92.3%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1360	Inf	Inf	0.0%
3/2+3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B	F	1	81:93	12	806	1915:1702	1330	60.6%
3/3	A2030 Eastern Road south entry Ahead	U	N/A	N/A	B		1	81	-	766	1915	1309	58.5%
4/1	Airport Service Road exit	U	N/A	N/A	-		-	-	-	265	Inf	Inf	0.0%
5/1+5/2	Airport Service Road entry Right Left	U	N/A	N/A	D E		1	28:7	-	56	1680:1680	437	12.8%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	779	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	792	Inf	Inf	0.0%

Full Input Data And Results

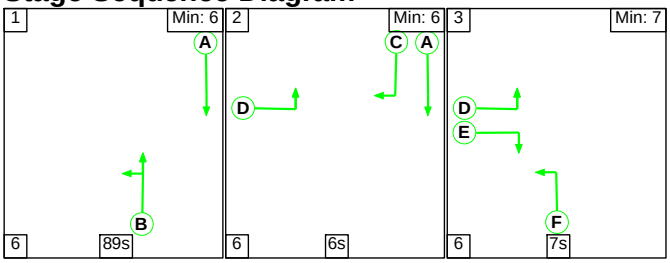
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**9.6**	**7.1**	**0.0**	**16.7**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**0**	**0**	**0**	**9.6**	**7.1**	**0.0**	**16.7**	**-**	**-**	**-**	**-**
1/1+1/2	1568	1568	-	-	-	4.8	5.6	-	10.3	23.7	27.9	5.6	33.4
2/1	1360	1360	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	806	806	-	-	-	2.1	0.8	-	2.9	13.0	13.4	0.8	14.2
3/3	766	766	-	-	-	2.1	0.7	-	2.8	13.3	13.4	0.7	14.1
4/1	265	265	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	56	56	-	-	-	0.6	0.1	-	0.6	41.6	1.3	0.1	1.4
6/1	779	779	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	792	792	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -2.6 Total Delay for Signalled Lanes (pcuHr): 16.71 Cycle Time (s): 120
PRC Over All Lanes (%): -2.6 Total Delay Over All Lanes(pcuHr): 16.71

Full Input Data And Results

Scenario 2: 'EMM - DS1 IP' (FG2: 'EMM - DS1 IP', Plan 1: 'Network Control Plan 1')

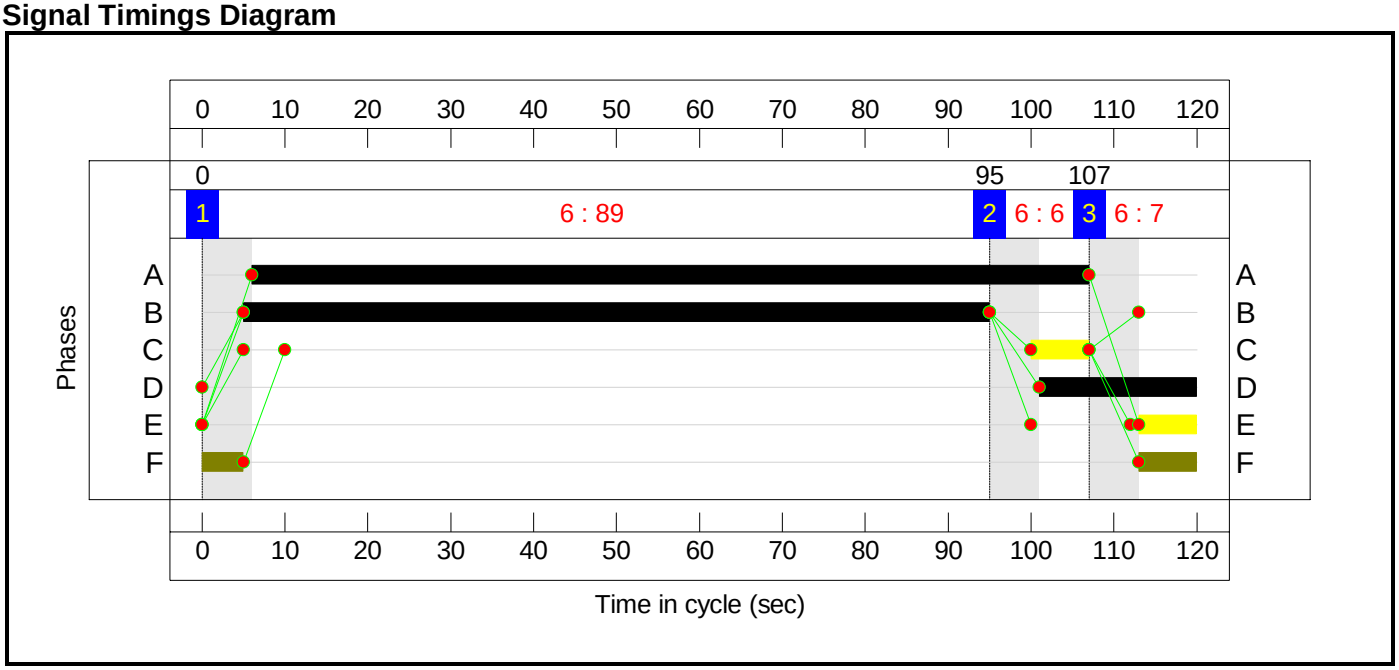
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	89	6	7
Change Point	0	95	107

Signal Timings Diagram



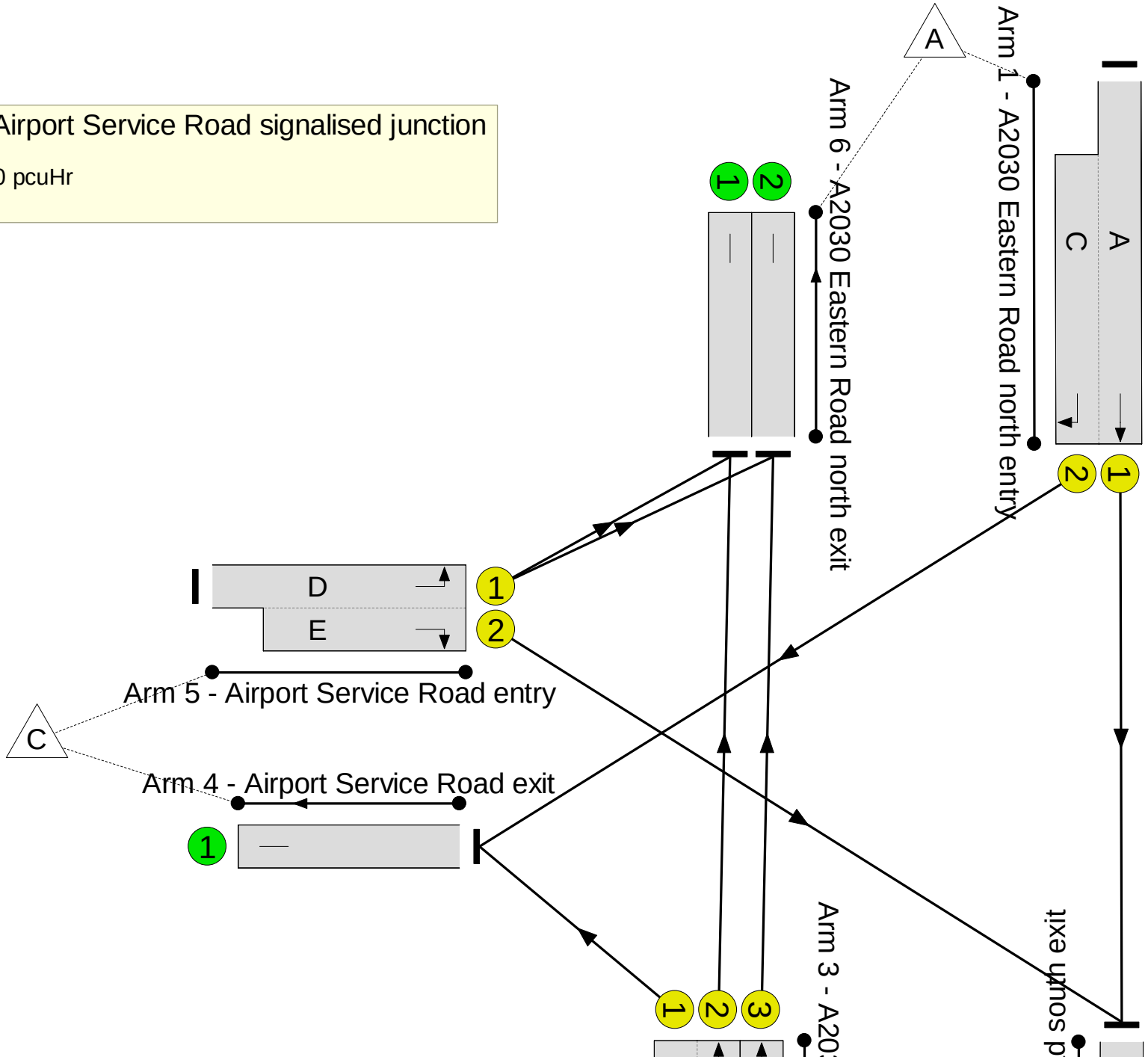
Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Airport Service Road signalised junction

PRC: 1.5 %

Total Traffic Delay: 9.0 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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.6%**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.6%**
1/1+1/2	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	101:7	-	1453	1915:1720	1639	88.6%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1430	Inf	Inf	0.0%
3/2+3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B	F	1	90:102	12	663	1915:1702	1454	45.6%
3/3	A2030 Eastern Road south entry Ahead	U	N/A	N/A	B		1	90	-	661	1915	1452	45.5%
4/1	Airport Service Road exit	U	N/A	N/A	-		-	-	-	24	Inf	Inf	0.0%
5/1+5/2	Airport Service Road entry Right Left	U	N/A	N/A	D E		1	19:7	-	0	1890:1890	441	0.0%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	662	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	661	Inf	Inf	0.0%

Full Input Data And Results

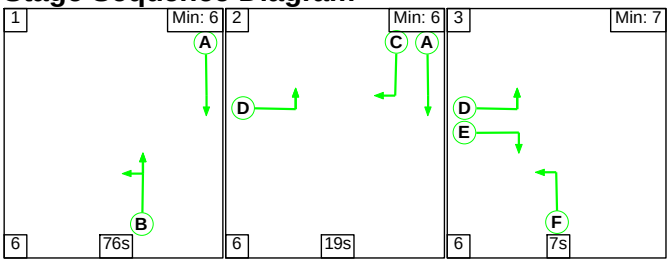
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**4.4**	**4.6**	**0.0**	**9.0**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**0**	**0**	**0**	**4.4**	**4.6**	**0.0**	**9.0**	**-**	**-**	**-**	**-**
1/1+1/2	1453	1453	-	-	-	2.5	3.8	-	6.2	15.4	28.7	3.8	32.5
2/1	1430	1430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	663	663	-	-	-	1.0	0.4	-	1.4	7.6	8.1	0.4	8.5
3/3	661	661	-	-	-	1.0	0.4	-	1.4	7.6	8.1	0.4	8.5
4/1	24	24	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	662	662	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	661	661	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 1.5 Total Delay for Signalled Lanes (pcuHr): 9.01 Cycle Time (s): 120
PRC Over All Lanes (%): 1.5 Total Delay Over All Lanes(pcuHr): 9.01

Full Input Data And Results

Scenario 3: 'EMM - DS1 PM' (FG3: 'EMM - DS1 PM', Plan 1: 'Network Control Plan 1')

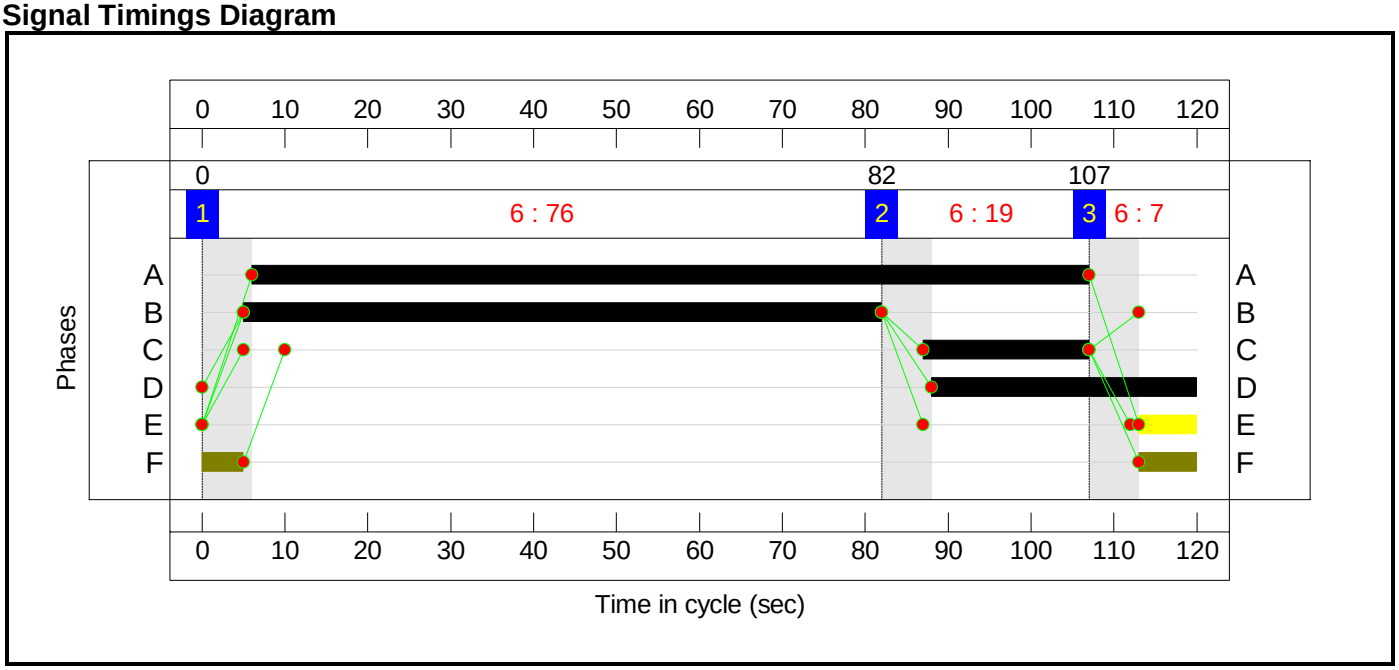
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	76	19	7
Change Point	0	82	107

Signal Timings Diagram



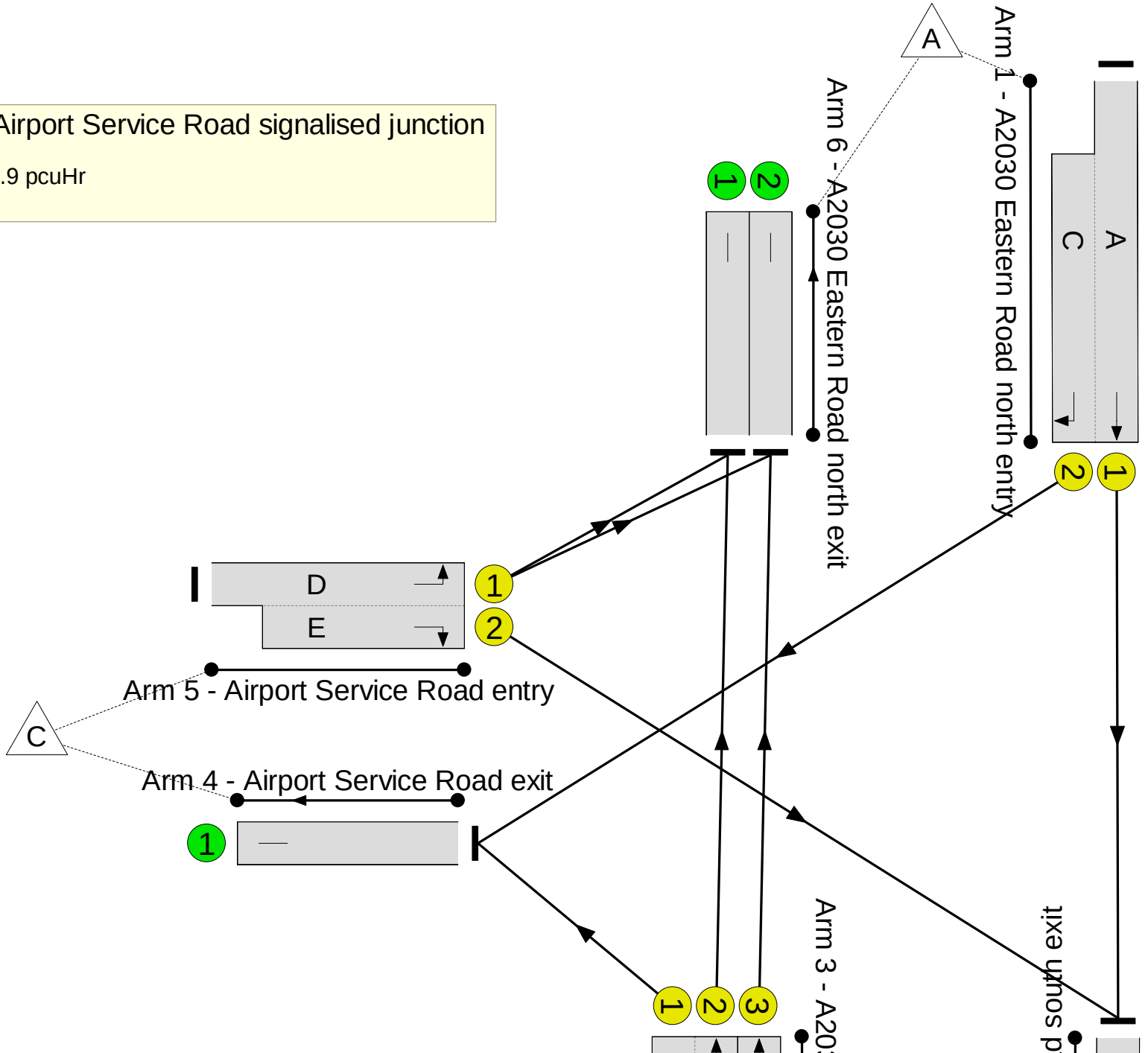
Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Airport Service Road signalised junction

PRC: -18.5 %

Total Traffic Delay: 83.9 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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**106.6%**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**106.6%**
1/1+1/2	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	101:20	-	1819	1915:1720	1706	106.6%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1548	Inf	Inf	0.0%
3/2+3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B	F	1	77:89	12	596	1915:1702	1247	47.8%
3/3	A2030 Eastern Road south entry Ahead	U	N/A	N/A	B		1	77	-	594	1915	1245	47.7%
4/1	Airport Service Road exit	U	N/A	N/A	-		-	-	-	272	Inf	Inf	0.0%
5/1+5/2	Airport Service Road entry Right Left	U	N/A	N/A	D E		1	32:7	-	286	1680:1890	462	61.9%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	738	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	737	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**	**18.7**	**65.2**	**0.0**	**83.9**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**0**	**0**	**0**	**18.7**	**65.2**	**0.0**	**83.9**	**-**	**-**	**-**	**-**
1/1+1/2	1819	1707	-	-	-	12.1	63.5	-	75.7	149.7	69.6	63.5	133.1
2/1	1453	1453	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	596	596	-	-	-	1.8	0.5	-	2.2	13.4	9.9	0.5	10.4
3/3	594	594	-	-	-	1.8	0.5	-	2.2	13.4	9.9	0.5	10.4
4/1	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	286	286	-	-	-	3.0	0.8	-	3.8	48.1	8.3	0.8	9.1
6/1	738	738	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	737	737	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -18.5
PRC Over All Lanes (%): -18.5

Total Delay for Signalled Lanes (pcuHr): 83.91
Total Delay Over All Lanes(pcuHr): 83.91

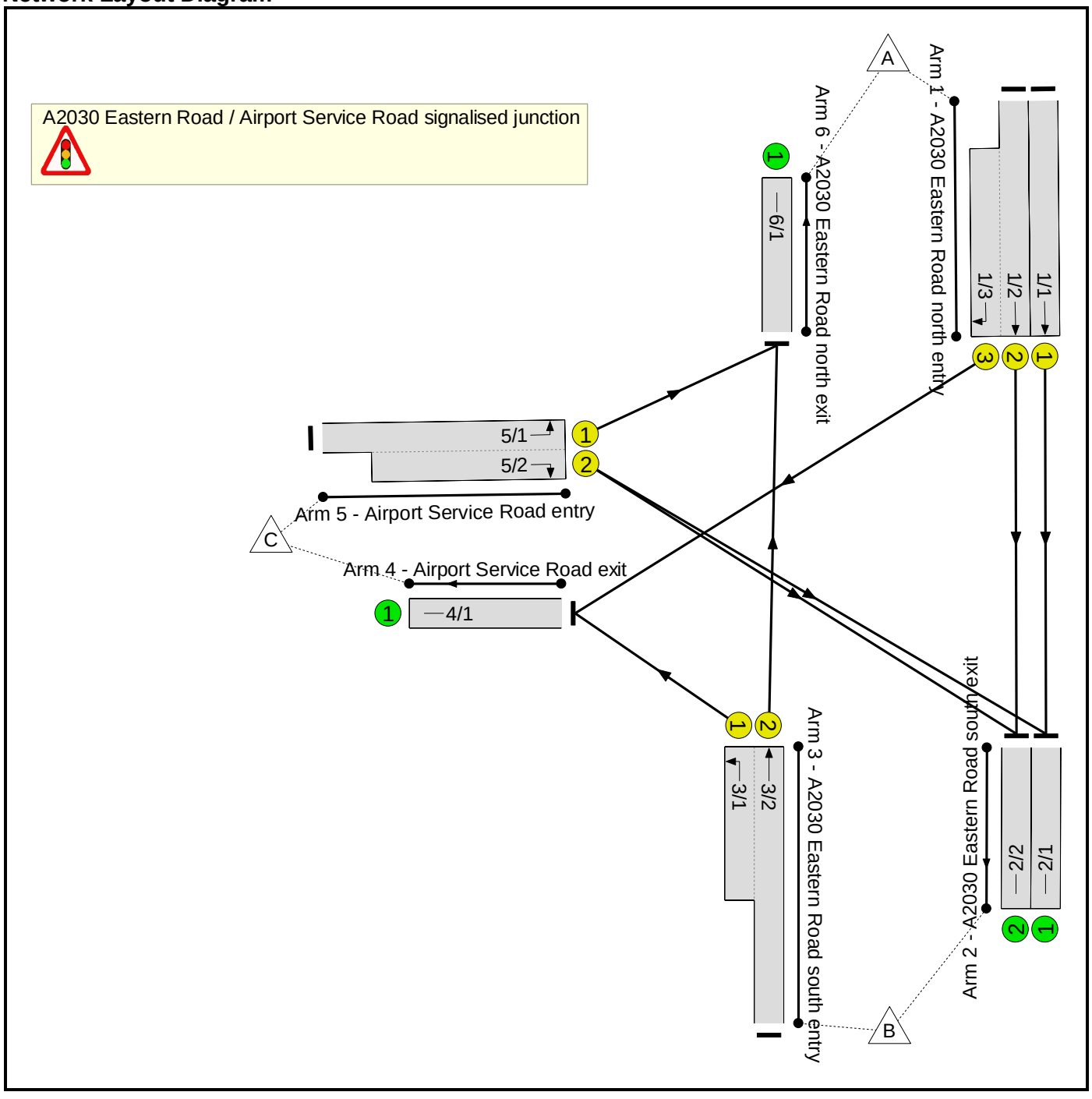
Cycle Time (s): 120

Full Input Data And Results

User and Project Details

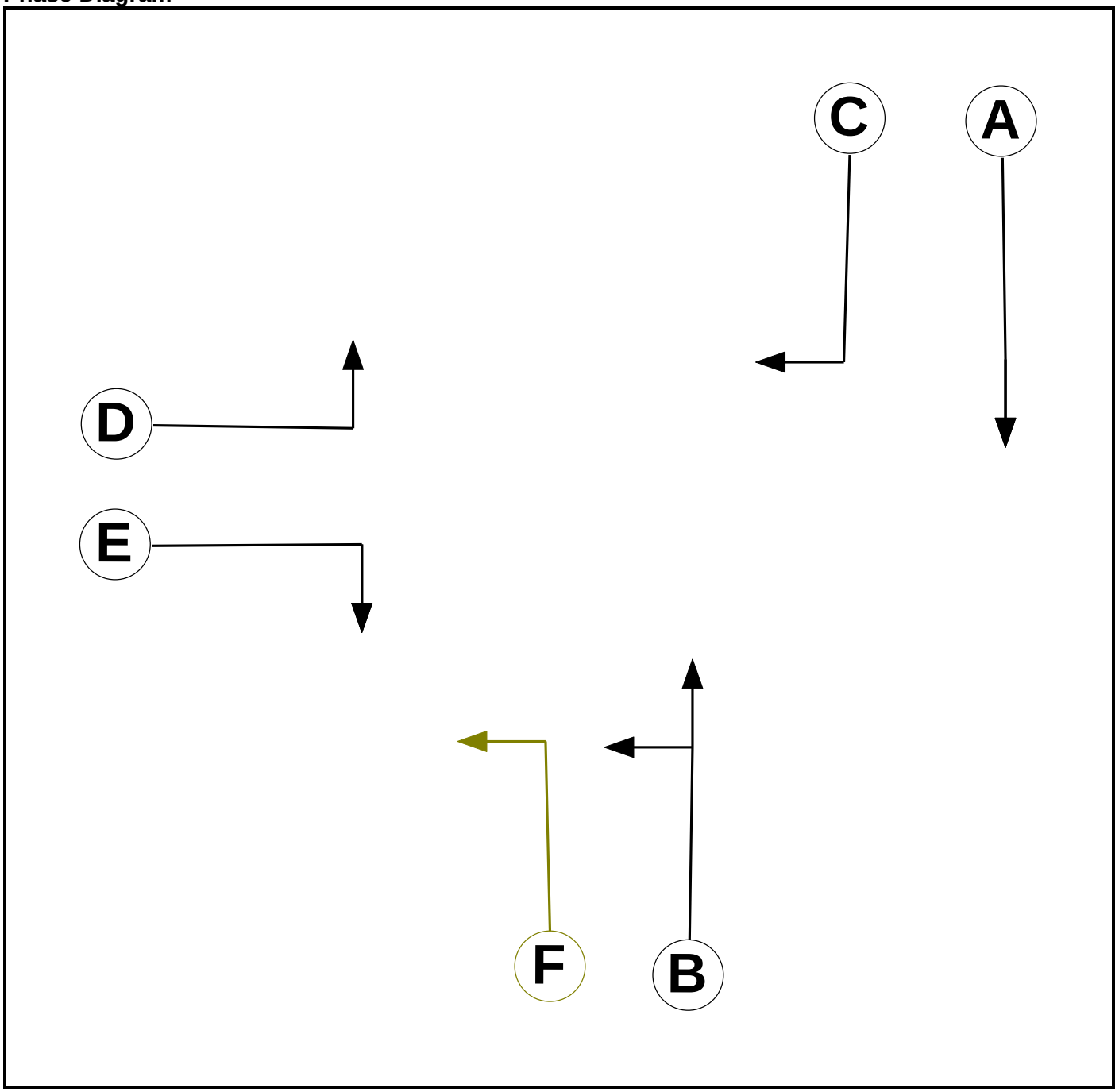
Project:	
Title:	
Location:	
Additional detail:	
File name:	A2030 Eastern Rd_Airport Service Rd DS2 (NB Closure).lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Filter	B	4	0

