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# Highways and Transport Technical Note

## Land South of Sacheverell Way, Groby

**Client: Bloor Homes**

**Project: Sacheverell Way, Groby**

**Date: 27/05/2026**

**BLOOR HOMES**



## Document Control Form

**Client:** Bloor Homes  
**Project Title:** Highways and Transport Technical Note  
  
**Document type:** Technical Note  
**Document Date:** 27<sup>th</sup> May 2026  
  
**Project No/Ref:** 211040  
**Document Status:** Final

Doc Ref: 211040 – Sacheverell Way, Groby

### Document Approval

|                        |    |
|------------------------|----|
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| Project Manager        | JC |
| Technical Review/Audit | JC |

### Document Issue

|                        |          |            |
|------------------------|----------|------------|
| Issue Date and History | Draft    | 22/05/2026 |
|                        | Final    | 27/05/2026 |
| Distribution           | External |            |
|                        | Internal | File       |

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# 1. Introduction

## 1.1 Overview

The Transportation Consultancy Ltd (TTC) have been commissioned on behalf of Bloor Homes to provide highways and transport support in relation to a proposed residential development south of Sacheverell Way, Groby, Leicestershire.

The application was for up to 180 dwellings with all matters reserved except for access. The site location is shown in **Figure 1.1** below.

**Figure 1.1 Site Location**



## 1.2 Purpose of Report

The planning application (ref. 25/01213/OUT) was submitted in December 2025. Following this consultation responses have been received from Leicestershire County Council (LCC) as Local Highway Authority (LHA) and National Highways (NH). The relevant responses are included in **Appendix A**.

The purpose of this note is to address the comments received by LCC and NH and where appropriate provide additional information. The comments are addressed in order below with LCC's/NH comments shown in blue italics with TTC's response following. For consistency the same headings used in the LCC and NH responses

have been used. It should be noted that there is some overlap between comments received from LCC and NH in relation to the A46/A50/Leicester Road junction, as a result these have been considered together within **Section 3.0**.

## 2. LCC Comments and Response

### 2.1 Site Access

#### LCC Comment 1

*Given the speed limit and recorded vehicle speeds along Sacheverell Way, the Applicant is advised to design all aspects of the site access and off-site works to Design Manual for Roads and Bridges standards as the main road is subject to a 40mph speed limit. The LHDG is applicable to speeds up to 37mph.*

In relation to TTC drawing number 211040-02 Rev D, LCC stated:

*A 2m wide splitter island has been chosen. It is unclear if this crossing facility is to have any cycle provision or form part of any proposed route, therefore affecting the choice of splitter island width. Should a cycle link be proposed into the site at this point, consideration would need to be given to the refuge design and how cyclists would safely leave/join the carriageway in this area.*

#### TTC Response 1

The proposed site access junctions are considered to be in line with guidance set out in 'CD 123 – Geometric design of at-grade priority and signal-controlled junctions'. The guidance states 'At simple priority junctions where no provision is to be made for the design vehicle, the minimum corner radii should be:

- 1) 6 metres in urban areas; and,
- 2) 10 metres in rural areas.

Given that the access would not have to cater for large articulated vehicles, the proposed 10m radius is considered suitable in this location. As speeds on Sacheverell Way are in excess of 40mph, the larger 10m radius has been proposed to improve manoeuvrability and ensure refuse vehicles can access the site without encroaching on the opposite side of Sacheverell Way. **Drawings 211040-03 rev D and 04 rev C** illustrate the corner radii at both access points. All drawings are provided in **Appendix B**.

In terms of the proposed splitter island on Sacheverell Way to the east of the eastern most access, this is currently proposed as a 2.0m wide pedestrian link. There are no dedicated off-road cycle facilities on the northern side of Sacheverell Way, as a result, a pedestrian splitter island is considered suitable. Further discussion on the cycle provision are presented later in this note.

### 2.2 Swept Path Analysis

#### LCC Comment 2

*Centre lines should be shown on Sacheverell Way to establish the exact extents of any over riding on the main road, as per problem 2.3 of the RSA1.*

#### TTC Response 2

Centre line markings have been added to **Drawing 211040-03 rev D and 04 rev C**. These indicate that the swept path of a large refuse vehicle will not encroach on the opposite side of Sacheverell Way when turning left in or left out of the site access junctions.

## 2.3 Junction Capacity Assessments

### LCC Comment 3

*The LHA advises it has concerns that the development appears to result in through traffic re routing along more unsuitable roads to reach junction 6 as a result of the development traffic causing additional delays. As advised further above, the LHA is also aware of queueing which can occur along Leicester Road/ Sacheverell Way and over junction 4 to reach Junction 6. It is noted that whilst the Applicant states the proposals are unlikely to have a material impact regardless of which route traffic takes to reach junction 6, this has not been demonstrated within a capacity assessment for example, all traffic routing to junction 6 via Sacheverell Way/ Leicester Road and junction 4.*

*The LHA requests the Applicant gives further consideration to the impact of the development at Junction 6 in particular, and whether any improvements could be made to reduce queueing and delay on Sacheverell Way/ Leicester Road.*

### TTC Response 3

Consideration has been given to the potential to improve capacity on the Leicester road approach arm at its junction with the A46/A50. The junction takes the form of a part signalised roundabout. The Leicester Road arm of the junction is under priority control. It is not considered possible to signalise this arm of the junction due to the lack of stacking space available within the internal circulatory of the junction on approach to this arm.

It is noted that there is some white line hatching on the Leicester Road approach arm which could potentially be used to widen the effective entry width and potentially provide three lane approaches for a short distance. However, on site observations indicate that vehicles on approach to the arm generally arrive in the offside lane to head along the A46 east of A50 south. It is therefore unlikely that that widening out to three lanes would have a material impact on capacity as the majority of traffic would still sit in the offside lane.

Furthermore, increasing capacity on the Leicester Road arm of the junction could inadvertently decrease capacity on other more sensitive arms of the junction (such as the A46), therefore, reducing capacity on more critical arms and resulting in a worsening in operation overall.

Nevertheless, additional sensitivity testing has been undertaken to determine the impact at this location should additional traffic route via this junction rather than through Groby. This is presented in **Section 3.0**.

### LCC Comment 4

With regard to the Groby Road/Sacheverell Way Priority T-junction LCC stated; *'The Applicants capacity assessments indicate that the junction would operate within capacity in all scenarios. As part of application reference 24/00914/OUT, the Applicant for that development highlighted that the junction would be operating at overcapacity in 2031 and proposed a junction signalisation scheme. The scheme was subsequently advised as a condition by the LHA, should the LPA be mindful to grant planning permission.*

*Given the above, it appears there are significant differences in the junction modelling when comparing the two applications. The LHA is aware delays can occur on Groby Road during peak hours. Therefore and considering the requirements for application reference 24/00914/OUT, the LHA request the Applicant gives further consideration to the impact of the development on the junction.*

## TTC Response 4

A comparison has been undertaken between the assessments carried out to support the 24/00914/OUT application and those included in the TA that supported the Sacheverell Way application.

The base traffic flows included within application 24/00914/OUT were collected on 2<sup>nd</sup> July 2024. In comparison, the base data to support the Sacheverell Way application were collected on the 24<sup>th</sup> June 2025. Traffic flow diagrams showing for each application are shown below in **Figure 2.1** and **2.2**.

**Figure 2.1** Sacheverell Way June 2025 AM and PM Peak Base Data

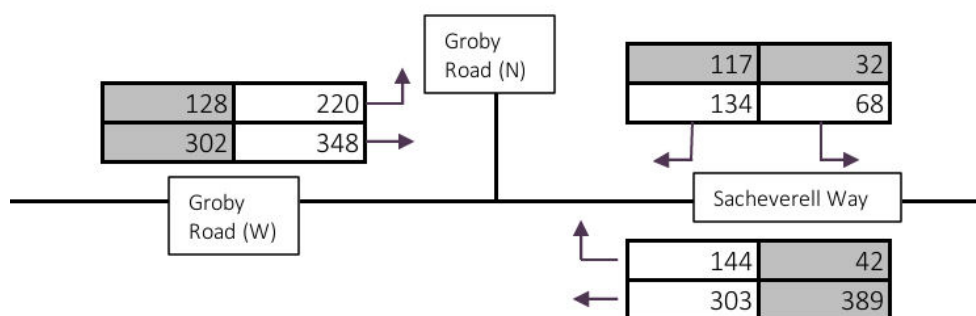
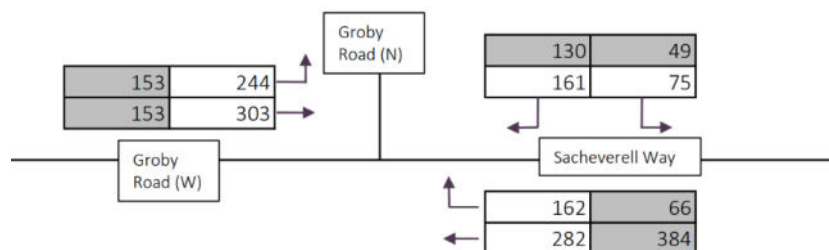


**Figure 2.2** 24/00914/OUT July 2024 AM and PM Peak Base Data



The data indicates that in the AM peak and PM peaks, flows are relatively similar between the two applications. Overall, flows for application 24/00914/OUT are 0.8% higher in the AM peak and 9.4% higher in the PM peak. Overall, the difference in base flows is not considered significant.

It is notable that the 2031 future year traffic flows for the 24/00914/OUT application were higher when compared to the 2030 future year included within the Sacheverell Way TA. However, the furnished flows provided to inform the future year assessments for the Sacheverell Way application were provided by LCC's



modelling team and are therefore considered robust and agreed given the furnishing process was undertaken using LCC's agreed methodology.

In addition to this, there are noticeable differences in the geometry used to inform the separate junction models. The PICADY model that informed application 24/00914/OUT modelled the Groby Road north arm as a single lane approach, whereas, the model that informed the Sacheverell Way application modelled it as one lane plus flare. Groby Road north widens out as it meets Sacheverell Way, therefore this would operate with an element of flare allowing two vehicles to sit at the give way line. Furthermore, the base model results for the Sacheverell Way application validated well against on-site observations. As a result, the model presented in the Sacheverell Way application is considered to provide an accurate indication of the current and future year junction performance. Whereas the geometry used to inform the junction assessment in the 24/00914/OUT application is considered to be overly robust.

## 2.4 Off-site Implications

### LCC Comment 5

*The LHA welcome and accept the proposed central refuge in principle. However, it was advised at the pre-application stage that a similar crossing facility to the west of the site would be beneficial to pupils walking to Brookvale College, as this would be the main desire line for pupils. Similar provision should therefore be provided to the west of the site and included on a drawing.*

### TTC Response 5

Following a review of the pedestrian desire lines, it is agreed that there would be benefit in providing a pedestrian refuge island towards the western side of the site frontage given that this would assist pedestrians accessing Brookvale College. In order to facilitate the proposed splitter island the carriageway would need to be widened to enable 3.1m wide running lanes either side of the pedestrian island.

The proposed splitter island is shown within **Drawing 211040.01 rev F**. It is proposed that internal footpaths will be provided to link to the crossing within the site. As the crossing is provided to the west of the proposed dwellings within the site, this will be located on the desire line for residents wishing to access Brookvale College or those wishing to head towards Ratby.

### LCC Comment 6

*Whilst the crossing points are proposed to be linked by footways internal to the site, the LHA advises internal isolated footways are unlikely to be considered for adoption by Leicestershire County Council. It is strongly advised that the Applicant provides a pedestrian footway within the highway alongside Sacheverell Way along the entire site frontage. This would need to cover the area between the two site access points, as well as the pedestrian refuge points.*

### TTC Response 6

Consideration has been given to the provision of footways on the southern side of Sacheverell Way along the frontage of the site. It is considered that the suggested footway provision is not preferable for the following reasons:

- To the west and east of the site there are no existing footways along the southern side of Sacheverell Way. This means that any residents would need to cross the road to the northern side of the carriageway to continue their onward journey. As a result, provision of a footway along the southern side of the road would not have any material benefit in terms of linkages to the existing footway network other than to accommodate residents travelling east-west within the site.
- Providing a footpath link within the site, to the south of the existing hedgeline that fronts the development, would provide a more pleasant experience for residents travelling east/west when compared to travelling on a footway alongside Sacheverell Way, adjacent to the carriageway.
- Within the verge along the southern side of Sacheverell Way, there are ditches which would make provision of the footway more challenging to construct and require existing hedges and trees to be removed. This could therefore have knock on affects for other disciplines such as landscape and Biodiversity Net Gain (BNG). The negative effects of this are likely to outweigh the benefit of providing the footway provision.
- If required, internal footpath provision within the site (i.e. pedestrian routes that do not run alongside the carriageway) could be maintained by a management company.
- Providing internal footpath links within the development to link to the two proposed splitter islands on Sacheverell Way will also encourage residents to use the proposed pedestrian splitter islands when crossing Sacheverell Way. Should a footway be provided alongside Sacheverell Way, pedestrians may be inclined to cross away from the proposed splitter island, therefore the internal footway connection could provide some safety benefits.

Overall, at this stage, the applicant considers the footway provision along the frontage of the site is not necessary to make the application acceptable.

#### LCC Comment 7

*National Cycle Network (NCN) Route 63 runs from the west of the site on Groby Road and provides access to Ratby to the west and Leicester to the east; this network is a mix of traffic-free and on-road. It is noted that Sacheverell Way falls short on the Local Transport Note 1/20 in relation to infrastructure requirements for cyclists as there is no formal off-road cycle provision. The LHA request the Applicant to investigate creating an off-road cycle link from one of the access points on Sacheverell Way to the west, to connect with existing provisions at the junction with Groby Road where cyclists can then pick up the NCN Route 63.*

#### TTC Response 7

NCN Route 63 is located approximately 650m from the western corner of the site. In order to facilitate access to the NCN the existing footway on the northern side of Sacheverell Way would need to be upgraded. LTN 1/20 suggests that a shared use facility of 3.0m in width would be appropriate based on the likely demand. The provision would also require improved crossing facilities at the Sacheverell Way/Laundon Road junction and Sacheverell Way/Groby Road junction. The widening of the footway would also require relocation of existing lighting columns that sit within the verge. The widening would also be required over a significant length (approx. 650m). As a result, such a scheme would require significant levels of infrastructure improvements.

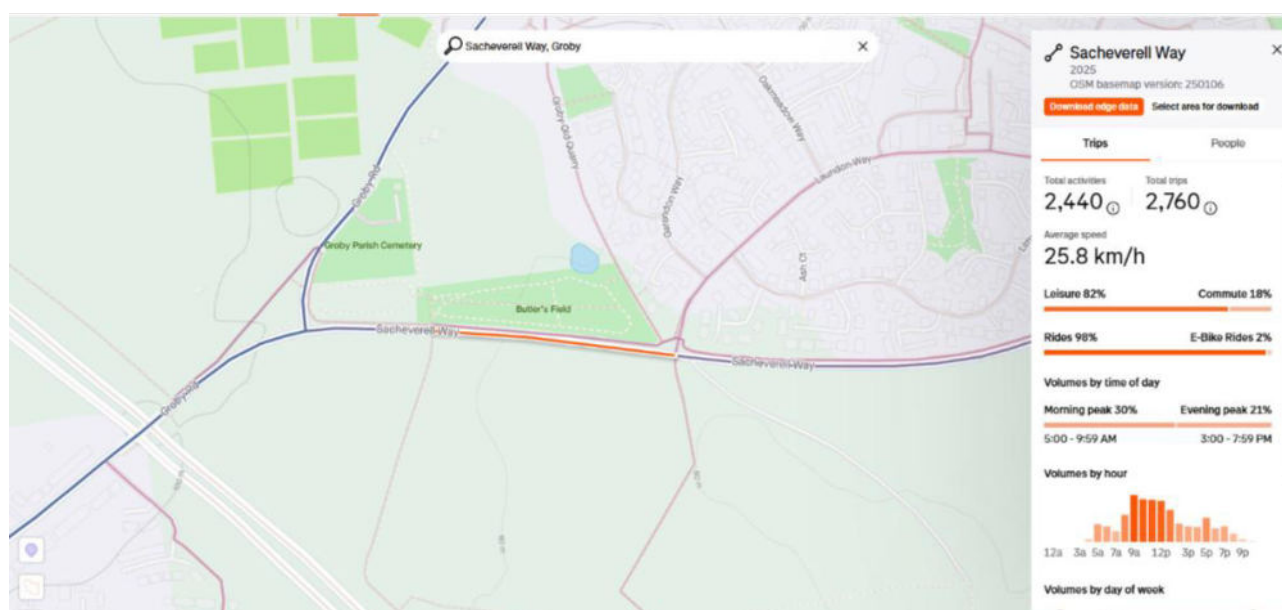
The TA that supported the application provided trip rates for multi modal uses and indicated that the development would be expected to generate four two-way cycle trips in the AM peak, three two-way movements on the PM peak and 23 two-way movements across the day. Whilst it is acknowledged that such an improvement scheme would help to further promote cycle trips to and from the site, as well as improving

access for existing residents on the northern side of Sacheverell Way, the level of infrastructure required to implement this is considered to be disproportionate to the level of development proposed.

It is also considered that the improved cycle connection is not considered necessary to make the application acceptable. There is nothing objectionable to residents cycling on road and there is nothing within the highway code that would prevent them from doing this. There is also evidence to suggest that Sacheverell Way is used frequently by cyclist at present.

To demonstrate this, data has been extracted from Strava to provide an indication of the existing cycling use on Sacheverell Way. Strava is a fitness tracking application that lets users log exercise sessions whether this be part of a commute or for leisure purposes. The Strava heat map showing cycle usage is provided in **Figure 2.4**.

**Figure 2.3 Sacheverell Way 2025 Strava Data**



The data recorded 2,440 movements across 2025 which equates to six to seven movements per day. It should be noted that this figure does not represent every cyclist who uses Sacheverell Way, just the ones that are signed up to the Strava App, therefore the actual number of users could be much higher. Nevertheless, it demonstrates that this road is used by cyclists already.

Personal Injury Accident (PIA) analysis carried out as part of the Transport Assessment that accompanied the application highlighted that no accidents involving cyclists have been recorded on Sacheverell Way between the site and NCN Route 63. This suggests that despite the road accommodating cyclists, this has not resulted in a highway safety issue.

In addition to the NCN 63 there is also a permissive route that runs to the west of the site that provides a link to NCN 63 to the south of the site.

Overall, the level of cycling demand generated by the development is low, and the infrastructure requirements to implement a new shared use footway/cycleway facility are considered disproportionate to the size of the development. This is therefore unlikely to align with government guidance on planning obligations which states they should be *'fairly and reasonably related in scale and kind to the development'*.

## LCC Comment 8

*The LHA advise that there are currently mobile Vehicle Activated Sign (VAS) locations along the length of Sacheverell Way. Given the recorded speeds of passing traffic along the site frontage, the LHA advise it would be beneficial for the Applicant to install permanent VAS along Sacheverell Way in the vicinity of the site access points, for traffic flows in each direction.*

#### **TCC Response 8**

The applicant is agreeable to the provision of permanent VAS signs along Sacheverell Way to replace the existing mobile signs. It is envisaged this could be secured through an appropriate mechanism such as a contribution through the Section 106 agreement.

## **2.5 Transport Sustainability**

#### **LCC Comment 9**

*The closest bus service to the site is the hourly Arriva 27 service which runs between Ratby and Leicester city centre. This routes along Laundon Way. The LHA requests clarification from the Applicant as to whether they have liaised with the bus operator to potentially route the service closer to the site, for example along Sacheverell Way or through the site itself. This could require new bus stops on Sacheverell Way or within the site itself.*

#### **TTC Response 9**

The closest bus stops to the site are located on Laundon Way approximately 450m from the centre of the site. Pedestrian splitter islands are proposed to improve access to the northern side of Sacheverell Way which will improve links to the bus stops.

The existing stops are served by the no. 27 service that runs an hourly service between Leicester and Ratby. In the vicinity of the site the service diverts onto Laundon Way and therefore does not run along the site frontage itself.

In order to route the bus closer to the site the bus would be required to route along Sacheverell Way rather than routing along Laundon Way. Whilst this would provide potential for the service to be located closer to the development it would result in the service being routed away from Laundon Way. This would mean that existing residents within Groby would have to walk further to the stops on Sacheverell Way and therefore could result in an overall disbenefit to locals, especially as considerably more dwellings are located to the north of Sacheverell Way, compared to the proposed development site.

Overall, it is considered that the proximity of the existing bus stops to the site is sufficient to serve the proposed development.

## 2.6 Public Rights of Way (PRoW)

### LCC Comment 10

*Rather than reflecting the legally defined route shown on the Definitive Map, the submitted plans propose constructing a path along the inside of the site edge. This will necessitate the legal diversion of public right of way Footpath R51. That requires a separate legal order made by the LPA (not the LHA), a separate application for which needs to be submitted. The legal order must be confirmed before the development is substantially complete. If this is not done, any construction or tree planting on the existing legal alignment would constitute an unlawful highway obstruction.*

*The LHA advise in the event it is mindful advise approval of the proposals in the future, improvements to the PRoW such as surfacing, signing, boundary treatments and management during construction could be conditioned.*

### TCC Response 10

It should be noted that a legal diversion of the existing PRoW towards the south of the site is not being proposed. The masterplan shows the existing trodden path and the definitive path of the PRoW. However, no building or planning will be undertaken on the line of the existing PRoW therefore a legal diversion is not considered necessary. The details surrounding the works proposed within this area will be set out as part of a future reserve matter application.



## 3. National Highways Comments and Response

### 3.1 Introduction

The section of the report provides a response to the comments received from NH dated 2<sup>nd</sup> March 2026, included in **Appendix A**. The comments predominantly focus on the A46 Leicester Western Bypass/A50 Markfield Road/Groby Road/Leicester Road grade separated junction.

Once again, the report has been structured using the same headings as those included within the NH response. Where appropriate comments from NH have been quoted using *blue italics*, with TTC's response provided below.

### 3.2 Standalone Junction Assessment

#### NH Comment 1 - Signal Data

*'Whilst we understand that the applicant has received the LinSig model from Leicestershire County Council (LCC), please supply the Controller Specification documents so that we can confirm the model corresponds with the existing signal operation. Please supply us with the LinSig model received from LCC so that we can fully understand the changes made.'*

#### TTC Response 1

The signal specification data has been obtained and is include in **Appendix C**. A review of the information indicates that the junction arrangements set out within the LinSig model accurately reflect the specification.

As requested by NH, the original LinSig model provided by LCC will be sent to NH for review in order to determine how the latest amended TTC model corresponds to the original version.

#### NH Comment 2 - Model Structure

NH have made various comments regarding the model structure, and these are considered in order in TTC's response below.

#### TTC Response 2

As requested, a review of cruise times used on all connectors has been carried out. For consistency all cruise times have been amended based on a 12m/s (26mph) speed. The results are presented in **Table 3.1**.

**Table 3.1 Cruise Times and Queue Lengths**

| Link                    | Length (metres) | Mean Cruise Time (seconds)                 |
|-------------------------|-----------------|--------------------------------------------|
| Arm 1 – Arm 4           | 134             | 11                                         |
| Arm 2 – Arm 4           | 120             | 10                                         |
| Arm 1 – Arm 15          | NA              | NA                                         |
| Arm 2 – Arm 15          | 40              | 3                                          |
| Arm 4 – Arm 6           | 46              | 4                                          |
| Arm 4 – Arm 7           | 27              | 2                                          |
| Arm 5 – Arm 6           | 49              | 4                                          |
| Arm 5 – Arm 7           | 26              | 2                                          |
| Arm 6 – Arm 9           | 30              | 3                                          |
| Arm 6 – Arm 10 - Arm 13 | 160             | 13 (split between Arm 6 – 10 and 10 to 13) |
| Arm 8 – Arm 10 – Arm 13 | 165             | 14 (split between Arm 8 – 10 and 10 – 13)  |
| Arm 8 – Arm 9           | 20              | 2                                          |
| Arm 11 – Arm 13         | 124             | 10                                         |
| Arm 13 – Arm 2          | 60              | 5                                          |
| Arm 14 – Arm 2          | 60              | 5                                          |
| Arm 14 – Arm 3          | 24              | 2                                          |

A CAD plan has been prepared showing these distances in plan view. The CAD file will be issued to NH for review, however a scaled plan has been provided in **Appendix D** as **Drawings 211040.06** and **07**.

With regard to the non-signalised arms, NH state *‘As per LinSig modelling best practice, please ensure that all non-signalised lanes have an Unconstrained Infinite Saturation Flow. Saturation flows place a capacity constraint on lanes and when lanes are not signalised, this constraint does not exist. Such constraints could also affect the vehicle routing.’*

LinSig does not allow unconstrained saturation flows on non-signalised arms. If this is selected, then an error message 2039 is shown and the model cannot be run. To allow for the unconstrained nature, the saturation flows on the non-signalised arms have been set as 3,000 PCUs per lane.

*‘As the Leicester Road (Arm 11) and A46 South (Arm 14) approaches have different destinations on each lane of both approaches, we would like to see these approaches modelled with two lanes at the roundabout entry. From the queue data obtained for National Highways Planning Response (NHPR 25-01) January 2025 each lane, we would like to understand how queues are split across each lane of both approaches. When entering the Slope and Intercept values into LinSig, please note that JUNCTIONS 11 calculates them for the approach, whilst in LinSig they need to be entered per lane. Please also make sure the effect the flares have on these*

*give way parameters is understood. It may not be suitable to equally divide the give way parameters across each lane when flares are present.'*

As requested, on Leicester Road a second short lane has been added. On site observations indicate that the outside lane is the predominant lane and therefore the Saturation flow has been split notionally 1200/600 nearside/outside arm to allow for this.

A46 West arm has been modelled as two long lanes. The Saturation/Slope coefficients have been equally split across both arms given that there is limited to no flare on approach.

*'On Arm 14 (A46 South), the Clear Conflict values have been reduced to zero (from the default value of 2 seconds) on two of the three movements. Please explain why these values have been adjusted.'*

The model received from LCC had set the Clear Conflict control to zero, this has now been changed to 2 seconds.

*'Please ensure Queue de-sliver threshold values are only used when the queue graph for that respective lane shows a sliver queue in any of the modelled scenarios. The LinSig User Guide states they should not be used to hide a genuine queue and the threshold value entered should be as small as necessary to remove the sliver queue.'*

The de-sliver queue thresholds have been reduced to 0.1 PCUs to ensure genuine queues are not hidden.

### 3.3 Traffic Flows

#### NH Comment 3

*'Please confirm the PCU factors which have been used and the classifications used by the survey company. To help us understand how the traffic flows for all modelled scenarios have been developed, please provide traffic flow analysis spreadsheet.'*

#### TTC Response 3

The PCU factors used are in line with TAG Unit M3.1 Highway Assignment Modelling and are set out in **Table 3.2**.

**Table 3.2** PCU Values

| Classification | PCU Value |
|----------------|-----------|
| Car            | 1         |
| LGV            | 1         |
| OGV1           | 2         |
| OGV2           | 2         |
| PSV            | 2         |
| MCL            | 1         |
| PCL            | 1         |

Traffic Flow diagram spreadsheet showing the turning flows and PCU calculations have been issued to NH for review.

*'Please show how peak hours have been determined. We wish to see the junction assessed in the peak hours with the highest traffic flows. 08:00 to 09:00 and 17:00 to 18:00 have been modelled, but our analysis of the traffic survey data shows that highway peaks are 07:30 to 08:30 and 16:30 to 17:30. The analysis shows that the total roundabout PM Peak flows are 7% higher than those modelled.'*

It should also be noted that the traffic impact analysis was based on outputs from the PRTM assessment. The PRTM considers an AM peak of 08:00-09:00 and PM peak of 17:00-18:00. In order to be consistent with the PRTM outputs, the observed base model flows for the same periods were used when calculating furnished flows for the various standalone models. Given the development peak coincides with the 08:00-09:00 and 17:00-18:00 periods, this is considered robust.

Nevertheless, calculations showing the AM and PM peak period flows is provided in **Table 3.3**.

**Table 3.3 AM and PM Peak Period Calculations**

| Period         | Total Flow Through Junction (Vehicles) | Percentage changes compared to PRTM assessment (08:00-09:00 and 17:0-18:00) |
|----------------|----------------------------------------|-----------------------------------------------------------------------------|
| <b>AM Peak</b> |                                        |                                                                             |
| 07:00-08:00    | 4903                                   | -2%                                                                         |
| 07:15-08:15    | 5124                                   | +3%                                                                         |
| 07:30-08:30    | 5170                                   | +4%                                                                         |
| 07:45-08:45    | 5097                                   | +2%                                                                         |
| 08:00-09:00    | 4994                                   | 0                                                                           |
| 08:15-09:15    | 4921                                   | -1%                                                                         |
| 08:30-09:30    | 4813                                   | -4%                                                                         |
| 08:45-09:45    | 4506                                   | -10%                                                                        |
| 09:00-10:00    | 4173                                   | -16%                                                                        |
| <b>PM Peak</b> |                                        |                                                                             |
| 16:00-17:00    | 5090                                   | +2%                                                                         |
| 16:15-17:15    | 5252                                   | +5%                                                                         |
| 16:30-17:30    | 5340                                   | +7%                                                                         |
| 16:45-17:45    | 5242                                   | +5%                                                                         |
| 17:00-18:00    | 4986                                   | 0                                                                           |
| 17:15-18:15    | 4591                                   | -8%                                                                         |
| 17:30-18:30    | 4276                                   | -14%                                                                        |
| 17:45-18:45    | 3787                                   | -24 %                                                                       |

| Period      | Total Flow Through Junction (Vehicles) | Percentage changes compared to PRTM assessment (08:00-09:00 and 17:0-18:00) |
|-------------|----------------------------------------|-----------------------------------------------------------------------------|
| 18:00-19:00 | 3502                                   | -30%                                                                        |

**Table 3.3** shows that the AM peak occurs between 07:30-08:30, with this being approximately 4% higher compared to the 08:00-09:00 PRTM peak assessed. The PM peak is between 16:30-17:30, which is 7% higher than the 17:00-18:00 PRTM peak.

As requested by NH, the junction assessment has been updated to allow for the AM and PM highway peak periods. The 2025 Base flows have been derived from the original turning counts and converted to PCUs based on the classifications set out earlier in this note. In order to understand the 2030 future year traffic flows the furnished flows provided by LCC have been used.

To derive the 2030 Do Minimum flows for the highway peak periods, the difference between the furnished 2025 Base and 2030 Do Minimum flows have been calculated and added to the highway peak base flows derived from the turning counts. Similarly, to understand the 2030 Do Something flows, the difference between the furnished 2030 Do Minimum and 2030 Do Something flows has been calculated and added to the newly derived 2030 Highway Peak Do Minimum. The same process has been used for the sensitivity test which includes the Land West of Ratby (ref. 24-00914-OUT) planning application. It should be noted that at the time of writing this application has not been determined.

The traffic flow diagrams showing this process are included in **Appendix E**.

It should be noted that using the highway peak flows will provide a robust assessment as it combines the highway peak with the development peak. Development trips between 07:30-08:30 and 16:30-17:30 are likely to be lower compared to the 08:00-09:00 and 17:00-18:00 periods.

To evidence this the TRICS database has been reviewed to consider how residential trip rates change throughout the day. The trip rates used within the assessment were based on 85<sup>th</sup> percentile trip rates used for neighbouring application. These were agreed with LCC and NH, however, as a result the daily trip rates are not available, only the peak periods. Therefore, the TRICS database has been interrogated to provide daily trip rates in order to provide an indication of how the traditional AM (08:00-09:00) and PM (17:00-18:00) differ to the preceding periods.

The full trip rates for privately owned houses are set out below, with the full selection criteria and rates included in **Appendix F**. **Table 3.4** provides a comparison between the development peak periods and proceeding peak period.

**Table 3.4 Trip Generation Peak Profile Review – Residential Dwellings**

| Time Range                          | Trip Rate (1-unit) |             |             |
|-------------------------------------|--------------------|-------------|-------------|
|                                     | Arrive             | Depart      | Two-way     |
| AM Development Peak (08:00 – 09:00) | 0.147              | 0.368       | 0.515       |
| AM Highway Peak (07:30-08:30)*      | 0.11               | 0.325       | 0.435       |
| <b>AM Percentage Difference</b>     | <b>-25%</b>        | <b>-12%</b> | <b>-16%</b> |

| Time Range                          | Trip Rate (1-unit) |            |            |
|-------------------------------------|--------------------|------------|------------|
|                                     | Arrive             | Depart     | Two-way    |
| PM Development Peak (17:00 – 18:00) | 0.333              | 0.163      | 0.496      |
| AM Highway Peak (16:30-17:30)**     | 0.300              | 0.1615     | 0.4615     |
| <b>PM Percentage Difference</b>     | <b>-10%</b>        | <b>-1%</b> | <b>-7%</b> |

\*Taken from an average between the 07:00-08:00 and 08:00-09:00 periods.

\*\*Taken from and average between the 16:00-17:00 and 17:00-18:00 periods.

The table indicates that in the AM peak period, the trips generated in the highway peak are predicted to be 16% lower, whilst in the PM peak, they are predicted to be 7% lower. As a result, this demonstrates that combining the AM and PM development trip generation with the highway peak base flows provides a very robust assessment, and in reality the impact of the development would be less than this.

It is also noteworthy that the trip rates used in the assessment are based on historical 85<sup>th</sup> percentile rates agreed for other applications in the area. Whilst it was agreed that these rates would provide consistency with other applications in the area, the 85<sup>th</sup> percentile nature of them means it does provide a very robust assessment.

### 3.4 Observed Queue Length Data

#### NH Comment 4

*'We note that queue data has been recorded in vehicles, so these values will need to be converted into PCUs so that they can be compared to the LinSig model output data. As HGV percentages can vary from approach to approach, we recommend that a PCU conversion factor be determined for each approach; please ensure assumptions in any calculations are provided.'*

*Queue data shows that queues on three of the lanes exceeded the recorded queue length in both peaks. The applicant will therefore need to adjust these maximum values to accurately reflect the observed queuing to produce an accurately validated base model. As excess queuing on will potentially affect the operation of the SRN, our main area of concern is that the queues observed on the two A46 sliproads, specifically the northern sliproad (Arm 5), be accurately replicated.'*

#### TTC Response 4

Queue lengths for the highway AM and PM peak periods have been set out in **Table 3.6**. A PCU factor for each approach arm has been calculated based on the traffic count surveys. The calculated factors are as set out in **Table 3.5**.



**Table 3.5 PCU Queue Factors**

| Arm                                  | Total Vehicles | HGVs | PCUs | PCU Factor (PCUs/Total Vehicles) |
|--------------------------------------|----------------|------|------|----------------------------------|
| <b>AM Highway Peak (07:30-08:30)</b> |                |      |      |                                  |
| A46 East Off-slip                    | 1031           | 87   | 1118 | 1.084                            |
| Groby Road (A50)                     | 839            | 46   | 885  | 1.055                            |
| Leicester Road                       | 733            | 16   | 749  | 1.022                            |
| A46 West Off-slip                    | 365            | 38   | 403  | 1.104                            |
| Markfield Road (A50)                 | 2202           | 168  | 2370 | 1.076                            |
| <b>PM Peak (16:30-17:30)</b>         |                |      |      |                                  |
| A46 East Off-slip                    | 1099           | 59   | 1158 | 1.054                            |
| Groby Road (A50)                     | 1244           | 20   | 1264 | 1.016                            |
| Leicester Road                       | 565            | 7    | 572  | 1.012                            |
| A46 West Off-slip                    | 349            | 19   | 403  | 1.104                            |
| Markfield Road (A50)                 | 2083           | 126  | 2209 | 1.060                            |

The queue lengths have been converted to PCU's based on the factors set out in **Table 3.5**. The minimum, average and maximum queues predicted during the AM (07:30-08:30) and PM (16:30-17:30) peak periods are set out in **Table 3.6**. This has been compared to the 2025 Base model queues.

It should be noted that where the queue extend past the point recorded by the queue length surveys, an adjustment has been made based on-site observations and live traffic data. The adjusted queue length surveys and PCU conversions are included in **Appendix G**.

It should be noted that LinSig is based on uniform traffic flows and fixed signal timings, therefore, it does not take into account the MOVA/SCOOT control system which reacts to queues on the ground and therefore varies signal timings throughout the day. It is therefore difficult for the model to fully replicate real time conditions.

It is also noteworthy that the model seeks to optimise signal timings to improve the operation of the junction. On occasion, the model indicates that the southern and northern most circulatory arms do marginally exceed the queue storage capacity, however, a review of the video footage of the junction indicates that this does occur occasionally during existing conditions. It is also noteworthy that particularly on the southernmost internal stop line, the majority of the queues build up on the central lane as LinSig is assigning more traffic to this. However, the inside lane is shown to be relatively free of queuing, so in reality more traffic would likely assign to this lane.

Nevertheless, for the purpose of this modelling exercise it is considered an appropriate tool to provide an understanding of the likely impact at the junction.

**Table 3.6 AM and PM Highway Peaks Queue Length Comparison**

| Arm                  | Lane | Observed Queues (PCUs) |         |         | 2025 Base Modelled Mean Max Queue | Commentary                                                                                                                                                   |
|----------------------|------|------------------------|---------|---------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |      | Minimum                | Average | Maximum |                                   |                                                                                                                                                              |
| AM Peak              |      |                        |         |         |                                   |                                                                                                                                                              |
| A46 East Off-slip    | 1    | 5                      | 13      | 30      | 5                                 | The modelled flows on this arm are marginally lower than the average observed queue, therefore the model is slightly underestimating the queues on this arm. |
|                      | 2    | 8                      | 10      | 13      | 9                                 |                                                                                                                                                              |
|                      | 3    | 10                     | 21      | 33      |                                   |                                                                                                                                                              |
| Groby Road (A50)     | 1    | 2                      | 4       | 6       | 6                                 | The modelled queues on this arm are generally in line with the average observed queues and therefore is considered to validate well.                         |
|                      | 2    | 5                      | 8       | 11      | 5                                 |                                                                                                                                                              |
|                      | 3    | 5                      | 7       | 9       |                                   |                                                                                                                                                              |
|                      | 4    | 1                      | 3       | 4       |                                   |                                                                                                                                                              |
| Leicester Road       | 1    | 1                      | 3       | 7       | 12                                | The modelled queues on this arm are generally in line with the average observed queues and therefore is considered to validate well.                         |
|                      | 2    | 8                      | 14      | 18      |                                   |                                                                                                                                                              |
| A46 West Off-slip    | 1    | 2                      | 5       | 7       | 2                                 | The modelled queues are towards the lower end of the observed queues.                                                                                        |
|                      | 2    | 3                      | 6       | 8       | 3                                 |                                                                                                                                                              |
| Markfield Road (A50) | 1    | 14                     | 21      | 29      | 13                                | The modelled flows generally align with the minimum and average observed queues.                                                                             |
|                      | 2    | 8                      | 11      | 13      |                                   |                                                                                                                                                              |
|                      | 3    | 11                     | 13      | 18      | 9                                 |                                                                                                                                                              |
|                      | 4    | 4                      | 6       | 12      |                                   |                                                                                                                                                              |
| PM Peak              |      |                        |         |         |                                   |                                                                                                                                                              |
| A46 East Off-slip    | 1    | 6                      | 23      | 26      | 9                                 | The modelled queues are lower than the average observed queue but higher than the minimum queue.                                                             |
|                      | 2    | 7                      | 9       | 12      | 22                                | Modelled queues are close to matching average observed queues and there this is considered to validate acceptably.                                           |
|                      | 3    | 25                     | 35      | 43      |                                   |                                                                                                                                                              |
| Groby Road (A50)     | 1    | 2                      | 8       | 15      | 9                                 | Modelled queues are in line with average observed queues and therefore this is considered to validate acceptably.                                            |
|                      | 2    | 5                      | 9       | 18      | 10                                | Modelled queues are in line with average observed queues and therefore this is considered to validate acceptably.                                            |
|                      | 3    | 7                      | 10      | 20      |                                   |                                                                                                                                                              |
|                      | 4    | 1                      | 3       | 4       |                                   |                                                                                                                                                              |

| Arm                  | Lane | Observed Queues (PCUs) |         |         | 2025 Base Modelled Mean Max Queue | Commentary                                                                                                                       |
|----------------------|------|------------------------|---------|---------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                      |      | Minimum                | Average | Maximum |                                   |                                                                                                                                  |
| Leicester Road       | 1    | 1                      | 2       | 3       | 9                                 | Modelled queues are in line with average observed queues and therefore this is considered to validate acceptably.                |
|                      | 2    | 9                      | 14      | 17      |                                   |                                                                                                                                  |
| A46 West Off-slip    | 1    | 0                      | 3       | 7       | 4                                 | Modelled queues are in close to the average observed queues and therefore this is considered to validate acceptably.             |
|                      | 2    | 1                      | 6       | 11      | 2                                 |                                                                                                                                  |
| Markfield Road (A50) | 1    | 5                      | 15      | 28      | 11                                | The modelled queues are slightly below the average observed flows on lane 1, however they are above the minimum observed queues. |
|                      | 2    | 3                      | 8       | 13      |                                   |                                                                                                                                  |
|                      | 3    | 4                      | 8       | 13      | 8                                 | Modelled queues are in line with average observed queues and therefore this is considered to validate acceptably.                |
|                      | 4    | 1                      | 9       | 25      |                                   |                                                                                                                                  |

As set out above, given the limitations of the LinSig model in relation to MOVA, the model is considered to validate acceptably for the purpose of indicating the likely development impacts.

It is also noteworthy that the as part of planning application for Land West of Ratby (ref. 24-00914-OUT), an assessment of the junction was carried out for a 2024 base year. A review of that assessment indicated similar overall base flows to those included with the 2025 base model for the Sacheverell Way application as set out above. The modelling results for the Ratby application generally showed similar or lower levels of queuing compared to those presented in **Table 3.6** above. Given that model was accepted by NH, the base model presented above is considered acceptable and is suitable to provide a robust assessment of the development impacts.

### 3.5 A46/A50/Leicester Road Development Impacts

Based on the validated base model presented in this report, the proposed development impacts have been assessed. As set out earlier, the traffic flows have been adjusted to reflect the highway peak periods. However, this is likely to overestimate the development impacts given that this combines the highway peak periods and the development peak periods. In reality, the development traffic would generate less traffic in the AM and PM peaks. Therefore, both the development peaks (08:00-09:00 and 17:00-18:00) and highway peak (07:30-08:30 and 16:30-17:30) scenarios have been presented.

In order to address LCC's comment 3, as set out in the previous chapter, an additional sensitivity test has been carried out to understand the impact on Leicester Road, if existing traffic that the model assumes to be routing through Groby to access the A46/A50/Leicester Road junction actually used Sacheverell Way/Leicester Road instead. The PRTM model assumes that 24 additional movements would access the junction via the A50 northwest arm rather than Leicester Road, so in the sensitivity test, this has been reversed so that the 24 additional vehicles have been assigned to Leicester Road, with the same amount taken off Leicester Road (as assessed in Scenario 21 set out in **Table 3.7**). Given that the re-assignment was based on the PRTM which considers an AM peak of 08:00-09:00, the sensitivity test is based on the same period.

A summary of the LinSig modelled network performance for all assessed scenarios is presented in **Table 3.7**. Results are reported by stream Practical Reserve Capacity (PRC), overall PRC and total network delay. All scenarios were modelled with a 60 second cycle time.

The summary distinguishes between Do Minimum (2030 background traffic without the development) and Do Something (2030 with the development) scenarios for both the network peak hours and the development peak hours. All detailed LinSig outputs are included in **Appendix H**.

**Table 3.7 LinSig Network Performance Summary – All Scenarios**

| Scen.                  | Scenario                                       | Stream 1 PRC (%) | Stream 2 PRC (%) | Overall PRC (%) | Total Delay (pcuHr) |
|------------------------|------------------------------------------------|------------------|------------------|-----------------|---------------------|
| Highway Peak Hours     |                                                |                  |                  |                 |                     |
| 1                      | 2025 Base AM                                   | 8.7              | -15.9            | -15.9           | 68.52               |
| 2                      | 2025 Base PM                                   | 14.5             | -11.0            | -11.0           | 64.00               |
| 3                      | 2030 Do Minimum AM                             | 4.4              | 3.1              | 0.6             | 62.16               |
| 4                      | 2030 Do Minimum PM                             | 2.8              | -11.9            | -28.9           | 97.29               |
| 5                      | 2030 Do Minimum Sens AM                        | 0.8              | -3.5             | -31.5           | 80.00               |
| 6                      | 2030 Do Minimum Sens PM                        | 5.7              | -14.7            | -26.8           | 96.19               |
| 7                      | 2030 Do Something AM                           | 3.2              | 0.0              | -0.9            | 64.36               |
| 8                      | 2030 Do Something PM                           | -7.9             | -13.4            | -32.6           | 105.02              |
| 9                      | 2030 Do Something Sens AM                      | 0.8              | -3.5             | -5.9            | 67.28               |
| 10                     | 2030 Do Something Sens PM                      | 3.2              | -9.4             | -27.0           | 86.71               |
| Development Peak Hours |                                                |                  |                  |                 |                     |
| 11                     | 2025 Base AM                                   | 0.4              | 10.1             | 0.4             | 47.90               |
| 12                     | 2025 Base PM                                   | 28.0             | -2.9             | -2.9            | 48.21               |
| 13                     | 2030 Do Minimum AM                             | 3.0              | 5.7              | 3.0             | 55.77               |
| 14                     | 2030 Do Minimum PM                             | 16.8             | 4.0              | 4.0             | 53.95               |
| 15                     | 2030 Do Minimum Sens AM                        | 1.0              | -1.6             | -1.6            | 60.63               |
| 16                     | 2030 Do Minimum Sens PM                        | 16.4             | 3.3              | 3.3             | 54.37               |
| 17                     | 2030 Do Something AM                           | 1.9              | 2.4              | 1.9             | 55.90               |
| 18                     | 2030 Do Something PM                           | 13.2             | 6.1              | 6.1             | 53.83               |
| 19                     | 2030 Do Something Sens AM                      | 1.7              | 6.1              | 1.7             | 55.97               |
| 20                     | 2030 Do Something Sens PM                      | 13.2             | 3.8              | 1.0             | 55.65               |
| 21                     | 2030 Do Something Sens AM (Reassignment Check) | 2.7              | 3.7              | 0.0             | 57.99               |

Negative PRC values indicate that the relevant stream or network is operating over its theoretical capacity within the assessed cycle time.

During the highway peak the majority of scenarios are operating over its theoretical capacity. It is also noteworthy that due to the way LinSig assigns traffic and optimises junction performance, as well as the dynamic nature of the PRTM which partly informs traffic flows, the results do not present a linear deterioration in junction performance as traffic flows increase through the junction from scenario to scenario as would be expected with other modelling tools such as PICADY and ARCADY. However, what is clear is that when the Do Minimum scenario is compared to the corresponding Do Something scenario, the increase in PRC and delay is minimal.

For example, in the highway peak, 2030 Do Minimum scenario shows total delays of 62.16 pcu/hrs and 97.29 pcu/hrs in the AM and PM peaks respectively. In the 2030 Do Something Scenarios this changes to 64.36 pcu/hrs and 105.02 pcu/hrs. This results in an increase of 2.2 pcu/hrs or 3.4% the AM peak and 7.73 pcu/hrs or 7.9% in the PM peak. However, in the sensitivity test that includes the Ratby application, decreases in total delay are predicted when the Do Something scenario is compared to the Do Minimum.

In the development peak period, the 2030 Do Minimum scenario shows total delays of 55.77 pcu/hrs and 53.95 pcu/hrs in the AM and PM peaks respectively. In the 2030 Do Something Scenarios this changes to 55.90 pcu/hrs and 53.83 pcu/hrs. This results in an increase of 0.13 pcu/hrs or 0.2% the AM peak and a decrease of 0.09 pcu/hrs or 0.16% in the PM peak. This suggests that the proposed development would not have a material impact on the junction operation.

To support the network-level summary, lane-level performance for the busiest entry lane on each arm is provided in **Tables 3.8 to 3.15**. Degree of saturation, mean max queue and delay per PCU are reported for both the Do Minimum and Do Something across the highway and development AM and PM peak periods. Where a lane is flared, the degree of saturation is reported in the LinSig convention as 'short lane : long lane'.

**Table 3.8** and **3.9** indicate the highway peak 2030 Do Minimum and Do Something scenarios.

**Table 3.8 Highway AM Peak – Lane-Level Comparison (2030 Do Minimum vs 2030 Do Something)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 72.1 : 86.2              | 74.6 : 87.2  | 14.7                 | 15.1         | 16.6                | 17           |
| A46 East       | 82.8 : 87.3              | 87.4 : 89.0  | 9.8                  | 10.4         | 31.2                | 35.3         |
| A50 South      | 83.4 : 83.4              | 90.0 : 57.0  | 7.0                  | 7.0          | 42.0                | 33.0         |
| Leicester Road | 88.4 : 89.5              | 90.8 : 90.8  | 13.0                 | 14.2         | 26.6                | 30.9         |
| A46 West       | 57.8                     | 69.5         | 1.5                  | 4.4          | 24.0                | 21.1         |

**Table 3.9 Highway PM Peak – Lane-Level Comparison (Do Minimum vs Do Something)**

| Arm            | Degree of Saturation (%) |               | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|---------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something  | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 87.6 : 87.6              | 97.1 : 97.1   | 16.3                 | 24.9         | 22.4                | 45.4         |
| A46 East       | 96.5                     | 92.1 : 92.1   | 14.0                 | 12.7         | 83.7                | 42.3         |
| A50 South      | 100.7 : 86.0             | 102.0 : 87.5  | 15.4                 | 19.6         | 58.4                | 76.8         |
| Leicester Road | 104.2 : 116.0            | 101.1 : 119.3 | 48.7                 | 39.5         | 152.8               | 125.2        |
| A46 West       | 68.0                     | 77.8          | 3.5                  | 4.3          | 31.0                | 44.0         |

**Table 3.8** demonstrates that in the AM peak the predicted increases in queues and delays between the Do Minimum and Do Something scenarios is minimal. In most instances queues increase by approximately one vehicle and delays increase less than five seconds per PCU.

In the PM peak the largest increase in queues is predicted on the A50 northern arm, where queues are predicted to increase by eight vehicles, and delays by 23 second per PCU. However, in contrast queues and delays on other arms, such as Leicester Road, are predicted to decrease.

**Table 3.10** and **3.11** provide a summary of the highway peak results for the sensitivity test which includes the Land West of Ratby application.