Full Input Data And Results

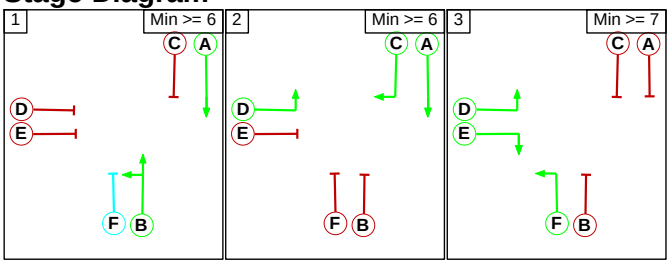
Phase Intergreens Matrix

		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		-	-	-	6	-
	B	-		5	6	5	-
	C	-	6		-	5	6
	D	-	5	-		-	-
	E	6	5	5	-		-
	F	-	-	5	-	-	

Phases in Stage

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

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	3
From Stage	1		6	6
	2	6		6
	3	6	X	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2030 Eastern Road / Airport Service Road signalised junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
1/2 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
1/3 (A2030 Eastern Road north entry)	U	C	2	3	17.4	Geom	-	3.20	0.00	Y	Arm 4 Right	12.00
2/1 (A2030 Eastern Road south exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2 (A2030 Eastern Road south exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A2030 Eastern Road south entry)	U	B F	2	3	7.8	Geom	-	3.00	0.00	Y	Arm 4 Left	12.00
3/2 (A2030 Eastern Road south entry)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
4/1 (Airport Service Road exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Airport Service Road entry)	U	D	2	3	60.0	Geom	-	2.75	0.00	Y	Arm 6 Left	12.00
5/2 (Airport Service Road entry)	U	E	2	3	14.8	Geom	-	2.75	0.00	Y	Arm 2 Right	12.00
6/1 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'EML - DS2 AM'	08:00	09:00	01:00	
2: 'EML - DS2 IP'	13:00	14:00	01:00	
3: 'EML - DS2 PM'	17:00	18:00	01:00	

Scenario 1: 'EML - DS2 AM' (FG1: 'EML - DS2 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1615	71	1686
	B	1234	0	0	1234
	C	89	4	0	93
	Tot.	1323	1619	71	3013

Traffic Lane Flows

Lane	Scenario 1: EML - DS2 AM
Junction: A2030 Eastern Road / Airport Service Road signalised junction	
1/1	816
1/2 (with short)	870(In) 799(Out)
1/3 (short)	71
2/1	818
2/2	801
3/1 (short)	0
3/2 (with short)	1234(In) 1234(Out)
4/1	71
5/1 (with short)	93(In) 89(Out)
5/2 (short)	4
6/1	1323

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/3 (A2030 Eastern Road north entry)	3.20	0.00	Y	Arm 4 Right	12.00	100.0 %	1720	1720
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A2030 Eastern Road south exit Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 4 Left	12.00	0.0 %	1915	1915
3/2 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
4/1 (Airport Service Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Airport Service Road entry)	2.75	0.00	Y	Arm 6 Left	12.00	100.0 %	1680	1680
5/2 (Airport Service Road entry)	2.75	0.00	Y	Arm 2 Right	12.00	100.0 %	1680	1680
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'EML - DS2 IP' (FG2: 'EML - DS2 IP', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1786	0	1786
	B	1066	0	1	1067
	C	15	1	0	16
	Tot.	1081	1787	1	2869

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: EML - DS2 IP
Junction: A2030 Eastern Road / Airport Service Road signalised junction	
1/1	893
1/2 (with short)	893(In) 893(Out)
1/3 (short)	0
2/1	894
2/2	893
3/1 (short)	1
3/2 (with short)	1067(In) 1066(Out)
4/1	1
5/1 (with short)	16(In) 15(Out)
5/2 (short)	1
6/1	1081

Lane Saturation Flows

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/3 (A2030 Eastern Road north entry)	3.20	0.00	Y	Arm 4 Right	12.00	0.0 %	1935	1935
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A2030 Eastern Road south exit Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 4 Left	12.00	100.0 %	1702	1702
3/2 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
4/1 (Airport Service Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Airport Service Road entry)	2.75	0.00	Y	Arm 6 Left	12.00	100.0 %	1680	1680
5/2 (Airport Service Road entry)	2.75	0.00	Y	Arm 2 Right	12.00	100.0 %	1680	1680
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'EML - DS2 PM' (FG3: 'EML - DS2 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	2200	1	2201
	B	1164	0	0	1164
	C	310	0	0	310
	Tot.	1474	2200	1	3675

Traffic Lane Flows

Lane	Scenario 3: EML - DS2 PM
Junction: A2030 Eastern Road / Airport Service Road signalised junction	
1/1	1100
1/2 (with short)	1101(In) 1100(Out)
1/3 (short)	1
2/1	1100
2/2	1100
3/1 (short)	0
3/2 (with short)	1164(In) 1164(Out)
4/1	1
5/1 (with short)	310(In) 310(Out)
5/2 (short)	0
6/1	1474

Full Input Data And Results

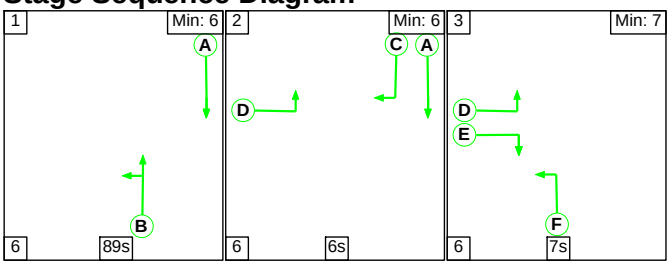
Lane Saturation Flows

Junction: A2030 Eastern Road / Airport Service Road signalised 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 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
1/3 (A2030 Eastern Road north entry)	3.20	0.00	Y	Arm 4 Right	12.00	100.0 %	1720	1720
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A2030 Eastern Road south exit Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 4 Left	12.00	0.0 %	1915	1915
3/2 (A2030 Eastern Road south entry)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
4/1 (Airport Service Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Airport Service Road entry)	2.75	0.00	Y	Arm 6 Left	12.00	100.0 %	1680	1680
5/2 (Airport Service Road entry)	2.75	0.00	Y	Arm 2 Right	12.00	0.0 %	1890	1890
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'EML - DS2 AM' (FG1: 'EML - DS2 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

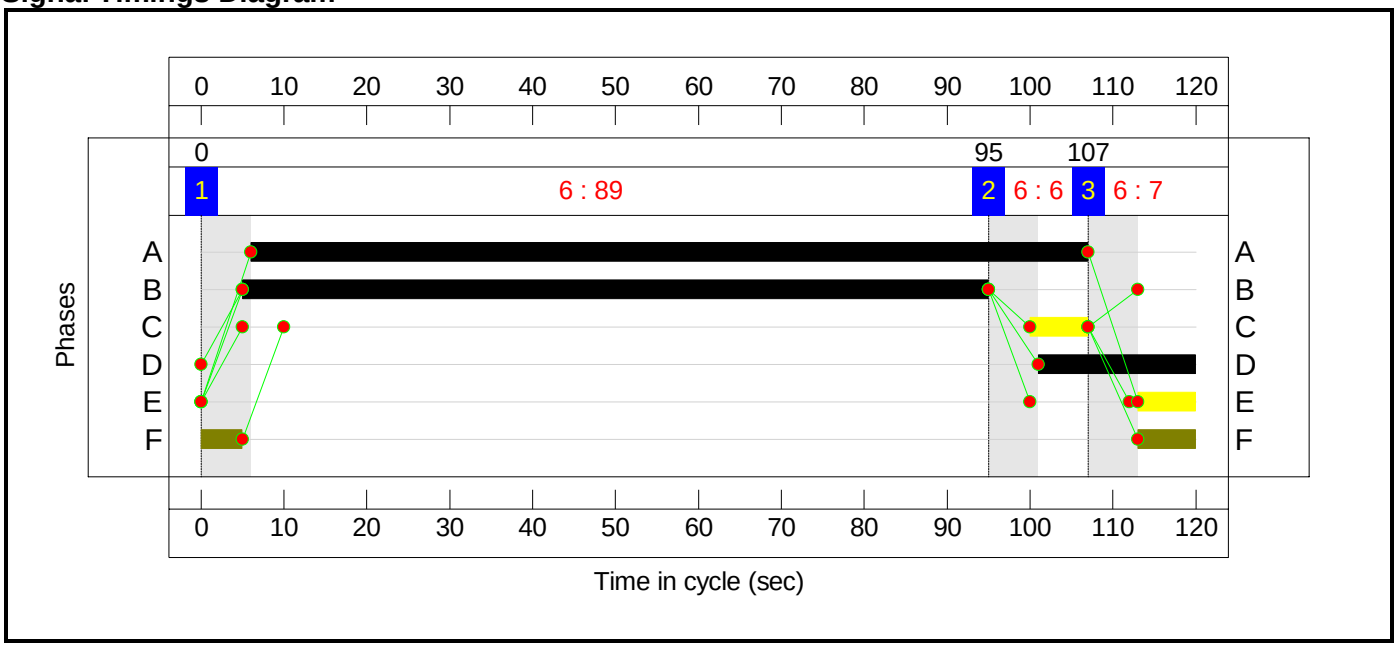


Stage Timings

Stage	1	2	3
Duration	89	6	7
Change Point	0	95	107

Full Input Data And Results

Signal Timings Diagram



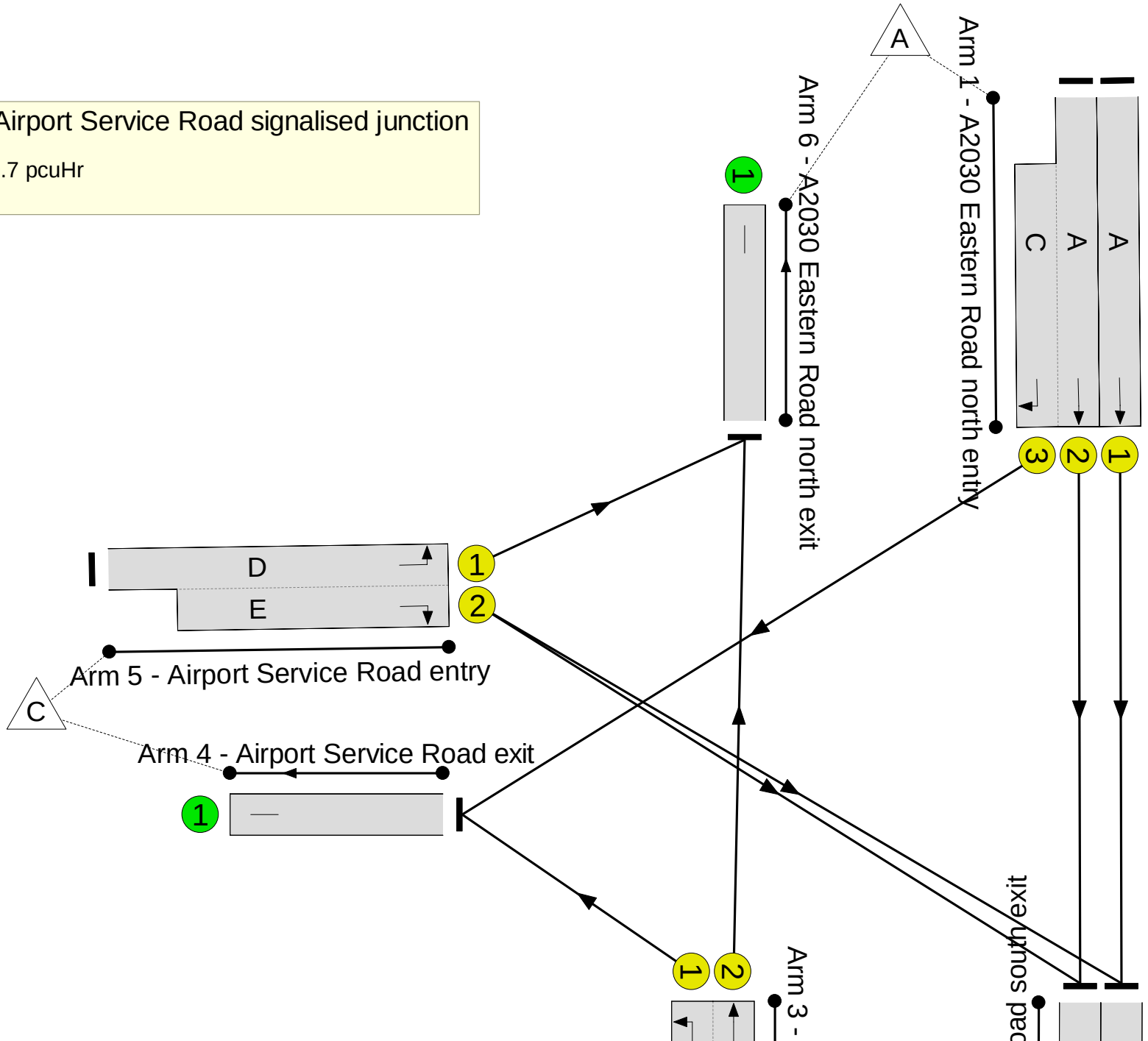
Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Airport Service Road signalised junction

PRC: 5.9 %

Total Traffic Delay: 10.7 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%**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.0%**
1/1	A2030 Eastern Road north entry Ahead	U	N/A	N/A	A		1	101	-	816	1915	1628	50.1%
1/2+1/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	101:7	-	870	1915:1720	1648	52.8%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
2/2	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	801	Inf	Inf	0.0%
3/2+3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B	F	1	90:102	12	1234	1915:1915	1452	85.0%
4/1	Airport Service Road exit	U	N/A	N/A	-		-	-	-	71	Inf	Inf	0.0%
5/1+5/2	Airport Service Road entry Right Left	U	N/A	N/A	D E		1	19:7	-	93	1680:1680	293	31.8%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1323	Inf	Inf	0.0%

Full Input Data And Results

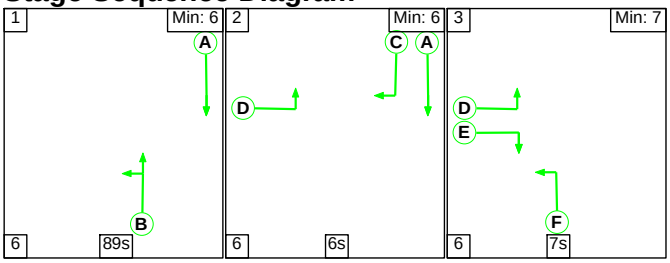
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**6.6**	**4.1**	**0.0**	**10.7**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**0**	**0**	**0**	**6.6**	**4.1**	**0.0**	**10.7**	**-**	**-**	**-**	**-**
1/1	816	816	-	-	-	0.5	0.5	-	1.0	4.6	7.0	0.5	7.5
1/2+1/3	870	870	-	-	-	1.6	0.6	-	2.1	8.9	6.7	0.6	7.2
2/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	801	801	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	1234	1234	-	-	-	3.4	2.8	-	6.1	17.9	27.8	2.8	30.5
4/1	71	71	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	93	93	-	-	-	1.1	0.2	-	1.4	53.4	2.6	0.2	2.8
6/1	1323	1323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 5.9 Total Delay for Signalled Lanes (pcuHr): 10.70 Cycle Time (s): 120
PRC Over All Lanes (%): 5.9 Total Delay Over All Lanes(pcuHr): 10.70

Full Input Data And Results

Scenario 2: 'EML - DS2 IP' (FG2: 'EML - DS2 IP', Plan 1: 'Network Control Plan 1')

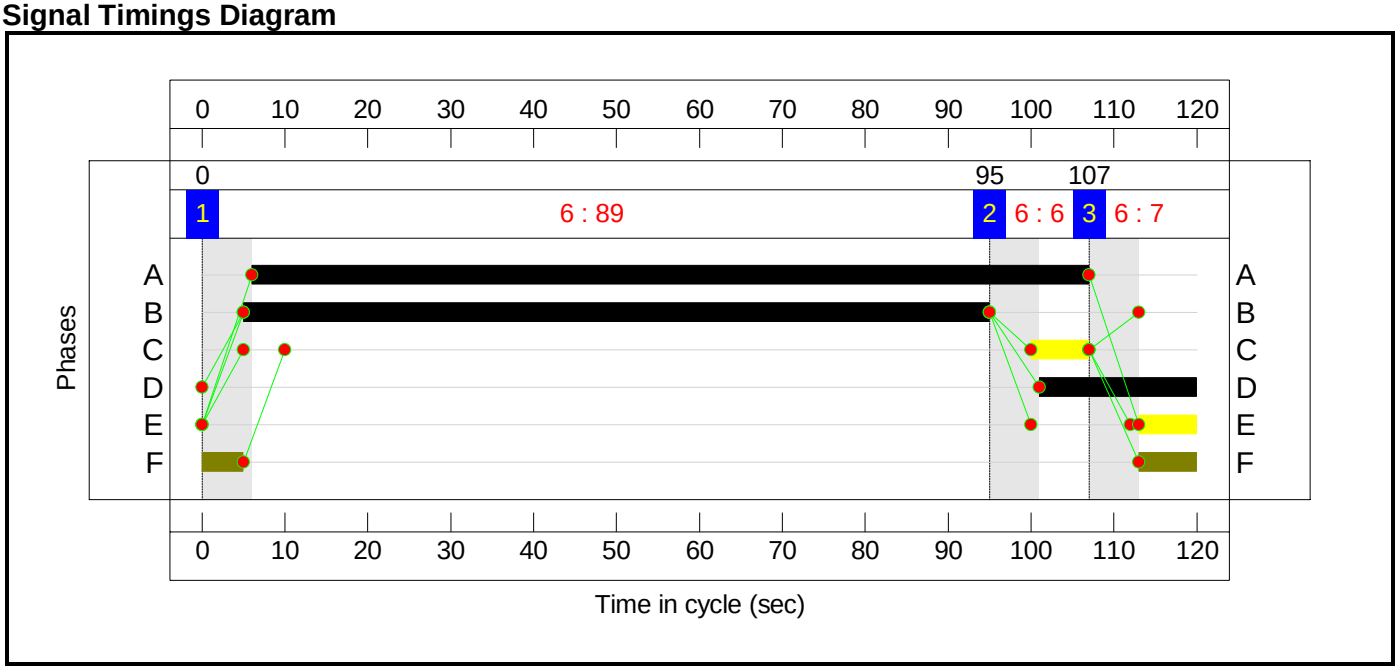
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	89	6	7
Change Point	0	95	107

Signal Timings Diagram



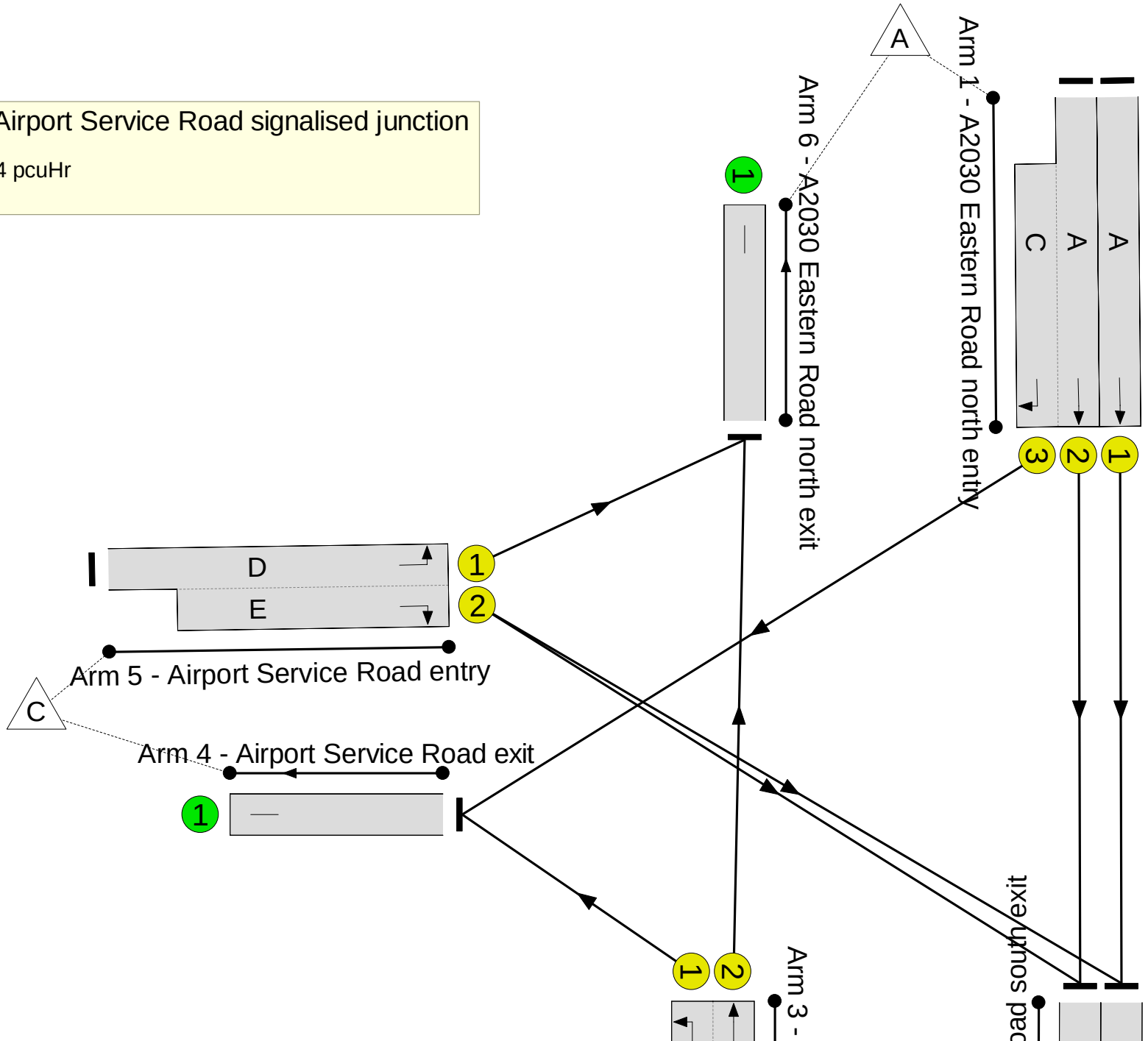
Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Airport Service Road signalised junction

PRC: 22.6 %

Total Traffic Delay: 6.4 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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.4%**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.4%**
1/1	A2030 Eastern Road north entry Ahead	U	N/A	N/A	A		1	101	-	893	1915	1628	54.9%
1/2+1/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	101:7	-	893	1915:1935	1628	54.9%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
2/2	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	893	Inf	Inf	0.0%
3/2+3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B	F	1	90:102	12	1067	1915:1702	1454	73.4%
4/1	Airport Service Road exit	U	N/A	N/A	-		-	-	-	1	Inf	Inf	0.0%
5/1+5/2	Airport Service Road entry Right Left	U	N/A	N/A	D E		1	19:7	-	16	1680:1680	299	5.4%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1081	Inf	Inf	0.0%

Full Input Data And Results

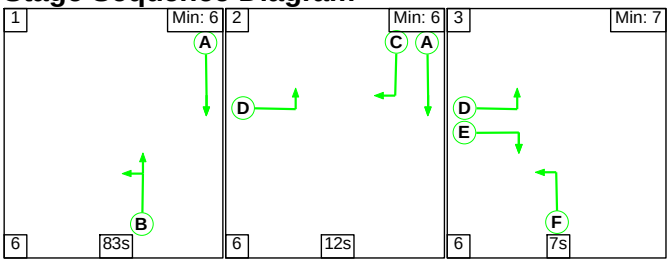
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**3.8**	**2.6**	**0.0**	**6.4**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**0**	**0**	**0**	**3.8**	**2.6**	**0.0**	**6.4**	**-**	**-**	**-**	**-**
1/1	893	893	-	-	-	0.6	0.6	-	1.2	5.0	8.2	0.6	8.8
1/2+1/3	893	893	-	-	-	0.6	0.6	-	1.2	5.0	8.2	0.6	8.8
2/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	893	893	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	1067	1067	-	-	-	2.3	1.4	-	3.7	12.5	19.2	1.4	20.6
4/1	1	1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	16	16	-	-	-	0.2	0.0	-	0.2	49.1	0.4	0.0	0.4
6/1	1081	1081	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 22.6 Total Delay for Signalled Lanes (pcuHr): 6.40 Cycle Time (s): 120
PRC Over All Lanes (%): 22.6 Total Delay Over All Lanes(pcuHr): 6.40

Full Input Data And Results

Scenario 3: 'EML - DS2 PM' (FG3: 'EML - DS2 PM', Plan 1: 'Network Control Plan 1')

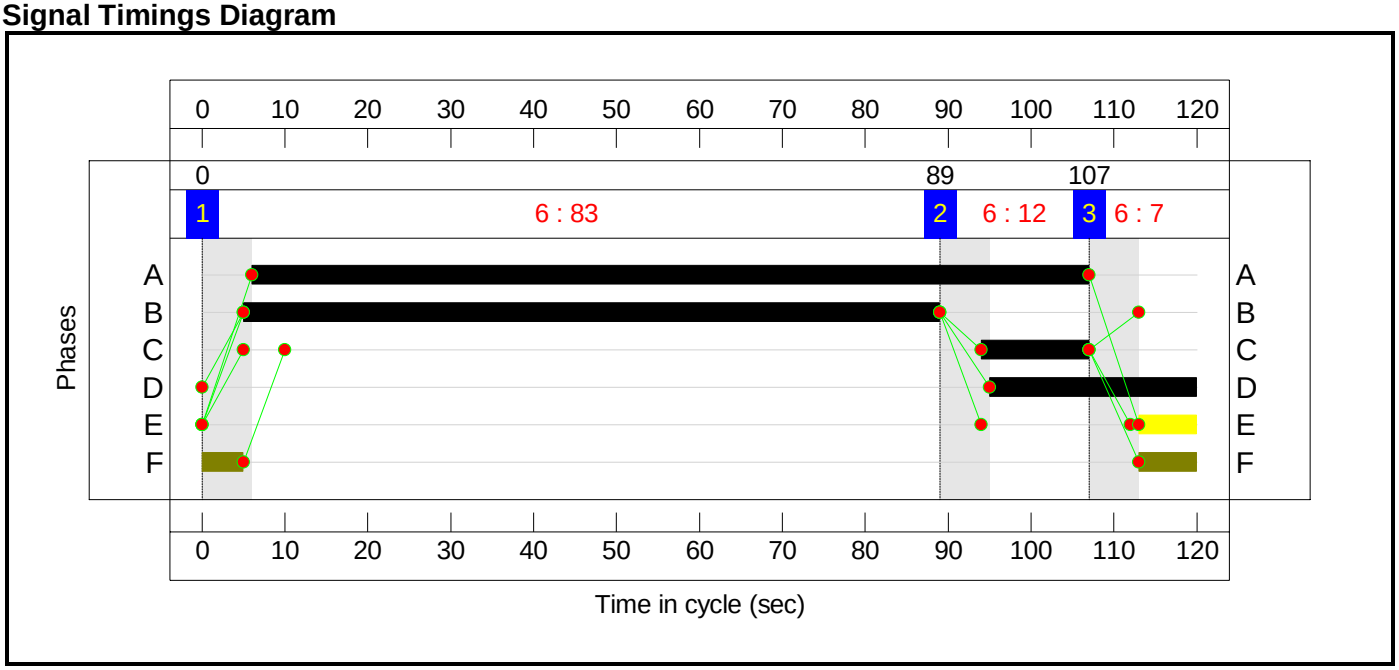
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	83	12	7
Change Point	0	89	107