**Table 3.10 Highway AM Peak Sensitivity Test – Lane-Level Comparison (2030 Do Minimum Sens Test vs 2030 Do Something Sense Test)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 72.7 : 89.3              | 73.0 : 89.3  | 15.5                 | 15.5         | 18.1                | 18.2         |
| A46 East       | 93.2 : 88.2              | 93.2 : 88.2  | 11.7                 | 11.7         | 38.8                | 38.8         |
| A50 South      | 80.8 : 80.8              | 80.8 : 80.8  | 6.9                  | 6.9          | 42.1                | 42.1         |
| Leicester Road | 94.4 : 118.4             | 94.1 : 95.3  | 30.9                 | 16.3         | 114.4               | 41.9         |
| A46 West       | 59.0                     | 59.9         | 2.3                  | 2.3          | 26.6                | 27.4         |

**Table 3.11 Highway PM Peak Sensitivity Test – Lane-Level Comparison (2030 Do Minimum Sense Test vs 2030 Do Something Sense Test)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 76.4 : 85.1              | 70.9 : 80.1  | 15.0                 | 13.4         | 17.0                | 13.9         |
| A46 East       | 103.2 : 103.2            | 94.6 : 94.6  | 31.6                 | 15.5         | 119.0               | 48.3         |
| A50 South      | 81.3:65.2                | 98.5 : 79.2  | 8.7                  | 11.7         | 25.6                | 39.4         |
| Leicester Road | 99.9:114.1               | 98.5 : 114.3 | 25.9                 | 27.5         | 107.3               | 118.8        |
| A46 West       | 89.2                     | 89.0         | 5.6                  | 5.6          | 80.6                | 78.0         |

**Table 3.10** and **3.11** indicate that there are no material increases in queues or delays as a result of the development traffic being added to the junction.

**Table 3.12** and **3.13** indicate the Do Minimum and Do Something results for the development peak period as assessed as part of the PRTM.

**Table 3.12 Development AM Peak – Lane-Level Comparison (2030 Do Minimum vs 2030 Do Something)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 75.8 :87.4               | 76.0 : 88.3  | 16.2                 | 16.4         | 16.5                | 16.5         |
| A46 East       | 82.6 : 84.9              | 77.1 : 77.1  | 9.0                  | 8.0          | 31.7                | 25.9         |
| A50 South      | 49.9 : 45.4              | 50.6 : 50.6  | 4.0                  | 4.2          | 23.6                | 23.8         |
| Leicester Road | 80.7 : 74.1              | 83.3 : 81.5  | 7.5                  | 8.2          | 14.3                | 16.3         |
| A46 West       | 61.6                     | 66.1         | 2.3                  | 2.7          | 15.0                | 17.4         |

**Table 3.13 Development PM Peak – Lane-Level Comparison (Do Minimum vs Do Something)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 77.1 : 77.1              | 76.3 : 79.5  | 12.7                 | 13.1         | 14.6                | 15.8         |
| A46 East       | 86.6 : 86.6              | 81.4 : 81.4  | 10.1                 | 8.6          | 33.3                | 28.9         |
| A50 South      | 84.8 : 73.1              | 84.8 : 74.2  | 8.9                  | 8.9          | 29.7                | 30.0         |
| Leicester Road | 82.3 : 82.4              | 84.3 : 84.2  | 9.8                  | 10.5         | 21.2                | 23.1         |
| A46 West       | 81.6                     | 81.5         | 4.7                  | 4.7          | 49.7                | 49.1         |



**Table 3.12** and **3.13** indicate that the proposed development would not result in a material increase in queues or delays in either the AM or PM peak period. The highest increase in queue on any arm is predicted on Leicester Road in the PM peak, however this is less than one vehicle and the corresponding increases in delay are negligible.

**Table 3.14** and **3.15** provide a summary of the development peak results for the sensitivity test which include the Ratby application.

**Table 3.14 Development AM Peak Sensitivity Test – Lane-Level Comparison (2030 Do Minimum Sense Test vs 2030 Do Something Sense Test)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 85.3 : 89.1              | 80.4 : 88.5  | 17.4                 | 16.8         | 21.8                | 17.7         |
| A46 East       | 91.5 : 91.5              | 80.2 : 80.2  | 12.0                 | 8.3          | 41.8                | 28.2         |
| A50 South      | 59.9 : 59.9              | 46.6 : 41.5  | 4.5                  | 3.8          | 28.7                | 22.3         |
| Leicester Road | 83.4 : 80.2              | 84.9 : 85.5  | 8.0                  | 8.8          | 16.4                | 18.1         |
| A46 West       | 59.4                     | 60.6         | 1.7                  | 1.7          | 22.7                | 23.2         |

**Table 3.15 Development PM Peak Sensitivity Test – Lane-Level Comparison (Do Minimum Sense Test vs Do Something Sense Test)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 77.4 : 77.4              | 77.1 : 79.5  | 12.8                 | 13.1         | 15.0                | 15.9         |
| A46 East       | 83.9 : 83.9              | 82.8 : 83.1  | 9.3                  | 8.9          | 30.5                | 29.8         |
| A50 South      | 87.1 : 72.4              | 86.7 : 73.5  | 9.2                  | 9.2          | 30.2                | 30.4         |
| Leicester Road | 83.4 : 81.8              | 85.6 : 89.1  | 9.9                  | 10.7         | 22.6                | 25.5         |
| A46 West       | 85.2                     | 85.6         | 5.4                  | 5.4          | 58.1                | 59.4         |

Once again, **Table 3.14** and **3.15** indicate that no discernible changes in queue or delay are predicted for the AM and PM peak periods.

**Table 3.16** indicates the results of the additional sensitivity test that considers the impact of traffic predicted to avoid Leicester Road, as indicated by the PRTM assessment, actually routes via Leicester Road. As a worst-case scenario, this is considered in the context of the Ratby application sensitivity test.

**Table 3.16 Development AM Peak Re-distribution Test – Lane-Level Comparison (2030 Do Minimum Sense Test vs Do Something Sense Test Re-distribution Test)**

| Arm            | Degree of Saturation (%) |              | Mean Max Queue (pcu) |              | Delay (Seconds/PCU) |              |
|----------------|--------------------------|--------------|----------------------|--------------|---------------------|--------------|
|                | Do Minimum               | Do Something | Do Minimum           | Do Something | Do Minimum          | Do Something |
| A50 North      | 85.3 : 89.1              | 76.0 : 87.6  | 17.4                 | 16.2         | 21.8                | 16.3         |
| A46 East       | 91.5 : 91.5              | 86.8 : 86.8  | 12.0                 | 10.1         | 41.8                | 33.5         |
| A50 South      | 59.9 : 59.9              | 49.1 : 41.5  | 4.5                  | 4.0          | 28.7                | 22.4         |
| Leicester Road | 83.4 : 80.2              | 88.2 : 90.0  | 8.0                  | 10.1         | 16.4                | 22.0         |
| A46 West       | 59.4                     | 68.5         | 1.7                  | 2.8          | 22.7                | 19.8         |

**Table 3.16** indicates that if traffic was to re-route via the Leicester Road rather than through Groby, the impact on the junction would be negligible. Queues on Leicester Road are predicted to increase by two vehicles, whilst delays would increase by six seconds. Such increases would not be noticeable to existing users on the network.

It is recognised that the LinSig model optimises the operation of the junction based on demand, and does not account for existing optimisation packages on the ground. It may therefore be necessary to review and amend the existing controller specification on the ground to provide a more efficient junction operation.

It is also noteworthy that Table 7.7 of the original Transport Assessment submitted as part of the application indicated the difference in traffic flows between the Do Minimum and Do Something scenarios. In terms of total traffic through the junction, during the AM peak, the development is predicted to add 46 vehicles through the junction, this equates to an increase of 0.8%. During the PM peak, 43 additional vehicles are predicted to route through the junction which equates to 0.76%. Such increase would not be perceptible to existing users on the network.

Overall, it is clear that the proposed development would not have a material impact on the operation of the junction and this could certainly could not be classed as sever in the context of paragraph 116 of the NPPF.

## 4. Summary and Conclusions

### 4.1 Summary

The Transportation Consultancy Ltd (TTC) have been commissioned on behalf of Bloor Homes to provide highways and transport support in relation to a proposed residential development south of Sacheverell Way, Groby, Leicestershire.

The technical note has provided clarity on a number of points in relation to off-site impacts, and sustainable travel connections.

The note confirms that the applicant will provide a new pedestrian refuge island towards the western end of the site to facilitate pedestrian crossing the road to reach Brookvale College or Ratby. Furthermore, the applicant is willing to upgrade the existing Vehicle Activated Sign (VAR) located along Sacheverell Way.

It is noted that requests from LCC to provide a footway along Sacheverell Way along the frontage of the site have been considered, however the benefit of this is deemed to be limited and outweighed by the negative impacts including loss of hedges and trees.

Consideration has also been given to the potential to provide infrastructure improvements along Sacheverell Way to provide a cycle link from the site to NCN 63. However, given the level of infrastructure required, and the level of cycle trips generated by the site, it is considered such infrastructure is not required to make the development acceptable, and is unlikely to be in line with government guidance on planning obligations which states they should be *'fairly and reasonably related in scale and kind to the development'*.

An updated assessment has also been carried out for the A46/A50/Leicester Road signalised roundabout junction. The model has also been adjusted based on detailed comments received from NH. The assessment shows that the proposed development would not have a material impact on the operation of the junction.

### 4.2 Conclusions

Based on the additional information provided, it is concluded that safe and suitable access can be provided for all users. Furthermore, it is considered that the proposed development would not result in a severe impact on the operation of the local highway network.

It can therefore be concluded that the proposed development is acceptable from a highway perspective, and is compliant with Paragraph 116 of the NPPF, which states that 'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios'.



# Appendix A

## LCC and NH Consultation Responses

**Substantive response of the Local Highway Authority to a planning consultation received under The Development Management Order.**



Response provided under the delegated authority of the Director of Environment & Transport.

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**APPLICATION DETAILS**

Planning Application Number: 25/01213/OUT

Highway Reference Number: 2025/1213/04/H

Application Address: Land South Of Sacheverell Way Groby Leicestershire

Application Type: Outline (with access)

Description of Application: Outline planning application for a residential development of up to 180 dwellings, alongside associated access via two junctions from Sacheverell Way, green and blue infrastructure (including drainage, landscaping and public open space), ancillary infrastructure, and enabling ground remodelling (All matters reserved except access)

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**GENERAL DETAILS**

Planning Case Officer: Ashleigh Gade

Applicant: C/O Agent

County Councillor: Cllr Ozzy O'Shea

Parish: Ratby

Road Classification: Class C

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**Substantive Response provided in accordance with article 22(5) of The Town and Country Planning (Development Management Procedure) (England) Order 2015:**

The Local Highway Authority does not consider that the application as submitted fully assesses the highway impact of the proposed development and further information is required as set out in this response. Without this information the Local Highway Authority is unable to provide final highway advice on this application.

**Advice to Local Planning Authority**

**Background**

The Local Highway Authority (LHA) has been consulted on an outline application for a residential development of up to 180 dwellings, alongside associated access via two junctions from Sacheverell Way. The site is located at land south of Sacheverell Way, Groby. All matters other than access are reserved at this stage.

The LHA has reviewed the following documents submitted by the Applicant in support of the proposals:

- Transport Assessment (Reference 211040-04 Rev. B, dated 3<sup>rd</sup> December 2025 and authored by TTC); and
- Framework Travel Plan (Reference 211040-05 Rev. B, dated 3<sup>rd</sup> December 2025 and authored by TTC)

Note – The LHA have included hyperlinks to relevant sections of the [Leicestershire Highway Design Guide](#) (LHDG) within this report. These are identified in bold, underlined and in blue text.

### **Site Access**

Two points of vehicular access are proposed to the site, both off Sacheverell Way, which is a C classified road subject to a 40mph speed limit. The route does not form part of Leicestershire County Councils Resilient Network<sup>1</sup>, or the Department for Transport's Major Road Network<sup>2</sup>. Details of the site accesses are shown on TTC drawing numbers 211040-00 Rev. A (overview plan), 211040-01 Rev. D (western priority junction) and 211040-02 Rev. D (eastern priority junction), included within Appendix I of the TA.

Both points of access measure 5.50m wide, with 2.0m footways proposed on either side and a 10.0m junction radii. The Applicant has proposed a 10.0m radii as opposed to a 6.0m radii due to the speed limit of the road and to facilitate easier ingress/ egress to the site.

The Applicant has undertaken two speed surveys on Sacheverell Way, which are stated to have been undertaken as part of Automatic Traffic Counts (ATC) between Thursday 20<sup>th</sup> June and Wednesday 26<sup>th</sup> June 2024. The locations of the speed surveys are shown in Figure 2.2 of the TA. ATC 'Site 1', located approximately 80m east of Laundon Way West, was selected out of the two ATC sites to inform volume and speed analysis on Sacheverell Way as it reported the highest speeds between the two counts undertaken. The results of the speed survey indicated the following 85<sup>th</sup> percentile speeds:

- 48.2mph eastbound
- 47.2mph westbound

The Applicant has stated 85<sup>th</sup> percentile speeds were taken from the 10:00-12:00 and 14:00-16:00 time periods exclusively. The Applicant has provided the raw data for ATC1 in Appendix C of the TA, however data for ATC2 has not been provided. Whilst the LHA accepts the use of the higher speed readings for the purposes of visibility splays, the raw data for ATC2 should also be provided for robustness. The LHA note the 24 hour 85<sup>th</sup> percentile speeds for ATC1 are 49.1mph eastbound and 48.4mph westbound.

The Applicant has stated that visibility splays of 2.4m x 139m would be required to the west of each access and 2.4 x 134m to the east of each access based on recorded vehicle speeds. Following a site visit, the LHA is satisfied splays of at least 2.4m x 215m can be achieved in both directions, which based on [Table 6](#) of the LHDG would be suitable for recorded vehicle speeds of between 54 to 62mph. The LHA is also satisfied following the site visit that due to the alignment of Sacheverell Way, the [junction spacing](#) between each access is sufficient, so that vehicles waiting in one of the access points would not interfere with visibility of a vehicle at the other access point.

After reviewing the site access drawings, the LHA provide the following comments:

- Given the speed limit and recorded vehicle speeds along Sacheverell Way, the Applicant is advised to design all aspects of the site access and off-site works to Design Manual for Roads and Bridges standards as the main road is subject to a 40mph speed limit. The LHDG is applicable to speeds up to 37mph.

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<sup>1</sup> <https://www.leicestershire.gov.uk/roads-and-travel/road-maintenance/the-resilient-network>

<sup>2</sup> <https://maps.dft.gov.uk/major-road-network/index.html>

TTC drawing number 211040-02 Rev. D.

- A 2m wide splitter island has been chosen. It is unclear if this crossing facility is to have any cycle provision or form part of any proposed route, therefore affecting the choice of splitter island width. Should a cycle link be proposed into the site at this point, consideration would need to be given to the refuge design and how cyclists would safely leave/ join the carriageway in this area.

### Road Safety Audit

The site access proposals have been accompanied by a Stage 1 Road Safety Audit (RSA1) and a Designer's Response, which are included within Appendix K of the TA. The RSA1 raised five problems in respect of surface water drainage, visibility, swept path analysis and visibility at the pedestrian crossing points over the site accesses and Sacheverell Way. The Applicant has accepted all five problems and outlined measures to resolve these within the Designer's Response.

This is accepted by the LHA.

### Swept Path Analysis

Swept path analysis of the two site accesses has also been undertaken using a refuse collection vehicle, as shown on TTC drawing numbers 211040-03 Rev. B (western priority junction) and 211040-04 (eastern priority junction) available within Appendix I of the TA. The LHA provide the following comments:

- Centre lines should be shown on Sacheverell Way to establish the exact extents of any over riding on the main road, as per problem 2.3 of the RSA1.

### Highway Safety

The Applicant has obtained Personal Injury Collision data (PIC) from Leicestershire County Council for the period between 1<sup>st</sup> January 2020 and 15<sup>th</sup> September 2025. This is summarised within Table 2.6 of the TA, along with a location plan which is included in Figure 2.7 of the TA.

The LHA advise that it has reviewed its PIC database and there has been one additional PIC recorded since the Applicant's review. This occurred in December 2025 at the Leicester Road/ Co-op access and was recorded as serious in severity. The PIC involved a pedestrian and another vehicle.

Notwithstanding the additional PIC, the LHA accepts the Applicants PIC analysis and conclusion that overall, whilst all PICs are regrettable, the frequency and severity of PIC's recorded within the study area over the latest five-year period does not suggest there are any inherent safety issues on the network. It is also noted that no PIC's have occurred within 500m either side of the proposed site access points on Sacheverell Way.

As a result, subject to a safe and suitable access design being demonstrated, the LHA considers the proposals are unlikely to exacerbate any existing highway safety concerns.

### Trip Generation and Distribution

#### Trip Generation

In order to establish the level of vehicular traffic which could be generated by the proposed development during the AM and PM peak hours, the Applicant has used the same TRICs trip rates as those accepted by the LHA as part of approved application reference 22/00648/OUT (75



dwelling, Land South Of Markfield Road, Ratby) and live application reference 24/00914/OUT (470 dwellings, care facility, community hub and primary school, Burroughs Road Recreation Ground, Burroughs Road, Ratby). The LHA therefore considers the vehicular trip rates shown in Table 1 to be acceptable.

| Time Range              | Trip Rate (1-unit) |        |         | Trip Generation (180-dwellings) |        |         |
|-------------------------|--------------------|--------|---------|---------------------------------|--------|---------|
|                         | Arrive             | Depart | Two-way | Arrive                          | Depart | Two-way |
| AM Peak (08:00 – 09:00) | 0.175              | 0.455  | 0.630   | 32                              | 82     | 114     |
| PM Peak (17:00 – 18:00) | 0.440              | 0.218  | 0.658   | 79                              | 39     | 118     |

Table 1: Vehicular trip rates (180 dwellings).

### Trip Distribution

In order to distribute the development traffic through the network, the Applicant has used Leicestershire County Council's [Pan Regional Transport Model](#) (PRTM).

The LHA has worked with the Applicant throughout the pre-application stage and agreed the Base Year Model Review and Uncertainty Logs. The results of the PRTM assessment indicate development trips are forecast to primarily route to and from the east along Sacheverell Way in both the AM and PM peaks. From here traffic heads east along the A46, or south towards Leicester city centre via the A50. A small percentage of traffic is predicted to head west from the site heading towards Ratby, or north through Groby via Ratby Road.

### Junction Capacity Assessments

The Applicants study junctions and dates traffic counts were undertaken are detailed below:

1. Proposed Site Access Junction off Sacheverell Way.
2. Laundon Way West/Sacheverell Way Priority T-junction (Tuesday 24<sup>th</sup> June 2025).
3. Laundon Way East/Sacheverell Way Priority T-junction (Tuesday 24<sup>th</sup> June 2025).
4. Sacheverell Way/Leicester Road Roundabout Junction (Tuesday 24<sup>th</sup> June 2025).
5. Groby Road/Leicester Road Priority T-junction (Tuesday 24<sup>th</sup> June 2025).
6. A50/A46 Roundabout Junction (Tuesday 24<sup>th</sup> June 2025).
7. Groby Road/Sacheverell Way Ghost Island Priority Junction (Tuesday 24<sup>th</sup> June 2025).
8. Ratby Road/Markfield Road/Leicester Road Priority Junction (Wednesday 8<sup>th</sup> October 2025).
9. Leicester Road/Newtown Linford Lane Priority T-junction (Wednesday 8<sup>th</sup> October 2025).
10. Newton Linford Lane/A50 Priority T-junction (Wednesday 8<sup>th</sup> October 2025).

The LHA holds records of survey permits for the dates shown.

The traffic counts and modelled flows were provided to LCC's NDI Team to undertake a furnishing process and produce the future model scenarios. The furnished matrices are available in Appendix P of the TA. It should be noted for the purposes of this assessment, the Applicant has considered a single point of vehicular access to the site, whereas two points of access are being applied for. It is therefore accepted that the assessment of the site access is a worst-case scenario. The LHA is also satisfied a single point of access would not influence the modelling/ trip distribution to/ from the site.

The following scenarios have been tested, which are accepted by the LHA:

- 2025 Base
- 2030 'Do Minimum 1'

- 2030 'Do Minimum 2' (Sensitivity Test)
- 2030 'Do Something 1'
- 2030 'Do Something 2' (Sensitivity Test)

The sensitivity test includes application reference 24/00914/OUT (470 dwellings, care facility, community hub and primary school, Burroughs Road Recreation Ground, Burroughs Road, Ratby) to inform the situation should that application be granted planning permission by the LPA.

The LHA initially advise the following points which should be reviewed by the Applicant. Following this, the LHA will review the Applicants junction modelling.

#### Junctions 6 and 8

The Applicant has highlighted that junction 6 is shown to be approaching capacity in the AM peak, and operating over its capacity in the PM peak in all scenarios. The LHA note that the AM peak is shown to operate overcapacity in all but the 2025 scenario. The LHA is aware that queueing can occur predominantly in the AM peak along the Leicester Road arm of this junction, across junction 4 and back along Sacheverell Way.

The Applicant has stated within the TA that in the AM peak hour, the PRTM model shows an increase in trips utilising Ratby Road and Newtown Linford Lane through junctions 8 and 10 to access junction 6. This is stated to be predominantly made up of existing trips re-routing away from Sacheverell Way, potentially due to increased congestion levels predicted within the model on approach to junction 6.

Figure 6.3 of the TA indicates in the AM peak, approximately 42 additional vehicle trips along Groby Road close to the school, with 33 routing through junction 8 and 28 routing through junction 10 on to the A50 to junction 6.

With regards to junction 8, the Applicant has suggested that the junction operates within capacity in current conditions, however it is close to capacity on the Ratby Road arm in the AM peak. In the 2030 Do Something 1 and 2 scenarios, the junction is shown to be overcapacity in the AM peak on this arm.

The Applicant has stated that only six development trips would route through the junction during the AM peak, which would not have a material impact on the junction. The Applicant has also stated it is likely that the PRTM assessment is overestimating the amount of traffic that is likely to re-assign via Ratby Road, especially as it does not show the volume/ capacity ratios exceeding 75%. The Applicant continues that the route via Ratby Road to junction 6 is considerably more convoluted compared to travelling along Sacheverell Way and Leicester Road. Furthermore, the capacity assessments indicate that the junction 4 is operating with spare capacity available. The Applicant therefore believes that should the reassigned traffic remain on Sacheverell Way, this is unlikely to result in a material impact.

The Applicant suggests at junction 6, the overall level of impact is likely to be similar whether the re-assigned traffic accesses the roundabout from the A50 north arm (via junctions 8 and 10) or via Leicester Road. It is also highlighted the Leicester Road arm of junction 6 is shown to operate with spare capacity in all scenarios.

The LHA advises it has concerns that the development appears to result in through traffic re-routing along more unsuitable roads to reach junction 6 as a result of the development traffic

causing additional delays. As advised further above, the LHA is also aware of queueing which can occur along Leicester Road/ Sacheverell Way and over junction 4 to reach Junction 6. It is noted that whilst the Applicant states the proposals are unlikely to have a material impact regardless of which route traffic takes to reach junction 6, this has not been demonstrated within a capacity assessment for example, all traffic routing to junction 6 via Sacheverell Way/ Leicester Road and junction 4.

The LHA requests the Applicant gives further consideration to the impact of the development at Junction 6 in particular, and whether any improvements could be made to reduce queueing and delay on Sacheverell Way/ Leicester Road.

### Junction 7

The Applicants capacity assessments indicate that the junction would operate within capacity in all scenarios. As part of application reference 24/00914/OUT, the Applicant for that development highlighted that the junction would be operating at overcapacity in 2031 and proposed a junction signalisation scheme. The scheme was subsequently advised as a condition by the LHA, should the LPA be mindful to grant planning permission.

Given the above, it appears there are significant differences in the junction modelling when comparing the two applications. The LHA is aware delays can occur on Groby Road during peak hours. Therefore and considering the requirements for application reference 24/00914/OUT, the LHA request the Applicant gives further consideration to the impact of the development on the junction.

### Off-Site Implications

A pedestrian refuge is proposed on Sacheverell Way to aid pedestrian movements between the site and Groby. This is located to the east of the site as it is stated this would be the main pedestrian desire line to/ from the development.

The Applicant has stated that based on the results of the site survey and supporting information, it is considered that the road has an average gap acceptance of five seconds during the busiest peak period. Given it is likely to take five seconds on average to cross the road it is possible that some pedestrians would find crossing the road difficult, resulting in longer waiting times. However, the pedestrian demand is relatively low, therefore a formal signalised pedestrian crossing is not considered necessary by the Applicant. It is therefore proposed to provide a central pedestrian refuge that would allow pedestrians to cross the road in two parts.

The LHA welcome and accept the proposed central refuge in principle. However, it was advised at the pre-application stage that a similar crossing facility to the west of the site would be beneficial to pupils walking to Brookvale College, as this would be the main desire line for pupils. Similar provision should therefore be provided to the west of the site and included on a drawing.

Furthermore, whilst the crossing points are proposed to be linked by footways internal to the site, the LHA advises internal isolated footways are unlikely to be considered for adoption by Leicestershire County Council. It is strongly advised that the Applicant provides a pedestrian footway within the highway alongside Sacheverell Way along the entire site frontage. This would need to cover the area between the two site access points, as well as the pedestrian refuge points.