Signal Timings Diagram



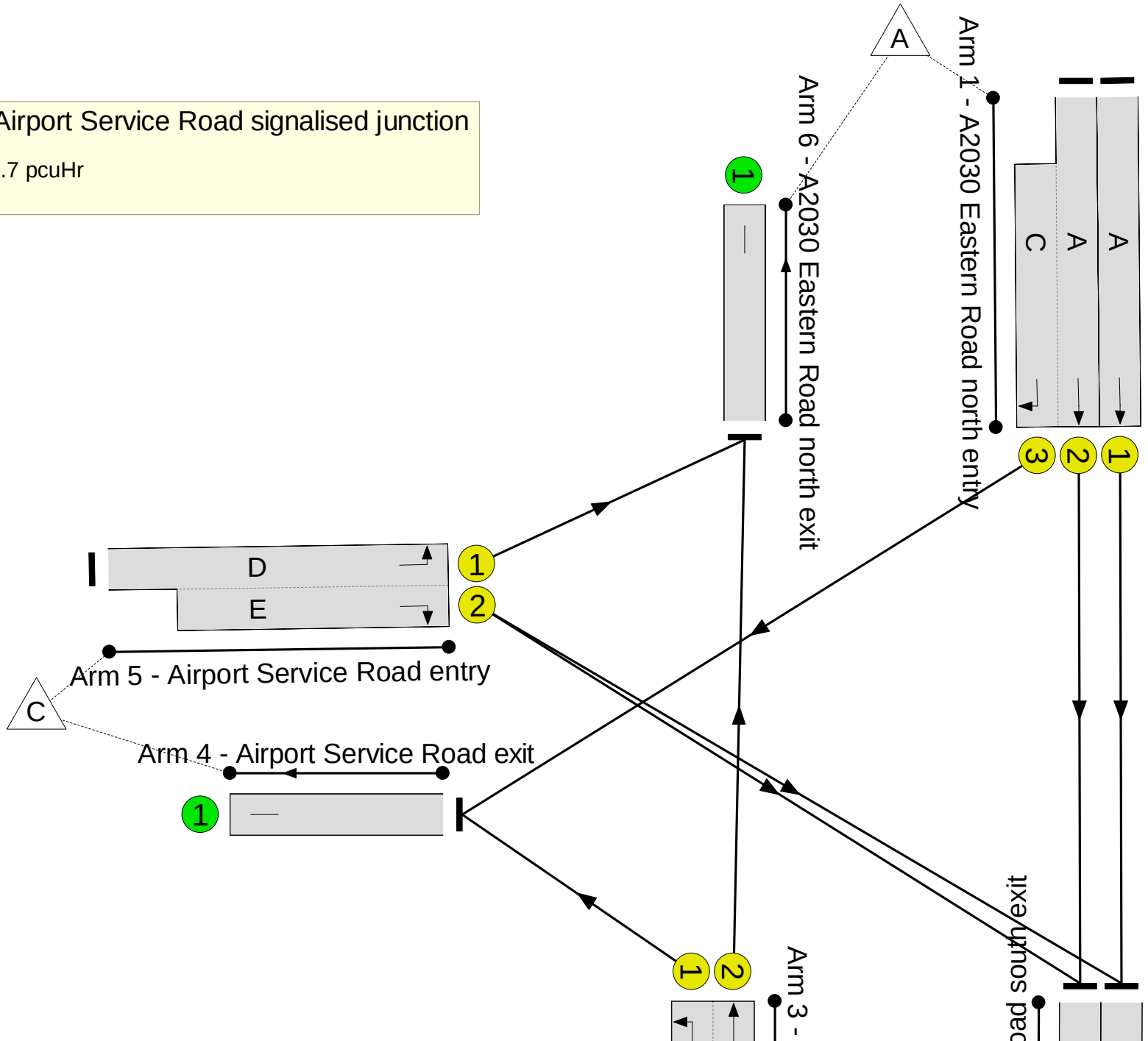
Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Airport Service Road signalised junction

PRC: 4.9 %

Total Traffic Delay: 17.7 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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.8%**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.8%**
1/1	A2030 Eastern Road north entry Ahead	U	N/A	N/A	A		1	101	-	1100	1915	1628	67.6%
1/2+1/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	101:13	-	1101	1915:1720	1629	67.6%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1100	Inf	Inf	0.0%
2/2	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1100	Inf	Inf	0.0%
3/2+3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B	F	1	84:96	12	1164	1915:1915	1356	85.8%
4/1	Airport Service Road exit	U	N/A	N/A	-		-	-	-	1	Inf	Inf	0.0%
5/1+5/2	Airport Service Road entry Right Left	U	N/A	N/A	D E		1	25:7	-	310	1680:1890	364	85.2%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1474	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**	**10.0**	**7.6**	**0.0**	**17.7**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Airport Service Road signalised junction	**-**	**-**	**0**	**0**	**0**	**10.0**	**7.6**	**0.0**	**17.7**	**-**	**-**	**-**	**-**
1/1	1100	1100	-	-	-	1.0	1.0	-	2.0	6.6	12.8	1.0	13.9
1/2+1/3	1101	1101	-	-	-	1.0	1.0	-	2.0	6.6	12.8	1.0	13.9
2/1	1100	1100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	1100	1100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	1164	1164	-	-	-	4.2	2.9	-	7.1	22.1	28.8	2.9	31.7
4/1	1	1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	310	310	-	-	-	3.9	2.6	-	6.5	75.5	9.9	2.6	12.5
6/1	1474	1474	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 4.9 Total Delay for Signalled Lanes (pcuHr): 17.68 Cycle Time (s): 120
PRC Over All Lanes (%): 4.9 Total Delay Over All Lanes(pcuHr): 17.68

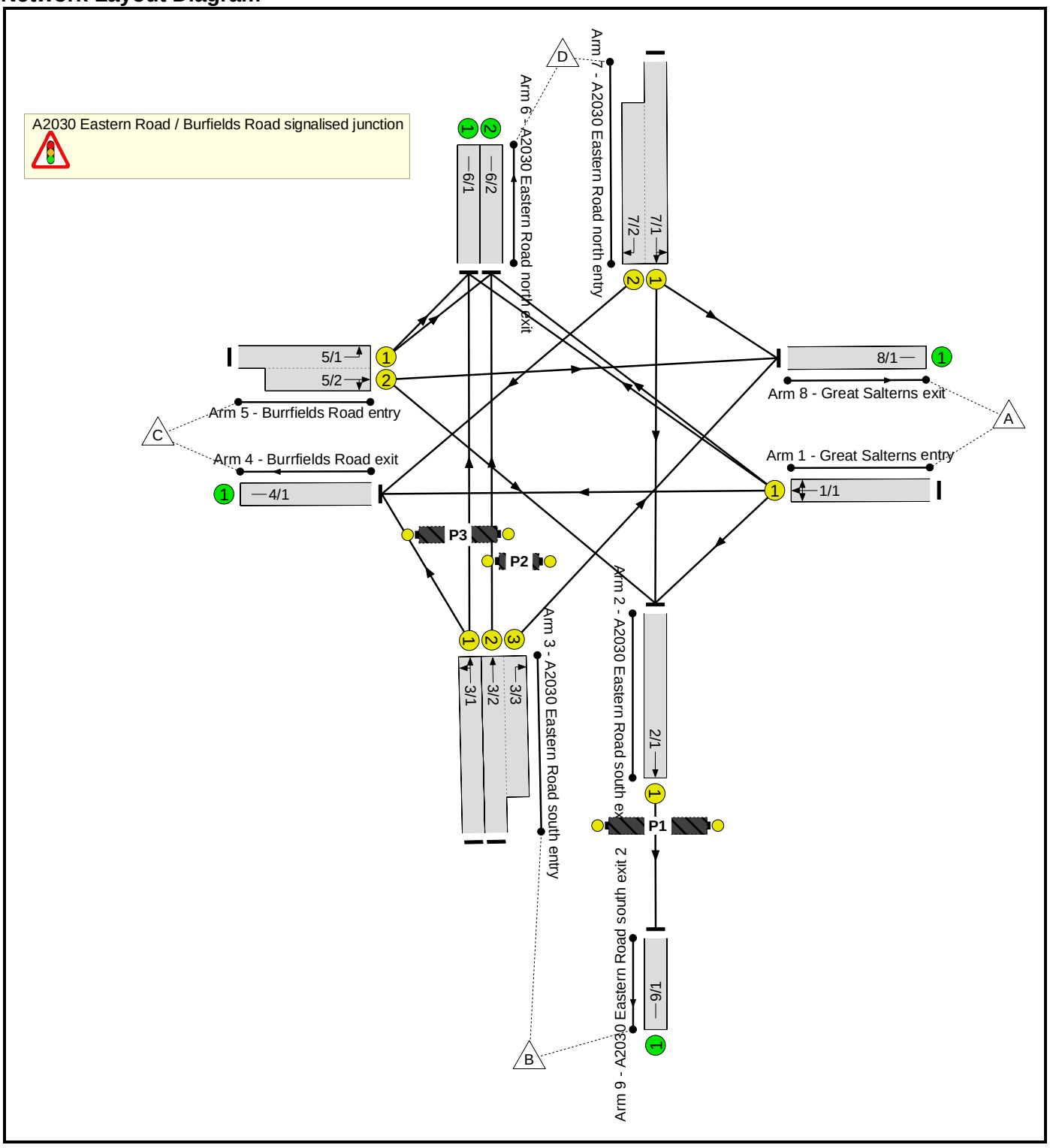
Full Input Data And Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	A2030 Eastern Rd_Burrfields Rd DS1 (SB Closure).lsg3x
Author:	
Company:	
Address:	

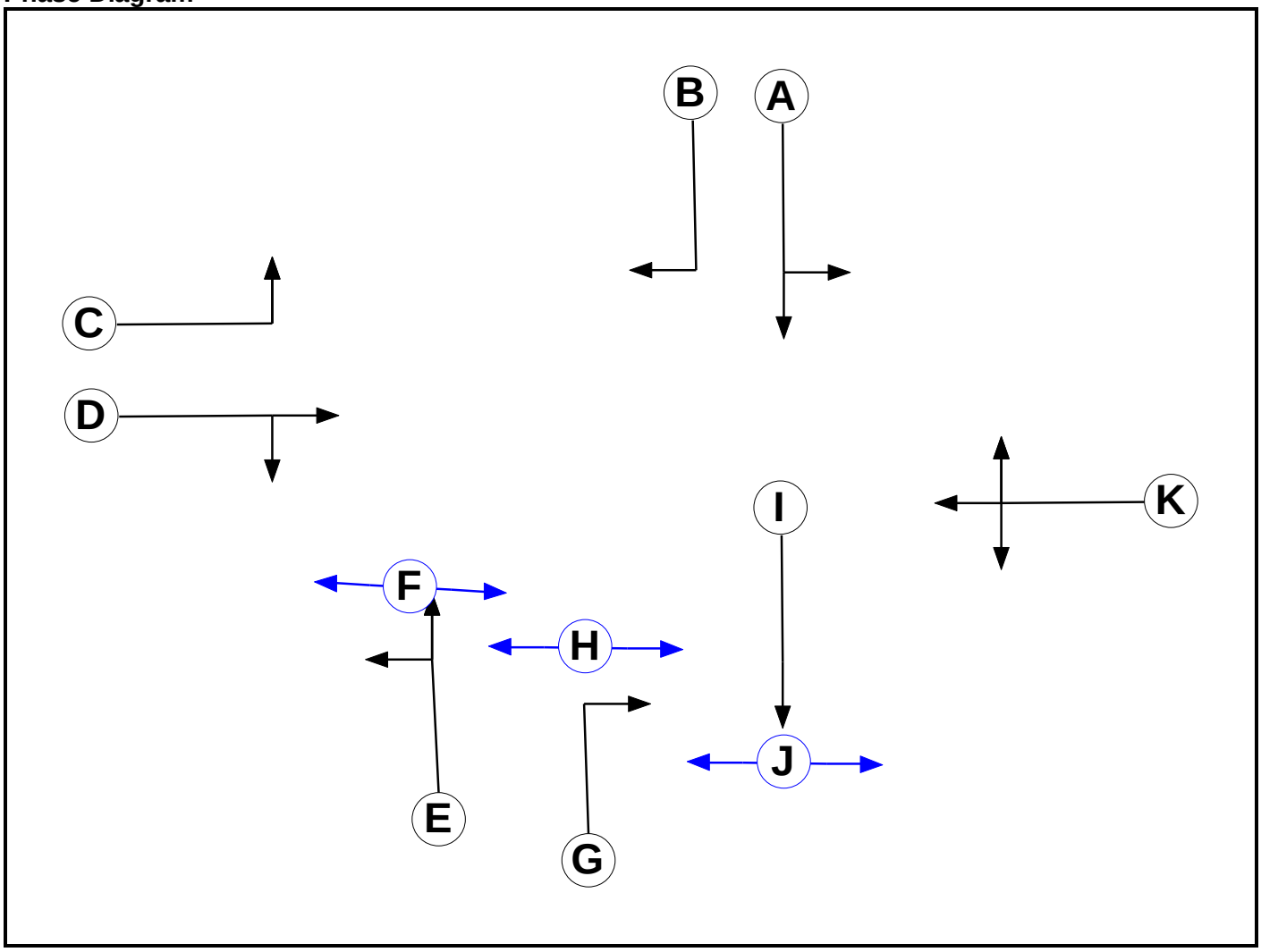
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		7	7
G	Traffic		7	7
H	Pedestrian		7	7
I	Traffic		7	7
J	Pedestrian		7	7
K	Traffic		7	7

Full Input Data And Results

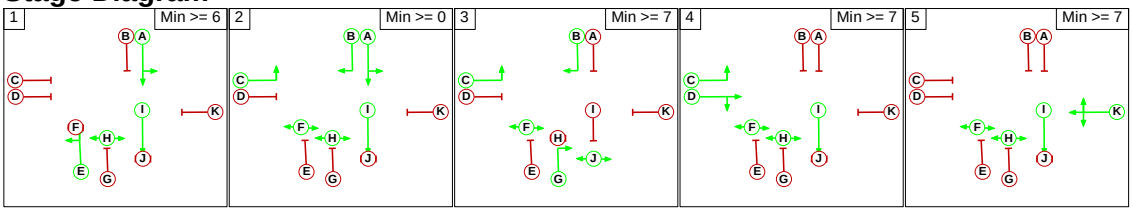
Phase Intergreens Matrix

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

Phases in Stage

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

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	3	4	5
From Stage	1		7	7	7	6
	2	7		7	6	7
	3	7	7		8	7
	4	8	8	7		7
	5	7	7	7	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2030 Eastern Road / Burfields Road signalised junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	U	K	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Left	15.00
											Arm 4 Ahead	Inf
											Arm 6 Right	15.00
2/1 (A2030 Eastern Road south exit)	U	I	2	3	3.1	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
3/1 (A2030 Eastern Road south entry)	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Left	10.00
											Arm 6 Ahead	Inf
3/2 (A2030 Eastern Road south entry)	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Ahead	Inf
3/3 (A2030 Eastern Road south entry)	U	G	2	3	12.2	Geom	-	3.50	0.00	Y	Arm 8 Right	10.00
4/1 (Burrfields Road exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Burrfields Road entry)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Left	12.00
5/2 (Burrfields Road entry)	U	D	2	3	7.8	Geom	-	3.25	0.00	Y	Arm 2 Right	15.00
											Arm 8 Ahead	Inf
6/1 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
											Arm 8 Left	Inf
7/2 (A2030 Eastern Road north entry)	U	B	2	3	12.2	Geom	-	3.00	0.00	Y	Arm 4 Right	12.00
8/1 (Great Salterns exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

9/1 (A2030 Eastern Road south exit 2)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'EMM - DS1 AM'	08:00	09:00	01:00	
2: 'EMM - DS1 IP'	08:00	09:00	01:00	
3: 'EMM - DS1 PM'	17:00	18:00	01:00	

Scenario 1: 'EMM - DS1 AM' (FG1: 'EMM - DS1 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	132	1541	1673
	C	0	91	0	31	122
	D	0	1144	216	0	1360
	Tot.	0	1235	348	1572	3155

Traffic Lane Flows

Lane	Scenario 1: EMM - DS1 AM
Junction: A2030 Eastern Road / Burfields Road signalised junction	
1/1	0
2/1	1235
3/1	825
3/2 (with short)	848(In) 848(Out)
3/3 (short)	0
4/1	348
5/1 (with short)	122(In) 31(Out)
5/2 (short)	91
6/1	708
6/2	864
7/1 (with short)	1360(In) 1144(Out)
7/2 (short)	216
8/1	0
9/1	1235

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	3.00	0.00	Y	Arm 2 Left	15.00	0.0 %	1915	1915
				Arm 4 Ahead	Inf	0.0 %		
				Arm 6 Right	15.00	0.0 %		
2/1 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	10.00	16.0 %	1919	1919
				Arm 6 Ahead	Inf	84.0 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
3/3 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 8 Right	10.00	0.0 %	1965	1965
4/1 (Burrfields Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Burrfields Road entry)	3.25	0.00	Y	Arm 6 Left	12.00	100.0 %	1724	1724
5/2 (Burrfields Road entry)	3.25	0.00	Y	Arm 2 Right	15.00	100.0 %	1764	1764
				Arm 8 Ahead	Inf	0.0 %		
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
				Arm 8 Left	Inf	0.0 %		
7/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 4 Right	12.00	100.0 %	1702	1702
8/1 (Great Salterns exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A2030 Eastern Road south exit 2 Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: 'EMM - DS1 IP' (FG2: 'EMM - DS1 IP', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	0	0	0	0
	B	0	0	123	1096	1219
	C	0	106	0	228	334
	D	0	1269	161	0	1430
	Tot.	0	1375	284	1324	2983

Traffic Lane Flows

Lane	Scenario 2: EMM - DS1 IP
Junction: A2030 Eastern Road / Burfields Road signalised junction	
1/1	0
2/1	1375
3/1	598
3/2 (with short)	621(In) 621(Out)
3/3 (short)	0
4/1	284
5/1 (with short)	334(In) 228(Out)
5/2 (short)	106
6/1	589
6/2	735
7/1 (with short)	1430(In) 1269(Out)
7/2 (short)	161
8/1	0
9/1	1375

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	3.00	0.00	Y	Arm 2 Left	15.00	0.0 %	1915	1915
				Arm 4 Ahead	Inf	0.0 %		
				Arm 6 Right	15.00	0.0 %		
2/1 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	10.00	20.6 %	1906	1906
				Arm 6 Ahead	Inf	79.4 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
3/3 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 8 Right	10.00	0.0 %	1965	1965
4/1 (Burrfields Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Burrfields Road entry)	3.25	0.00	Y	Arm 6 Left	12.00	100.0 %	1724	1724
5/2 (Burrfields Road entry)	3.25	0.00	Y	Arm 2 Right	15.00	100.0 %	1764	1764
				Arm 8 Ahead	Inf	0.0 %		
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
				Arm 8 Left	Inf	0.0 %		
7/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 4 Right	12.00	100.0 %	1702	1702
8/1 (Great Salterns exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A2030 Eastern Road south exit 2 Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'EMM - DS1 PM' (FG3: 'EMM - DS1 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	0	0	0	0
	B	0	0	38	1189	1227
	C	0	183	0	0	183
	D	0	1548	0	0	1548
	Tot.	0	1731	38	1189	2958

Traffic Lane Flows

Lane	Scenario 3: EMM - DS1 PM
Junction: A2030 Eastern Road / Burfields Road signalised junction	
1/1	0
2/1	1731
3/1	610
3/2 (with short)	617(In) 617(Out)
3/3 (short)	0
4/1	38
5/1 (with short)	183(In) 0(Out)
5/2 (short)	183
6/1	572
6/2	617
7/1 (with short)	1548(In) 1548(Out)
7/2 (short)	0
8/1	0
9/1	1731

Full Input Data And Results

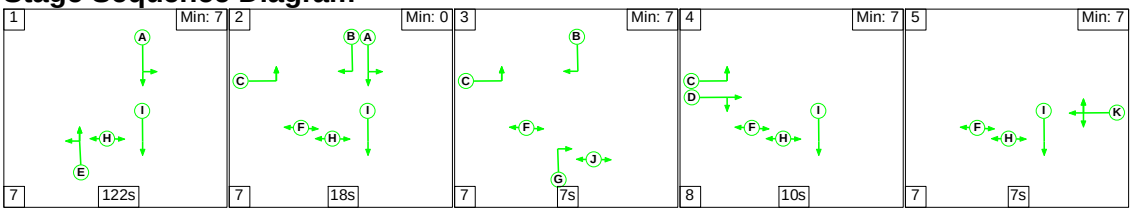
Lane Saturation Flows

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	3.00	0.00	Y	Arm 2 Left	15.00	0.0 %	1915	1915
				Arm 4 Ahead	Inf	0.0 %		
				Arm 6 Right	15.00	0.0 %		
2/1 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	10.00	6.2 %	1947	1947
				Arm 6 Ahead	Inf	93.8 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
3/3 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 8 Right	10.00	0.0 %	1965	1965
4/1 (Burrfields Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Burrfields Road entry)	3.25	0.00	Y	Arm 6 Left	12.00	0.0 %	1940	1940
5/2 (Burrfields Road entry)	3.25	0.00	Y	Arm 2 Right	15.00	100.0 %	1764	1764
				Arm 8 Ahead	Inf	0.0 %		
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
				Arm 8 Left	Inf	0.0 %		
7/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 4 Right	12.00	0.0 %	1915	1915
8/1 (Great Salterns exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A2030 Eastern Road south exit 2 Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'EMM - DS1 AM' (FG1: 'EMM - DS1 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

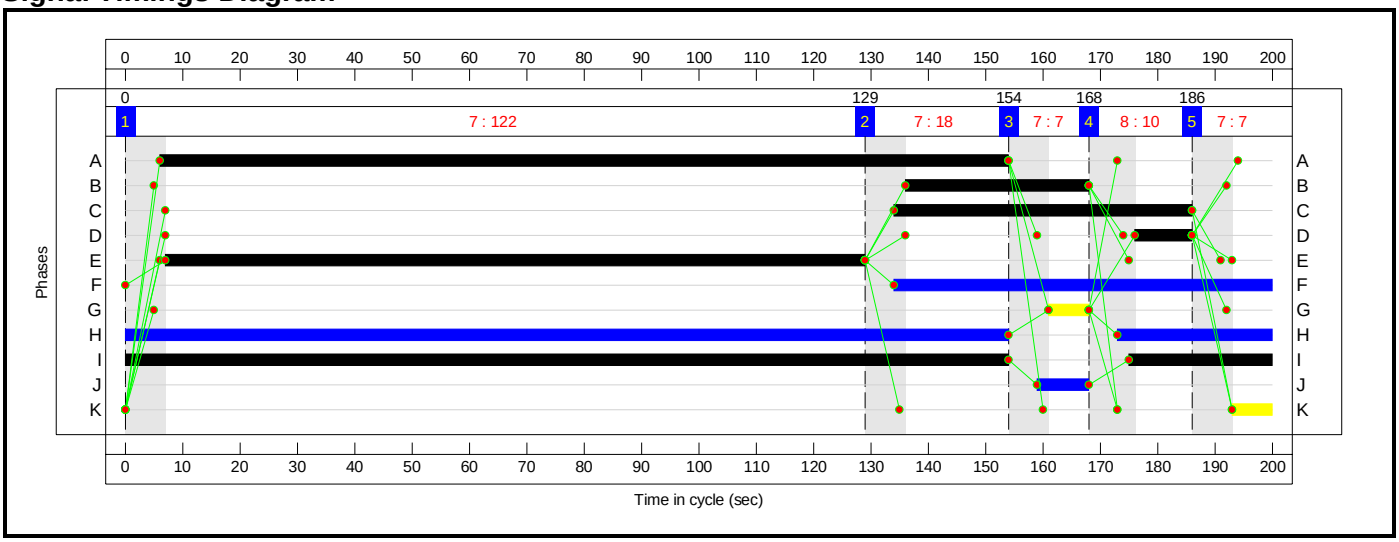


Full Input Data And Results

Stage Timings

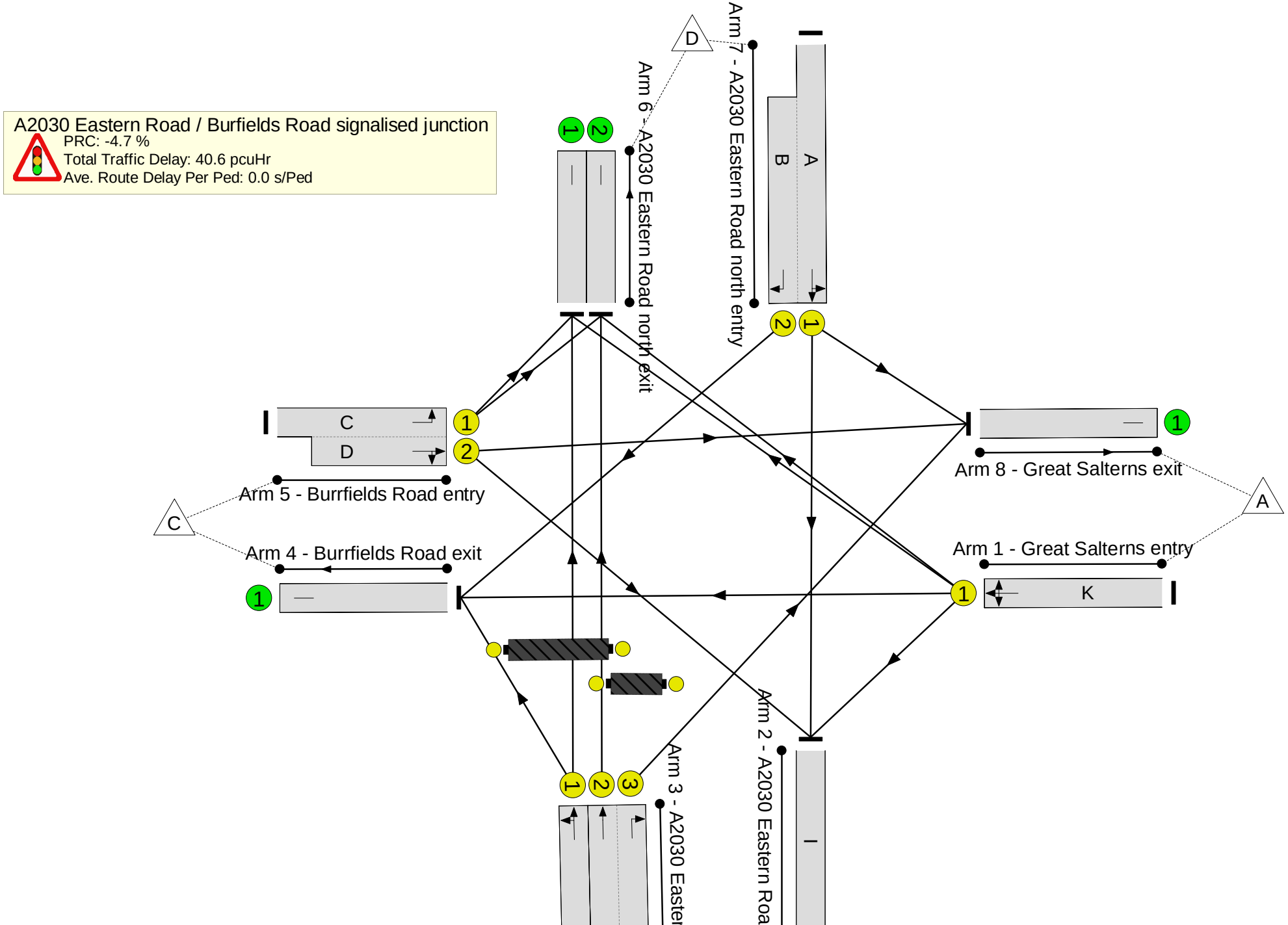
Stage	1	2	3	4	5
Duration	122	18	7	10	7
Change Point	0	129	154	168	186

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A2030 Eastern Road / Burfields Road signalised junction
PRC: -4.7 %
Total Traffic Delay: 40.6 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Arm 6 - A2030 Eastern Road north exit
Arm 7 - A2030 Eastern Road north entry
Arm 5 - Burrfields Road entry
Arm 8 - Great Salterns exit
Arm 4 - Burrfields Road exit
Arm 1 - Great Salterns entry
Arm 3 - A2030 Eastern
Arm 2 - A2030 Eastern Roa
A
B
C
D
K
I

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**	-	-		-	-	-	-	-	-	**94.2%**
A2030 Eastern Road / Burfields Road signalised junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.2%**
1/1	Great Salterns entry Left Ahead Right	U	N/A	N/A	K		1	7	-	0	1915	77	0.0%
2/1	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1235	1915	1724	71.7%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	E		1	122	-	825	1919	1180	69.9%
3/2+3/3	A2030 Eastern Road south entry Ahead Right	U	N/A	N/A	E G		1	122:7	-	848	1965:1965	1208	70.2%
4/1	Burrfields Road exit	U	N/A	N/A	-		-	-	-	348	Inf	Inf	0.0%
5/1+5/2	Burrfields Road entry Right Left Ahead	U	N/A	N/A	C D		1	52:10	-	122	1724:1764	130	93.8%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	708	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	864	Inf	Inf	0.0%
7/1+7/2	A2030 Eastern Road north entry Ahead Right Left	U	N/A	N/A	A B		1	148:32	-	1360	1915:1702	1443	94.2%
8/1	Great Salterns exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
9/1	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1235	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	J		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	181	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	66	-	0	-	0	0.0%

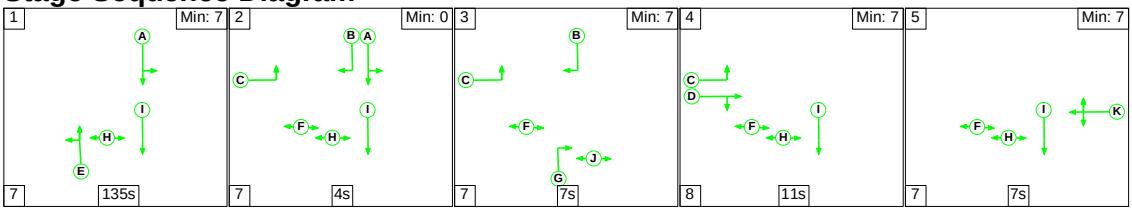
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**26.2**	**14.4**	**0.0**	**40.6**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**0**	**0**	**0**	**26.2**	**14.4**	**0.0**	**40.6**	**-**	**-**	**-**	**-**
1/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/1	1235	1235	-	-	-	0.1	1.3	-	1.3	3.9	0.9	1.3	2.1
3/1	825	825	-	-	-	6.0	1.2	-	7.1	31.0	30.9	1.2	32.1
3/2+3/3	848	848	-	-	-	6.1	1.2	-	7.3	31.0	31.8	1.2	33.0
4/1	348	348	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	122	122	-	-	-	2.9	3.9	-	6.7	198.2	5.0	3.9	8.9
6/1	708	708	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	864	864	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	1360	1360	-	-	-	11.1	7.0	-	18.1	48.0	61.2	7.0	68.2
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1235	1235	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -4.7 Total Delay for Signalled Lanes (pcuHr): 40.60 Cycle Time (s): 200
PRC Over All Lanes (%): -4.7 Total Delay Over All Lanes(pcuHr): 40.60

Full Input Data And Results

Scenario 2: 'EMM - DS1 IP' (FG2: 'EMM - DS1 IP', Plan 1: 'Network Control Plan 1')

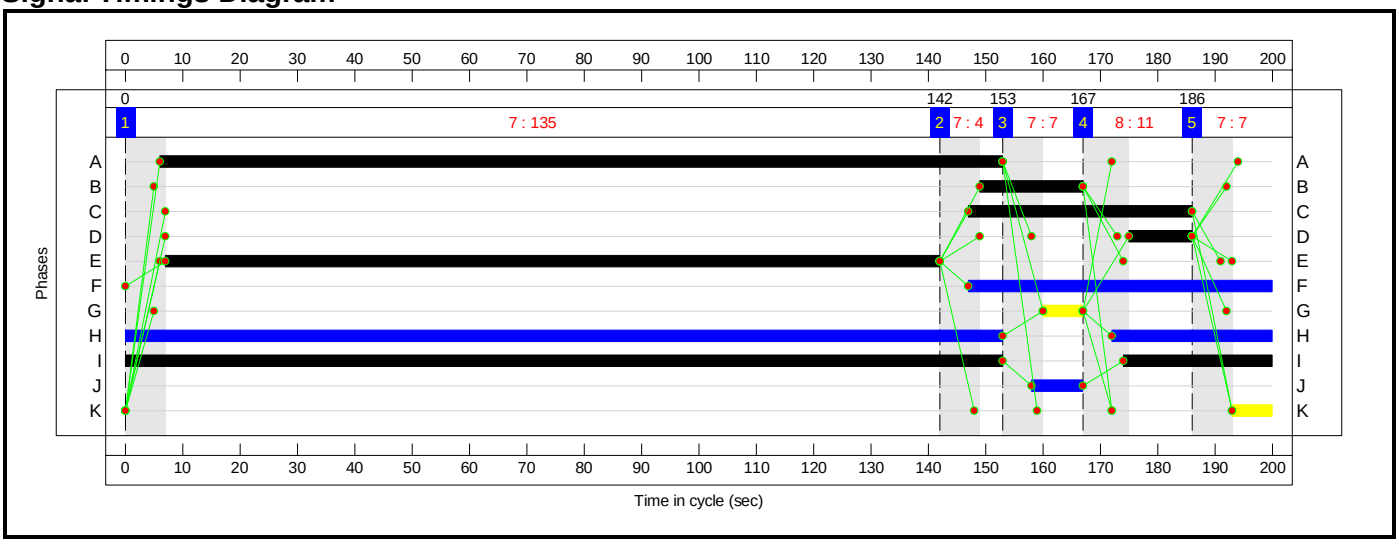
Stage Sequence Diagram



Stage Timings

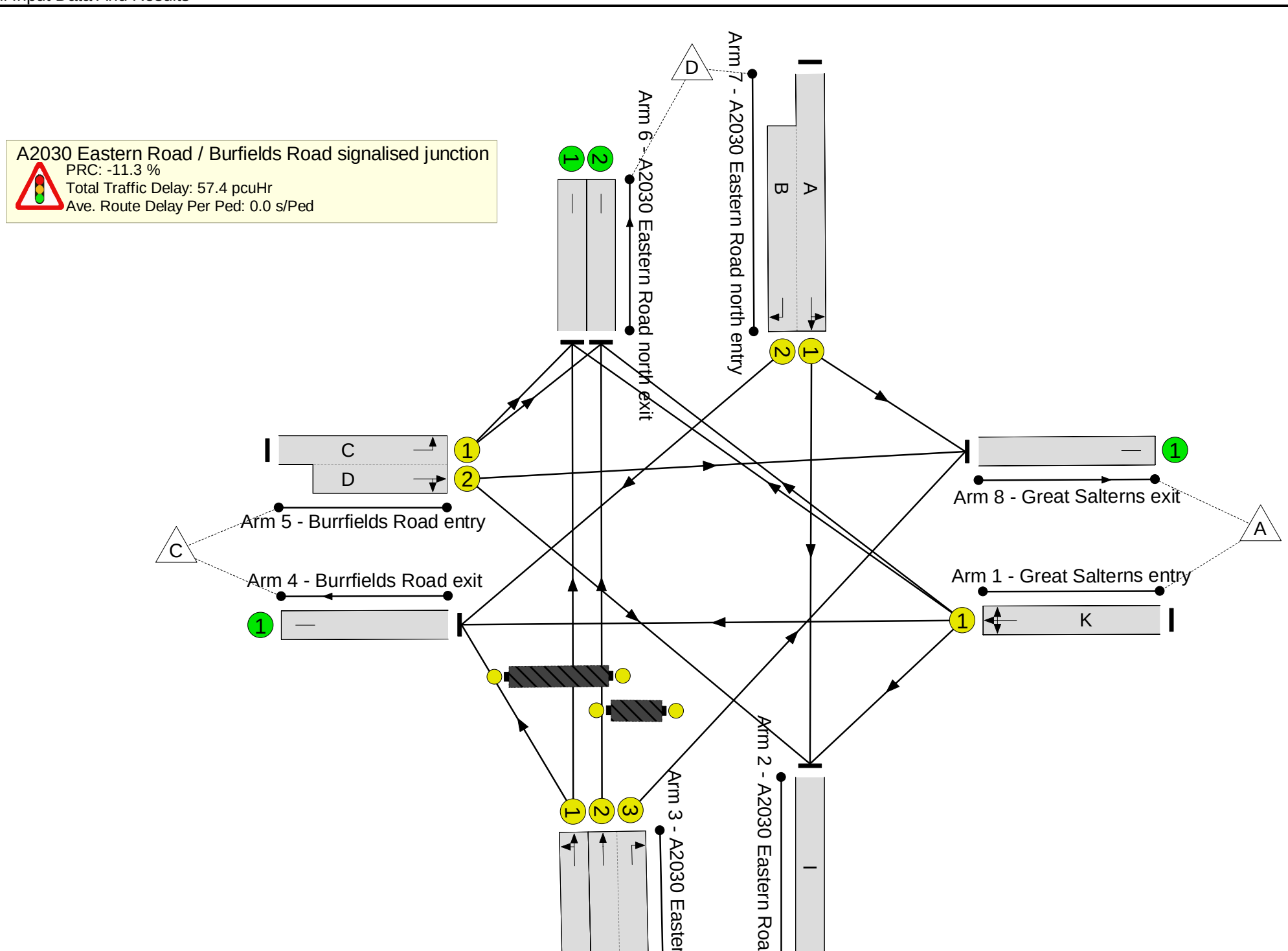
Stage	1	2	3	4	5
Duration	135	4	7	11	7
Change Point	0	142	153	167	186

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A2030 Eastern Road / Burfields Road signalised junction
PRC: -11.3 %
Total Traffic Delay: 57.4 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Arm 6 - A2030 Eastern Road north exit
Arm 7 - A2030 Eastern Road north entry
Arm 5 - Burrfields Road entry
Arm 8 - Great Salterns exit
Arm 4 - Burrfields Road exit
Arm 1 - Great Salterns entry
Arm 3 - A2030 Eastern
Arm 2 - A2030 Eastern Roa
A
B
C
D
K
I

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**100.2%**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**100.2%**
1/1	Great Salterns entry Left Ahead Right	U	N/A	N/A	K		1	7	-	0	1915	77	0.0%
2/1	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1375	1915	1724	79.6%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	E		1	135	-	598	1906	1296	46.1%
3/2+3/3	A2030 Eastern Road south entry Ahead Right	U	N/A	N/A	E G		1	135:7	-	621	1965:1965	1336	46.5%
4/1	Burrfields Road exit	U	N/A	N/A	-		-	-	-	284	Inf	Inf	0.0%
5/1+5/2	Burrfields Road entry Right Left Ahead	U	N/A	N/A	C D		1	39:11	-	334	1724:1764	333	100.2%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	589	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	735	Inf	Inf	0.0%
7/1+7/2	A2030 Eastern Road north entry Ahead Right Left	U	N/A	N/A	A B		1	147:18	-	1430	1915:1702	1427	100.2%
8/1	Great Salterns exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
9/1	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1375	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	J		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	181	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	53	-	0	-	0	0.0%

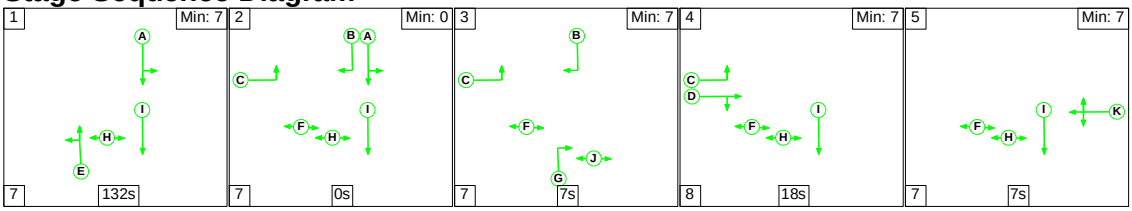
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**25.7**	**31.7**	**0.0**	**57.4**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**0**	**0**	**0**	**25.7**	**31.7**	**0.0**	**57.4**	**-**	**-**	**-**	**-**
1/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/1	1371	1371	-	-	-	0.1	1.9	-	2.0	5.4	1.3	1.9	3.2
3/1	598	598	-	-	-	2.5	0.4	-	2.9	17.5	15.4	0.4	15.9
3/2+3/3	621	621	-	-	-	2.6	0.4	-	3.0	17.5	16.0	0.4	16.5
4/1	284	284	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	334	334	-	-	-	7.5	9.3	-	16.7	180.4	13.8	9.3	23.1
6/1	589	589	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	735	735	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	1430	1426	-	-	-	13.1	19.6	-	32.7	82.3	79.3	19.6	98.9
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1371	1371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -11.3 Total Delay for Signalled Lanes (pcuHr): 57.42 Cycle Time (s): 200
PRC Over All Lanes (%): -11.3 Total Delay Over All Lanes(pcuHr): 57.42

Full Input Data And Results

Scenario 3: 'EMM - DS1 PM' (FG3: 'EMM - DS1 PM', Plan 1: 'Network Control Plan 1')

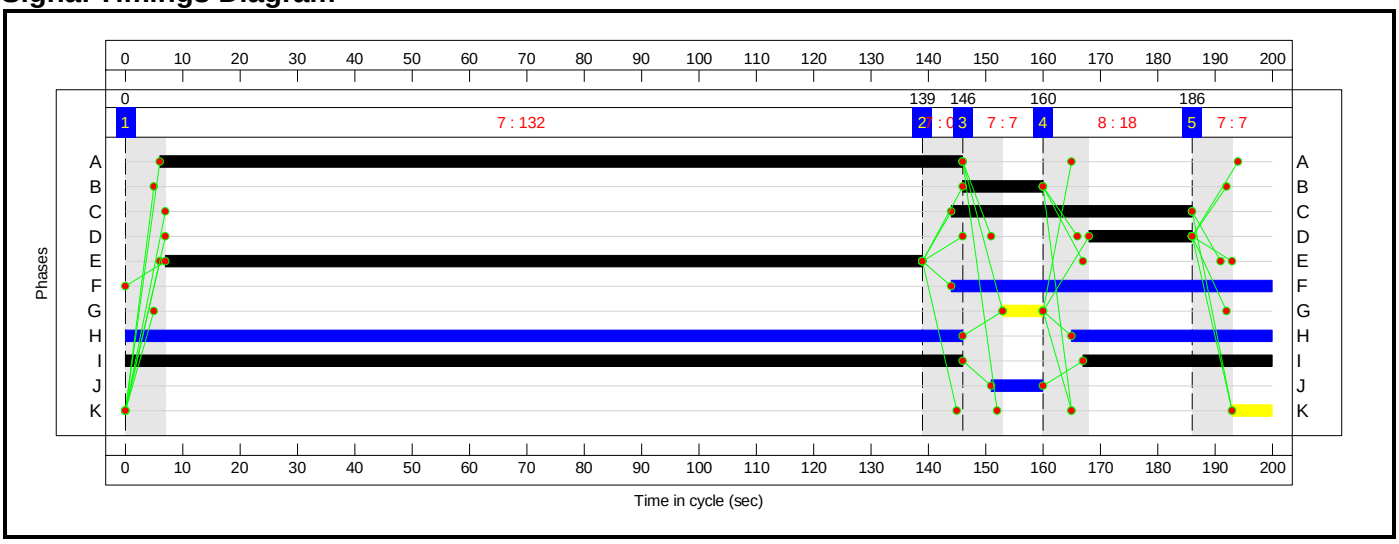
Stage Sequence Diagram



Stage Timings

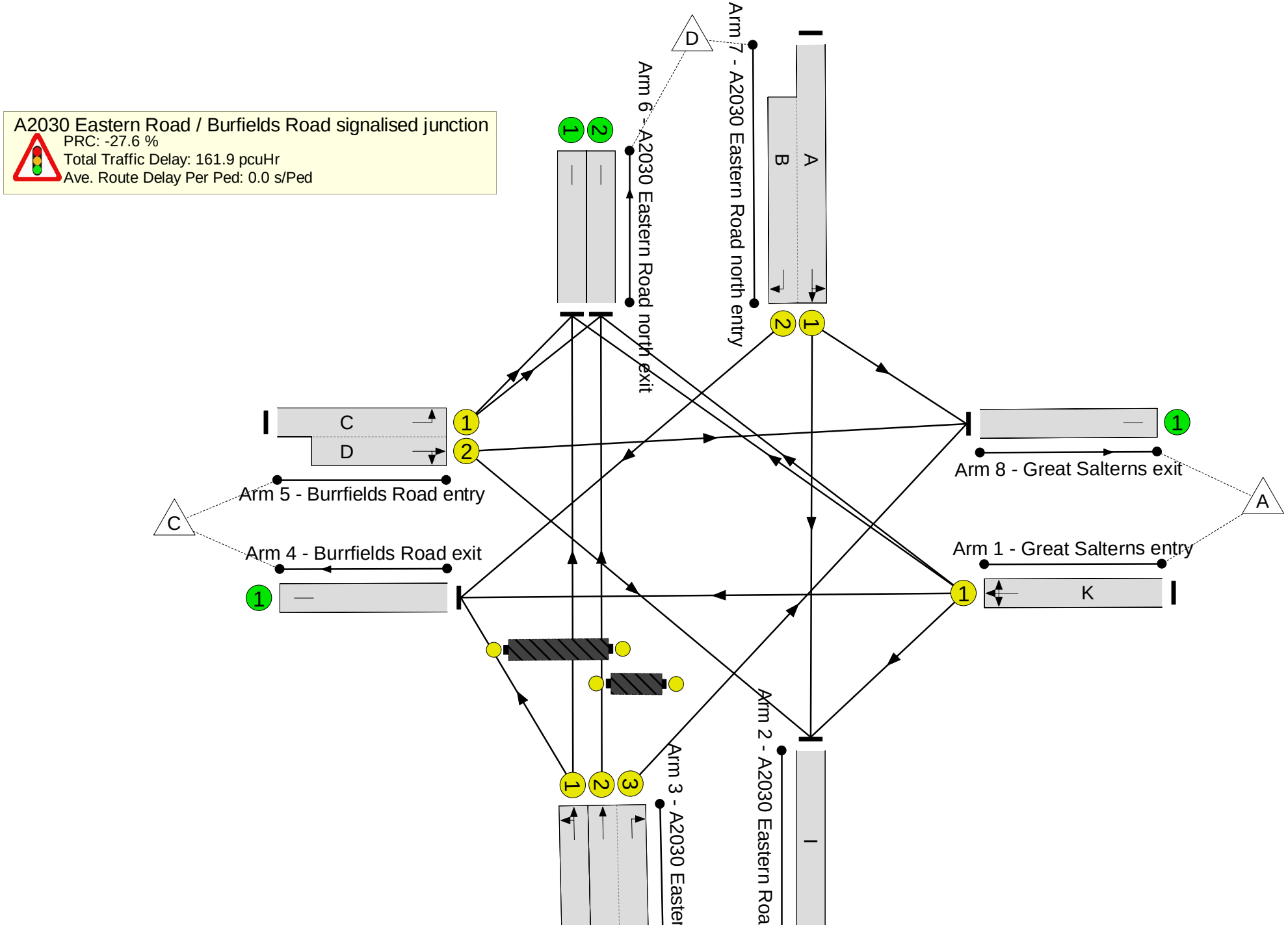
Stage	1	2	3	4	5
Duration	132	0	7	18	7
Change Point	0	139	146	160	186

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A2030 Eastern Road / Burfields Road signalised junction
PRC: -27.6 %
Total Traffic Delay: 161.9 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Arm 6 - A2030 Eastern Road north exit
Arm 7 - A2030 Eastern Road north entry
Arm 5 - Burrfields Road entry
Arm 8 - Great Salterns exit
Arm 4 - Burrfields Road exit
Arm 1 - Great Salterns entry
Arm 3 - A2030 Eastern Roa
Arm 2 - A2030 Eastern Roa
A
B
C
D
K
I

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**114.9%**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**114.9%**
1/1	Great Salterns entry Left Ahead Right	U	N/A	N/A	K		1	7	-	0	1915	77	0.0%
2/1	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1731	1915	1724	87.9%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	E		1	132	-	610	1947	1295	47.1%
3/2+3/3	A2030 Eastern Road south entry Ahead Right	U	N/A	N/A	E G		1	132:7	-	617	1965:1965	1307	47.2%
4/1	Burrfields Road exit	U	N/A	N/A	-		-	-	-	38	Inf	Inf	0.0%
5/1+5/2	Burrfields Road entry Right Left Ahead	U	N/A	N/A	C D		1	42:18	-	183	1940:1764	168	109.2%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	572	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	617	Inf	Inf	0.0%
7/1+7/2	A2030 Eastern Road north entry Ahead Right Left	U	N/A	N/A	A B		1	140:14	-	1548	1915:1915	1348	114.9%
8/1	Great Salterns exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
9/1	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1731	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	J		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	181	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	56	-	0	-	0	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	**-**	**-**	**0**	**0**	**0**	**41.9**	**120.0**	**0.0**	**161.9**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**0**	**0**	**0**	**41.9**	**120.0**	**0.0**	**161.9**	**-**	**-**	**-**	**-**
1/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/1	1515	1515	-	-	-	0.1	3.5	-	3.7	8.7	1.4	3.5	5.0
3/1	610	610	-	-	-	2.8	0.4	-	3.2	19.0	16.4	0.4	16.9
3/2+3/3	617	617	-	-	-	2.8	0.4	-	3.3	19.0	16.6	0.4	17.1
4/1	38	38	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	183	168	-	-	-	5.5	11.6	-	17.2	338.1	11.1	11.6	22.8
6/1	572	572	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	617	617	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	1548	1348	-	-	-	30.6	104.0	-	134.6	313.0	107.9	104.0	211.8
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1515	1515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -27.6 Total Delay for Signalled Lanes (pcuHr): 161.92 Cycle Time (s): 200
PRC Over All Lanes (%): -27.6 Total Delay Over All Lanes(pcuHr): 161.92

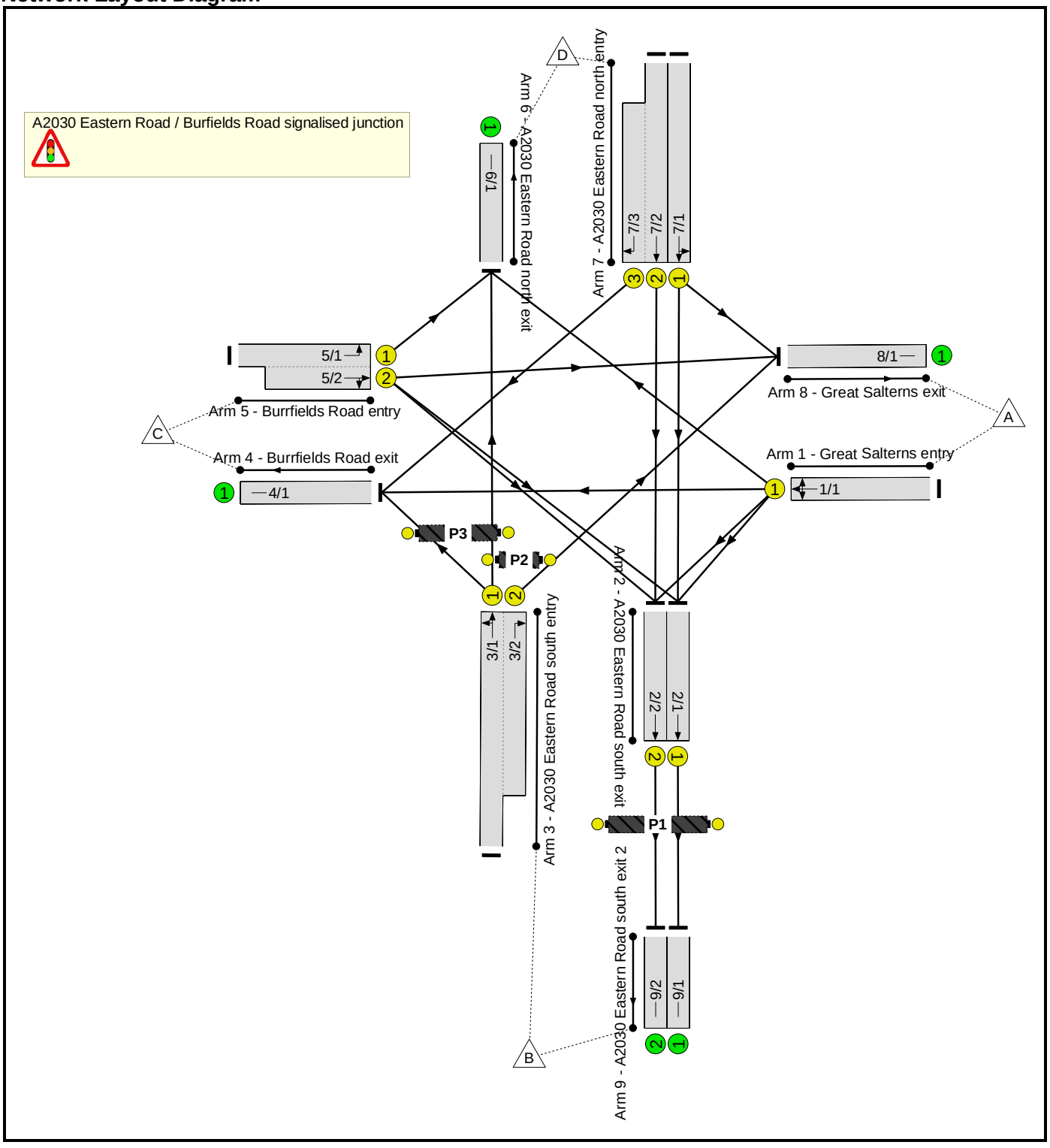
Full Input Data And Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	A2030 Eastern Rd_Burrfields Rd DS2 (NB Closure).lsg3x
Author:	
Company:	
Address:	