National Cycle Network (NCN) Route 63 runs from the west of the site on Groby Road and provides access to Ratby to the west and Leicester to the east; this network is a mix of traffic-free and on-road. It is noted that Sacheverell Way falls short on the Local Transport Note 1/20 in

relation to infrastructure requirements for cyclists as there is no formal off-road cycle provision. The LHA request the Applicant to investigate creating an off-road cycle link from one of the access points on Sacheverell Way to the west, to connect with existing provisions at the junction with Groby Road where cyclists can then pick up the NCN Route 63.

The Applicant has stated that residents would benefit from access to the off-road permissive cycleway to the west of the site, which provides an off-road connection to the National Cycle Network and links to Leicester City Centre and Ratby. To the northeast of the development, it is stated there is access to Leicester Road, which accommodates a local off-road cycle route which is conducive of cycling for all abilities. Furthermore, Laundon Way, which is approximately 80m northeast of the eastern most pedestrian access, is lightly trafficked and more in line with LTN 1/20 guidance regarding mixed traffic scenarios.

The LHA advise however that an off-road link from the western side of the development which connects to existing facilities would still be beneficial, particularly for school pupils.

Finally, the LHA advise that there are currently mobile Vehicle Activated Sign (VAS) locations along the length of Sacheverell Way. Given the recorded speeds of passing traffic along the site frontage, the LHA advise it would be beneficial for the Applicant to install permanent VAS along Sacheverell Way in the vicinity of the site access points, for traffic flows in each direction.

### **Internal Layout**

The internal layout of the development is not for consideration at this stage and has therefore not been studied in detail. In the event the proposals are granted planning permission by the LPA, the Applicant should be aware of [Policy 5](#) of the LHDG if they wish for the internal development roads to be put forward for adoption.

Should the two site access points be linked as a vehicular through route, this route must be put forward for adoption and designed to an adoptable standard, otherwise the two access points must not be linked to through traffic.

The Applicant should also note the requirement to provide some [visitor parking](#) as part of the planning layout if planning permission is granted.

### **Highway Trees**

The submitted Arboricultural Assessment presents a clear and unbiased assessment of trees which may be affected by the proposed development. Unfortunately, the report does not identify trees and hedgerow as being part of LCC adopted highway and instead considers the trees to be part of the hedgerow.

The LHA understand trees on Sacheverell Way have been recorded as part of LCC managed highway for more than 20 years and that the hedge was planted on the boundary, with the trees planted just proud of the hedge and in the public highway.

LCC managed trees form part of Group 1 (G1) and that G1 is noted on the Tree Preservation Order. The LHA agree with the AA that the trees on Sacheverell Way are not covered by the Tree Preservation Order (TPO) – they are too young to be considered part of the TPO and would not be present when the order was created.

The proposed vehicle access points require four LCC managed trees and hedgerow to be removed. The LHA would be prepared to accept the loss of these trees providing suitable

remuneration is provided by the Applicant, i.e. the trees amenity value as defined by the Capital Asset Value for Amenity Trees (CAVAT). The remaining LCC managed trees are marked for retention and attributed with a root protection area (an area to remain free of construction, or where work is under strict supervision).

The LHA request that the Applicant provides a method statement to show how and when retained trees will be protected, and how works near to LCC trees (including vehicle access creation) will be managed. It is also requested that the developer look to provide suitable remuneration for tree loss as expressed using CAVAT.

The Applicant may wish to contact [Forestry@leics.gov.uk](mailto:Forestry@leics.gov.uk) to discuss the proposals and the impact on highway trees.

### **Transport Sustainability**

The Applicant has submitted a Framework Travel Plan, however given the proposals are solely for a residential development, a full Travel Plan is required. This could however be conditioned.

The closest bus service to the site is the hourly Arriva 27 service which runs between Ratby and Leicester city centre. This routes along Laundon Way. The LHA requests clarification from the Applicant as to whether they have liaised with the bus operator to potentially route the service closer to the site, for example along Sacheverell Way or through the site itself. This could require new bus stops on Sacheverell Way or within the site itself.

The LHA would require a Travel Plan Monitoring fee of £6,000 and appointment of a Travel Plan Co-Ordinator as part of a Section 106 agreement, should the LPA be mindful to grant planning permission for the proposals in the future.

The Applicant would also be required to provide one travel pack per dwelling (currently £52.85 per pack, if supplied by LCC) which contains an application form for two six-month bus passes to encourage sustainable travel to and from the site. Currently, the cost of a bus pass for an Arriva service is £632.50 per pass. The Applicant should be aware that should they choose to create the Travel Pack themselves, there is a fee of £500.00 to be paid to LCC to review the packs prior to distribution.

### **Public Rights of Way (PRoW)**

The application site includes PRoW Footpath R51 which crosses the southwestern corner of the site heading from Ratby village. R51 then runs along the outside of the southeastern edge of the site and connects with Footpath R116 which runs along the outside eastern edge of the site adjoining the A46 Leicester Bypass.

Paragraph 105 of the NPPF (2024) requires:

*“Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users ...”*

Also Planning Policy Guidance in Circular 1/09 establishes that:

*“The effect of development on a public right of way is a material consideration in the determination of applications for planning permission ...”*

Rather than reflecting the legally defined route shown on the Definitive Map, the submitted plans propose constructing a path along the inside of the site edge. This will necessitate the legal diversion of public right of way Footpath R51. That requires a separate legal order made by the LPA (not the LHA), a separate application for which needs to be submitted. The legal order must be confirmed before the development is substantially complete. If this is not done, any construction or tree planting on the existing legal alignment would constitute an unlawful highway obstruction.

The LHA advise in the event it is mindful advise approval of the proposals in the future, improvements to the PRow such as surfacing, signing, boundary treatments and management during construction could be conditioned.

### **Construction Access and Construction Traffic**

Planning Permission is required for any construction access onto a classified road, unless it is in strict accordance with the development access planning approval. To carry out off-site works associated with a construction access onto a classified road, separate approval must first be obtained from Leicestershire County Council as Local Highway Authority. This will take the form of a major section 184 permit. However, if planning consent has not been secured in respect of the construction access, the section 184 application will be refused. It is therefore strongly advised the Applicant provides details of any construction access, should it not be in accordance with one of the two proposed site accesses, at this stage.

Construction traffic and the route HGV's/ construction vehicles would use to access the site is not a material planning consideration. The LHA would not be able to seek to resist the proposals based on construction traffic, the type of vehicles used, or the route HGVs would take to access the site.

Nevertheless, the LHA would advise the LPA, that in the event it is mindful to advise approval of the proposed development, it would require a Construction Management Plan (CMP) to be conditioned, which would need to be submitted and approved prior to any construction works on the site. As a minimum the CMP should include details of the routing of construction traffic, along with details of parking and wheel washing facilities.

### **Closing**

Based on the above, in summary, the following information should be submitted to the LPA for consideration by the LHA:

- Raw survey data for ATC2;
- Consideration of the design for the pedestrian refuge/ splitter island for cyclists;
- Details of the centre lines on Sacheverell Way to aid with swept path analysis;
- Further consideration of the developments impact at junctions 6, 7 and 8 as detailed further above;
- Provision of a pedestrian (or cycle) refuge to the west of the site to aid pupils crossing to Brookvale College;
- Provision of a 2.0m wide pedestrian footway along the site frontage;
- Provision of an off-road cycleway along Sacheverell Way linking the site to existing facilities to the west;
- Installation of permanent VAS along Sacheverell Way within the vicinity of the site accesses;
- Provision of a Method Statement regarding the highway trees
- Provision of a Full Travel Plan;
- Consideration as to whether the existing 27 bus service could be routed passed the site; and
- Potentially consideration of any construction access.

**Date Received**  
**13 January 2026**

**Case Officer**  
**Ben Dutton**

**Reviewer**  
**DH**

**Date issued**  
**26 March 2026**



## National Highways Planning Response (NHPR 25-01) Formal Recommendation to an Application for Planning Permission

From: Kamaljit Khokhar (Head of Planning & Development)  
Operations Directorate  
Midlands Region  
National Highways  
[PlanningM@nationalhighways.co.uk](mailto:PlanningM@nationalhighways.co.uk)

To: Hinckley and Bosworth Borough Council (FAO Ashleigh Gade)  
[planning@hinckley-bosworth.gov.uk](mailto:planning@hinckley-bosworth.gov.uk)

CC: [transportplanning@dft.gov.uk](mailto:transportplanning@dft.gov.uk)  
[spatialplanning@nationalhighways.co.uk](mailto:spatialplanning@nationalhighways.co.uk)

**Council's Reference:** 25/01213/OUT

**Location:** Land South of Sacheverell Way, Groby, Leicestershire

**Proposal:** Outline planning application for a residential development of up to 180 dwellings, alongside associated access via two junctions from Sacheverell Way, green and blue infrastructure (including drainage, landscaping and public open space), ancillary infrastructure, and enabling ground remodelling (all matters reserved except access)

**National Highways Ref:** NH/26/14553

Referring to the consultation on a planning application dated 14 January 2026 referenced above, in the vicinity of the A46 Trunk Road that forms part of the Strategic Road Network, notice is hereby given that National Highways' formal recommendation is as follows:

- ~~a) offer no objection (see reasons at Annex A);~~
- ~~b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – National Highways recommended Planning Conditions & reasons);~~
- c) recommend that planning permission not be granted for a specified period (see reasons at Annex A);
- ~~d) recommend that the application be refused (see reasons at Annex A)~~



Highways Act 1980 Section 175B is not relevant to this application.<sup>1</sup>

This represents National Highways' formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should the Local Planning Authority propose not to determine the application in accordance with this recommendation they are required to consult the Secretary of State for Transport, as set out in the [Town and Country Planning \(Development Affecting Trunk Roads\) Direction 2018](#), via [transportplanning@dft.gov.uk](mailto:transportplanning@dft.gov.uk) and may not determine the application until the consultation process is complete.

The Local Planning Authority must also copy any consultation under the 2018 Direction to [PlanningM@nationalhighways.co.uk](mailto:PlanningM@nationalhighways.co.uk).

This response and all comments outlined herein are made in respect of planning matters only in National Highways' position as a statutory planning consultee, and does not confer any proprietary rights nor amount to the giving or refusal of consent, assent, approval, or awareness of or by National Highways in or of any other aspects or matters (including, but not limited to, the use of property belonging to National Highways). If anyone wishes for National Highways to consider any aspects which do not relate to planning submissions, they should call our contact centre on 0300 123 5000.

|                                                                                      |                                            |
|--------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Signature:</b> <i>THewitt</i>                                                     | <b>Date:</b> 2 <sup>nd</sup> March 2026    |
| <b>Name:</b> Thomas Hewitt                                                           | <b>Position:</b> Assistant Spatial Planner |
| <b>National Highways</b><br>Three Snow Hill, Snow Hill Queensway, Birmingham, B4 6GA |                                            |

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<sup>1</sup> Where relevant, further information will be provided within Annex A.

## **Annex A**     **National Highways' assessment of the proposed development**

National Highways has been appointed by the Secretary of State for Transport as a strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

### **Deferral**

It is recommended that the application should not be determined for a period of 3 months from the date of this notification to allow the applicant sufficient time to provide additional information.

### **Reasons**

National Highways key interest is the A46/A50 junction, which forms the nearest connection to the SRN and is located approximately 1.5km northeast of the proposed site. The proposed site also shares a boundary with the A46 northbound carriageway.

National Highways has been engaging with the applicant in ongoing pre-application discussions since March 2025 to agree on the scope of traffic-related matters, including, but not limited to, trip rates, trip generation, and PRTM modelling methodology.

As part of the planning application submission, a deferral letter was first issued on 4 February 2026, to allow the applicant sufficient time to provide additional information on matters, including but not limited to traffic, boundary, and drainage aspects of the application.

Since then, the applicant has provided additional information to address these outstanding matters, and our comments are provided below.

### **Standalone Junction Assessment**

To address our comments regarding the LinSig model audit of the A46/A50/Leicester Road signalled roundabout junction, we have reviewed the following documents, submitted via email dated 13 February 2026:

- A46-A50 Rbt Existing + Calibration.lsg3x
- A46-A50 Arcady Coefficients.j11
- 14555 Groby CTC Data - To Issue.xlsx

Following this review, we have the following comments:

### Signal Data

Whilst we understand that the applicant has received the LinSig model from Leicestershire County Council (LCC), please supply the Controller Specification documents so that we can confirm the model corresponds with the existing signal operation. Please supply us with the LinSig model received from LCC so that we can fully understand the changes made.

### Model Structure

Please review the cruise times used on all connectors to ensure they accurately represent the time it takes vehicles to get from node to node. For example, the cruise time from Arm 6 (eastern circulatory) to Arm 13 (circulatory adjacent to A46 South approach) is zero seconds which is not realistic, as Arms 11 and 14 will not be seeing the platoon of vehicles from Arm 6 at the correct duration after Arm 6 turns green.

Also, the combined cruise time from Arm 6 (eastern circulatory) to Arm 2 (western circulatory) is 18 seconds, whilst the cruise time from Arm 8 (A50 East) to Arm 2 is 24 seconds and the cruise time from Arm 11 (Leicester Road) to Arm 2 is 28 seconds. The Leicester Road approach is closer to the western circulatory than the other two arms, but has the longer cruise time. Comparing these three values, these input values do not appear correct.

The cruise time from Arm 11 (Leicester Road) to Arm 13 Lane 1 has been entered as 18 seconds, whereas the connector to Arm 13 Lane 2 has been entered as 10 seconds. This difference in cruise times may affect the routing of traffic between Zones C and E. Vehicles are unlikely to use the nearside lane (lane 1) due to the journey time penalty compared to using lane 2. This lane usage may affect how vehicles on the A46 sliproad enter the roundabout.

Therefore, please update the model by determining accurate cruise times by entering suitable mean cruise speeds and custom lane lengths on each connector.

Please supply us with a CAD drawing of the junction so that we can check measurements for lane lengths and the JUNCTIONS 11 give way entry parameters. It would be helpful if this CAD file showed the measurements used in the base model builds.

As per LinSig modelling best practice, please ensure that all non-signalised lanes have an Unconstrained Infinite Saturation Flow. Saturation flows place a capacity constraint on lanes and when lanes are not signalised, this constraint does not exist. Such constraints could also affect the vehicle routing.

As the Leicester Road (Arm 11) and A46 South (Arm 14) approaches have different destinations on each lane of both approaches, we would like to see these approaches modelled with two lanes at the roundabout entry. From the queue data obtained for

each lane, we would like to understand how queues are split across each lane of both approaches. When entering the Slope and Intercept values into LinSig, please note that JUNCTIONS 11 calculates them for the approach, whilst in LinSig they need to be entered per lane. Please also make sure the effect the flares have on these give way parameters is understood. It may not be suitable to equally divide the give way parameters across each lane when flares are present.

On Arm 14 (A46 South), the Clear Conflict values have been reduced to zero (from the default value of 2 seconds) on two of the three movements. Please explain why these values have been adjusted.

Please ensure Queue de-sliver threshold values are only used when the queue graph for that respective lane shows a sliver queue in any of the modelled scenarios. The LinSig User Guide states they should not be used to hide a genuine queue and the threshold value entered should be as small as necessary to remove the sliver queue.

#### Traffic Flows

The supplied traffic survey data only shows the total number of vehicles for each time period and these will have been converted into Passenger Car Unit (PCU) for input in the LinSig models. Please confirm the PCU factors which have been used and the classifications used by the survey company. To help us understand how the traffic flows for all modelled scenarios have been developed, please provide traffic flow analysis spreadsheet.

Please show how peak hours have been determined. We wish to see the junction assessed in the peak hours with the highest traffic flows. 08:00 to 09:00 and 17:00 to 18:00 have been modelled, but our analysis of the traffic survey data shows that highway peaks are 07:30 to 08:30 and 16:30 to 17:30. The analysis shows that the total roundabout PM Peak flows are 7% higher than those modelled.

#### Observed Queue Length Data

We note that queue data has been recorded in vehicles, so these values will need to be converted into PCUs so that they can be compared to the LinSig model output data. As HGV percentages can vary from approach to approach, we recommend that a PCU conversion factor be determined for each approach; please ensure assumptions in any calculations are provided.

Queue data shows that queues on three of the lanes exceeded the recorded queue length in both peaks. The applicant will therefore need to adjust these maximum values to accurately reflect the observed queuing to produce an accurately validated base model. As excess queuing on will potentially affect the operation of the SRN, our main area of concern is that the queues observed on the two A46 sliproads, specifically the northern sliproad (Arm 5), be accurately replicated.

On the A46 North approach (Arm 5), the queue data shows the observed queues on Lane 2 are lower than on Lane 3. To help with base model validation, it may be more appropriate to model the flare on lane 2, rather than lane 3.

#### Base Model Validation

Please can supply a model validation table, for each peak hour, comparing the observed and modelled queue lengths on a lane-by-lane basis. Please provide a narrative explaining how well the model validates across each approach. When recording the modelled queue lengths on flared lanes, we recommend that the respective “storage graph for short lane” be referred to. When looking to achieve the validity of the model that is required, please determine the suitability of all the input parameters such as signal timings and saturation flows.

The model currently does not show good validation on the A46 North slip road in both peaks. Please note that traffic surveys only record vehicles that get through the stopline. They will not record vehicles that fail to get through the stopline in periods of high demand. In these situations, it may be necessary to add back in this latent demand to ensure the model accurately represents the observed queues.

As observed queues appear to be exceeding the area that it was possible to record on some arms, it may have been more suitable to validate off Degree of Saturation surveys, rather than queue surveys. However, as only queue length data was collected, we shall support as best as possible to achieve validation of the model on the information available.

#### General Comments

Please ensure any relevant guidance is noted from Local Transport Note 1/09 – Signal Controlled Roundabouts.

Once we are content with the base model validation, we will then move on to understand the impact of the development in the future year tests.

#### Important Note

These comments do not imply a pre-determined view on the acceptability of the proposed development in traffic, environmental or highway terms. They specifically address matters related to National Highways’ responsibilities to manage and maintain the Strategic Road Network (SRN) in England, in line with DfT’s Circular 01/2022, to support the sustainable delivery of growth. Comments on the Local Road Network should be sought from the Local Highway Authority.

### **Standing advice to the local planning authority**

The Climate Change Committee's [2022 Report to Parliament](#) notes that for the UK to achieve net zero carbon status by 2050, action is needed to support a modal shift away from car travel. The NPPF supports this position, with paragraphs 77 and 110 prescribing that significant development should offer a genuine choice of transport modes, while paragraphs 109 and 115 advise that appropriate opportunities to promote walking, cycling and public transport should be taken up as part of a vision-led approach.

Moreover, the carbon reduction hierarchy (avoid-switch-improve) as set out in clause 4.3 of PAS2080:2023 promotes approaches and measures to minimise resource consumption and thereby reduce carbon emissions.

These considerations should be weighed alongside any relevant Local Plan policies to ensure that planning decisions are in line with the necessary transition to net zero carbon.



# Appendix B

## Site Access Drawings

## Overview Plan:



|                               |                                           |                |                  |      |
|-------------------------------|-------------------------------------------|----------------|------------------|------|
| Date of 1st Issue<br>05/06/25 | Description<br>First Issue                | Drawn by<br>OH | Checked by<br>JC |      |
| REVISIONS                     |                                           |                |                  |      |
| Mark                          | Revision                                  | Drawn          | Date             | Chkd |
| A                             | Relocation of western access              | OH             | 02/07/25         | JC   |
| B                             | Updated to reflect comments from LCC      | OH             | 26/01/26         | JC   |
| C                             | Relocation of western pedestrian crossing | OH             | 12/05/26         | JC   |

Key:

- |                                                                                     |                      |
|-------------------------------------------------------------------------------------|----------------------|
|  | Site Boundary        |
|  | Topographical Survey |
|  | Proposed Design      |
|  | Highway Boundary     |
|  | Key Dimensions       |

Notes:

1. Drawing units are in metres unless specified otherwise.
2. Drawing is based on topographical survey data from Define.
3. Extents of the highway boundary have been interpreted from data obtained from LCC.

|               |
|---------------|
| A3 SCALE      |
| Not too scale |

|               |                                                                |
|---------------|----------------------------------------------------------------|
| Drawing Title | Sacheverell Way, Groby<br>Site Access Strategy - Overview Plan |
|---------------|----------------------------------------------------------------|

Client  
**Bloor Homes**

|                |                 |
|----------------|-----------------|
| Drawing Status | For Information |
|----------------|-----------------|