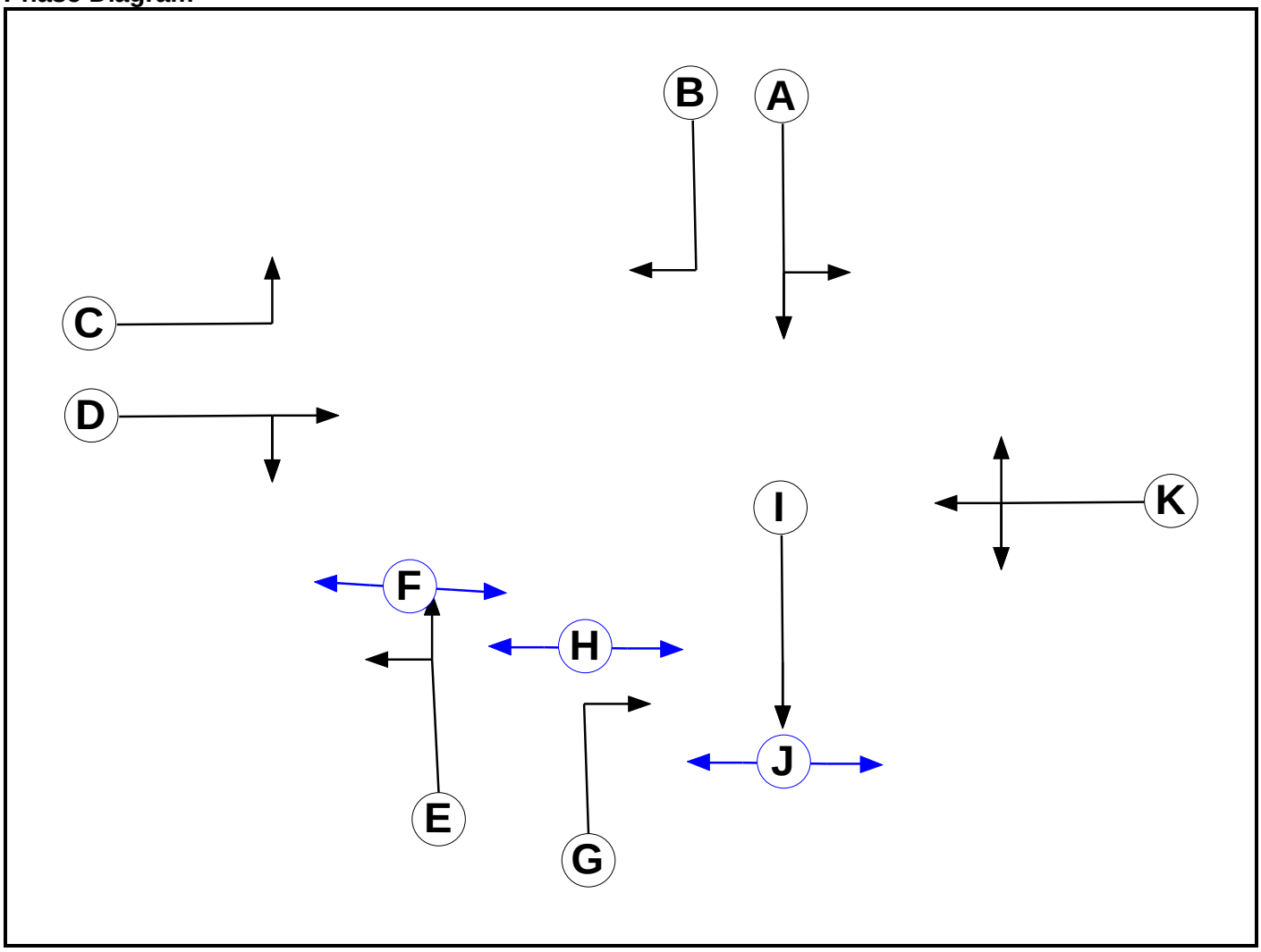
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		7	7
G	Traffic		7	7
H	Pedestrian		7	7
I	Traffic		7	7
J	Pedestrian		7	7
K	Traffic		7	7

Full Input Data And Results

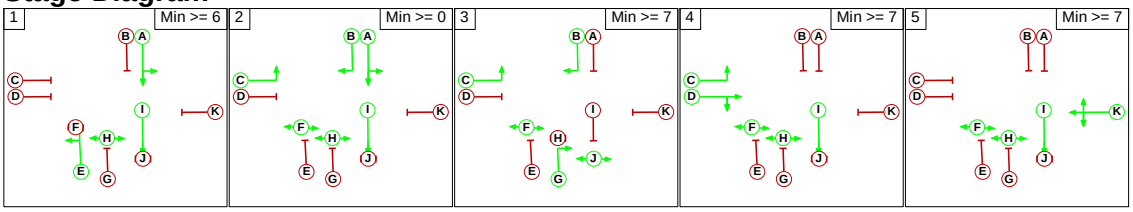
Phase Intergreens Matrix

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

Phases in Stage

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

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	3	4	5
From Stage	1		7	7	7	6
	2	7		7	6	7
	3	7	7		8	7
	4	8	8	7		7
	5	7	7	7	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2030 Eastern Road / Burfields Road signalised junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	U	K	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Left	15.00
											Arm 4 Ahead	Inf
											Arm 6 Right	15.00
2/1 (A2030 Eastern Road south exit)	U	I	2	3	3.1	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
2/2 (A2030 Eastern Road south exit)	U	I	2	3	3.1	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
3/1 (A2030 Eastern Road south entry)	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Left	Inf
											Arm 6 Ahead	Inf
3/2 (A2030 Eastern Road south entry)	U	G	2	3	12.2	Geom	-	3.50	0.00	Y	Arm 8 Right	10.00
4/1 (Burrfields Road exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Burrfields Road entry)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Left	12.00
5/2 (Burrfields Road entry)	U	D	2	3	7.8	Geom	-	3.25	0.00	Y	Arm 2 Right	15.00
											Arm 8 Ahead	Inf
6/1 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
											Arm 8 Left	15.00
7/2 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
7/3 (A2030 Eastern Road north entry)	U	B	2	3	12.2	Geom	-	3.00	0.00	Y	Arm 4 Right	12.00
8/1 (Great Salterns exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

9/1 (A2030 Eastern Road south exit 2)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (A2030 Eastern Road south exit 2)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'EML - DS2 AM'	08:00	09:00	01:00	
2: 'EML - DS2 IP'	13:00	14:00	01:00	
3: 'EML - DS2 PM'	17:00	18:00	01:00	

Scenario 1: 'EML - DS2 AM' (FG1: 'EML - DS2 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	302	1234	1536
	C	0	74	0	0	74
	D	0	1278	342	0	1620
	Tot.	0	1352	644	1234	3230

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: EML - DS2 AM
Junction: A2030 Eastern Road / Burfields Road signalised junction	
1/1	0
2/1	1184
2/2	168
3/1 (with short)	1536(In) 1536(Out)
3/2 (short)	0
4/1	644
5/1 (with short)	74(In) 0(Out)
5/2 (short)	74
6/1	1234
7/1	1170
7/2 (with short)	450(In) 108(Out)
7/3 (short)	342
8/1	0
9/1	1184
9/2	168

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	3.00	0.00	Y	Arm 2 Left	15.00	0.0 %	1915	1915
				Arm 4 Ahead	Inf	0.0 %		
				Arm 6 Right	15.00	0.0 %		
2/1 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
2/2 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	Inf	19.7 %	1965	1965
				Arm 6 Ahead	Inf	80.3 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 8 Right	10.00	0.0 %	1965	1965
4/1 (Burrfields Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Burrfields Road entry)	3.25	0.00	Y	Arm 6 Left	12.00	0.0 %	1940	1940
5/2 (Burrfields Road entry)	3.25	0.00	Y	Arm 2 Right	15.00	100.0 %	1764	1764
				Arm 8 Ahead	Inf	0.0 %		
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
				Arm 8 Left	15.00	0.0 %		
7/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
7/3 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 4 Right	12.00	100.0 %	1702	1702
8/1 (Great Salterns exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A2030 Eastern Road south exit 2 Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A2030 Eastern Road south exit 2 Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: 'EML - DS2 IP' (FG2: 'EML - DS2 IP', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	0	0	0	0
	B	0	0	124	1049	1173
	C	0	102	0	17	119
	D	0	1517	269	0	1786
	Tot.	0	1619	393	1066	3078

Traffic Lane Flows

Lane	Scenario 2: EML - DS2 IP
Junction: A2030 Eastern Road / Burfields Road signalised junction	
1/1	0
2/1	1064
2/2	555
3/1 (with short)	1173(In) 1173(Out)
3/2 (short)	0
4/1	393
5/1 (with short)	119(In) 17(Out)
5/2 (short)	102
6/1	1066
7/1	1025
7/2 (with short)	761(In) 492(Out)
7/3 (short)	269
8/1	0
9/1	1064
9/2	555

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	3.00	0.00	Y	Arm 2 Left	15.00	0.0 %	1915	1915
				Arm 4 Ahead	Inf	0.0 %		
				Arm 6 Right	15.00	0.0 %		
2/1 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
2/2 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	Inf	10.6 %	1965	1965
				Arm 6 Ahead	Inf	89.4 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 8 Right	10.00	0.0 %	1965	1965
4/1 (Burrfields Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Burrfields Road entry)	3.25	0.00	Y	Arm 6 Left	12.00	100.0 %	1724	1724
5/2 (Burrfields Road entry)	3.25	0.00	Y	Arm 2 Right	15.00	100.0 %	1764	1764
				Arm 8 Ahead	Inf	0.0 %		
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
				Arm 8 Left	15.00	0.0 %		
7/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
7/3 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 4 Right	12.00	100.0 %	1702	1702
8/1 (Great Salterns exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A2030 Eastern Road south exit 2 Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A2030 Eastern Road south exit 2 Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'EML - DS2 PM' (FG3: 'EML - DS2 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	0	0	0	0
	B	0	0	65	1123	1188
	C	0	180	0	41	221
	D	0	2024	176	0	2200
	Tot.	0	2204	241	1164	3609

Traffic Lane Flows

Lane	Scenario 3: EML - DS2 PM
Junction: A2030 Eastern Road / Burfields Road signalised junction	
1/1	0
2/1	1145
2/2	1059
3/1 (with short)	1188(In) 1188(Out)
3/2 (short)	0
4/1	241
5/1 (with short)	221(In) 41(Out)
5/2 (short)	180
6/1	1164
7/1	1076
7/2 (with short)	1124(In) 948(Out)
7/3 (short)	176
8/1	0
9/1	1145
9/2	1059

Full Input Data And Results

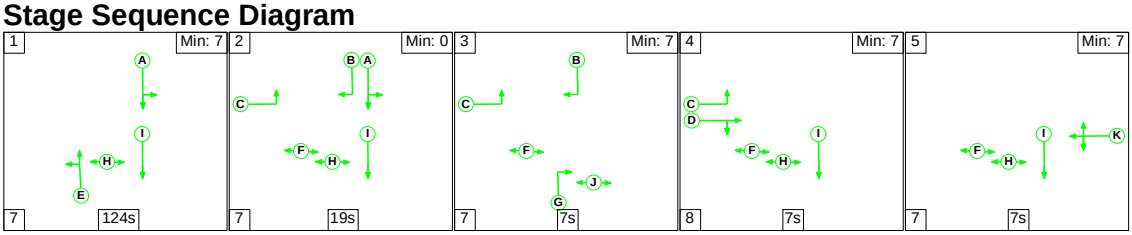
Lane Saturation Flows

Junction: A2030 Eastern Road / Burfields Road signalised 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 (Great Salterns entry)	3.00	0.00	Y	Arm 2 Left	15.00	0.0 %	1915	1915
				Arm 4 Ahead	Inf	0.0 %		
				Arm 6 Right	15.00	0.0 %		
2/1 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
2/2 (A2030 Eastern Road south exit)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	Inf	5.5 %	1965	1965
				Arm 6 Ahead	Inf	94.5 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 8 Right	10.00	0.0 %	1965	1965
4/1 (Burrfields Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Burrfields Road entry)	3.25	0.00	Y	Arm 6 Left	12.00	100.0 %	1724	1724
5/2 (Burrfields Road entry)	3.25	0.00	Y	Arm 2 Right	15.00	100.0 %	1764	1764
				Arm 8 Ahead	Inf	0.0 %		
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
				Arm 8 Left	15.00	0.0 %		
7/2 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915	1915
7/3 (A2030 Eastern Road north entry)	3.00	0.00	Y	Arm 4 Right	12.00	100.0 %	1702	1702
8/1 (Great Salterns exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A2030 Eastern Road south exit 2 Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A2030 Eastern Road south exit 2 Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'EML - DS2 AM' (FG1: 'EML - DS2 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

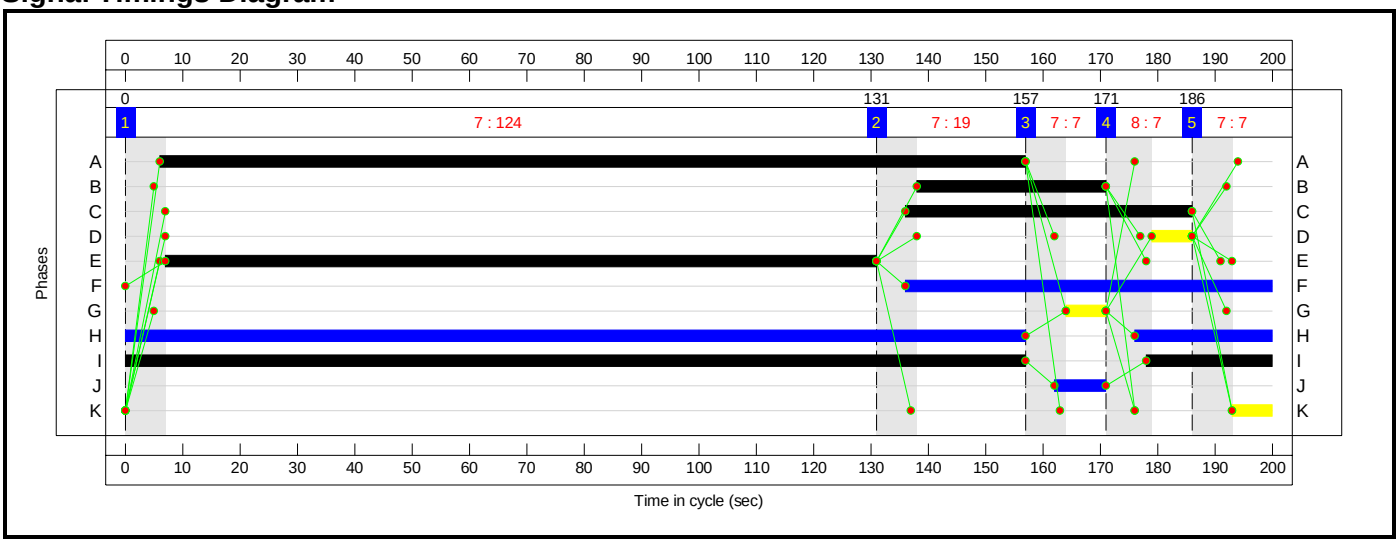


Full Input Data And Results

Stage Timings

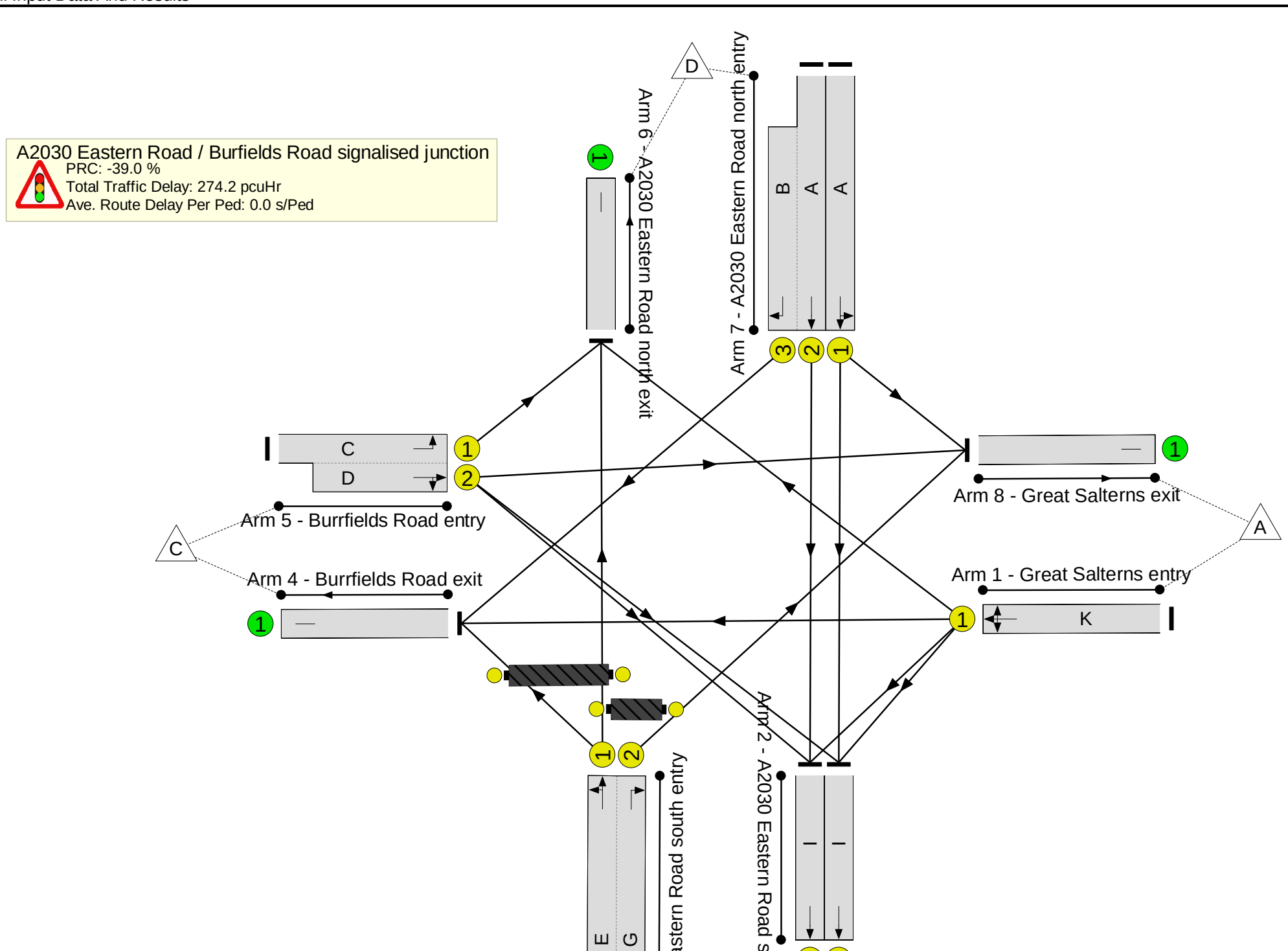
Stage	1	2	3	4	5
Duration	124	19	7	7	7
Change Point	0	131	157	171	186

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A2030 Eastern Road / Burfields Road signalised junction
PRC: -39.0 %
Total Traffic Delay: 274.2 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Arm 6 - A2030 Eastern Road north exit
Arm 7 - A2030 Eastern Road north entry
Arm 5 - Burrfields Road entry
Arm 8 - Great Salterns exit
Arm 4 - Burrfields Road exit
Arm 1 - Great Salterns entry
Arm 3 - A2030 Eastern Road south entry
Arm 2 - A2030 Eastern Road south exit
A
B
C
D
E
G
I
K

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**	-	-		-	-	-	-	-	-	**125.1%**
A2030 Eastern Road / Burfields Road signalised junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**125.1%**
1/1	Great Salterns entry Left Ahead Right	U	N/A	N/A	K		1	7	-	0	1915	77	0.0%
2/1	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1184	1915	1724	68.7%
2/2	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	168	1915	1724	8.4%
3/1+3/2	A2030 Eastern Road south entry Left Ahead Right	U	N/A	N/A	E G		1	124:7	-	1536	1965:1965	1228+0	125.1 : 0.0%
4/1	Burrfields Road exit	U	N/A	N/A	-		-	-	-	644	Inf	Inf	0.0%
5/1+5/2	Burrfields Road entry Right Left Ahead	U	N/A	N/A	C D		1	50:7	-	74	1940:1764	0+71	0.0 : 104.9%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1234	Inf	Inf	0.0%
7/1	A2030 Eastern Road north entry Ahead Left	U	N/A	N/A	A		1	151	-	1170	1915	1455	80.4%
7/2+7/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A B		1	151:33	-	450	1915:1702	88+278	122.9 : 122.9%
8/1	Great Salterns exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
9/1	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1184	Inf	Inf	0.0%
9/2	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	168	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	J		1	9	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	181	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	64	-	0	-	0	0.0%

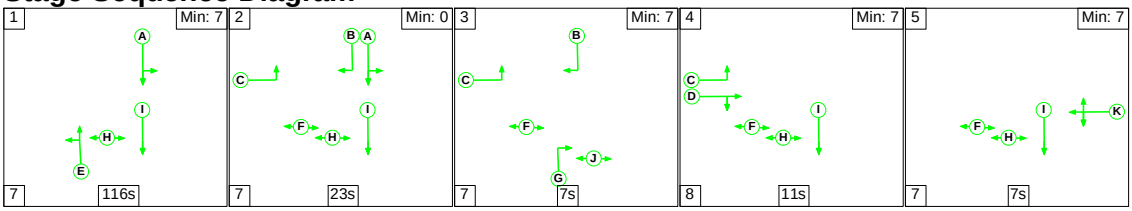
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**64.9**	**209.2**	**0.0**	**274.2**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**0**	**0**	**0**	**64.9**	**209.2**	**0.0**	**274.2**	**-**	**-**	**-**	**-**
1/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/1	1183	1183	-	-	-	0.1	1.1	-	1.2	3.6	0.9	1.1	2.0
2/2	145	145	-	-	-	0.0	0.0	-	0.0	1.1	0.0	0.0	0.0
3/1+3/2	1536	1228	-	-	-	44.1	156.4	-	200.5	470.0	106.7	156.4	263.1
4/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	74	71	-	-	-	2.2	5.2	-	7.4	361.2	4.3	5.2	9.5
6/1	987	987	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1170	1170	-	-	-	4.8	2.0	-	6.8	21.0	40.0	2.0	42.0
7/2+7/3	450	366	-	-	-	13.7	44.4	-	58.2	465.3	27.4	44.4	71.9
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1183	1183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	145	145	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -39.0 PRC Over All Lanes (%): -39.0 Total Delay for Signalled Lanes (pcuHr): 274.17 Total Delay Over All Lanes(pcuHr): 274.17 Cycle Time (s): 200

Full Input Data And Results

Scenario 2: 'EML - DS2 IP' (FG2: 'EML - DS2 IP', Plan 1: 'Network Control Plan 1')

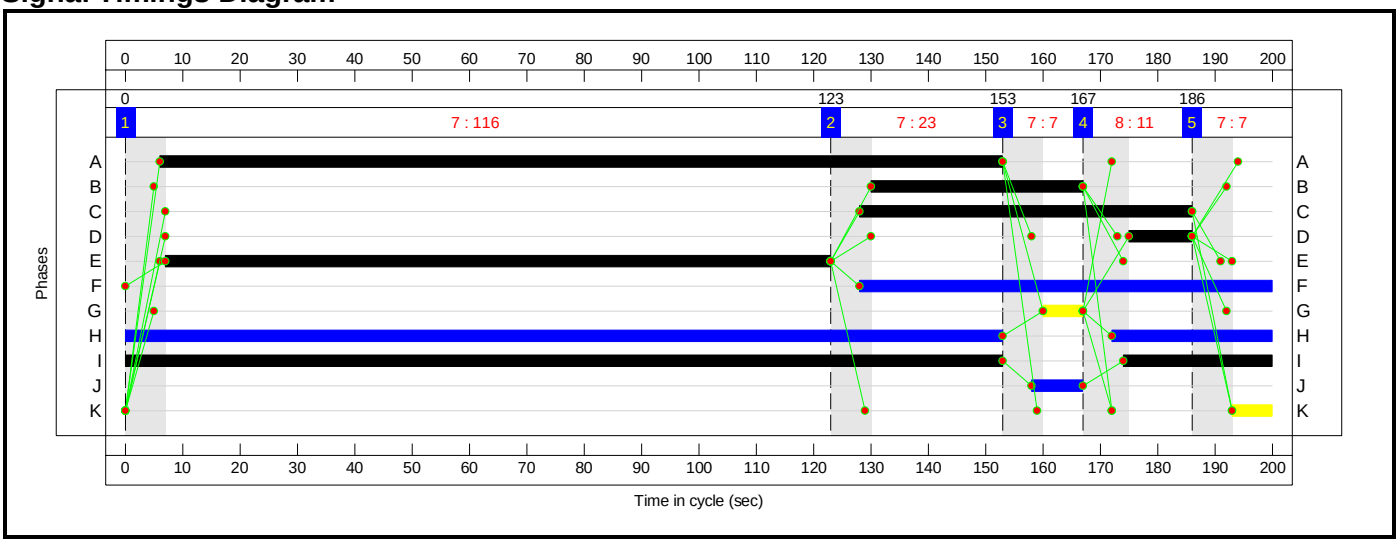
Stage Sequence Diagram



Stage Timings

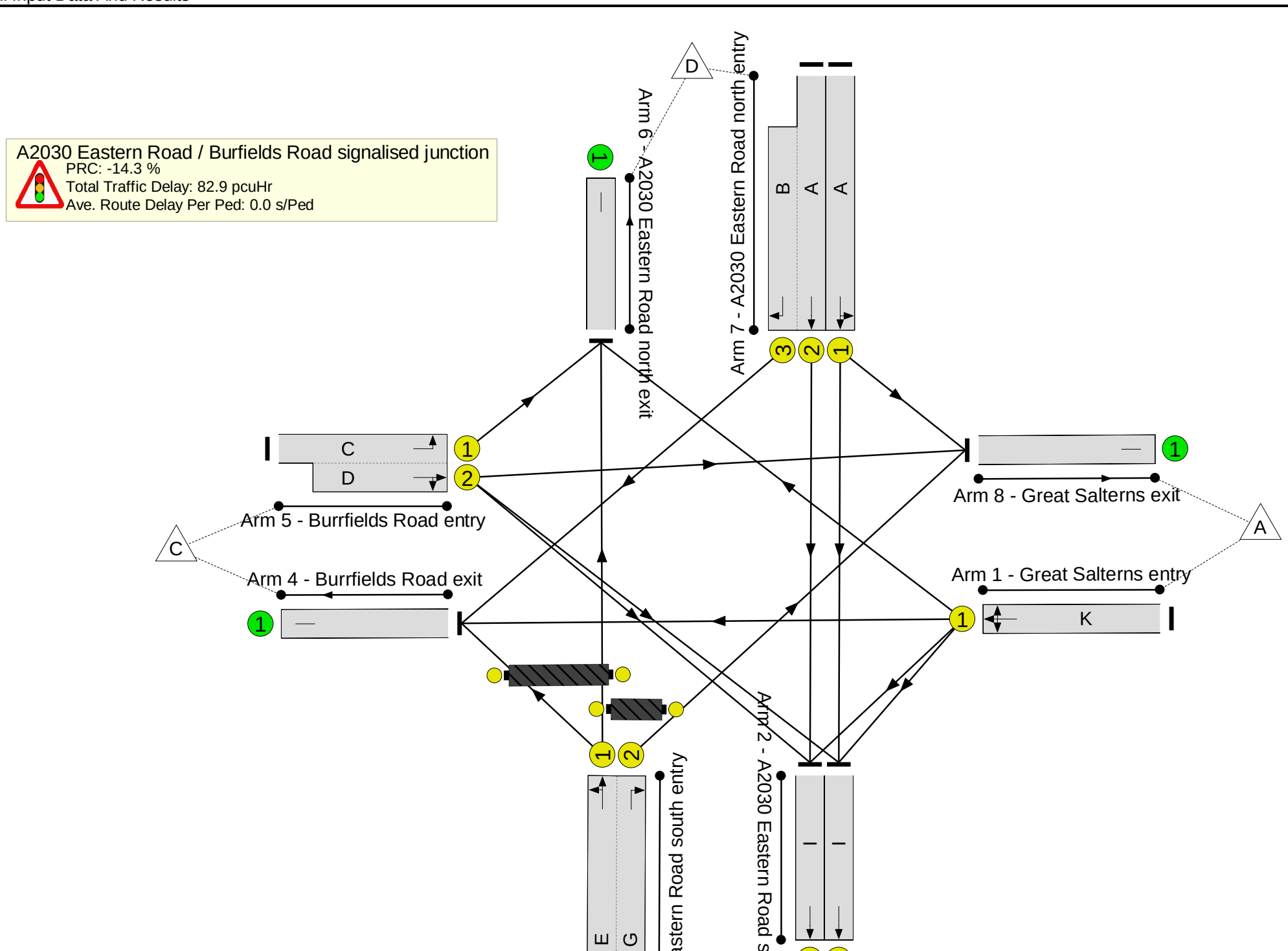
Stage	1	2	3	4	5
Duration	116	23	7	11	7
Change Point	0	123	153	167	186

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A2030 Eastern Road / Burfields Road signalised junction
PRC: -14.3 %
Total Traffic Delay: 82.9 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Arm 6 - A2030 Eastern Road north exit
Arm 7 - A2030 Eastern Road north entry
Arm 5 - Burrfields Road entry
Arm 8 - Great Salterns exit
Arm 4 - Burrfields Road exit
Arm 1 - Great Salterns entry
Arm 3 - A2030 Eastern Road south entry
Arm 2 - A2030 Eastern Road south exit
A
B
C
D
E
G
I
K