27 Park Street  
Leamington Spa  
CV32 4QN  
E: [info@ttc-transportplanning.com](mailto:info@ttc-transportplanning.com)

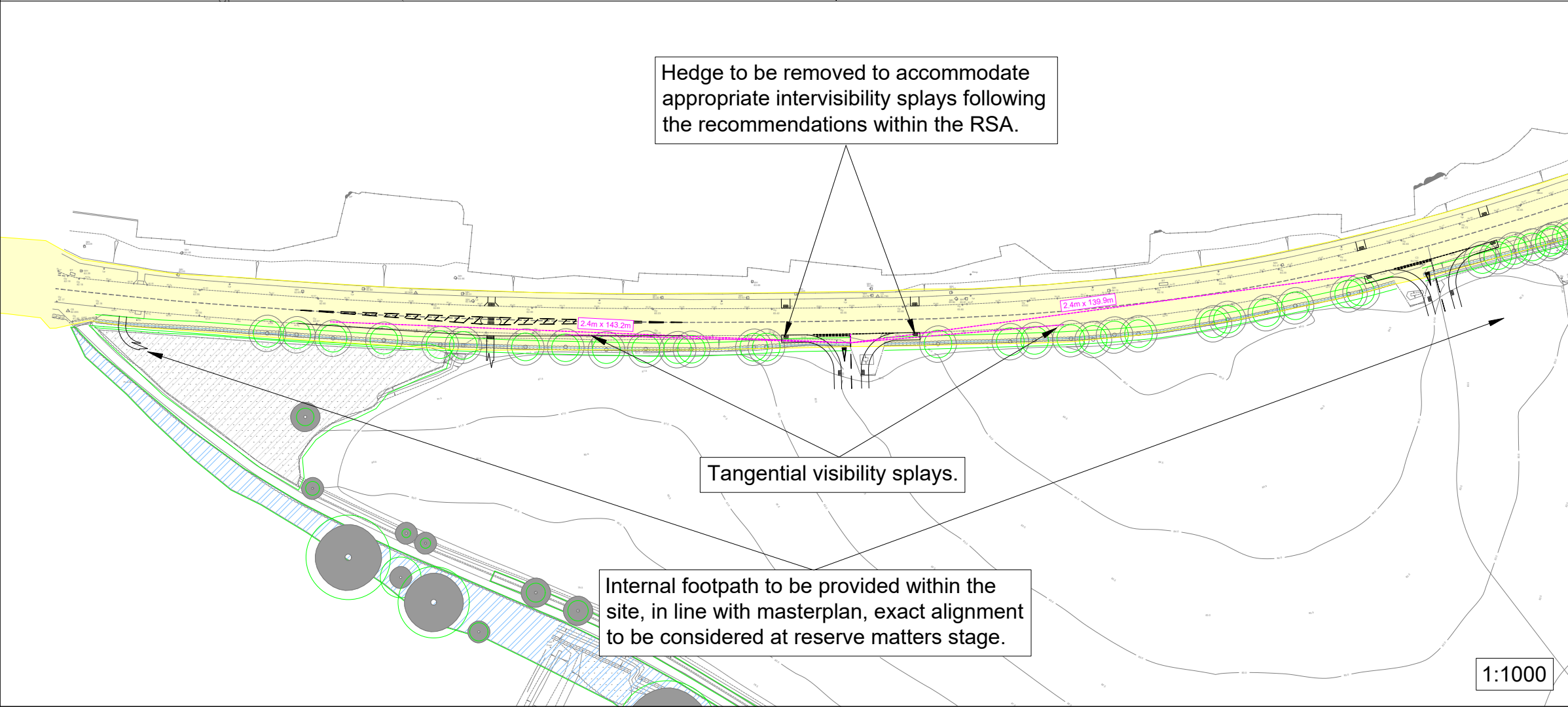
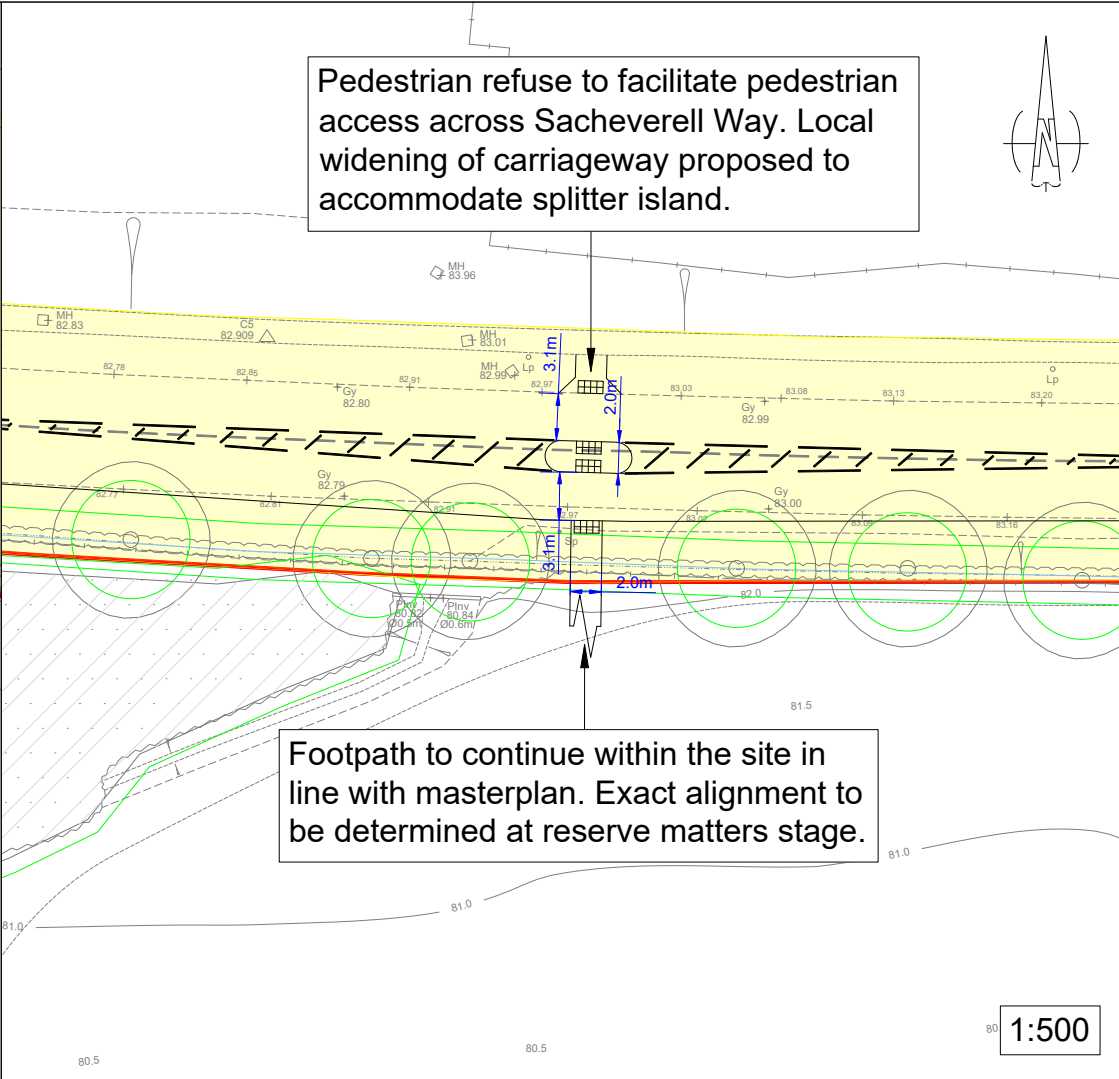
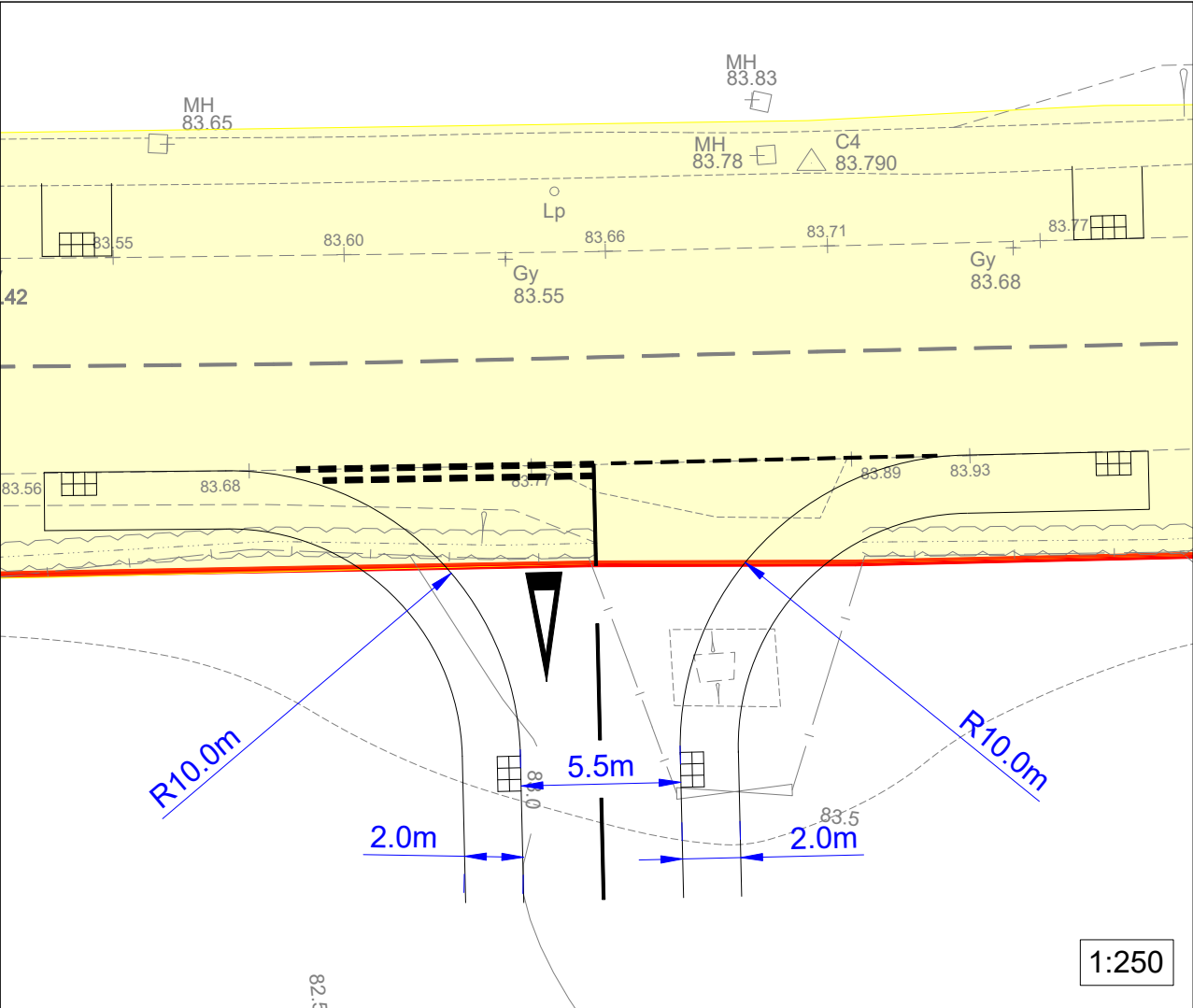


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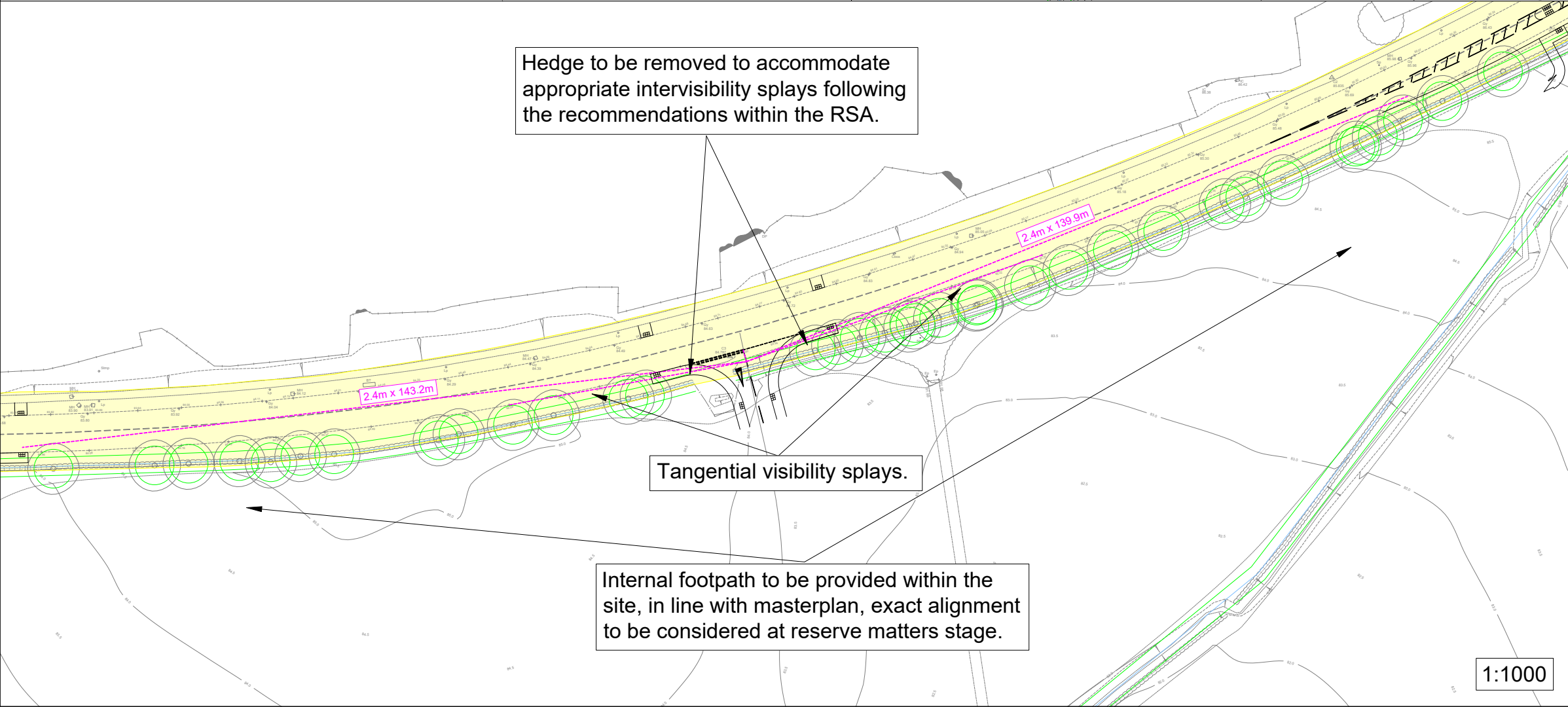
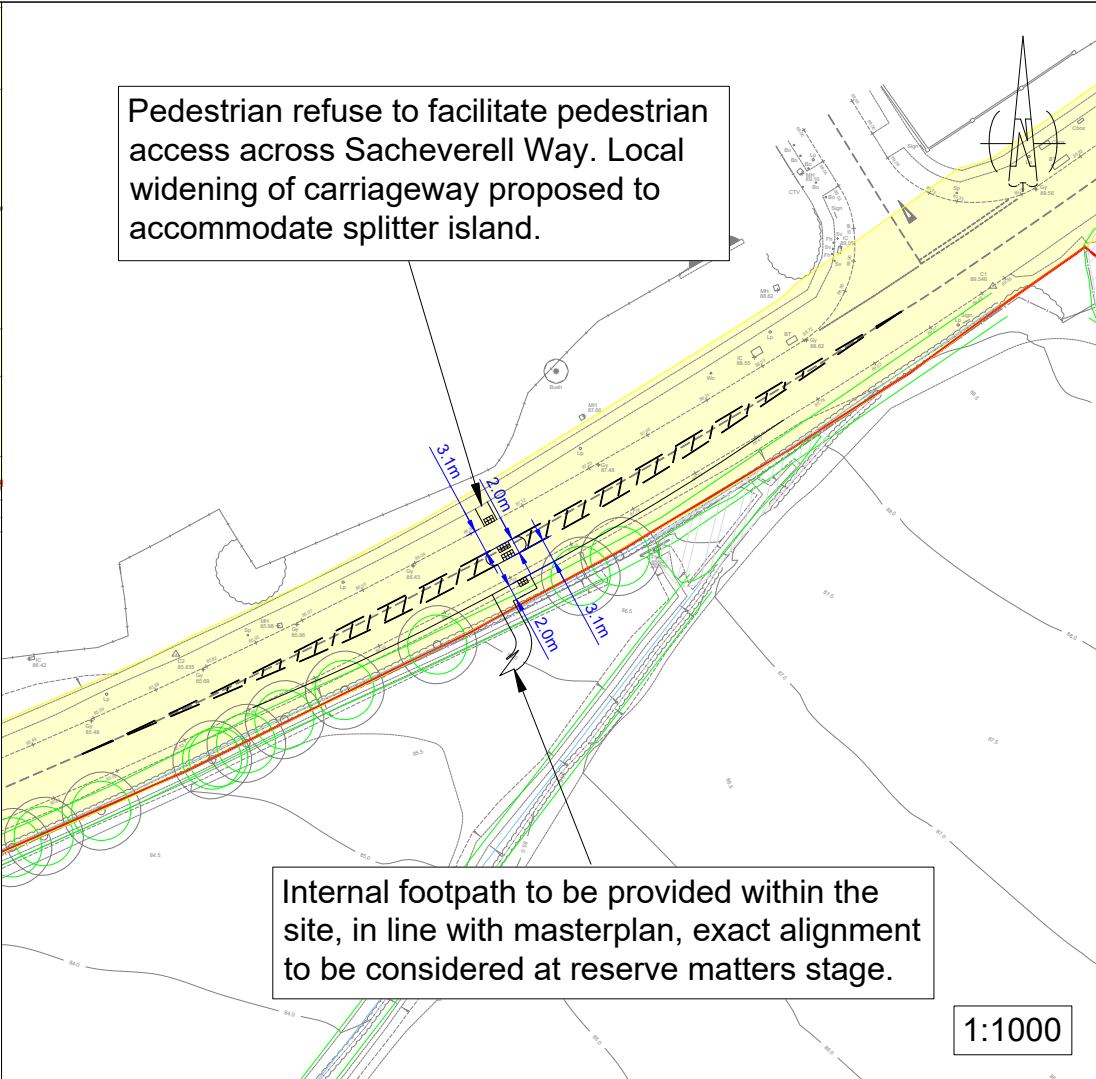
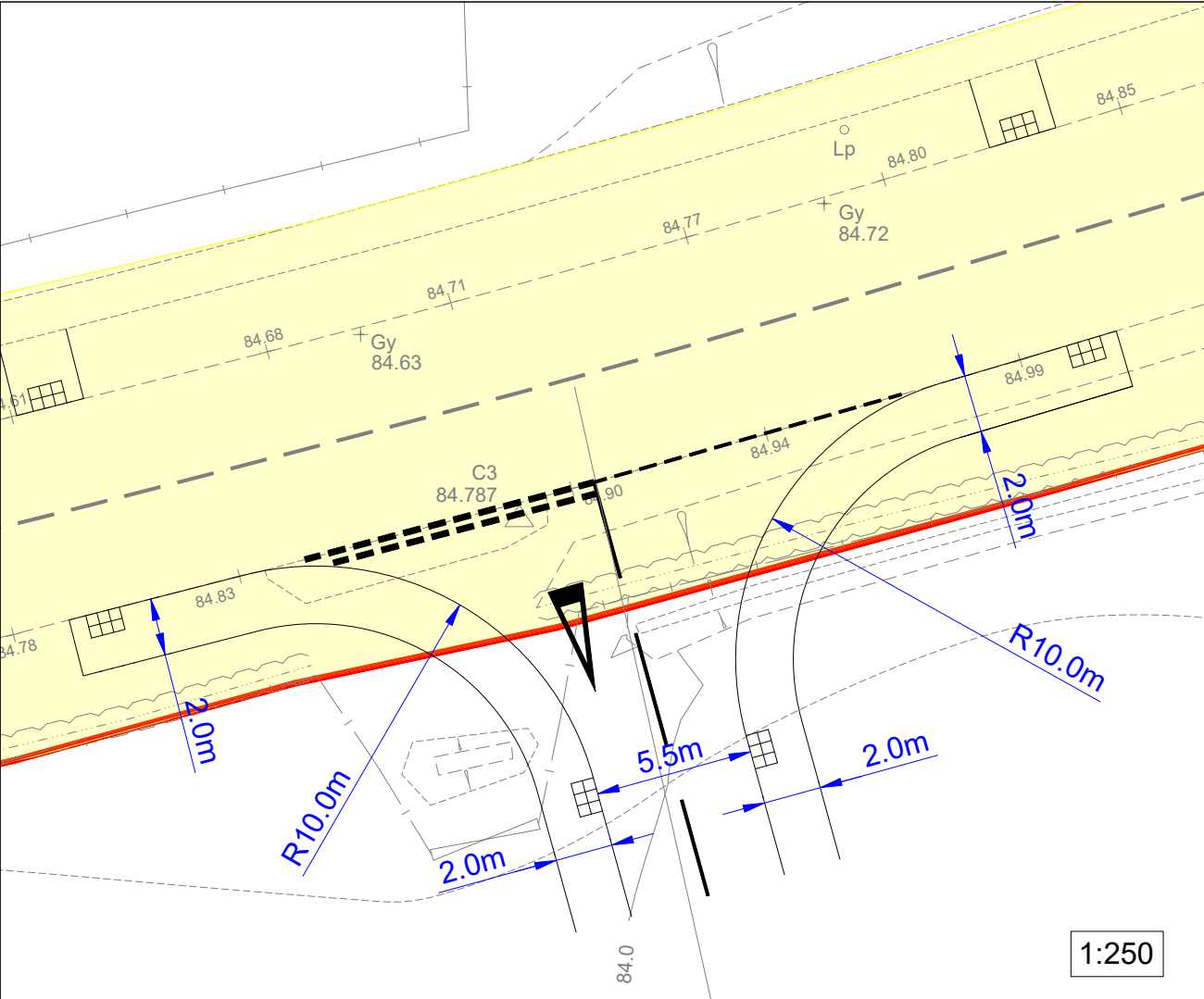
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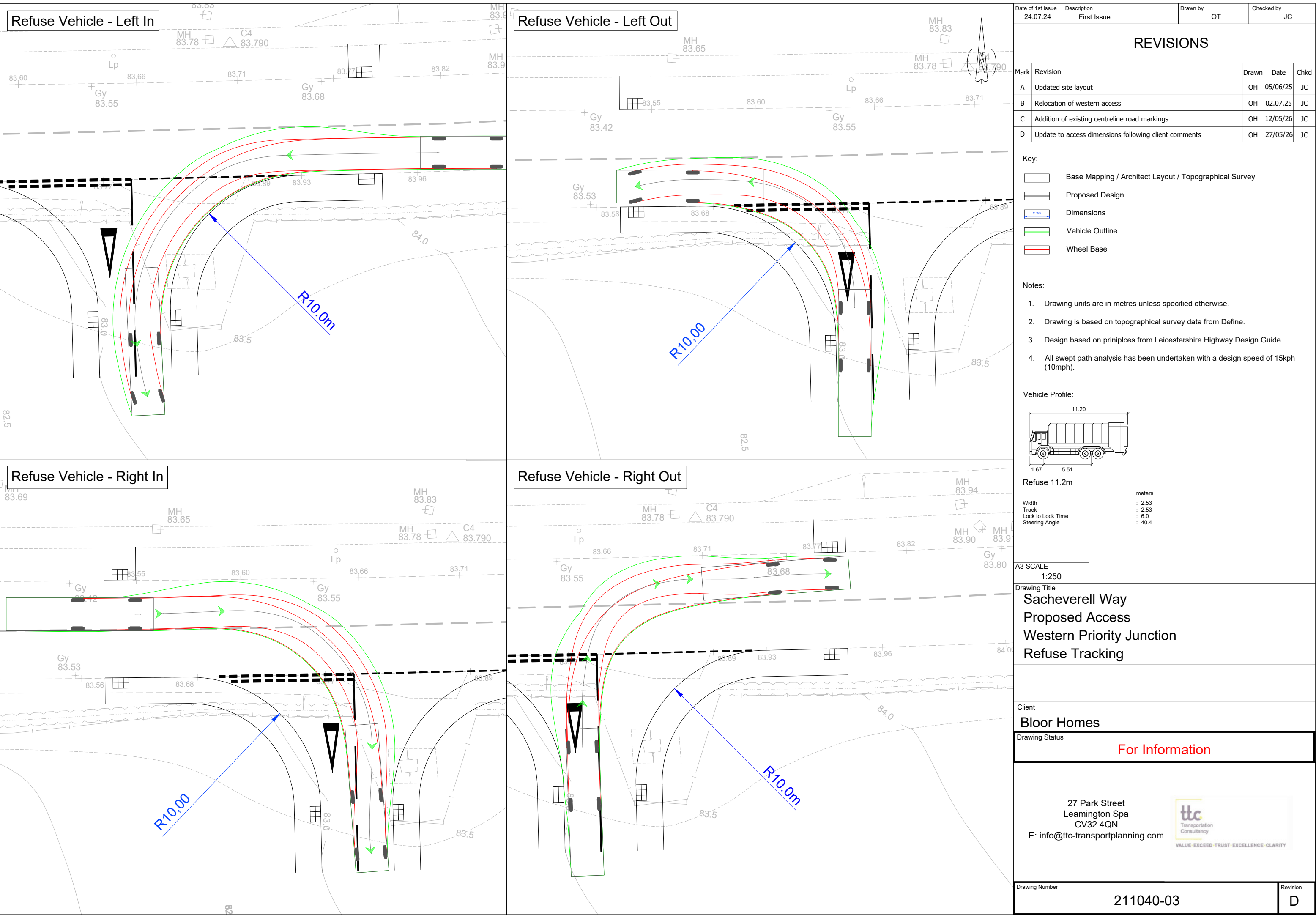


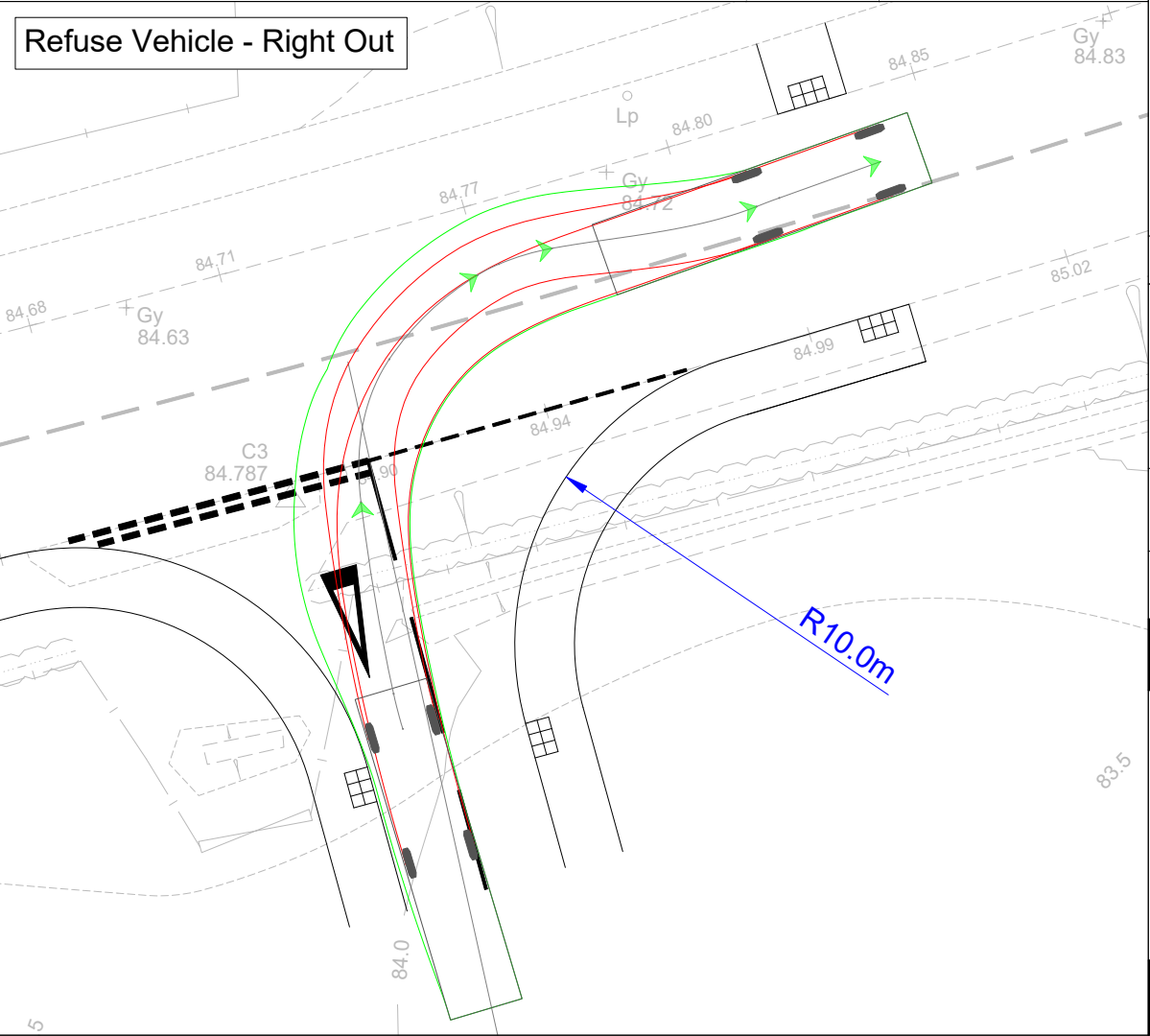
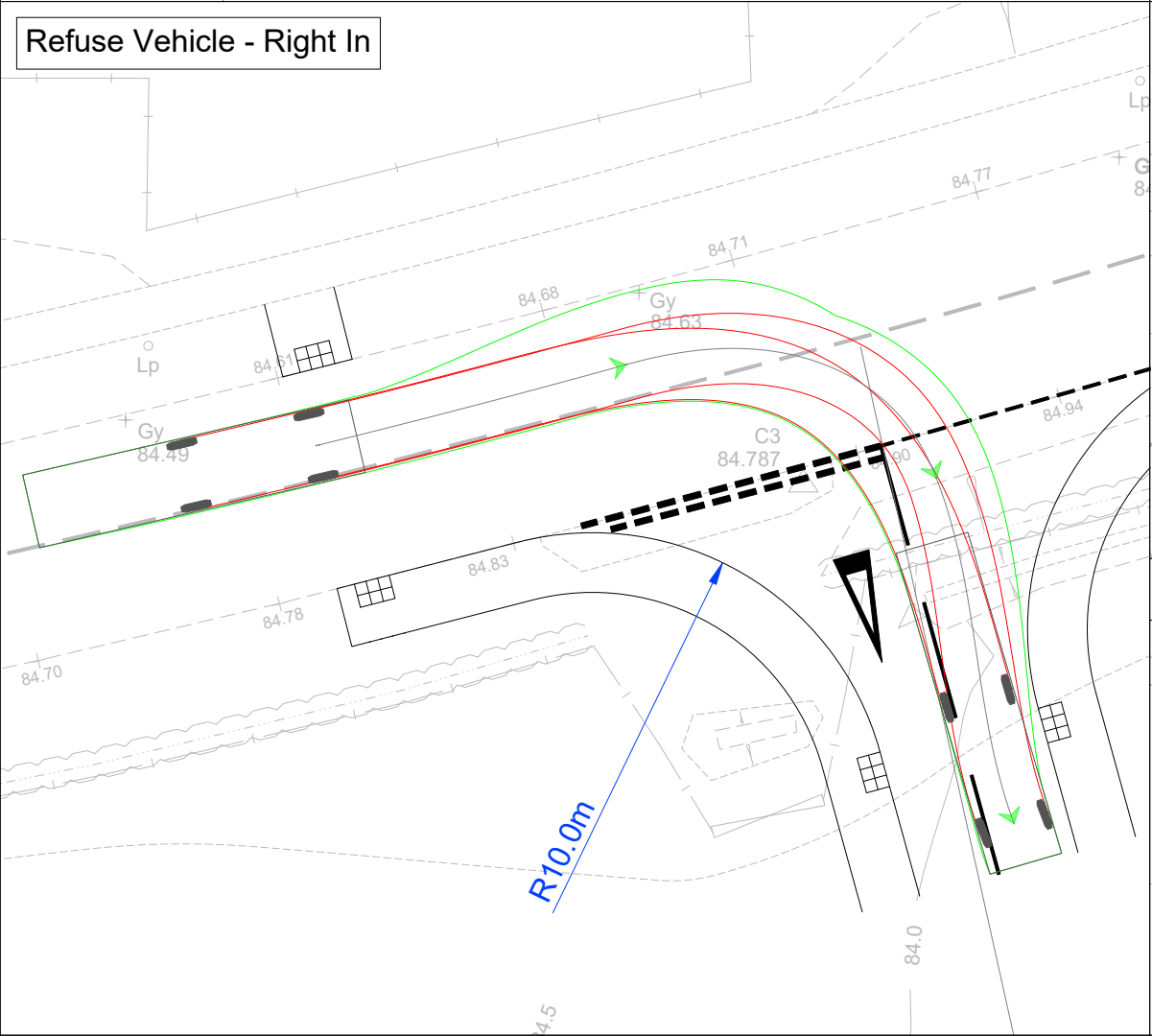
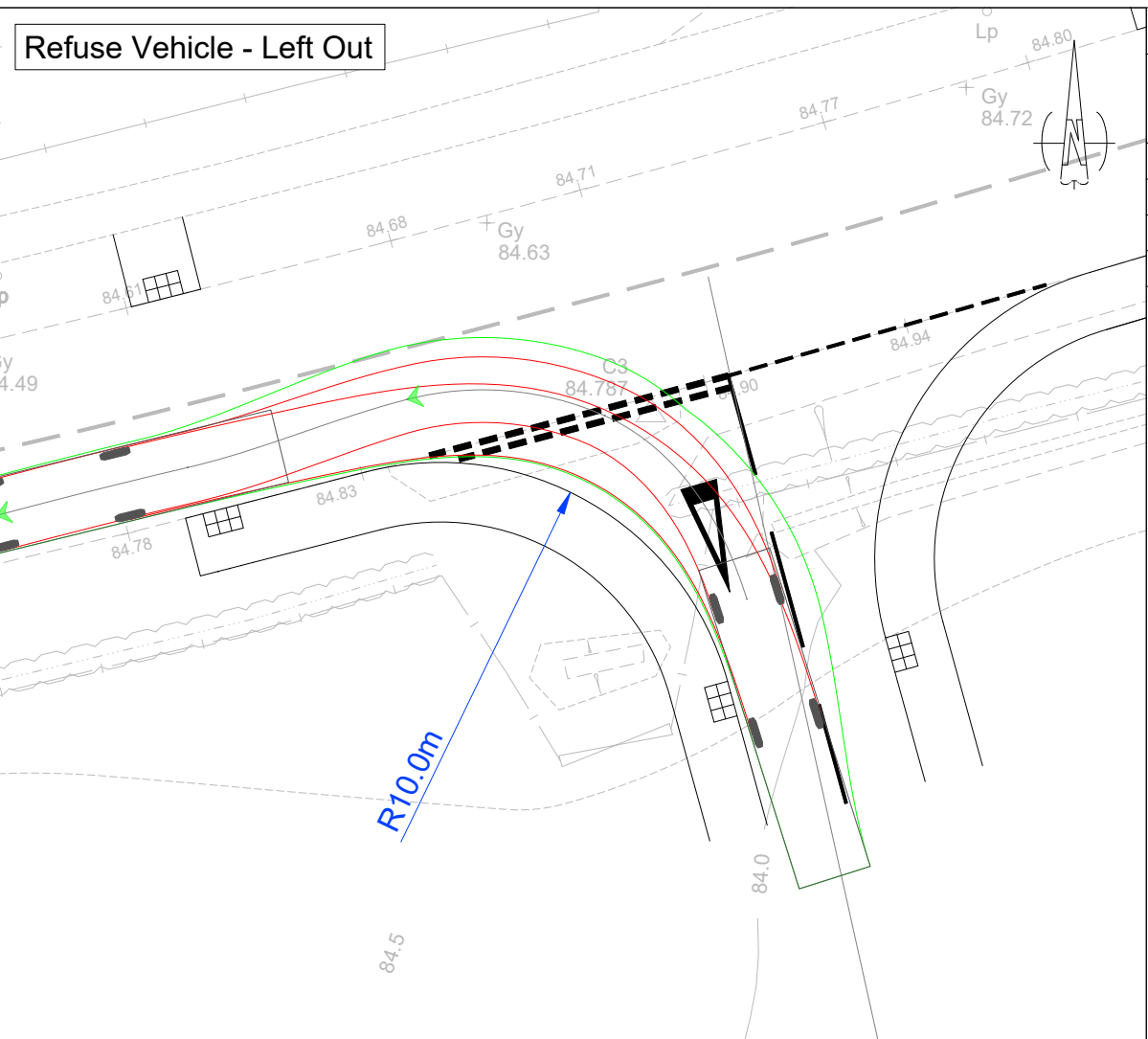
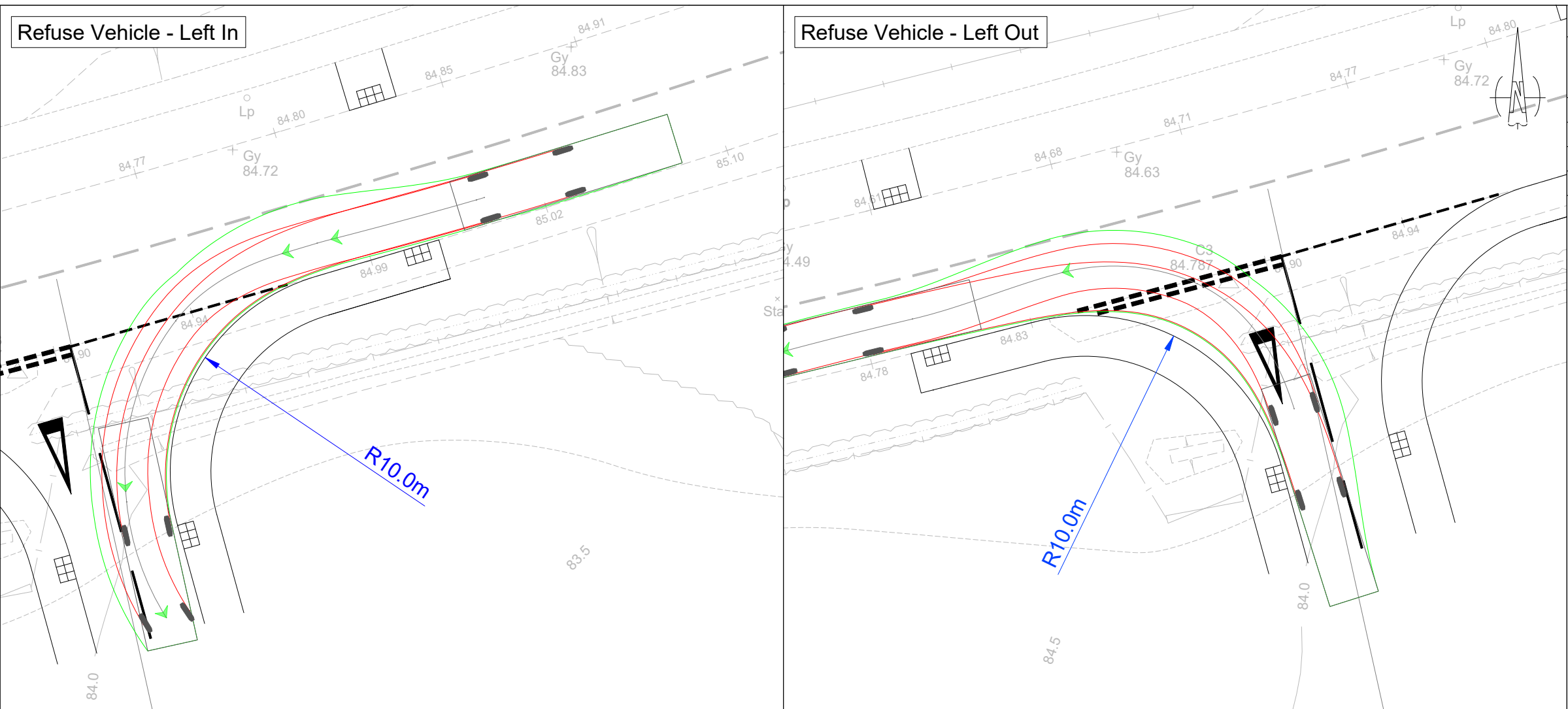
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------|------------------|---------------|
| Date of 1st Issue<br>24.07.24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Description<br>First Issue                         | Drawn by<br>OT | Checked by<br>JC |               |
| REVISIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                    |                |                  |               |
| Mark                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Revision                                           | Drawn          | Date             | Chkd          |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Updated site layout                                | OH             | 05/06/25         | JC            |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Updated visibility splays                          | OH             | 13/06/25         | JC            |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relocation of western access                       | OH             | 02/07/25         | JC            |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response to the recommendations in the Stage 1 RSA | OH             | 16/07/25         | JC            |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Updated to reflect comments from LCC               | OH             | 26/01/26         | JC            |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relocation of western pedestrian crossing          | OH             | 12/05/26         | JC            |
| <div>Key:</div> <div><div> Site Boundary</div><div> Topographical Survey / OS Mapping</div><div> Proposed Design</div><div> Tactile Paving</div><div> Visibility Splays</div><div> Key Dimensions</div><div> Highway Boundary</div></div> <div>Notes:</div> <div><div>1. Drawing units are in metres unless specified otherwise.</div><div>2. Drawing is based on topographical survey data and arboricultural survey provided from Define.</div><div>3. Visibility splays calculated based on recorded 85th percentile speeds.</div><div>4. Design based on principles from Leicestershire Highway Design Guide.</div><div>5. Extents of the highway boundary have been interpreted from data obtained from LCC.</div></div> |                                                    |                |                  |               |
| A3 SCALE<br>As shown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |                |                  |               |
| <div>Drawing Title</div> <div>Sacheverell Way, Groby<br/>Proposed Access<br/>Western Priority Junction</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |                |                  |               |
| <div>Client</div> <div>Bloor Homes</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                    |                |                  |               |
| <div>Drawing Status</div> <div>For Information</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |                |                  |               |
| <div><div>27 Park Street<br/>Leamington Spa<br/>CV32 4QN<br/>E: info@ttc-transportplanning.com</div><div><div>VALUE EXCEED TRUST EXCELLENCE CLARITY</div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                    |                |                  |               |
| Drawing Number<br>211040-01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |                |                  | Revision<br>F |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                    |                |                  |                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------|------------------|----------------------------------|
| Date of 1st Issue<br>24.07.24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Description<br>First Issue                         | Drawn by<br>OT | Checked by<br>JC |                                  |
| REVISIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                    |                |                  |                                  |
| Mark                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Revision                                           | Drawn          | Date             | Chkd                             |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Updated site layout                                | OH             | 05/06/25         | JC                               |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Updated visibility splays                          | OH             | 13/06/25         | JC                               |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relocation of western access                       | OH             | 02/07/25         | JC                               |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response to the recommendations in the Stage 1 RSA | OH             | 16/07/25         | JC                               |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Updated to reflect comments from LCC               | OH             | 16/07/25         | JC                               |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relocation of western pedestrian crossing          | OH             | 12/05/26         | JC                               |
| <div>Key:</div> <div><div></div>Site Boundary</div> <div><div></div>Topographical Survey</div> <div><div></div>Proposed Design</div> <div><div></div>Tactile Paving</div> <div><div></div>Visibility Splays</div> <div><div></div>Key Dimensions</div> <div><div></div>Highway Boundary</div> |                                                    |                |                  |                                  |
| <div>Notes:</div> <div><div>1.</div><div>Drawing units are in metres unless specified otherwise.</div></div> <div><div>2.</div><div>Drawing is based on topographical survey data and arboricultural survey provided from Define.</div></div> <div><div>3.</div><div>Visibility splays calculated based on 85th percentile recorded speeds.</div></div> <div><div>4.</div><div>Design based on principles from Leicestershire Highway Design Guide</div></div> <div><div>5.</div><div>Extents of the highway boundary have been interpreted from data obtained from LCC.</div></div>                                                                                                                                                                                                                                                                                                               |                                                    |                |                  |                                  |
| A3 SCALE<br>As shown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |                |                  |                                  |
| <div>Drawing Title</div> <div>Sacheverell Way, Groby<br/>Proposed Access<br/>Eastern Priority Junction</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |                |                  |                                  |
| <div>Client</div> <div>Bloor Homes</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                    |                |                  |                                  |
| <div>Drawing Status</div> <div>For Information</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |                |                  |                                  |
| <div><div><div>27 Park Street<br/>Leamington Spa<br/>CV32 4QN<br/>E: info@ttc-transportplanning.com</div><div><div></div><div>VALUE EXCEED TRUST EXCELLENCE CLARITY</div></div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |                |                  |                                  |
| <div>Drawing Number</div> <div>211040-02</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |                |                  | <div>Revision</div> <div>F</div> |







|                               |                            |                |                  |
|-------------------------------|----------------------------|----------------|------------------|
| Date of 1st Issue<br>24.07.24 | Description<br>First Issue | Drawn by<br>OT | Checked by<br>JC |
|-------------------------------|----------------------------|----------------|------------------|

### REVISIONS

| Mark | Revision                                              | Drawn | Date     | Chkd |
|------|-------------------------------------------------------|-------|----------|------|
| A    | Updated site layout                                   | OH    | 05/06/25 | JC   |
| B    | Addition of existing centreline road markings         | OH    | 12/05/26 | JC   |
| C    | Update to access dimensions following client comments | OH    | 27/05/26 | JC   |

Key:

- Base Mapping / Architect Layout / Topographical Survey
- Proposed Design
- Dimensions
- Vehicle Outline
- Wheel Base

Notes:

- Drawing units are in metres unless specified otherwise.
- Drawing is based on topographical survey data from Define.
- Design based on prinipcles from Leicestershire Highway Design Guide
- All swept path analysis has been undertaken with a design speed of 15kph (10mph).

Vehicle Profile: 11.20

Refuse 11.2m

|                   |        |
|-------------------|--------|
| Width             | : 2.53 |
| Track             | : 2.53 |
| Lock to Lock Time | : 6.0  |
| Steering Angle    | : 40.4 |

meters

A3 SCALE  
1:250

Drawing Title  
**Sacheverell Way  
Proposed Access  
Eastern Priority Junction  
Refuse Tracking**

Client  
**Bloor Homes**

Drawing Status  
**For Information**

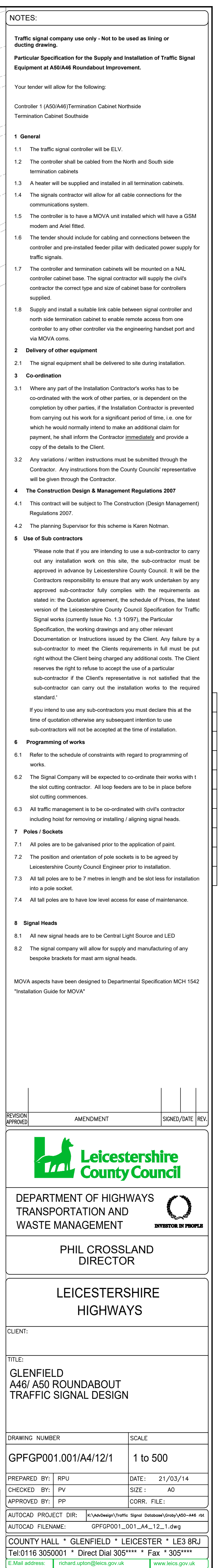
27 Park Street  
Leamington Spa  
CV32 4QN  
E: [info@ttc-transportplanning.com](mailto:info@ttc-transportplanning.com)

|                                    |                      |
|------------------------------------|----------------------|
| Drawing Number<br><b>211040-04</b> | Revision<br><b>C</b> |
|------------------------------------|----------------------|

# Appendix C

## Traffic Signal Specification









**Project data**

|                   |                        |
|-------------------|------------------------|
| Project           | A50/A46 Roundabout     |
| Program date      | 22-11-2013             |
| Version           | 1                      |
| Programmer        | Neil Bell              |
| Country           | UK                     |
| City              | Leicester              |
| Street1           | A50                    |
| Street2           | A46                    |
| Controller type   | 1                      |
| 12NC              | 0                      |
| Serial number     | 0                      |
| Report created at | 3/26/2014 10:27 AM     |
| Database file     | A50-A46 Roundabout.cpf |
| Tool version      | 8.0.22.20312           |

Detailed description: \* This is memofield DESCRIPTION



**FACILITIES MODES AND PRIORITIES****FACILITIES**

| Facility            | Enabled |
|---------------------|---------|
| Manual Control      | 1       |
| Manual Step On Mode | 0       |
| CLF                 | 1       |
| UTC Facility        | 1       |
| Hurry Call Mode     | 1       |
| Priority            | 0       |

**MODES AND PRIORITY**

| Mode                             | PRIOR | Dem. set leave      | Dem. set enter |
|----------------------------------|-------|---------------------|----------------|
| Hurry call (high priority)       | 1     | -                   | -              |
| Urban Traffic Control (UTC)      | 4     | -                   | -              |
| Hurry call (std priority)        | 5     | -                   | -              |
| Manual control                   | 2     | Start-up demand set | -              |
| Cableless linking facility (CLF) | 6     | -                   | -              |
| Vehicle actuated (VA)            | 7     | -                   | -              |
| Simple fix time (FT)             | 8     | Start-up demand set | -              |
| Public service vehicle priority  | -1    | -                   | -              |
| Selected cableless linking       | 3     | -                   | -              |
| Selected vehicle actuated        | 3     | -                   | -              |
| Selected fix time                | 3     | Start-up demand set | -              |

Use hurry call (high priority) mode for all red moves: 1

**STREAMS AND STAGES****STREAM**

| ID | Name    | Type     | Stu | Art | swoff | All Red |
|----|---------|----------|-----|-----|-------|---------|
| 1  | STREAM1 | Junction | *** | *** | ***   | ***     |
| 2  | STREAM2 | Junction |     |     |       |         |

**STAGE**

| ID | Description | Stream | Set move before stage | Set move in stage | Ripple Change |
|----|-------------|--------|-----------------------|-------------------|---------------|
| 1  | STAGE1      | 1      | 0                     | 1                 | 0             |
| 2  | STAGE2      | 1      | 0                     | 1                 | 0             |
| 3  | ALLRED      | 1      | 0                     | 1                 | 0             |
| 4  | STAGE4      | 2      | 0                     | 1                 | 0             |
| 5  | STAGE5      | 2      | 0                     | 1                 | 0             |
| 6  | STAGE6      | 2      | 0                     | 1                 | 0             |
| 7  | ALLRED      | 2      | 0                     | 1                 | 0             |

**Phases in stages**

|   | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | X | - | - | - | - | - | - | - | - |
| 2 | - | X | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | X | - | - |
| 4 | - | - | X | - | - | X | - | - | - |
| 5 | - | - | - | X | X | - | - | - | - |
| 6 | - | - | X | - | X | - | - | - | X |
| 7 | - | - | - | - | - | - | - | X | - |

## PHASES

### Types

| ID | Phase | Site Phase | Description                    | Type | APH | Demand         | NCH | WL | TAC | NODEMAND |
|----|-------|------------|--------------------------------|------|-----|----------------|-----|----|-----|----------|
| 1  | A     | A          | North Circulatory              | T    | -   | Start of Green | 1   | 0  | 0   | 0        |
| 2  | B     | B          | A50 Inbound                    | T    | -   | Start of Green | 1   | 0  | 0   | 0        |
| 3  | C     | C          | A46 South Circulatory          | T    | -   | Start of Green | 1   | 0  | 0   | 0        |
| 4  | D     | D          | A46 Westbound Slip             | T    | -   | Start of Green | 1   | 0  | 0   | 0        |
| 5  | E     | E          | A50 South Circulatory          | T    | -   | Start of Green | 1   | 0  | 0   | 0        |
| 6  | F     | F          | A50 Inbound                    | T    | -   | Start of Green | 1   | 0  | 0   | 0        |
| 7  | G     | G          | Dummy Stream1 All Red Stage3   | -    | -   | Start of Green | 1   | 0  | 0   | 1        |
| 8  | H     | H          | Dummy Stream 2 All Red Stage 7 | -    | -   | Start of Green | 1   | 0  | 0   | 1        |
| 9  | I     | I          | Dummy Confirm For Stage 6      | -    | -   | Start of Green | 1   | 0  | 0   | 1        |

### CONDITIONS

| ID | Phase | Type | Appearance type | Termination type |
|----|-------|------|-----------------|------------------|
| 1  | A     | T    | Always          | At end of stage  |
| 2  | B     | T    | Always          | At end of stage  |
| 3  | C     | T    | Always          | At end of stage  |
| 4  | D     | T    | Always          | At end of stage  |
| 5  | E     | T    | Always          | At end of stage  |
| 6  | F     | T    | Always          | At end of stage  |
| 7  | G     | -    | Always          | At end of stage  |
| 8  | H     | -    | Always          | At end of stage  |
| 9  | I     | -    | Always          | At end of stage  |

### TIMINGS

| ID | Phase | Type | Min green | Min red | Red/amber | Amber | Pre-timed |
|----|-------|------|-----------|---------|-----------|-------|-----------|
| 1  | A     | T    | 7         | 1       | 2         | 3     | 0         |
| 2  | B     | T    | 7         | 1       | 2         | 3     | 0         |
| 3  | C     | T    | 7         | 1       | 2         | 3     | 0         |
| 4  | D     | T    | 7         | 1       | 2         | 3     | 0         |
| 5  | E     | T    | 7         | 1       | 2         | 3     | 0         |
| 6  | F     | T    | 7         | 1       | 2         | 3     | 0         |
| 7  | G     | -    | 4         | 1       |           |       | 0         |
| 8  | H     | -    | 4         | 1       |           |       | 0         |
| 9  | I     | -    | 1         | 1       |           |       | 0         |

### PEDESTRIAN TIMINGS

| ID | Phase | Type | Period V | Period VI | Period VII | Period VIII |
|----|-------|------|----------|-----------|------------|-------------|
| 1  | A     | T    |          |           |            |             |
| 2  | B     | T    |          |           |            |             |
| 3  | C     | T    |          |           |            |             |
| 4  | D     | T    |          |           |            |             |
| 5  | E     | T    |          |           |            |             |
| 6  | F     | T    |          |           |            |             |
| 7  | G     | -    |          |           |            |             |
| 8  | H     | -    |          |           |            |             |
| 9  | I     | -    |          |           |            |             |

Note: Use of zero second blackout is not current Department of Transport policy and should be discouraged

### Revertive demands

| ID | Phase | Type | RDC | Start-up | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----|-------|------|-----|----------|---|---|---|---|---|---|---|
| 1  | A     | T    | A   | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2  | B     | T    | B   | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3  | C     | T    | C   | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4  | D     | T    | D   | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5  | E     | T    | E   | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6  | F     | T    | F   | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7  | G     | -    | -   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8  | H     | -    | -   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9  | I     | -    | -   | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### Switches