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**	-	-		-	-	-	-	-	-	**102.9%**
A2030 Eastern Road / Burfields Road signalised junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.9%**
1/1	Great Salterns entry Left Ahead Right	U	N/A	N/A	K		1	7	-	0	1915	77	0.0%
2/1	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1064	1915	1724	61.7%
2/2	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	555	1915	1724	31.4%
3/1+3/2	A2030 Eastern Road south entry Left Ahead Right	U	N/A	N/A	E G		1	116:7	-	1173	1965:1965	1150+0	102.0 : 0.0%
4/1	Burrfields Road exit	U	N/A	N/A	-		-	-	-	393	Inf	Inf	0.0%
5/1+5/2	Burrfields Road entry Right Left Ahead	U	N/A	N/A	C D		1	58:11	-	119	1724:1764	18+106	96.4 : 96.4%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1066	Inf	Inf	0.0%
7/1	A2030 Eastern Road north entry Ahead Left	U	N/A	N/A	A		1	147	-	1025	1915	1417	72.3%
7/2+7/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A B		1	147:37	-	761	1915:1702	478+261	102.9 : 102.9%
8/1	Great Salterns exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
9/1	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1064	Inf	Inf	0.0%
9/2	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	555	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	J		1	9	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	181	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	72	-	0	-	0	0.0%

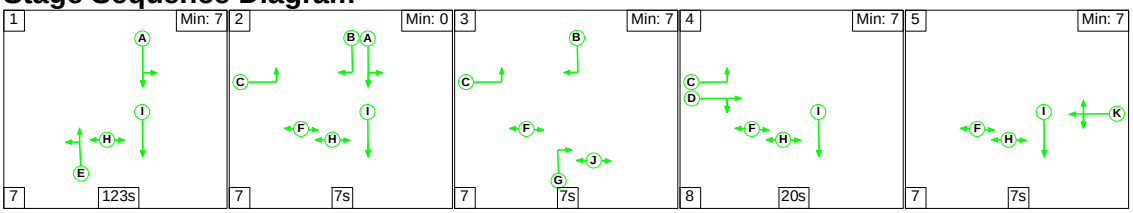
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**32.1**	**50.9**	**0.0**	**82.9**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**0**	**0**	**0**	**32.1**	**50.9**	**0.0**	**82.9**	**-**	**-**	**-**	**-**
1/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/1	1064	1064	-	-	-	0.1	0.8	-	0.9	3.0	0.8	0.8	1.6
2/2	541	541	-	-	-	0.0	0.2	-	0.3	1.7	0.3	0.2	0.5
3/1+3/2	1173	1150	-	-	-	15.7	24.0	-	39.7	121.7	69.7	24.0	93.7
4/1	383	383	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	119	119	-	-	-	2.9	4.4	-	7.3	222.1	5.6	4.4	10.1
6/1	1045	1045	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1025	1025	-	-	-	4.1	1.3	-	5.4	19.1	31.6	1.3	32.9
7/2+7/3	761	740	-	-	-	9.2	20.1	-	29.4	138.9	22.8	20.1	42.9
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1064	1064	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	541	541	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -14.3 Total Delay for Signalled Lanes (pcuHr): 82.93 Cycle Time (s): 200
PRC Over All Lanes (%): -14.3 Total Delay Over All Lanes(pcuHr): 82.93

Full Input Data And Results

Scenario 3: 'EML - DS2 PM' (FG3: 'EML - DS2 PM', Plan 1: 'Network Control Plan 1')

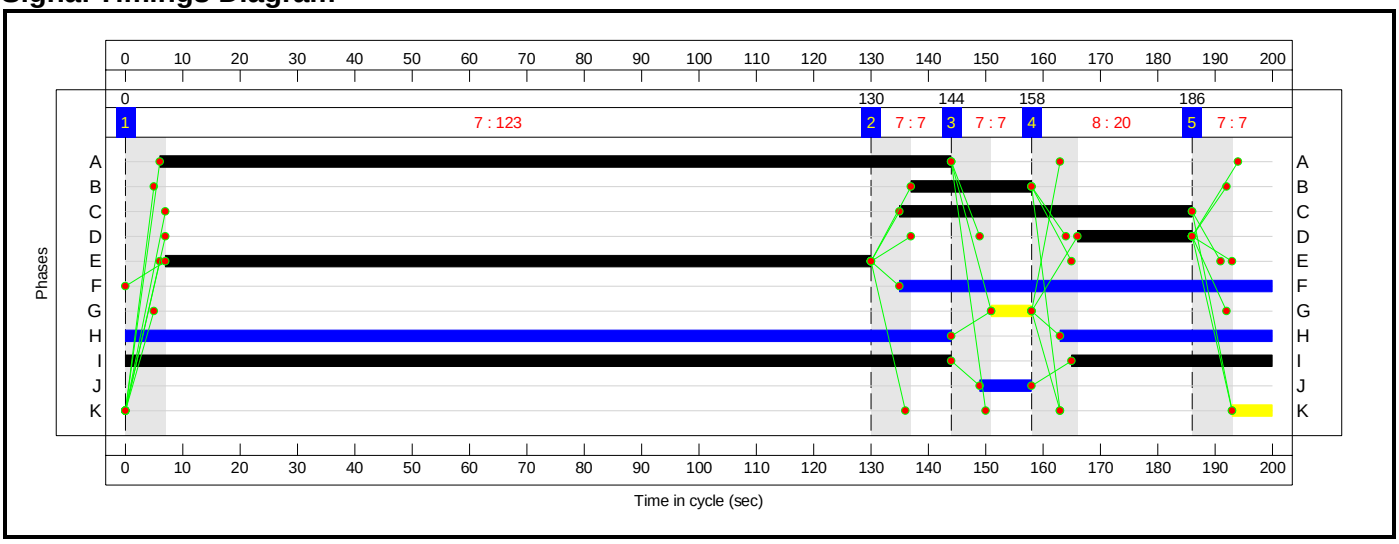
Stage Sequence Diagram



Stage Timings

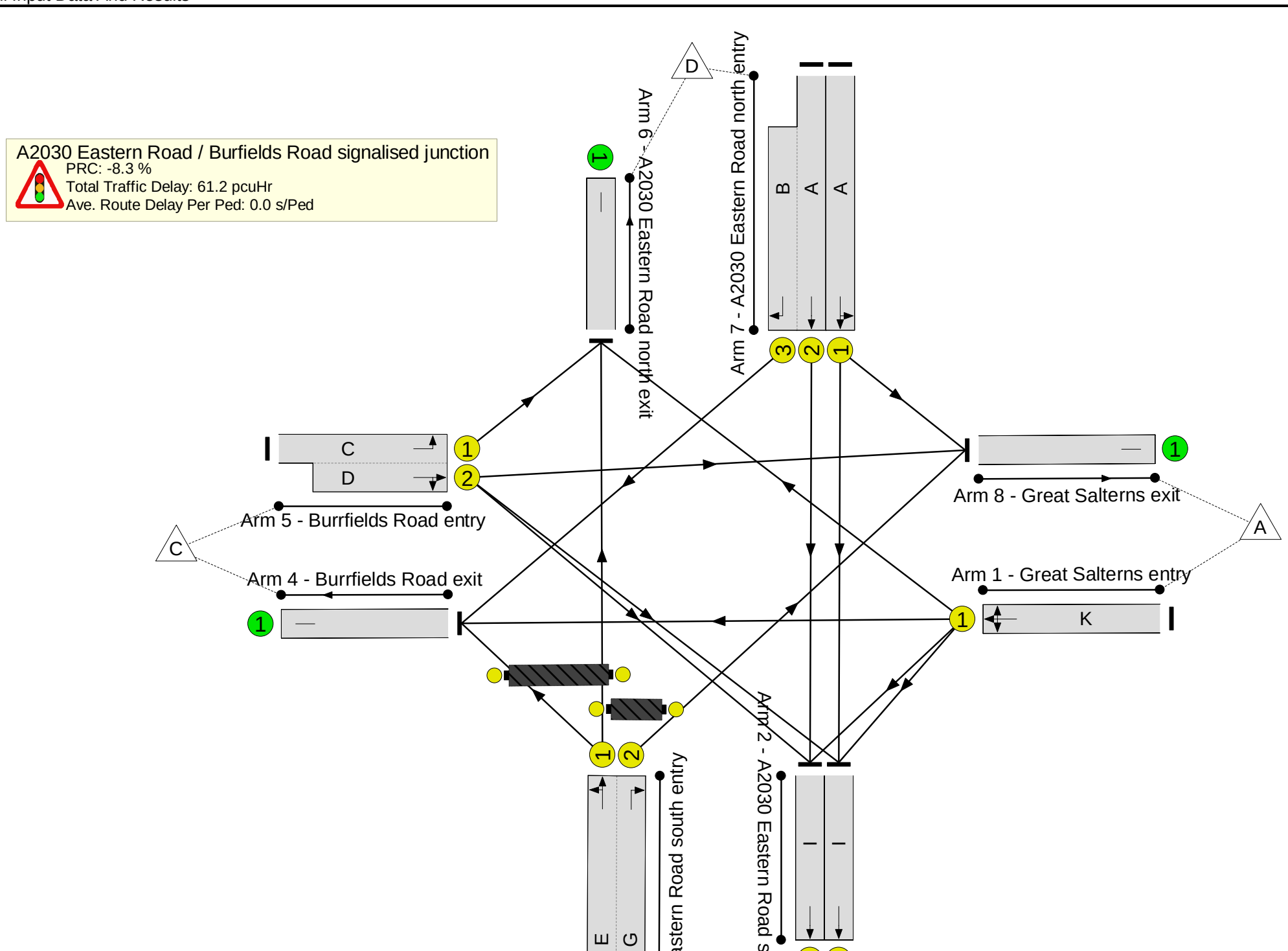
Stage	1	2	3	4	5
Duration	123	7	7	20	7
Change Point	0	130	144	158	186

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A2030 Eastern Road / Burfields Road signalised junction
PRC: -8.3 %
Total Traffic Delay: 61.2 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Arm 6 - A2030 Eastern Road north exit
Arm 7 - A2030 Eastern Road north entry
Arm 5 - Burrfields Road entry
Arm 8 - Great Salterns exit
Arm 4 - Burrfields Road exit
Arm 1 - Great Salterns entry
Arm 3 - A2030 Eastern Road south entry
Arm 2 - A2030 Eastern Road south exit
A
B
C
D
E
G
I
K

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**	-	-		-	-	-	-	-	-	**97.5%**
A2030 Eastern Road / Burfields Road signalised junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.5%**
1/1	Great Salterns entry Left Ahead Right	U	N/A	N/A	K		1	7	-	0	1915	77	0.0%
2/1	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1145	1915	1724	66.4%
2/2	A2030 Eastern Road south exit Ahead	U	N/A	N/A	I		1	179	-	1059	1915	1724	61.4%
3/1+3/2	A2030 Eastern Road south entry Left Ahead Right	U	N/A	N/A	E G		1	123:7	-	1188	1965:1965	1218+0	97.5 : 0.0%
4/1	Burrfields Road exit	U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%
5/1+5/2	Burrfields Road entry Right Left Ahead	U	N/A	N/A	C D		1	51:20	-	221	1724:1764	42+185	97.3 : 97.3%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1164	Inf	Inf	0.0%
7/1	A2030 Eastern Road north entry Ahead Left	U	N/A	N/A	A		1	138	-	1076	1915	1331	80.8%
7/2+7/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A B		1	138:21	-	1124	1915:1702	1008+187	94.0 : 94.0%
8/1	Great Salterns exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
9/1	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1145	Inf	Inf	0.0%
9/2	A2030 Eastern Road south exit 2	U	N/A	N/A	-		-	-	-	1059	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	J		1	9	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	181	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	65	-	0	-	0	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	**-**	**-**	**0**	**0**	**0**	**33.4**	**27.8**	**0.0**	**61.2**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Burfields Road signalised junction	**-**	**-**	**0**	**0**	**0**	**33.4**	**27.8**	**0.0**	**61.2**	**-**	**-**	**-**	**-**
1/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/1	1145	1145	-	-	-	0.1	1.0	-	1.1	3.3	0.8	1.0	1.8
2/2	1059	1059	-	-	-	0.1	0.8	-	0.9	2.9	0.7	0.8	1.5
3/1+3/2	1188	1188	-	-	-	12.1	11.3	-	23.3	70.6	63.4	11.3	74.6
4/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	221	221	-	-	-	5.2	6.1	-	11.2	182.6	10.5	6.1	16.6
6/1	1164	1164	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1076	1076	-	-	-	6.3	2.1	-	8.4	28.2	41.5	2.1	43.6
7/2+7/3	1124	1124	-	-	-	9.7	6.6	-	16.3	52.2	41.4	6.6	48.1
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1145	1145	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	1059	1059	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-

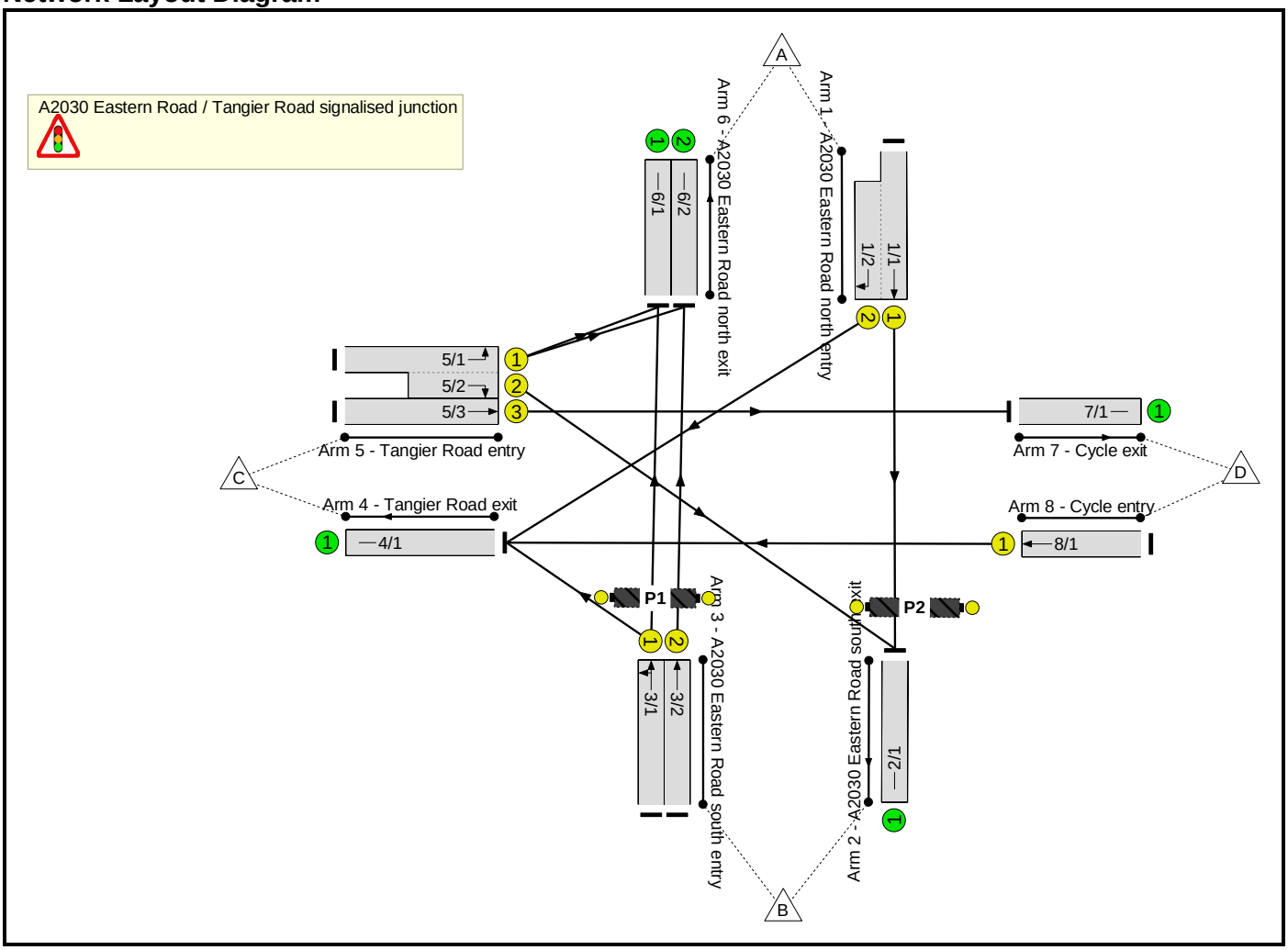
C1 PRC for Signalled Lanes (%): -8.3 Total Delay for Signalled Lanes (pcuHr): 61.16 Cycle Time (s): 200
PRC Over All Lanes (%): -8.3 Total Delay Over All Lanes(pcuHr): 61.16

Full Input Data And Results

User and Project Details

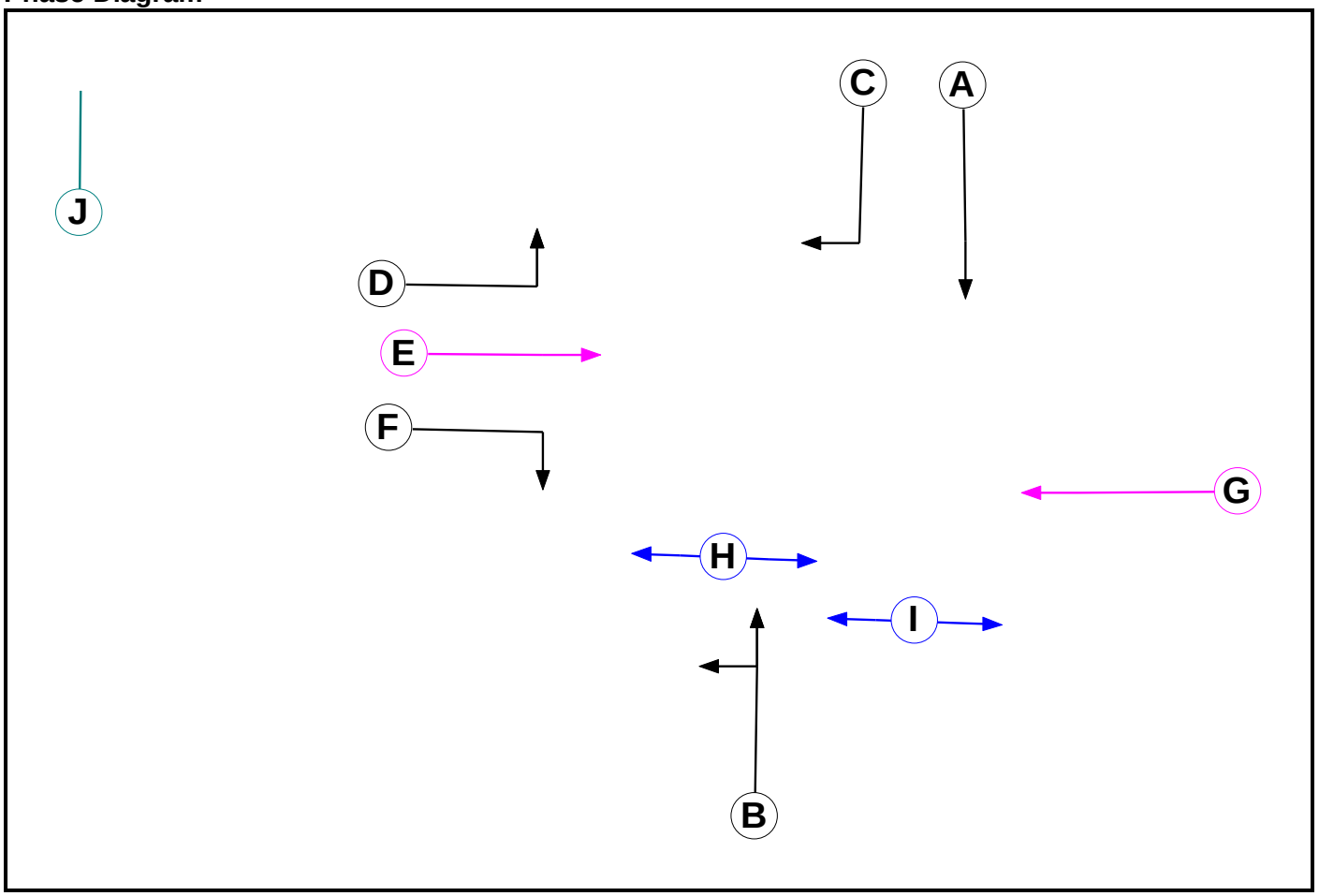
Project:	
Title:	
Location:	
Additional detail:	
File name:	Eastern Rd Contra Southbound - Update (DS1).lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Cycle		7	7
F	Traffic		7	7
G	Cycle		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Dummy		3	3

Full Input Data And Results

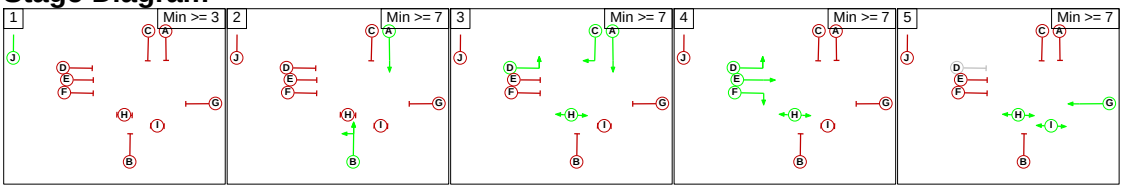
Phase Intergreens Matrix

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

Phases in Stage

Stage No.	Phases in Stage
1	J
2	A B
3	A C D H
4	D E F H
5	G H I

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage \ To Stage	1	2	3	4	5
1		2	2	2	2
2	3		7	7	9
3	3	8		8	9
4	3	8	8		10
5	3	8	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2030 Eastern Road / Tangier Road signalised junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A2030 Eastern Road / Tangier Road signalised 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 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
1/2 (A2030 Eastern Road north entry)	U	C	2	3	14.8	Geom	-	3.50	0.00	Y	Arm 4 Right	12.00
2/1 (A2030 Eastern Road south exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A2030 Eastern Road south entry)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Left	12.00
											Arm 6 Ahead	Inf
3/2 (A2030 Eastern Road south entry)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Ahead	Inf
4/1 (Tangier Road exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Tangier Road entry)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	10.00
5/2 (Tangier Road entry)	U	F	2	3	5.2	Geom	-	3.50	0.00	Y	Arm 2 Right	10.00
5/3 (Tangier Road entry)	U	E	2	3	17.4	Geom	-	2.00	0.00	Y	Arm 7 Ahead	Inf
6/1 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Cycle exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Cycle entry)	U	G	2	3	60.0	Geom	-	2.00	0.00	Y	Arm 4 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'EMM - DS1 AM'	08:00	09:00	01:00	
2: 'EMM - DS1 PM'	17:00	18:00	01:00	

Scenario 1: 'EMM - DS1 AM' (FG1: 'EMM - DS1 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	1113	35	0	1148
	B	1434	0	9	0	1443
	C	131	3	0	0	134
	D	0	0	0	0	0
	Tot.	1565	1116	44	0	2725

Traffic Lane Flows

Lane	Scenario 1: EMM - DS1 AM
Junction: A2030 Eastern Road / Tangier Road signalised junction	
1/1 (with short)	1148(In) 1113(Out)
1/2 (short)	35
2/1	1116
3/1	721
3/2	722
4/1	44
5/1 (with short)	134(In) 131(Out)
5/2 (short)	3
5/3	0
6/1	778
6/2	787
7/1	0
8/1	0

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Tangier Road signalised 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 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
1/2 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 4 Right	12.00	100.0 %	1747	1747
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	12.00	1.2 %	1962	1962
				Arm 6 Ahead	Inf	98.8 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
4/1 (Tangier Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Tangier Road entry)	3.50	0.00	Y	Arm 6 Left	10.00	100.0 %	1709	1709
5/2 (Tangier Road entry)	3.50	0.00	Y	Arm 2 Right	10.00	100.0 %	1709	1709
5/3 (Tangier Road entry)	2.00	0.00	Y	Arm 7 Ahead	Inf	0.0 %	1815	1815
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Cycle exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Cycle entry)	2.00	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1815	1815

Scenario 2: 'EMM - DS1 PM' (FG2: 'EMM - DS1 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	1399	143	0	1542
	B	854	0	7	0	861
	C	189	3	0	0	192
	D	0	0	0	0	0
	Tot.	1043	1402	150	0	2595

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: EMM - DS1 PM
Junction: A2030 Eastern Road / Tangier Road signalised junction	
1/1 (with short)	1542(In) 1399(Out)
1/2 (short)	143
2/1	1402
3/1	430
3/2	431
4/1	150
5/1 (with short)	192(In) 189(Out)
5/2 (short)	3
5/3	0
6/1	518
6/2	525
7/1	0
8/1	0

Full Input Data And Results

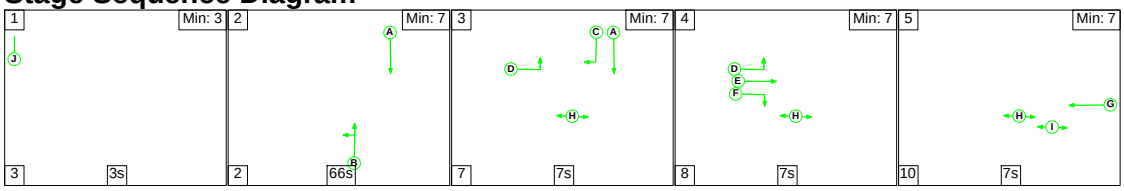
Lane Saturation Flows

Junction: A2030 Eastern Road / Tangier Road signalised 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 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
1/2 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 4 Right	12.00	100.0 %	1747	1747
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	12.00	1.6 %	1961	1961
				Arm 6 Ahead	Inf	98.4 %		
3/2 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
4/1 (Tangier Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Tangier Road entry)	3.50	0.00	Y	Arm 6 Left	10.00	100.0 %	1709	1709
5/2 (Tangier Road entry)	3.50	0.00	Y	Arm 2 Right	10.00	100.0 %	1709	1709
5/3 (Tangier Road entry)	2.00	0.00	Y	Arm 7 Ahead	Inf	0.0 %	1815	1815
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A2030 Eastern Road north exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Cycle exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Cycle entry)	2.00	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1815	1815

Scenario 1: 'EMM - DS1 AM' (FG1: 'EMM - DS1 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

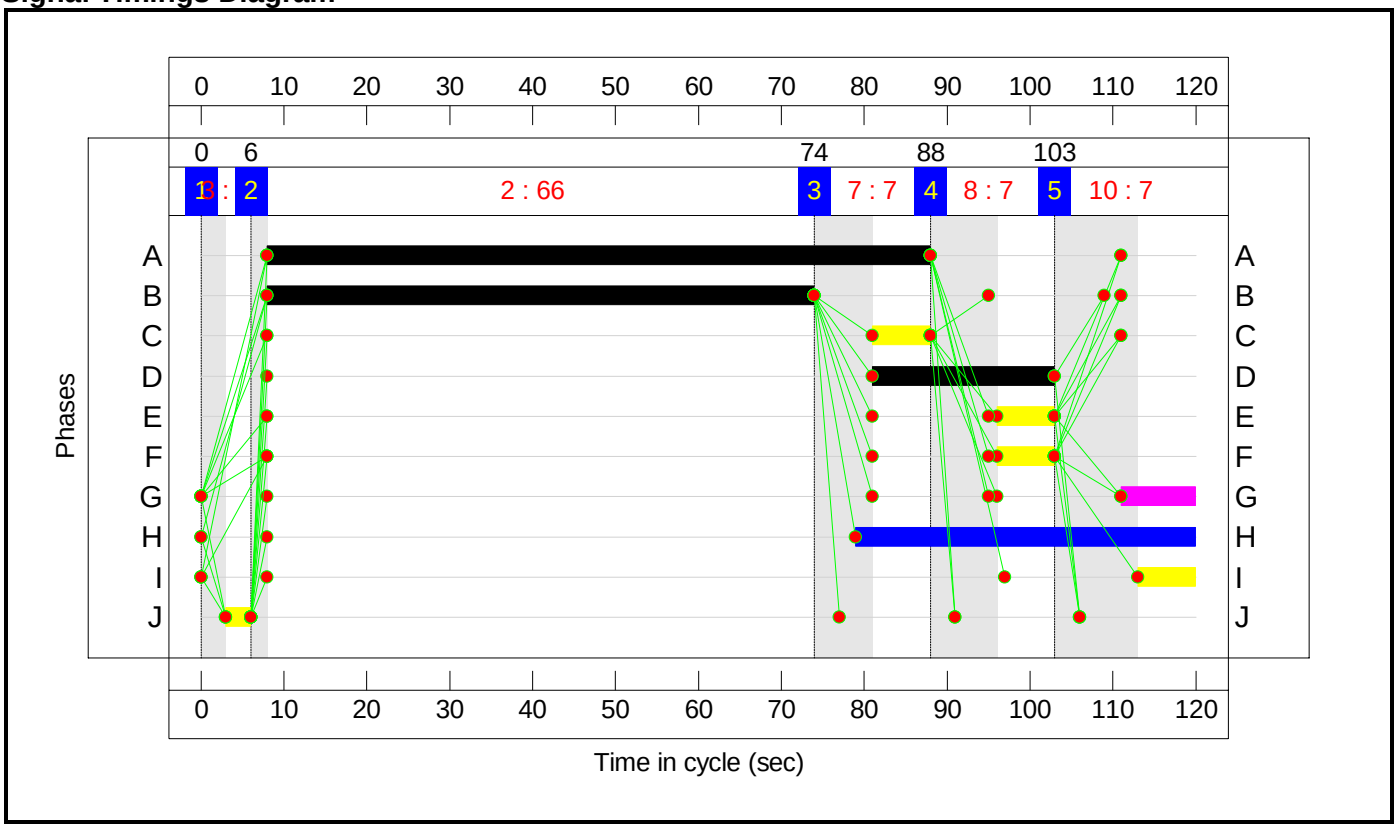


Stage Timings

Stage	1	2	3	4	5
Duration	3	66	7	7	7
Change Point	0	6	74	88	103

Full Input Data And Results

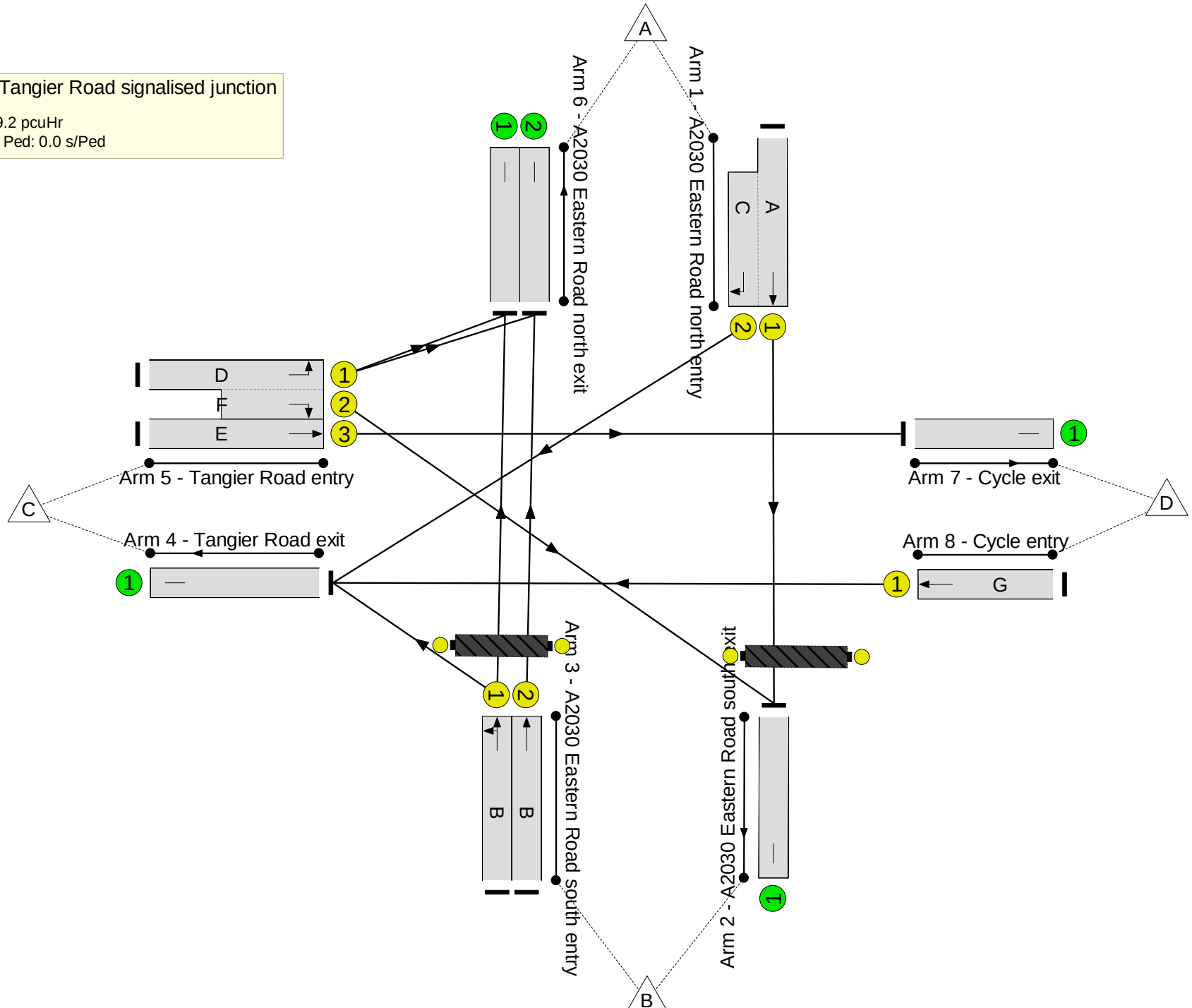
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Tangier Road signalised junction
PRC: 5.2 %
Total Traffic Delay: 19.2 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.5%**
A2030 Eastern Road / Tangier Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.5%**
1/1+1/2	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	80:7	-	1148	1965:1747	1342	85.5%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1116	Inf	Inf	0.0%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B		1	66	-	721	1962	1095	65.8%
3/2	A2030 Eastern Road south entry Ahead	U	N/A	N/A	B		1	66	-	722	1965	1097	65.8%
4/1	Tangier Road exit	U	N/A	N/A	-		-	-	-	44	Inf	Inf	0.0%
5/1+5/2	Tangier Road entry Right Left	U	N/A	N/A	D F		1	22:7	-	134	1709:1709	328	40.9%
5/3	Tangier Road entry Ahead	U	N/A	N/A	E		1	7	-	0	1815	121	0.0%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	778	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	787	Inf	Inf	0.0%
7/1	Cycle exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
8/1	Cycle entry Ahead	U	N/A	N/A	G		1	9	-	0	1815	151	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	41	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

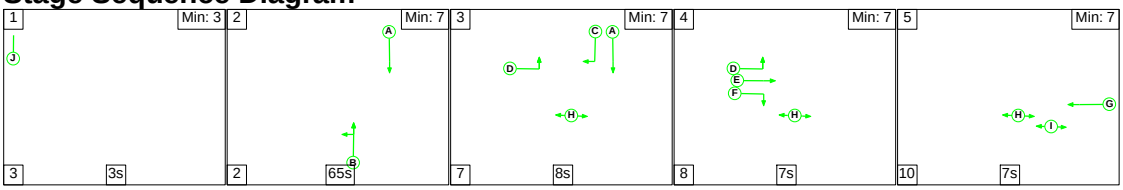
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**14.1**	**5.1**	**0.0**	**19.2**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Tangier Road signalised junction	**-**	**-**	**0**	**0**	**0**	**14.1**	**5.1**	**0.0**	**19.2**	**-**	**-**	**-**	**-**
1/1+1/2	1148	1148	-	-	-	5.1	2.9	-	7.9	24.9	28.6	2.9	31.4
2/1	1116	1116	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	721	721	-	-	-	3.7	1.0	-	4.7	23.3	16.6	1.0	17.6
3/2	722	722	-	-	-	3.7	1.0	-	4.7	23.3	16.6	1.0	17.6
4/1	44	44	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	134	134	-	-	-	1.6	0.3	-	1.9	52.0	3.8	0.3	4.2
5/3	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	778	778	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	787	787	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 5.2 Total Delay for Signalled Lanes (pcuHr): 19.19 Cycle Time (s): 120
PRC Over All Lanes (%): 5.2 Total Delay Over All Lanes(pcuHr): 19.19

Full Input Data And Results

Scenario 2: 'EMM - DS1 PM' (FG2: 'EMM - DS1 PM', Plan 1: 'Network Control Plan 1')

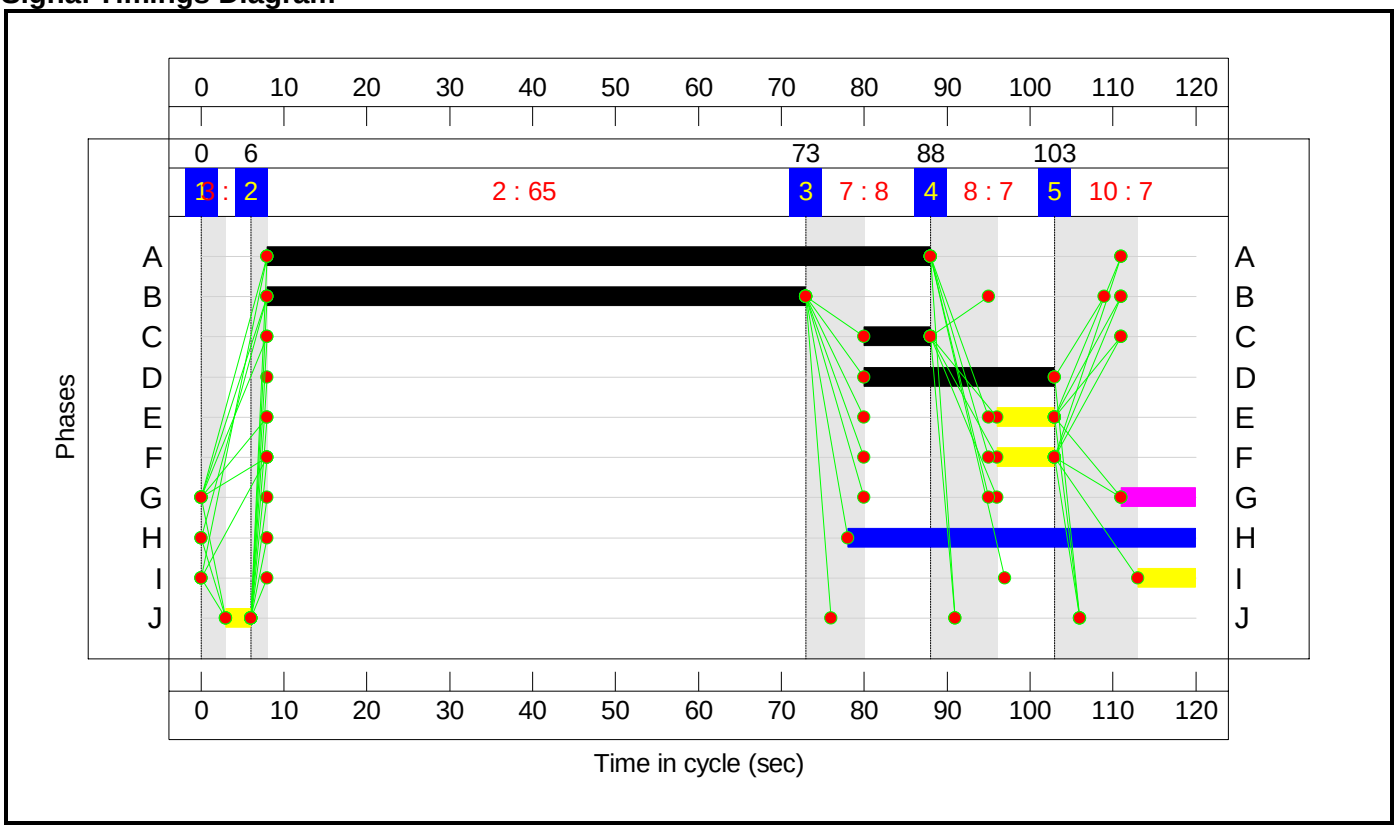
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	3	65	8	7	7
Change Point	0	6	73	88	103

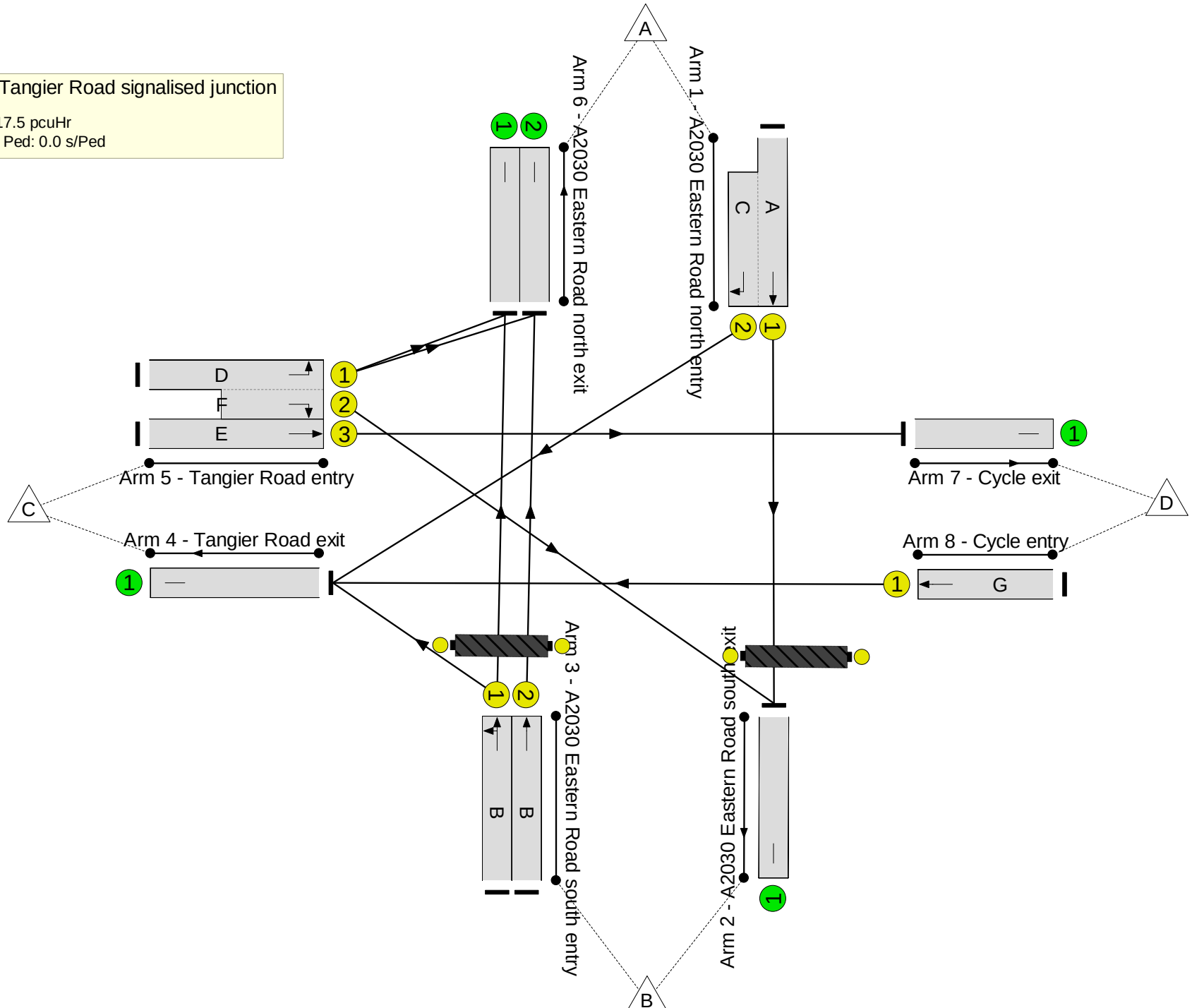
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

A2030 Eastern Road / Tangier Road signalised junction
PRC: -25.3 %
Total Traffic Delay: 117.5 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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**	-	-		-	-	-	-	-	-	**112.8%**
A2030 Eastern Road / Tangier Road signalised junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**112.8%**
1/1+1/2	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	80:8	-	1542	1965:1747	1367	112.8%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1402	Inf	Inf	0.0%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B		1	65	-	430	1961	1079	39.9%
3/2	A2030 Eastern Road south entry Ahead	U	N/A	N/A	B		1	65	-	431	1965	1081	39.9%
4/1	Tangier Road exit	U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
5/1+5/2	Tangier Road entry Right Left	U	N/A	N/A	D F		1	23:7	-	192	1709:1709	341	56.3%
5/3	Tangier Road entry Ahead	U	N/A	N/A	E		1	7	-	0	1815	121	0.0%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
6/2	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	525	Inf	Inf	0.0%
7/1	Cycle exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
8/1	Cycle entry Ahead	U	N/A	N/A	G		1	9	-	0	1815	151	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	42	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**24.6**	**93.0**	**0.0**	**117.5**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Tangier Road signalised junction	**-**	**-**	**0**	**0**	**0**	**24.6**	**93.0**	**0.0**	**117.5**	**-**	**-**	**-**	**-**
1/1+1/2	1542	1367	-	-	-	18.5	91.7	-	110.2	257.3	60.9	91.7	152.5
2/1	1243	1243	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	430	430	-	-	-	1.9	0.3	-	2.2	18.3	8.2	0.3	8.6
3/2	431	431	-	-	-	1.9	0.3	-	2.2	18.3	8.3	0.3	8.6
4/1	134	134	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	192	192	-	-	-	2.3	0.6	-	3.0	55.3	5.7	0.6	6.3
5/3	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	525	525	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

C1

PRC for Signalled Lanes (%): -25.3
PRC Over All Lanes (%): -25.3

Total Delay for Signalled Lanes (pcuHr): 117.54
Total Delay Over All Lanes(pcuHr): 117.54

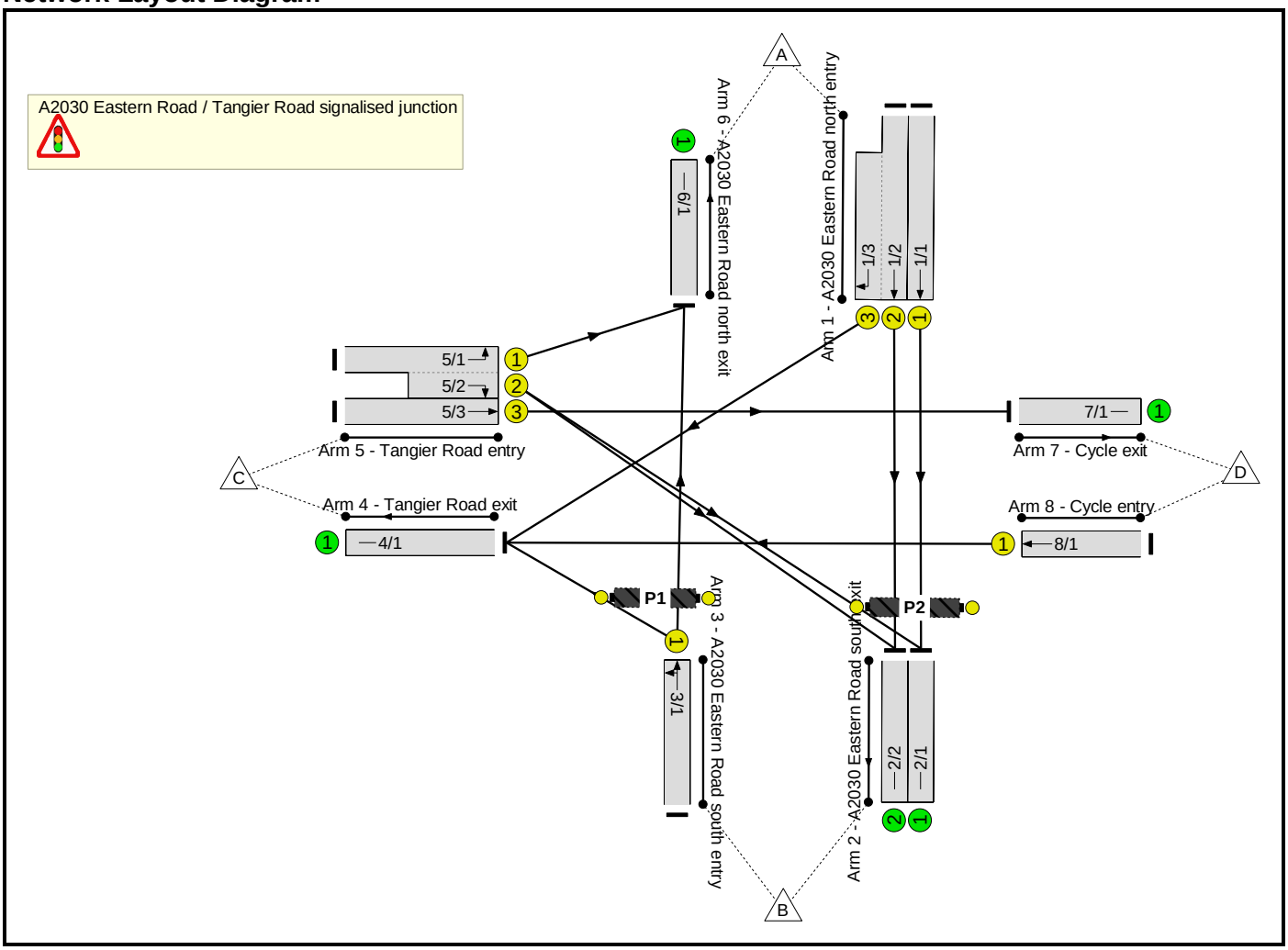
Cycle Time (s): 120

Full Input Data And Results

User and Project Details

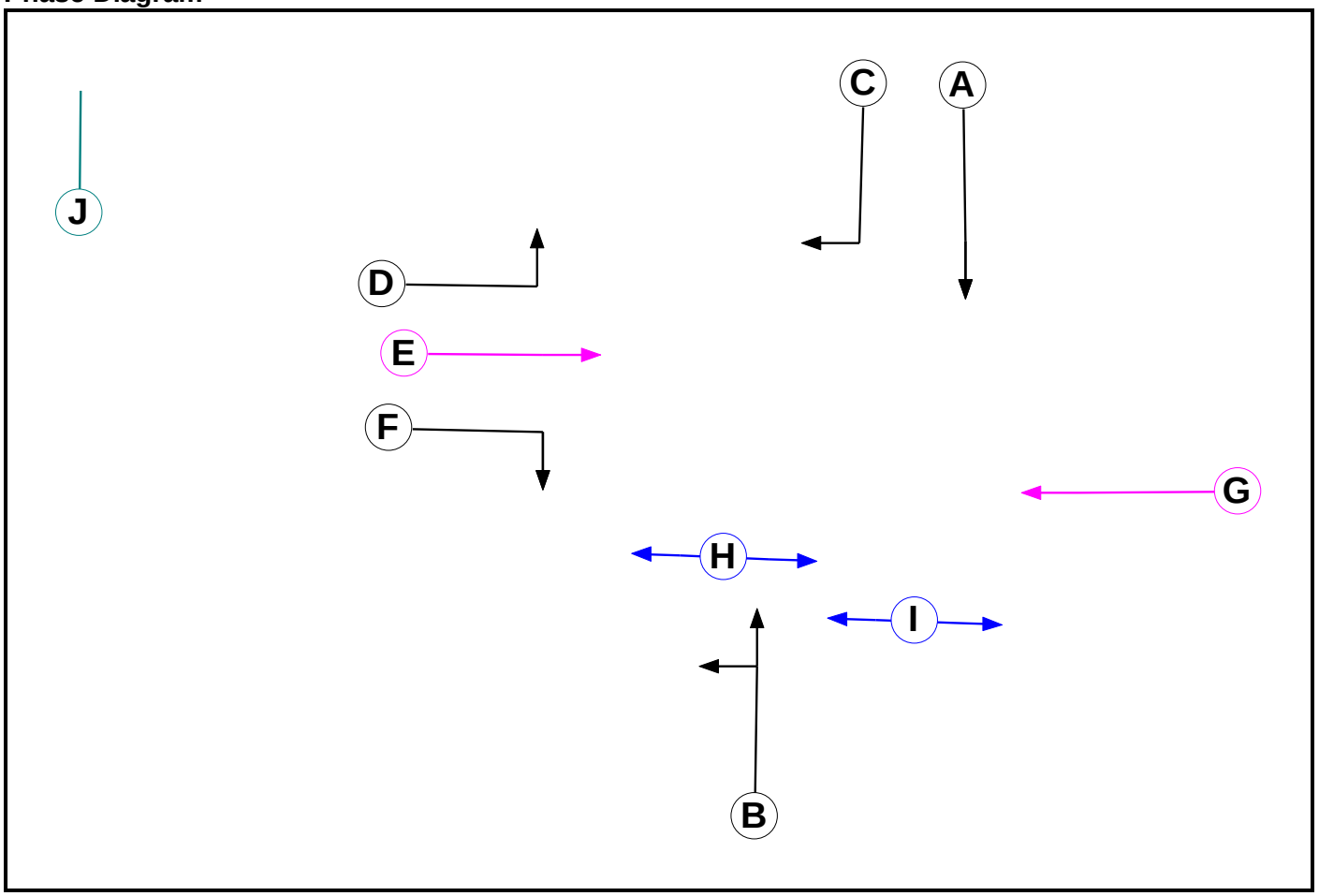
Project:	
Title:	
Location:	
Additional detail:	
File name:	Eastern Rd Contra Northbound - Update (DS2).lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Cycle		7	7
F	Traffic		7	7
G	Cycle		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Dummy		3	3

Full Input Data And Results

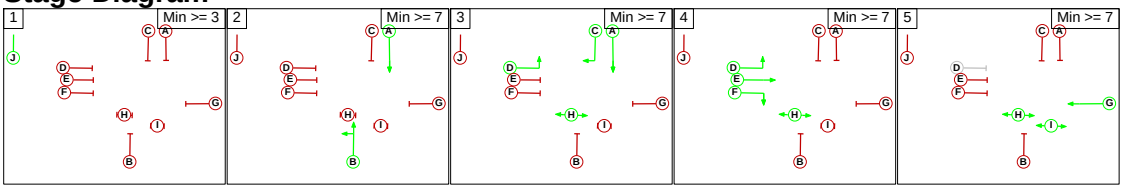
Phase Intergreens Matrix

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

Phases in Stage

Stage No.	Phases in Stage
1	J
2	A B
3	A C D H
4	D E F H
5	G H I

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage \ To Stage	1	2	3	4	5
1		2	2	2	2
2	3		7	7	9
3	3	8		8	9
4	3	8	8		10
5	3	8	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2030 Eastern Road / Tangier Road signalised junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: A2030 Eastern Road / Tangier Road signalised 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 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
1/2 (A2030 Eastern Road north entry)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
1/3 (A2030 Eastern Road north entry)	U	C	2	3	14.8	Geom	-	3.50	0.00	Y	Arm 4 Right	12.00
2/1 (A2030 Eastern Road south exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2 (A2030 Eastern Road south exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A2030 Eastern Road south entry)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Left	12.00
											Arm 6 Ahead	Inf
4/1 (Tangier Road exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Tangier Road entry)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	10.00
5/2 (Tangier Road entry)	U	F	2	3	5.2	Geom	-	3.50	0.00	Y	Arm 2 Right	10.00
5/3 (Tangier Road entry)	U	E	2	3	17.4	Geom	-	2.00	0.00	Y	Arm 7 Ahead	Inf
6/1 (A2030 Eastern Road north exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Cycle exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Cycle entry)	U	G	2	3	60.0	Geom	-	2.00	0.00	Y	Arm 4 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'EML - DS2 AM'	08:00	09:00	01:00	
2: 'EML - DS2 PM'	17:00	18:00	01:00	