Lamp type: Halogen (70/30)

| ID | Phase | Type | SWR | SWA | SWG | SWWL |
|----|-------|------|-----|-----|-----|------|
| 1  | A     | T    | R01 | A01 | G01 |      |
| 2  | B     | T    | R02 | A02 | G02 |      |
| 3  | C     | T    | R03 | A03 | G03 |      |
| 4  | D     | T    | R04 | A04 | G04 |      |
| 5  | E     | T    | R05 | A05 | G05 |      |
| 6  | F     | T    | R06 | A06 | G06 |      |
| 7  | G     | -    |     |     |     |      |
| 8  | H     | -    |     |     |     |      |
| 9  | I     | -    |     |     |     |      |

**MINIMUM GREEN**

| PHASE | MIN | MAX |
|-------|-----|-----|
| A     | 5   | 15  |
| B     | 5   | 15  |
| C     | 5   | 15  |
| D     | 5   | 15  |
| E     | 5   | 15  |
| F     | 5   | 15  |
| G     | 0   | 10  |
| H     | 0   | 10  |
| I     | 0   | 10  |

**MAXIMUM GREEN**

| PHASE | MIN | MAX |
|-------|-----|-----|
| A     | 0   | 100 |
| B     | 0   | 100 |
| C     | 0   | 100 |
| D     | 0   | 100 |
| E     | 0   | 100 |
| F     | 0   | 100 |
| G     | 0   | 100 |
| H     | 0   | 100 |
| I     | 0   | 100 |

| .                   | MIN | MAX |
|---------------------|-----|-----|
| Minimum green       | 3   | 99  |
| Maximum green       | 0   | 120 |
| Starting intergreen | 8   | 8   |

**PHASE TIMING SETS**

| PHASE | TYPE |
|-------|------|
| A     | T    |
| B     | T    |
| C     | T    |
| D     | T    |
| E     | T    |
| F     | T    |
| G     | -    |
| H     | -    |
| I     | -    |

**Regular maximus**

|   | 1  | 2  | 3  | 4  |
|---|----|----|----|----|
| A | 20 | 20 | 20 | 10 |
| B | 30 | 22 | 22 | 10 |
| C | 38 | 26 | 26 | 10 |
| D | 20 | 16 | 16 | 10 |
| E | 36 | 26 | 26 | 10 |
| F | 16 | 16 | 18 | 10 |
| G |    |    |    |    |
| H |    |    |    |    |
| I |    |    |    |    |

**Alternative maximums**

|   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| A |   |   |   |   |
| B |   |   |   |   |
| C |   |   |   |   |
| D |   |   |   |   |
| E |   |   |   |   |
| F |   |   |   |   |
| G |   |   |   |   |
| H |   |   |   |   |
| I |   |   |   |   |

**Variable blackout/red periods**

|   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| A |   |   |   |   |
| B |   |   |   |   |
| C |   |   |   |   |
| D |   |   |   |   |
| E |   |   |   |   |
| F |   |   |   |   |
| G |   |   |   |   |
| H |   |   |   |   |
| I |   |   |   |   |

**Minimum green**

|   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| A |   |   |   |   |
| B |   |   |   |   |
| C |   |   |   |   |
| D |   |   |   |   |
| E |   |   |   |   |
| F |   |   |   |   |
| G |   |   |   |   |
| H |   |   |   |   |
| I |   |   |   |   |

**PSVP inhibition times**

|   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| A |   |   |   |   |
| B |   |   |   |   |
| C |   |   |   |   |

|   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| D |   |   |   |   |
| E |   |   |   |   |
| F |   |   |   |   |
| G |   |   |   |   |
| H |   |   |   |   |
| I |   |   |   |   |

**PSVP maximum green times**

|   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| A |   |   |   |   |
| B |   |   |   |   |
| C |   |   |   |   |
| D |   |   |   |   |
| E |   |   |   |   |
| F |   |   |   |   |
| G |   |   |   |   |
| H |   |   |   |   |
| I |   |   |   |   |



## PHASE MATRICES

Starting intergreen 8

Handset maximum 30

### Opposing and conflicting

|   | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| A | - | C | - | - | - | - | C | - | - |
| B | C | - | - | - | - | - | C | - | - |
| C | - | - | - | C | - | - | - | C | - |
| D | - | - | C | - | - | - | - | C | C |
| E | - | - | - | - | - | C | - | C | - |
| F | - | - | - | - | C | - | - | C | - |
| G | C | C | - | - | - | - | - | - | - |
| H | - | - | C | C | C | C | - | - | - |
| I | - | - | - | C | - | - | - | - | - |

### Intergreen times

|   | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| A |   | 6 |   |   |   |   | 3 |   |   |
| B | 6 |   |   |   |   |   | 3 |   |   |
| C |   |   |   | 6 |   |   |   | 3 |   |
| D |   |   | 6 |   |   |   |   | 3 | 6 |
| E |   |   |   |   |   | 7 |   | 3 |   |
| F |   |   |   |   | 7 |   |   | 3 |   |
| G | 2 | 2 |   |   |   |   |   |   |   |
| H |   |   | 2 | 2 | 2 | 2 |   |   |   |
| I |   |   |   | 6 |   |   |   |   |   |

### Handset intergreen limits

|   | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| A |   | 5 |   |   |   |   | 3 |   |   |
| B | 5 |   |   |   |   |   | 3 |   |   |
| C |   |   |   | 5 |   |   |   | 3 |   |
| D |   |   | 5 |   |   |   |   | 3 | 5 |
| E |   |   |   |   |   | 3 |   | 3 |   |
| F |   |   |   |   | 3 |   |   | 3 |   |
| G | 2 | 2 |   |   |   |   |   |   |   |
| H |   |   | 2 | 2 | 2 | 2 |   |   |   |
| I |   |   |   | 5 |   |   |   |   |   |

### RLM additional intergreens

|   | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| A |   |   |   |   |   |   |   |   |   |
| B |   |   |   |   |   |   |   |   |   |
| C |   |   |   |   |   |   |   |   |   |
| D |   |   |   |   |   |   |   |   |   |
| E |   |   |   |   |   |   |   |   |   |
| F |   |   |   |   |   |   |   |   |   |
| G |   |   |   |   |   |   |   |   |   |
| H |   |   |   |   |   |   |   |   |   |
| I |   |   |   |   |   |   |   |   |   |

### RLM phase inhibits

|   | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| A | - | - | - | - | - | - | - | - | - |
| B | - | - | - | - | - | - | - | - | - |
| C | - | - | - | - | - | - | - | - | - |
| D | - | - | - | - | - | - | - | - | - |
| E | - | - | - | - | - | - | - | - | - |
| F | - | - | - | - | - | - | - | - | - |
| G | - | - | - | - | - | - | - | - | - |
| H | - | - | - | - | - | - | - | - | - |
| I | - | - | - | - | - | - | - | - | - |

**PHASE DELAYS**

| ID | Phase | From | To | Delay Time | Associated Phase | Delay Type                      |
|----|-------|------|----|------------|------------------|---------------------------------|
| 1  | E     | 4    | 3  | 4          | -                | Delay phase losing Right of Way |

**FIXED TIME****FIXEDTIME TO CURRENT MAXIMUM**

| <b>STREAM</b> | <b>Fixed</b> |
|---------------|--------------|
| STREAM1       | 1            |
| STREAM2       | 1            |

| <b>Phase</b> | <b>Demand</b> | <b>Extend</b> |
|--------------|---------------|---------------|
| A            | 1             | 1             |
| B            | 1             | 1             |
| C            | 1             | 1             |
| D            | 1             | 1             |
| E            | 1             | 1             |
| F            | 1             | 1             |
| G            | 0             | 0             |
| H            | 0             | 0             |
| I            | 0             | 0             |

**STAGE MOVES****Move sets**

| Mode                             | SET |
|----------------------------------|-----|
| Hurry call (high priority)       | 1   |
| Urban Traffic Control (UTC)      | 1   |
| Hurry call (std priority)        | 1   |
| Manual control                   | 1   |
| Cableless linking facility (CLF) | 1   |
| Vehicle actuated (VA)            | 1   |
| Simple fix time (FT)             | 1   |
| Public service vehicle priority  | 0   |

**Set 1**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | A | A | - | - | - | - |
| 2 | A | - | A | - | - | - | - |
| 3 | A | A | - | - | - | - | - |
| 4 | - | - | - | - | A | A | A |
| 5 | - | - | - | A | - | A | A |
| 6 | - | - | - | A | A | - | A |
| 7 | - | - | - | A | A | A | - |

**Set 2**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

**Set 3**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

**Set 4**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

**Set 5**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

**Set 6**

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

## Set 7

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

## Set 8

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - |
| 7 | - | - | - | - | - | - | - |

## STREAM 1

| No | Mode | FromStage | ToStage | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | D | I | E | X |
|----|------|-----------|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1  | FT   | 1         | 2       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 1         | 2       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 1         | 2       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 1         | 2       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 1         | 2       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 1         | 2       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 1         | 2       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 1         | 3       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 1         | 3       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 1         | 3       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 1         | 3       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 1         | 3       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 1         | 3       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 1         | 3       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 2         | 3       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 2         | 3       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 2         | 3       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 2         | 3       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 2         | 3       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 2         | 3       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 2         | 3       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 2         | 1       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 2         | 1       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 2         | 1       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 2         | 1       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 2         | 1       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 2         | 1       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 2         | 1       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 3         | 1       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 3         | 1       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 3         | 1       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 3         | 1       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 3         | 1       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 3         | 1       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 3         | 1       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 3         | 2       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |

| No | Mode | FromStage | ToStage | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | D | I | E | X |
|----|------|-----------|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1  | VA   | 3         | 2       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 3         | 2       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 3         | 2       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 3         | 2       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 3         | 2       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 3         | 2       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |

**STREAM 2**

| No | Mode | FromStage | ToStage | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | D | I | E | X |
|----|------|-----------|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1  | FT   | 4         | 5       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 4         | 5       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 4         | 5       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 4         | 5       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 4         | 5       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 4         | 5       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 4         | 5       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 4         | 6       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 4         | 6       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 4         | 6       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 4         | 6       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 4         | 6       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 4         | 6       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 4         | 6       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 4         | 7       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 4         | 7       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 4         | 7       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 4         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 4         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 4         | 7       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 4         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 5         | 6       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 5         | 6       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 5         | 6       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 5         | 6       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 5         | 6       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 5         | 6       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 5         | 6       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 5         | 7       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 5         | 7       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 5         | 7       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 5         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 5         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 5         | 7       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 5         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 5         | 4       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 5         | 4       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 5         | 4       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 5         | 4       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 5         | 4       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 5         | 4       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 5         | 4       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 6         | 7       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 6         | 7       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 6         | 7       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 6         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 6         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 6         | 7       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 6         | 7       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 6         | 4       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 6         | 4       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 6         | 4       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 6         | 4       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 6         | 4       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 6         | 4       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 6         | 4       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 6         | 5       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |

| No | Mode | FromStage | ToStage | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | D | I | E | X |
|----|------|-----------|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1  | VA   | 6         | 5       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 6         | 5       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 6         | 5       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 6         | 5       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 6         | 5       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 6         | 5       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 7         | 4       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 7         | 4       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | U | D | D | D |
| 1  | CLF  | 7         | 4       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 7         | 4       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 7         | 4       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 7         | 4       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 7         | 4       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 7         | 5       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 7         | 5       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 7         | 5       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 7         | 5       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 7         | 5       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 7         | 5       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 7         | 5       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | FT   | 7         | 6       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | VA   | 7         | 6       | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | CLF  | 7         | 6       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | MAN  | 7         | 6       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCL  | 7         | 6       | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | UTC  | 7         | 6       | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |
| 1  | HCH  | 7         | 6       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | D | D | D |



**MANUAL STAGE SELECTION**

|               | <b>1</b> | <b>2</b> |
|---------------|----------|----------|
| <b>But 1</b>  | 1        | 6        |
| <b>But 2</b>  | 2        | 4        |
| <b>But 3</b>  | 1        | 5        |
| <b>But 4</b>  | 1        | 4        |
| <b>But 5</b>  | 2        | 6        |
| <b>But 6</b>  | -        | -        |
| <b>But 7</b>  | -        | -        |
| <b>But 8</b>  | -        | -        |
| <b>But 9</b>  | -        | -        |
| <b>But 10</b> | -        | -        |
| <b>But 11</b> | -        | -        |
| <b>But 12</b> | -        | -        |
| <b>But 13</b> | -        | -        |
| <b>But 14</b> | -        | -        |
| <b>But 15</b> | -        | -        |
| <b>But 16</b> | -        | -        |

**Detectors****Application**

| ID | Detector | Type                  | Phase | DTO | DTC | DTG1 | DTG2 | DKS | DEM | CANCEL |
|----|----------|-----------------------|-------|-----|-----|------|------|-----|-----|--------|
| 1  | AX1      | External vehicle loop | A     |     |     | 4    |      | -   | 1   | 0      |
| 2  | ASL2a    | External vehicle loop | A     |     |     |      |      | -   | 1   | 0      |
| 3  | ASL2b    | External vehicle loop | A     |     |     |      |      | -   | 1   | 0      |
| 4  | ASL2c    | External vehicle loop | A     |     |     |      |      | -   | 1   | 0      |
| 5  | AX3      | External vehicle loop | A     |     |     | 4    |      | -   | 1   | 0      |
| 6  | AX4      | External vehicle loop | A     |     |     | 4    |      | -   | 1   | 0      |
| 7  | BIN5     | External vehicle loop | B     |     |     | 4    |      | -   | 0   | 0      |
| 8  | BX6      | External vehicle loop | B     |     |     | 4    |      | -   | 1   | 0      |
| 9  | BSL7a    | External vehicle loop | B     |     |     |      |      | -   | 1   | 0      |
| 10 | BSL7b    | External vehicle loop | B     |     |     |      |      | -   | 1   | 0      |
| 11 | BSL7c    | External vehicle loop | B     |     |     |      |      | -   | 1   | 0      |
| 12 | BSL7d    | External vehicle loop | B     |     |     |      |      | -   | 1   | 0      |
| 13 | BIN8     | External vehicle loop | B     |     |     | 4    |      | -   | 0   | 0      |
| 14 | BX9      | External vehicle loop | B     |     |     | 4    |      | -   | 1   | 0      |
| 15 | BIN10    | External vehicle loop | B     |     |     | 4    |      | -   | 0   | 0      |
| 16 | BX11     | External vehicle loop | B     |     |     | 4    |      | -   | 1   | 0      |
| 17 | BIN12    | External vehicle loop | B     |     |     | 4    |      | -   | 0   | 0      |
| 18 | BX13     | External vehicle loop | B     |     |     | 4    |      | -   | 1   | 0      |
| 19 | CIN1     | Vehicle loop          | C     |     |     | 4    |      | -   | 0   | 0      |
| 20 | CX2      | Vehicle loop          | C     |     |     | 4    |      | -   | 1   | 0      |
| 21 | CSL3a    | Vehicle loop          | C     |     |     |      |      | -   | 1   | 0      |
| 22 | CSL3b    | Vehicle loop          | C     |     |     |      |      | -   | 1   | 0      |
| 23 | CSL3c    | Vehicle loop          | C     |     |     |      |      | -   | 1   | 0      |
| 24 | CIN4     | Vehicle loop          | C     |     |     | 4    |      | -   | 0   | 0      |
| 25 | CX5      | Vehicle loop          | C     |     |     | 4    |      | -   | 1   | 0      |
| 26 | CIN6     | Vehicle loop          | C     |     |     | 4    |      | -   | 0   | 0      |
| 27 | CX7      | Vehicle loop          | C     |     |     | 4    |      | -   | 1   | 0      |
| 28 | DIN8     | Vehicle loop          | D     |     |     | 4    |      | -   | 0   | 0      |
| 29 | DX9      | Vehicle loop          | D     |     |     | 4    |      | -   | 1   | 0      |
| 30 | DSL10a   | Vehicle loop          | D     |     |     |      |      | -   | 1   | 0      |
| 31 | DSL10b   | Vehicle loop          | D     |     |     |      |      | -   | 1   | 0      |
| 32 | DSL10c   | Vehicle loop          | D     |     |     |      |      | -   | 1   | 0      |
| 33 | DIN11    | Vehicle loop          | D     |     |     | 4    |      | -   | 0   | 0      |
| 34 | DX12     | Vehicle loop          | D     |     |     | 4    |      | -   | 1   | 0      |
| 35 | DX13     | Vehicle loop          | D     |     |     | 4    |      | -   | 1   | 0      |
| 36 | EX14     | Vehicle loop          | E     |     |     | 4    |      | -   | 1   | 0      |
| 37 | ESL15a   | Vehicle loop          | E     |     |     |      |      | -   | 1   | 0      |
| 38 | ESL15b   | Vehicle loop          | E     |     |     |      |      | -   | 1   | 0      |
| 39 | ESL15c   | Vehicle loop          | E     |     |     |      |      | -   | 1   | 0      |
| 40 | EX16     | Vehicle loop          | E     |     |     | 4    |      | -   | 1   | 0      |
| 41 | EX17     | Vehicle loop          | E     |     |     | 4    |      | -   | 1   | 0      |
| 42 | FIN18    | Vehicle loop          | F     |     |     | 4    |      | -   | 0   | 0      |
| 43 | FX19     | Vehicle loop          | F     |     |     | 4    |      | -   | 1   | 0      |
| 44 | FSL20a   | Vehicle loop          | F     |     |     |      |      | -   | 1   | 0      |
| 45 | FSL20b   | Vehicle loop          | F     |     |     |      |      | -   | 1   | 0      |
| 46 | FSL20c   | Vehicle loop          | F     |     |     |      |      | -   | 1   | 0      |
| 47 | FSL20d   | Vehicle loop          | F     |     |     |      |      | -   | 1   | 0      |
| 48 | FIN21    | Vehicle loop          | F     |     |     | 4    |      | -   | 0   | 0      |
| 49 | FX22     | Vehicle loop          | F     |     |     | 4    |      | -   | 1   | 0      |
| 50 | FIN23    | Vehicle loop          | F     |     |     | 4    |      | -   | 0   | 0      |
| 51 | FX24     | Vehicle loop          | F     |     |     | 4    |      | -   | 1   | 0      |
| 52 | FIN25    | Vehicle loop          | F     |     |     | 4    |      | -   | 0   | 0      |
| 53 | FX26     | Vehicle loop          | F     |     |     | 4    |      | -   | 1   | 0      |
| 54 | Q1       | External vehicle loop | -     |     |     |      |      | -   | 0   | 0      |
| 55 | Q2       | External vehicle loop | -     |     |     |      |      | -   | 0   | 0      |
| 56 | Q3       | External vehicle loop | -     |     |     |      |      | -   | 0   | 0      |
| 57 | Q4       | External vehicle loop | -     |     |     |      |      | -   | 0   | 0      |
| 58 | Q5       | Vehicle loop          | -     |     |     |      |      | -   | 0   | 0      |
| 59 | Q6       | Vehicle loop          | -     |     |     |      |      | -   | 0   | 0      |
| 60 | DQ1      | Vehicle loop          | -     |     |     |      |      | -   | 0   | 0      |
| 61 | DQ2      | Vehicle loop          | -     |     |     |      |      | -   | 0   | 0      |
| 62 | EQ1      | Vehicle loop          | -     |     |     |      |      | -   | 0   | 0      |
| 63 | Q7       | Vehicle loop          | -     | 6   | 4   |      |      | -   | 0   | 0      |

| ID | Detector | Type         | Phase | DTO | DTC | DTG1 | DTG2 | DKS | DEM | CANCEL |
|----|----------|--------------|-------|-----|-----|------|------|-----|-----|--------|
| 64 | Q8       | Vehicle loop | -     | 6   | 4   |      |      | -   | 0   | 0      |
| 65 | AXQ      | -            | -     | 6   | 4   |      |      | -   | 0   | 0      |
| 66 | CINQ     | -            | -     | 6   | 4   |      |      | -   | 0   | 0      |
| 67 | DQ1_2    | -            | -     | 10  | 4   |      |      | -   | 0   | 0      |
| 68 | EXQ      | -            | -     | 6   | 4   |      |      | -   | 0   | 0      |
| 69 | EQ       | -            | -     | 6   | 4   |      |      | -   | 0   | 0      |
| 70 | Q1_2     | -            | -     | 8   | 4   |      |      | -   | 0   | 0      |
| 71 | Q3_4     | -            | -     | 10  | 6   |      |      | -   | 0   | 0      |
| 72 | Q_5      | -            | H     | 10  | 4   |      |      | -   | 1   | 0      |
| 73 | Q_6      | -            | H     | 6   | 6   |      |      | -   | 1   | 0      |

## Hardware

| ID | Detector | Type                  | Inv | Unit     | Nr | Occ1 | Noc1 | Occ2 | Noc2 | Occ3 | Noc3 | Occ4 | Noc4 | ErrState | OkCount |
|----|----------|-----------------------|-----|----------|----|------|------|------|------|------|------|------|------|----------|---------|
| 1  | AX1      | External vehicle loop | 0   | IO1616-2 | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 2  | ASL2a    | External vehicle loop | 0   | IO1616-2 | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 3  | ASL2b    | External vehicle loop | 0   | IO1616-2 | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 4  | ASL2c    | External vehicle loop | 0   | IO1616-2 | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 5  | AX3      | External vehicle loop | 0   | IO1616-2 | 5  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 6  | AX4      | External vehicle loop | 0   | IO1616-2 | 6  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 7  | BIN5     | External vehicle loop | 0   | IO1616-2 | 7  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 8  | BX6      | External vehicle loop | 0   | IO1616-2 | 8  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 9  | BSL7a    | External vehicle loop | 0   | IO1616-2 | 9  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 10 | BSL7b    | External vehicle loop | 0   | IO1616-2 | 10 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 11 | BSL7c    | External vehicle loop | 0   | IO1616-2 | 11 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 12 | BSL7d    | External vehicle loop | 0   | IO1616-2 | 12 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 13 | BIN8     | External vehicle loop | 0   | IO1616-2 | 13 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 14 | BX9      | External vehicle loop | 0   | IO1616-2 | 14 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 15 | BIN10    | External vehicle loop | 0   | IO1616-2 | 15 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 16 | BX11     | External vehicle loop | 0   | IO1616-2 | 16 | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 17 | BIN12    | External vehicle loop | 0   | IO1616-3 | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 18 | BX13     | External vehicle loop | 0   | IO1616-3 | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 19 | CIN1     | Vehicle loop          | 0   | MTS4E-1  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 20 | CX2      | Vehicle loop          | 0   | MTS4E-11 | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 21 | CSL3a    | Vehicle loop          | 0   | MTS4E-1  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 22 | CSL3b    | Vehicle loop          | 0   | MTS4E-1  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 23 | CSL3c    | Vehicle loop          | 0   | MTS4E-1  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 24 | CIN4     | Vehicle loop          | 0   | MTS4E-2  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 25 | CX5      | Vehicle loop          | 0   | MTS4E-11 | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 26 | CIN6     | Vehicle loop          | 0   | MTS4E-2  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 27 | CX7      | Vehicle loop          | 0   | MTS4E-11 | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 28 | DIN8     | Vehicle loop          | 0   | MTS4E-2  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 29 | DX9      | Vehicle loop          | 0   | MTS4E-2  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 30 | DSL10a   | Vehicle loop          | 0   | MTS4E-3  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 31 | DSL10b   | Vehicle loop          | 0   | MTS4E-3  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 32 | DSL10c   | Vehicle loop          | 0   | MTS4E-3  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 33 | DIN11    | Vehicle loop          | 0   | MTS4E-3  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 34 | DX12     | Vehicle loop          | 0   | MTS4E-4  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 35 | DX13     | Vehicle loop          | 0   | MTS4E-4  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 36 | EX14     | Vehicle loop          | 0   | MTS4E-4  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 37 | ESL15a   | Vehicle loop          | 0   | MTS4E-4  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 38 | ESL15b   | Vehicle loop          | 0   | MTS4E-5  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 39 | ESL15c   | Vehicle loop          | 0   | MTS4E-5  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 40 | EX16     | Vehicle loop          | 0   | MTS4E-5  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 41 | EX17     | Vehicle loop          | 0   | MTS4E-5  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 42 | FIN18    | Vehicle loop          | 0   | MTS4E-6  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 43 | FX19     | Vehicle loop          | 0   | MTS4E-6  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 44 | FSL20a   | Vehicle loop          | 0   | MTS4E-6  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 45 | FSL20b   | Vehicle loop          | 0   | MTS4E-6  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 46 | FSL20c   | Vehicle loop          | 0   | MTS4E-7  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 47 | FSL20d   | Vehicle loop          | 0   | MTS4E-7  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 48 | FIN21    | Vehicle loop          | 0   | MTS4E-7  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 49 | FX22     | Vehicle loop          | 0   | MTS4E-7  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 50 | FIN23    | Vehicle loop          | 0   | MTS4E-8  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |
| 51 | FX24     | Vehicle loop          | 0   | MTS4E-8  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied | 32      |

| ID | Detector | Type                  | Inv | Unit     | Nr | Occ1 | Noc1 | Occ2 | Noc2 | Occ3 | Noc3 | Occ4 | Noc4 | ErrState   | OkCount |
|----|----------|-----------------------|-----|----------|----|------|------|------|------|------|------|------|------|------------|---------|
| 52 | FIN25    | Vehicle loop          | 0   | MTS4E-8  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 53 | FX26     | Vehicle loop          | 0   | MTS4E-8  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 54 | Q1       | External vehicle loop | 0   | IO1616-3 | 3  | 30   | 1800 |      |      |      |      |      |      | Unoccupied |         |
| 55 | Q2       | External vehicle loop | 0   | IO1616-3 | 4  | 30   | 1800 |      |      |      |      |      |      | Unoccupied |         |
| 56 | Q3       | External vehicle loop | 0   | IO1616-3 | 5  | 30   | 1800 |      |      |      |      |      |      | Unoccupied |         |
| 57 | Q4       | External vehicle loop | 0   | IO1616-3 | 6  | 30   | 1800 |      |      |      |      |      |      | Unoccupied |         |
| 58 | Q5       | Vehicle loop          | 0   | MTS4E-9  | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 59 | Q6       | Vehicle loop          | 0   | MTS4E-9  | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 60 | DQ1      | Vehicle loop          | 0   | MTS4E-9  | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 61 | DQ2      | Vehicle loop          | 0   | MTS4E-9  | 4  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 62 | EQ1      | Vehicle loop          | 0   | MTS4E-10 | 1  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 63 | Q7       | Vehicle loop          | 0   | MTS4E-10 | 2  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 64 | Q8       | Vehicle loop          | 0   | MTS4E-10 | 3  | 30   | 1800 |      |      |      |      |      |      | Occupied   | 32      |
| 65 | AXQ      | -                     | 0   | DUMMY-1  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 66 | CINQ     | -                     | 0   | DUMMY-2  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 67 | DQ1_2    | -                     | 0   | DUMMY-3  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 68 | EXQ      | -                     | 0   | DUMMY-4  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 69 | EQ       | -                     | 0   | DUMMY-5  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 70 | Q1_2     | -                     | 0   | DUMMY-6  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 71 | Q3_4     | -                     | 0   | DUMMY-7  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 72 | Q_5      | -                     | 0   | DUMMY-8  | 1  |      |      |      |      |      |      |      |      | -          |         |
| 73 | Q_6      | -                     | 0   | DUMMY-9  | 1  |      |      |      |      |      |      |      |      | -          |         |