Scenario 1: 'EML - DS2 AM' (FG1: 'EML - DS2 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	1325	41	0	1366
	B	1126	0	7	0	1133
	C	131	3	0	0	134
	D	0	0	0	0	0
	Tot.	1257	1328	48	0	2633

Traffic Lane Flows

Lane	Scenario 1: EML - DS2 AM
Junction: A2030 Eastern Road / Tangier Road signalised junction	
1/1	665
1/2 (with short)	701(In) 660(Out)
1/3 (short)	41
2/1	667
2/2	661
3/1	1133
4/1	48
5/1 (with short)	134(In) 131(Out)
5/2 (short)	3
5/3	0
6/1	1257
7/1	0
8/1	0

Full Input Data And Results

Lane Saturation Flows

Junction: A2030 Eastern Road / Tangier Road signalised 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 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
1/2 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
1/3 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 4 Right	12.00	100.0 %	1747	1747
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A2030 Eastern Road south exit Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	12.00	0.6 %	1963	1963
				Arm 6 Ahead	Inf	99.4 %		
4/1 (Tangier Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Tangier Road entry)	3.50	0.00	Y	Arm 6 Left	10.00	100.0 %	1709	1709
5/2 (Tangier Road entry)	3.50	0.00	Y	Arm 2 Right	10.00	100.0 %	1709	1709
5/3 (Tangier Road entry)	2.00	0.00	Y	Arm 7 Ahead	Inf	0.0 %	1815	1815
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Cycle exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Cycle entry)	2.00	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1815	1815

Scenario 2: 'EML - DS2 PM' (FG2: 'EML - DS2 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	1989	204	0	2193
	B	836	0	7	0	843
	C	189	3	0	0	192
	D	0	0	0	0	0
	Tot.	1025	1992	211	0	3228

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: EML - DS2 PM
Junction: A2030 Eastern Road / Tangier Road signalised junction	
1/1	1054
1/2 (with short)	1139(In) 935(Out)
1/3 (short)	204
2/1	1056
2/2	936
3/1	843
4/1	211
5/1 (with short)	192(In) 189(Out)
5/2 (short)	3
5/3	0
6/1	1025
7/1	0
8/1	0

Full Input Data And Results

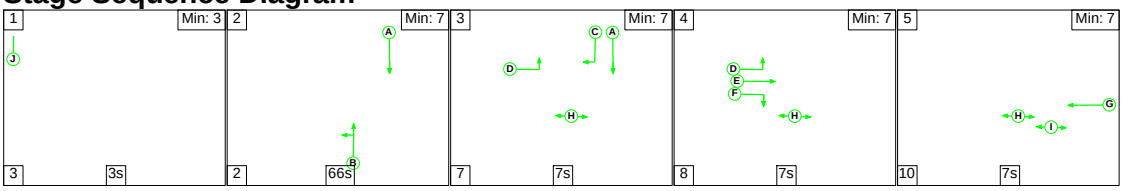
Lane Saturation Flows

Junction: A2030 Eastern Road / Tangier Road signalised 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 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
1/2 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
1/3 (A2030 Eastern Road north entry)	3.50	0.00	Y	Arm 4 Right	12.00	100.0 %	1747	1747
2/1 (A2030 Eastern Road south exit Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A2030 Eastern Road south exit Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1 (A2030 Eastern Road south entry)	3.50	0.00	Y	Arm 4 Left	12.00	0.8 %	1963	1963
				Arm 6 Ahead	Inf	99.2 %		
4/1 (Tangier Road exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Tangier Road entry)	3.50	0.00	Y	Arm 6 Left	10.00	100.0 %	1709	1709
5/2 (Tangier Road entry)	3.50	0.00	Y	Arm 2 Right	10.00	100.0 %	1709	1709
5/3 (Tangier Road entry)	2.00	0.00	Y	Arm 7 Ahead	Inf	0.0 %	1815	1815
6/1 (A2030 Eastern Road north exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Cycle exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Cycle entry)	2.00	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1815	1815

Scenario 1: 'EML - DS2 AM' (FG1: 'EML - DS2 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

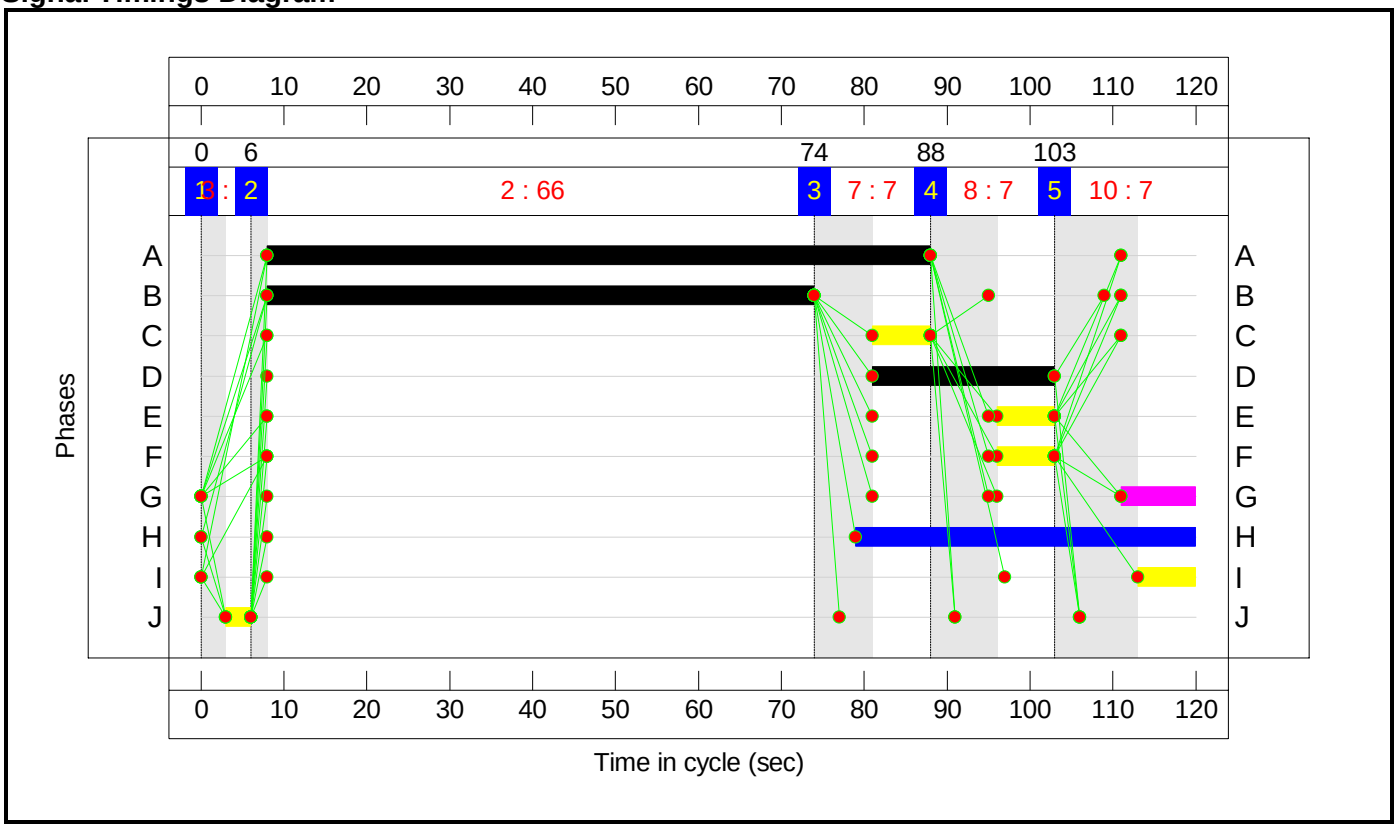


Stage Timings

Stage	1	2	3	4	5
Duration	3	66	7	7	7
Change Point	0	6	74	88	103

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

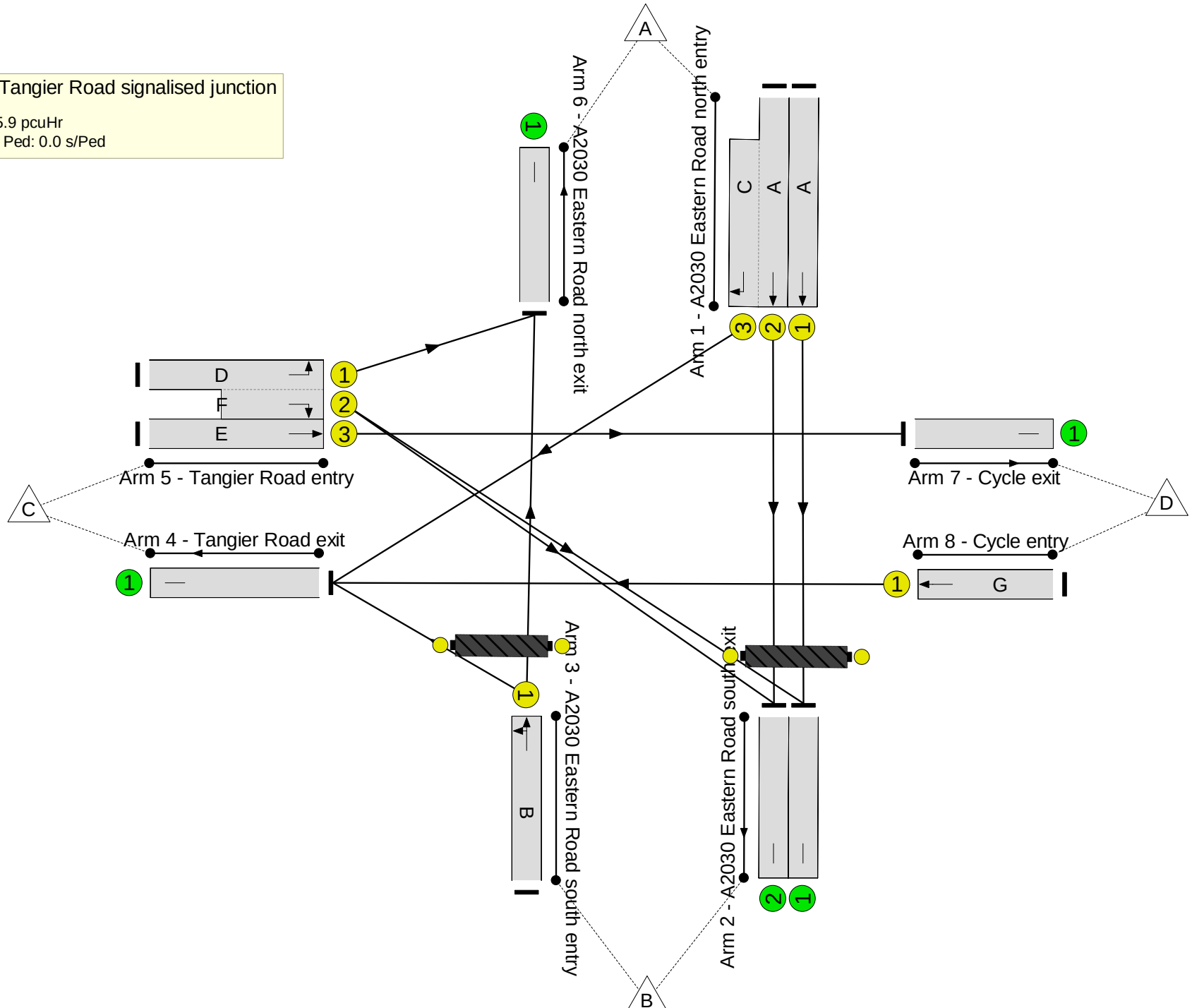
Network Layout Diagram

A2030 Eastern Road / Tangier Road signalised junction

PRC: -14.9 %

Total Traffic Delay: 45.9 pcuHr

Ave. Route Delay Per Ped: 0.0 s/Ped



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**	-	-		-	-	-	-	-	-	**103.4%**
A2030 Eastern Road / Tangier Road signalised junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**103.4%**
1/1	A2030 Eastern Road north entry Ahead	U	N/A	N/A	A		1	80	-	665	1965	1326	50.1%
1/2+1/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	80:7	-	701	1965:1747	1353	51.8%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	667	Inf	Inf	0.0%
2/2	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	661	Inf	Inf	0.0%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B		1	66	-	1133	1963	1096	103.4%
4/1	Tangier Road exit	U	N/A	N/A	-		-	-	-	48	Inf	Inf	0.0%
5/1+5/2	Tangier Road entry Right Left	U	N/A	N/A	D F		1	22:7	-	134	1709:1709	328	40.9%
5/3	Tangier Road entry Ahead	U	N/A	N/A	E		1	7	-	0	1815	121	0.0%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1257	Inf	Inf	0.0%
7/1	Cycle exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
8/1	Cycle entry Ahead	U	N/A	N/A	G		1	9	-	0	1815	151	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	41	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**16.1**	**29.8**	**0.0**	**45.9**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Tangier Road signalised junction	**-**	**-**	**0**	**0**	**0**	**16.1**	**29.8**	**0.0**	**45.9**	**-**	**-**	**-**	**-**
1/1	665	665	-	-	-	1.8	0.5	-	2.3	12.3	10.7	0.5	11.2
1/2+1/3	701	701	-	-	-	2.4	0.5	-	2.9	14.9	10.6	0.5	11.2
2/1	667	667	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	661	661	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	1133	1096	-	-	-	10.4	28.5	-	38.8	123.3	39.0	28.5	67.5
4/1	48	48	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	134	134	-	-	-	1.6	0.3	-	1.9	52.0	3.8	0.3	4.2
5/3	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1220	1220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

C1

PRC for Signalled Lanes (%): -14.9
PRC Over All Lanes (%): -14.9

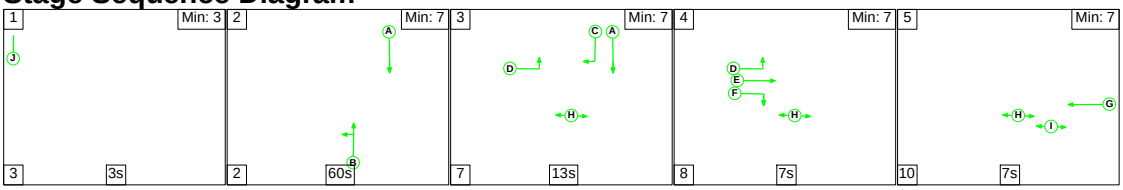
Total Delay for Signalled Lanes (pcuHr): 45.92
Total Delay Over All Lanes(pcuHr): 45.92

Cycle Time (s): 120

Full Input Data And Results

Scenario 2: 'EML - DS2 PM' (FG2: 'EML - DS2 PM', Plan 1: 'Network Control Plan 1')

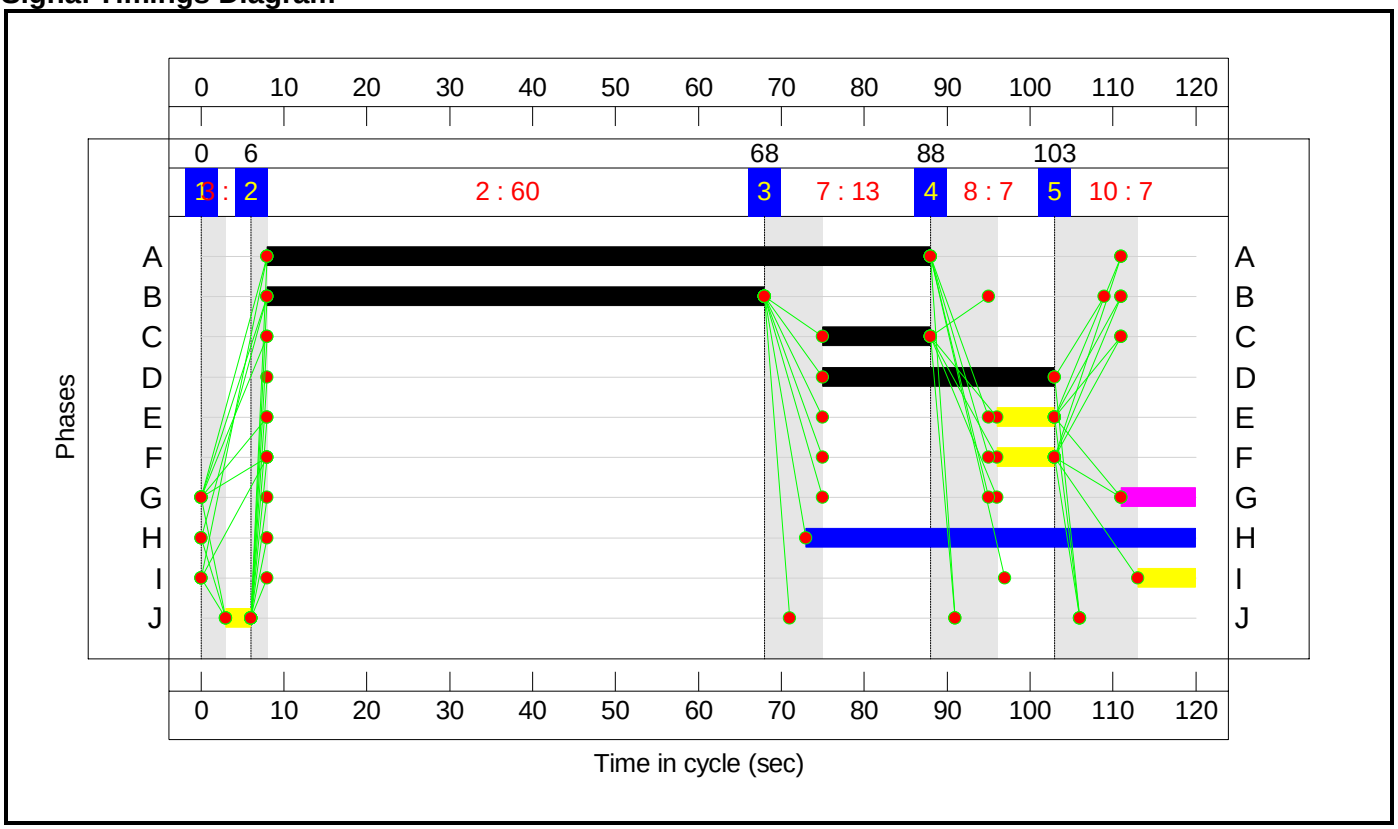
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	3	60	13	7	7
Change Point	0	6	68	88	103

Signal Timings Diagram



Full Input Data And Results

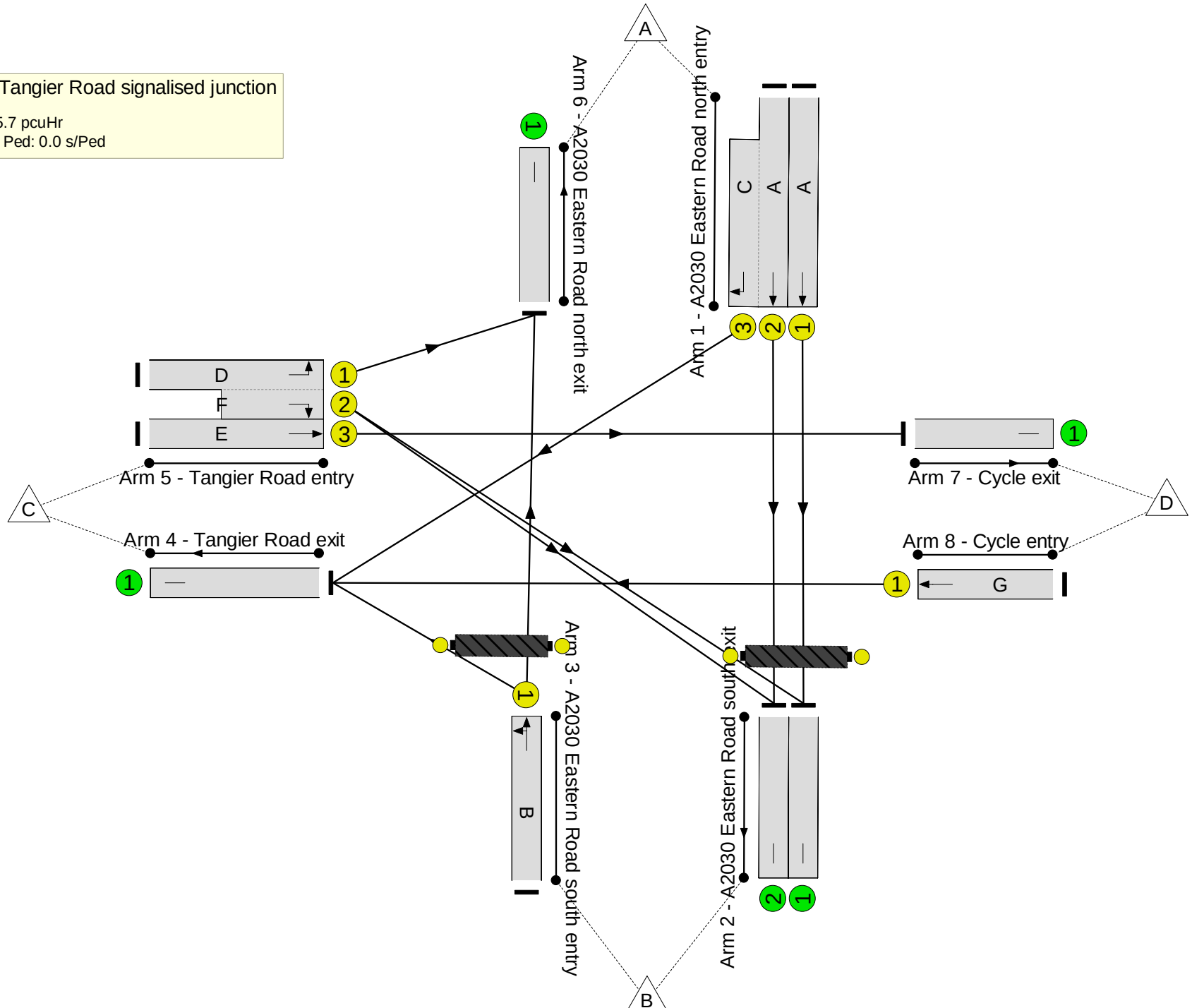
Network Layout Diagram

A2030 Eastern Road / Tangier Road signalised junction

PRC: 6.5 %

Total Traffic Delay: 25.7 pcuHr

Ave. Route Delay Per Ped: 0.0 s/Ped



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
A2030 Eastern Road / Tangier Road signalised junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
1/1	A2030 Eastern Road north entry Ahead	U	N/A	N/A	A		1	80	-	1054	1965	1326	79.5%
1/2+1/3	A2030 Eastern Road north entry Ahead Right	U	N/A	N/A	A C		1	80:13	-	1139	1965:1747	1361	83.7%
2/1	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	1056	Inf	Inf	0.0%
2/2	A2030 Eastern Road south exit	U	N/A	N/A	-		-	-	-	936	Inf	Inf	0.0%
3/1	A2030 Eastern Road south entry Left Ahead	U	N/A	N/A	B		1	60	-	843	1963	998	84.5%
4/1	Tangier Road exit	U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
5/1+5/2	Tangier Road entry Right Left	U	N/A	N/A	D F		1	28:7	-	192	1709:1709	412	46.6%
5/3	Tangier Road entry Ahead	U	N/A	N/A	E		1	7	-	0	1815	121	0.0%
6/1	A2030 Eastern Road north exit	U	N/A	N/A	-		-	-	-	1025	Inf	Inf	0.0%
7/1	Cycle exit	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
8/1	Cycle entry Ahead	U	N/A	N/A	G		1	9	-	0	1815	151	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	47	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**18.2**	**7.5**	**0.0**	**25.7**	**-**	**-**	**-**	**-**
A2030 Eastern Road / Tangier Road signalised junction	**-**	**-**	**0**	**0**	**0**	**18.2**	**7.5**	**0.0**	**25.7**	**-**	**-**	**-**	**-**
1/1	1054	1054	-	-	-	4.0	1.9	-	5.9	20.2	24.6	1.9	26.5
1/2+1/3	1139	1139	-	-	-	6.2	2.5	-	8.7	27.5	21.8	2.5	24.3
2/1	1056	1056	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	936	936	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	843	843	-	-	-	6.0	2.6	-	8.6	36.7	24.1	2.6	26.8
4/1	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	192	192	-	-	-	2.1	0.4	-	2.5	47.2	5.4	0.4	5.8
5/3	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1025	1025	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 6.5 Total Delay for Signalled Lanes (pcuHr): 25.71 Cycle Time (s): 120
PRC Over All Lanes (%): 6.5 Total Delay Over All Lanes(pcuHr): 25.71

Appendix E – Queue length data for TM locations

Table A12: A2030 Eastern Road / Airport Service Road (DS1 - southbound closure)

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	UQ End Red (pcu)	MMQ (pcu)	UQ End Red (pcu)	MMQ (pcu)
A2030 Eastern Road (north)	6	34	21	134
Airport Service Road	2	2	7	10
A2030 Eastern Road (south) (left / ahead)	8	15	7	11
A2030 Eastern Road (south) (ahead only)	8	15	7	11

Table A13: A2030 Eastern Road / Airport Service Road (DS2 - northbound closure)

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	UQ End Red (pcu)	MMQ (pcu)	UQ End Red (pcu)	MMQ (pcu)
A2030 Eastern Road (north) (ahead)	4	8	5	14
A2030 Eastern Road (north) (ahead / right)	4	8	5	14
Airport Service Road	3	3	8	13
A2030 Eastern Road (south)	10	31	11	32

Table A14: A2030 Eastern Road / Burrfields Road (DS1 – Southbound closures)

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	UQ End Red (pcu)	MMQ (pcu)	UQ End Red (pcu)	MMQ (pcu)
A2030 Eastern Road (north)	17	69	36	212
Great Salterns	0	0	0	0
A2030 Eastern Road (south) (ahead / right)	18	33	12	18
A2030 Eastern Road (south) (left / ahead)	18	33	11	17
Burrfields Road	9	9	9	23

Table A15: A2030 Eastern Road / Burrfields Road (DS2 – Northbound closures)

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	UQ End Red (pcu)	MMQ (pcu)	UQ End Red (pcu)	MMQ (pcu)
A2030 Eastern Road (north) (ahead / right)	7	72	17	49
A2030 Eastern Road (north) (ahead / left)	15	42	18	44
Great Salterns	0	0	0	0
A2030 Eastern Road (south) (left / ahead)	49	264	25	75
Burrfields Road	4	10	8	17

Table A16: A2030 Eastern Road / Tangier Road (DS1 - Southbound closures)

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	UQ End Red (pcu)	MMQ (pcu)	UQ End Red (pcu)	MMQ (pcu)
A2030 Eastern Road (north)	12	32	21	153
A2030 Eastern Road (south) (ahead)	11	18	7	9
A2030 Eastern Road (south) (ahead / left)	11	18	7	9
Tangier Road	4	5	5	7

Table A17: A2030 Eastern Road / Tangier Road (DS2 - Northbound closures)

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	UQ End Red (pcu)	MMQ (pcu)	UQ End Red (pcu)	MMQ (pcu)
A2030 Eastern Road (north) (ahead / right)	7	12	10	25
A2030 Eastern Road (north) (ahead)	7	12	11	28
A2030 Eastern Road (south) (ahead / left)	18	68	14	27
Tangier Road	4	5	5	6