**Supervision time**

| Day       | On time | Off time |
|-----------|---------|----------|
| Monday    | 00:00   | 24:00    |
| Tuesday   | 00:00   | 24:00    |
| Wednesday | 00:00   | 24:00    |
| Thursday  | 00:00   | 24:00    |
| Friday    | 00:00   | 24:00    |
| Saturday  | 00:00   | 24:00    |
| Sunday    | 00:00   | 24:00    |

**MASTER TIME CLOCK****MTC table**

| ID | Function        | Arg1 | Arg2 | Start    | End      | M | N | W | T | F | S | S | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Description |
|----|-----------------|------|------|----------|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-------------|
| 1  | Control plan    | 1    | 0    | 00:00:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 2  | Timing set      | 2    | 0    | 06:00:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 3  | CLF plan        | 2    | 0    | 06:00:01 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 4  | Timing set      | 1    | 0    | 07:00:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 5  | CLF plan        | 2    | 0    | 06:30:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 6  | Timing set      | 2    | 0    | 09:30:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 7  | CLF plan        | 2    | 0    | 09:30:01 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 8  | Timing set      | 3    | 0    | 16:15:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 9  | CLF plan        | 3    | 0    | 16:15:01 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 10 | Timing set      | 2    | 0    | 18:30:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 11 | CLF plan        | 2    | 0    | 18:30:01 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 12 | Timing set      | 4    | 0    | 22:30:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 13 | Timing set      | 4    | 0    | 00:00:00 | 06:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 14 | CLF plan        | 4    | 0    | 22:30:01 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 15 | CLF plan        | 4    | 0    | 00:00:00 | 06:00:00 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 16 | Timing set      | 2    | 0    | 08:00:00 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 17 | CLF plan        | 2    | 0    | 08:00:01 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 18 | Timing set      | 4    | 0    | 21:30:00 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 19 | CLF plan        | 4    | 0    | 21:30:01 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 20 | CLF plan        | 4    | 0    | 00:00:00 | 08:00:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 21 | Timing set      | 2    | 0    | 09:00:00 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 22 | CLF plan        | 2    | 0    | 09:00:01 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 23 | Timing set      | 4    | 0    | 21:30:00 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 24 | CLF plan        | 4    | 0    | 21:30:01 | 24:00:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 25 | CLF plan        | 4    | 0    | 00:00:00 | 09:00:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |
| 26 | User function 1 | 1    | 0    | 00:00:00 | 24:00:00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |             |

**CONFLICT EXTENSION RED**

**CABLELESS LINKING FACILITY****Plans**

Global settings

Sync. Mode: Daily

Sync. Day: Monday

Ref. time: 02:00

| No | Cycle | Offset | EntryTime | ExitTime |
|----|-------|--------|-----------|----------|
| 1  | 50    | 0      |           |          |
| 2  | 60    | 0      |           |          |
| 3  | 55    | 0      |           |          |
| 4  | 50    | 0      |           |          |

**Functions and actions****PLAN 1**

| No | Time | Influence          | Stage | Stream |
|----|------|--------------------|-------|--------|
| 1  | 5    | IM: Immediate move | 1     | 1      |
| 2  | 3    | IM: Immediate move | 5     | 2      |
| 3  | 22   | IM: Immediate move | 2     | 1      |
| 4  | 20   | IM: Immediate move | 6     | 2      |
| 5  | 32   | IM: Immediate move | 4     | 2      |

**PLAN 2**

| No | Time | Influence          | Stage | Stream |
|----|------|--------------------|-------|--------|
| 1  | 0    | IM: Immediate move | 1     | 1      |
| 2  | 0    | IM: Immediate move | 5     | 2      |
| 3  | 28   | IM: Immediate move | 2     | 1      |
| 4  | 22   | IM: Immediate move | 6     | 2      |
| 5  | 37   | IM: Immediate move | 4     | 2      |

**PLAN 3**

| No | Time | Influence          | Stage | Stream |
|----|------|--------------------|-------|--------|
| 1  | 0    | IM: Immediate move | 1     | 1      |
| 2  | 0    | IM: Immediate move | 5     | 2      |
| 3  | 22   | IM: Immediate move | 2     | 1      |
| 4  | 20   | IM: Immediate move | 6     | 2      |
| 5  | 34   | IM: Immediate move | 4     | 2      |

**PLAN 4**

| No | Time | Influence          | Stage | Stream |
|----|------|--------------------|-------|--------|
| 1  | 0    | IM: Immediate move | 1     | 1      |
| 2  | 3    | IM: Immediate move | 5     | 2      |
| 3  | 24   | IM: Immediate move | 6     | 2      |
| 4  | 27   | IM: Immediate move | 2     | 1      |
| 5  | 31   | IM: Immediate move | 4     | 2      |



**OTU****Units**

GENERAL INTEGRAL OTU OPTIONS

Integral OTU: -

**DISCRETE OTU**

| ID | Invert control bits | Invert reply bits |
|----|---------------------|-------------------|
| 1  | 0                   | 1                 |

**Control and reply bits****CONTROL BITS**

| ID | Function | Arg | Label |
|----|----------|-----|-------|
| 1  | F        | 1   | F1    |
| 2  | F        | 2   | F2    |
| 3  | F        | 3   | F3    |
| 4  | F        | 4   | F4    |
| 5  | F        | 5   | F5    |
| 6  | F        | 6   | F6    |
| 7  | F        | 7   | F7    |
| 8  | -        | 0   |       |
| 9  | -        | 0   |       |
| 10 | -        | 0   |       |
| 11 | -        | 0   |       |
| 12 | -        | 0   |       |
| 13 | -        | 0   |       |
| 14 | -        | 0   |       |
| 15 | -        | 0   |       |
| 16 | TO       | 0   | TO    |

**REPLY BITS**

| ID | Function | Arg | Label |
|----|----------|-----|-------|
| 1  | G        | 1   | G1    |
| 2  | G        | 2   | G2    |
| 3  | G        | 3   | G3    |
| 4  | G        | 4   | G4    |
| 5  | G        | 5   | G5    |
| 6  | G        | 6   | G6    |
| 7  | G        | 7   | G7    |
| 8  | UF       | 1   | PC    |
| 9  | UF       | 2   | PE    |
| 10 | -        | 0   |       |
| 11 | -        | 0   |       |
| 12 | -        | 0   |       |
| 13 | -        | 0   |       |
| 14 | -        | 0   |       |
| 15 | -        | 0   |       |
| 16 | -        | 0   |       |

**RTC**

|                                     |       |
|-------------------------------------|-------|
| Synchronisation time (UTC TS input) | 00:00 |
| Confirm time (UTC RT output)        | 0:0:0 |

**SPECIAL UTC REPLY BITS**

|                                         |       |    |
|-----------------------------------------|-------|----|
| .                                       | G1/G2 | RR |
| Manual mode operative                   | 0     | 1  |
| Manual mode selected                    | 0     | 1  |
| No lamp power (excluding RLM and PT)    | 1     | -  |
| Normal not selected on the manual panel | 0     | 1  |

**UG405 Bit Mapping****Settings**

|                             |   |
|-----------------------------|---|
| Enable UG405                | 0 |
| OTU System Code Number(SCN) |   |

**CONTROL BITS**

| ID | Function | Arg | Label | Controller SCN | UG405 Name | Bit Index |
|----|----------|-----|-------|----------------|------------|-----------|
| 1  | F        | 1   | F1    |                | -          |           |
| 2  | F        | 2   | F2    |                | -          |           |
| 3  | F        | 3   | F3    |                | -          |           |
| 4  | F        | 4   | F4    |                | -          |           |
| 5  | F        | 5   | F5    |                | -          |           |
| 6  | F        | 6   | F6    |                | -          |           |
| 7  | F        | 7   | F7    |                | -          |           |
| 8  | -        | 0   |       |                | -          |           |
| 9  | -        | 0   |       |                | -          |           |
| 10 | -        | 0   |       |                | -          |           |
| 11 | -        | 0   |       |                | -          |           |
| 12 | -        | 0   |       |                | -          |           |
| 13 | -        | 0   |       |                | -          |           |
| 14 | -        | 0   |       |                | -          |           |
| 15 | -        | 0   |       |                | -          |           |
| 16 | TO       | 0   | TO    |                | -          |           |

**REPLY BITS**

| ID | Function | Arg | Label | Controller SCN | UG405 Name | Bit Index |
|----|----------|-----|-------|----------------|------------|-----------|
| 1  | G        | 1   | G1    |                | -          |           |
| 2  | G        | 2   | G2    |                | -          |           |
| 3  | G        | 3   | G3    |                | -          |           |
| 4  | G        | 4   | G4    |                | -          |           |
| 5  | G        | 5   | G5    |                | -          |           |
| 6  | G        | 6   | G6    |                | -          |           |
| 7  | G        | 7   | G7    |                | -          |           |
| 8  | UF       | 1   | PC    |                | -          |           |
| 9  | UF       | 2   | PE    |                | -          |           |
| 10 | -        | 0   |       |                | -          |           |
| 11 | -        | 0   |       |                | -          |           |
| 12 | -        | 0   |       |                | -          |           |
| 13 | -        | 0   |       |                | -          |           |
| 14 | -        | 0   |       |                | -          |           |
| 15 | -        | 0   |       |                | -          |           |
| 16 | -        | 0   |       |                | -          |           |

## UTC FAULT LOGGING REPLY BITS (FLOG)

### General Faults and Events

| Fault ID | Fault/Event Names                                | Flog1 | Flog2 | Flog3 | Flog4 |
|----------|--------------------------------------------------|-------|-------|-------|-------|
| 0        | POWERFAIL                                        | 0     | 0     | 0     | 0     |
| 1        | Mains Low                                        | 0     | 0     | 0     | 0     |
| 2        | CPU-B CRC CODE (CRC check failed)                | 0     | 0     | 0     | 0     |
| 3        | CPU-B CRC DATA (configuration error)             | 0     | 0     | 0     | 0     |
| 4        | CPU-B LCM (error in current measuring )          | 0     | 0     | 0     | 0     |
| 6        | CPU-B LCM DIAG (communication problem )          | 0     | 0     | 0     | 0     |
| 7        | CPU-B LOT SLOW                                   | 0     | 0     | 0     | 0     |
| 8        | CPU-A ALARM (CPU-A has switched the lights off.) | 0     | 0     | 0     | 0     |
| 9        | XP ALARM                                         | 0     | 0     | 0     | 0     |
| 10       | USER ALARM                                       | 0     | 0     | 0     | 0     |
| 11       | MAINS SYNC                                       | 0     | 0     | 0     | 0     |
| 13       | LOC-LOC                                          | 0     | 0     | 0     | 0     |
| 14       | CPU-B COM CPU-A                                  | 0     | 0     | 0     | 0     |
| 25       | CPU-A COM CPU-B                                  | 0     | 0     | 0     | 0     |
| 28       | CPU-A (EXT)                                      | 0     | 0     | 0     | 0     |
| 52       | DEADLOCK SG                                      | 0     | 0     | 0     | 0     |
| 81       | PHASE INH SG ON                                  | 0     | 0     | 0     | 0     |
| 100      | CPU-A XLM name                                   | 0     | 0     | 0     | 0     |
| 101      | CONFLICT                                         | 0     | 0     | 0     | 0     |
| 102      | OMS ERROR                                        | 0     | 0     | 0     | 0     |
| 110      | PARAM LOG 1                                      | 0     | 0     | 0     | 0     |
| 151      | BATTERY ERROR                                    | 0     | 0     | 0     | 0     |
| 193      | DIMMING FAIL                                     | 0     | 0     | 0     | 0     |
| 194      | DIMMING OK                                       | 0     | 0     | 0     | 0     |
| 217      | MIMIC MODE ON                                    | 0     | 0     | 0     | 0     |
| 218      | CPU-A/B ID                                       | 0     | 0     | 0     | 0     |
| 243      | WATCHDOG                                         | 0     | 0     | 0     | 0     |
| 250      | MAINS OFF                                        | 0     | 0     | 0     | 0     |

### Functional safety errors

| Fault ID | Error Names                                      | Flog1 | Flog2 | Flog3 | Flog4 |
|----------|--------------------------------------------------|-------|-------|-------|-------|
| 0        | Switch off                                       | 0     | 0     | 0     | 0     |
| 1        | Conflict between SG1 and SG2                     | 0     | 0     | 0     | 0     |
| 2        | Minimum timing violation of SG in state S        | 0     | 0     | 0     | 0     |
| 3        | Maximum timing violation of SG in state S        | 0     | 0     | 0     | 0     |
| 4        | Sequence error for SG in state S                 | 0     | 0     | 0     | 0     |
| 5        | Minimum timing violation of stream XP in state S | 0     | 0     | 0     | 0     |
| 6        | Maximum timing violation of stream XP in state S | 0     | 0     | 0     | 0     |
| 7        | Sequence error for stream XP in state S          | 0     | 0     | 0     | 0     |

### Unit Errors

| Fault ID | Error Names                                                                               | Flog1 | Flog2 | Flog3 | Flog4 |
|----------|-------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| 1        | LCM unit has failed or is missing                                                         | 0     | 0     | 0     | 0     |
| 9        | PAR-IO16 Error                                                                            | 0     | 0     | 0     | 0     |
| 10       | Integral OTU has lost communication with the in-station or off-line due to F bit timeout. | 0     | 0     | 0     | 0     |
| 11       | MTS4E detector panel Error                                                                | 0     | 0     | 0     | 0     |
| 13       | Manual panel Error                                                                        | 0     | 0     | 0     | 0     |

### Lamp switch errors

| Fault ID | Error Names  | Flog1 | Flog2 | Flog3 | Flog4 |
|----------|--------------|-------|-------|-------|-------|
| 0        | All switches | 0     | 0     | 0     | 0     |

### Lamp errors

| Fault ID | Error Names | Flog1 FIRST LAMP | Flog1 SECOND LAMP | Flog1 LAST LAMP | Flog2 FIRST LAMP | Flog2 SECOND LAMP | Flog2 LAST LAMP | Flog3 FIRST LAMP | Flog3 SECOND LAMP | Flog3 LAST LAMP | Flog4 FIRST LAMP | Flog4 SECOND LAMP | Flog4 LAST LAMP |
|----------|-------------|------------------|-------------------|-----------------|------------------|-------------------|-----------------|------------------|-------------------|-----------------|------------------|-------------------|-----------------|
| 0        | All Lamps   | 0                | 0                 | 0               | 0                | 0                 | 0               | 0                | 0                 | 0               | 0                | 0                 | 0               |

### Detector errors

| ID | Detectors | Flog1 Fault | Flog1 Active alarm | Flog1 Inactive alarm | Flog1 Override | Flog2 Fault | Flog2 Active alarm | Flog2 Inactive alarm | Flog2 Override | Flog3 Fault | Flog3 Active alarm | Flog3 Inactive alarm | Flog3 Override | Flog4 Fault | Flog4 Active alarm | Flog4 Inactive alarm | Flog4 Override |
|----|-----------|-------------|--------------------|----------------------|----------------|-------------|--------------------|----------------------|----------------|-------------|--------------------|----------------------|----------------|-------------|--------------------|----------------------|----------------|
| 1  | AX1       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |

| ID | Detectors | Flog1 Fault | Flog1 Active alarm | Flog1 Inactive alarm | Flog1 Override | Flog2 Fault | Flog2 Active alarm | Flog2 Inactive alarm | Flog2 Override | Flog3 Fault | Flog3 Active alarm | Flog3 Inactive alarm | Flog3 Override | Flog4 Fault | Flog4 Active alarm | Flog4 Inactive alarm | Flog4 Override |
|----|-----------|-------------|--------------------|----------------------|----------------|-------------|--------------------|----------------------|----------------|-------------|--------------------|----------------------|----------------|-------------|--------------------|----------------------|----------------|
| 2  | ASL2a     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 3  | ASL2b     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 4  | ASL2c     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 5  | AX3       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 6  | AX4       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 7  | BIN5      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 8  | BX6       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 9  | BSL7a     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 10 | BSL7b     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 11 | BSL7c     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 12 | BSL7d     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 13 | BIN8      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 14 | BX9       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 15 | BIN10     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 16 | BX11      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 17 | BIN12     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 18 | BX13      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 19 | CIN1      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 20 | CX2       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 21 | CSL3a     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 22 | CSL3b     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 23 | CSL3c     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 24 | CIN4      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 25 | CX5       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 26 | CIN6      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 27 | CX7       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 28 | DIN8      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 29 | DX9       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 30 | DSL10a    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 31 | DSL10b    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 32 | DSL10c    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 33 | DIN11     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 34 | DX12      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 35 | DX13      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 36 | EX14      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 37 | ESL15a    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 38 | ESL15b    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 39 | ESL15c    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 40 | EX16      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 41 | EX17      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 42 | FIN18     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 43 | FX19      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 44 | FSL20a    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 45 | FSL20b    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 46 | FSL20c    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 47 | FSL20d    | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 48 | FIN21     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 49 | FX22      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 50 | FIN23     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 51 | FX24      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 52 | FIN25     | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 53 | FX26      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 54 | Q1        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 55 | Q2        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 56 | Q3        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 57 | Q4        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 58 | Q5        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 59 | Q6        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 60 | DQ1       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 61 | DQ2       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 62 | EQ1       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 63 | Q7        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 64 | Q8        | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 65 | AXQ       | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |
| 66 | CINQ      | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              | 0           | 0                  | 0                    | 0              |

| ID | Detectors | Flog1<br>Fault | Flog1<br>Active<br>alarm | Flog1<br>Inactive<br>alarm | Flog1<br>Override | Flog2<br>Fault | Flog2<br>Active<br>alarm | Flog2<br>Inactive<br>alarm | Flog2<br>Override | Flog3<br>Fault | Flog3<br>Active<br>alarm | Flog3<br>Inactive<br>alarm | Flog3<br>Override | Flog4<br>Fault | Flog4<br>Active<br>alarm | Flog4<br>Inactive<br>alarm | Flog4<br>Override |
|----|-----------|----------------|--------------------------|----------------------------|-------------------|----------------|--------------------------|----------------------------|-------------------|----------------|--------------------------|----------------------------|-------------------|----------------|--------------------------|----------------------------|-------------------|
| 67 | DQ1_2     | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |
| 68 | EXQ       | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |
| 69 | EQ        | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |
| 70 | Q1_2      | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |
| 71 | Q3_4      | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |
| 72 | Q_5       | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |
| 73 | Q_6       | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 | 0              | 0                        | 0                          | 0                 |

## HURRY CALLS

**PUBLIC SERVICE VEHICLE PRIORITY**

## **SPEED ASSESSMENT AND SPEED DISCRIMINATION**



**GENERAL PURPOSE I/O****Hardware****INPUTS**

| ID | Input   | Invert | Toggle | Unit     | Bit | Flag |
|----|---------|--------|--------|----------|-----|------|
| 1  | UTC_I1  | 0      | 0      | IO1616-1 | 1   |      |
| 2  | UTC_I2  | 0      | 0      | IO1616-1 | 2   |      |
| 3  | UTC_I3  | 0      | 0      | IO1616-1 | 3   |      |
| 4  | UTC_I4  | 0      | 0      | IO1616-1 | 4   |      |
| 5  | UTC_I5  | 0      | 0      | IO1616-1 | 5   |      |
| 6  | UTC_I6  | 0      | 0      | IO1616-1 | 6   |      |
| 7  | UTC_I7  | 0      | 0      | IO1616-1 | 7   |      |
| 8  | UTC_I8  | 0      | 0      | IO1616-1 | 8   |      |
| 9  | UTC_I9  | 0      | 0      | IO1616-1 | 9   |      |
| 10 | UTC_I10 | 0      | 0      | IO1616-1 | 10  |      |
| 11 | UTC_I11 | 0      | 0      | IO1616-1 | 11  |      |
| 12 | UTC_I12 | 0      | 0      | IO1616-1 | 12  |      |
| 13 | UTC_I13 | 0      | 0      | IO1616-1 | 13  |      |
| 14 | UTC_I14 | 0      | 0      | IO1616-1 | 14  |      |
| 15 | UTC_I15 | 0      | 0      | IO1616-1 | 15  |      |
| 16 | UTC_I16 | 0      | 0      | IO1616-1 | 16  |      |
| 17 | DIM_IN  | 0      | 0      | DIMMING  | 1   | DIMR |

**OUTPUTS**

| ID | Output   | Invert | Unit     | Bit | Flag |
|----|----------|--------|----------|-----|------|
| 1  | ST1A42C  | 0      | IO1616-2 | 1   |      |
| 2  | ST1A43H  | 0      | IO1616-2 | 2   |      |
| 3  | ST1B44C  | 0      | IO1616-2 | 3   |      |
| 4  | ST1B45H  | 0      | IO1616-2 | 4   |      |
| 5  | ST2F34C  | 0      | IO1616-2 | 5   |      |
| 6  | ST2F35H  | 0      | IO1616-2 | 6   |      |
| 7  | DET40_1  | 0      | IO1616-2 | 7   |      |
| 8  | DET41_1  | 0      | IO1616-2 | 8   |      |
| 9  | DET42_1  | 0      | IO1616-2 | 9   |      |
| 10 | DET36_2  | 0      | IO1616-2 | 10  |      |
| 11 | DET37_2  | 0      | IO1616-2 | 11  |      |
| 12 | DET38_2  | 0      | IO1616-2 | 12  |      |
| 13 | DET39_2  | 0      | IO1616-2 | 13  |      |
| 14 | DET40_2  | 0      | IO1616-2 | 14  |      |
| 15 | DET41_2  | 0      | IO1616-2 | 15  |      |
| 16 | MCRB1    | 1      | IO1616-2 | 16  |      |
| 17 | MCRB2    | 1      | IO1616-3 | 1   |      |
| 18 | ST1DET31 | 0      | IO1616-3 | 2   |      |
| 19 | ST2DET31 | 0      | IO1616-3 | 3   |      |
| 20 | ST1DET32 | 0      | IO1616-3 | 4   |      |
| 21 | ST2DET32 | 0      | IO1616-3 | 5   |      |
| 22 | UTC_O1   | 0      | IO1616-1 | 1   |      |
| 23 | UTC_O2   | 0      | IO1616-1 | 2   |      |
| 24 | UTC_O3   | 0      | IO1616-1 | 3   |      |
| 25 | UTC_O4   | 0      | IO1616-1 | 4   |      |
| 26 | UTC_O5   | 0      | IO1616-1 | 5   |      |
| 27 | UTC_O6   | 0      | IO1616-1 | 6   |      |
| 28 | UTC_O7   | 0      | IO1616-1 | 7   |      |
| 29 | UTC_O8   | 0      | IO1616-1 | 8   |      |
| 30 | UTC_O9   | 0      | IO1616-1 | 9   |      |
| 31 | UTC_O10  | 0      | IO1616-1 | 10  |      |
| 32 | UTC_O11  | 0      | IO1616-1 | 11  |      |
| 33 | UTC_O12  | 0      | IO1616-1 | 12  |      |
| 34 | UTC_O13  | 0      | IO1616-1 | 13  |      |
| 35 | UTC_O14  | 0      | IO1616-1 | 14  |      |
| 36 | UTC_O15  | 0      | IO1616-1 | 15  |      |
| 37 | UTC_O16  | 0      | IO1616-1 | 16  |      |
| 38 | DIM_OUT  | 0      | DIMMING  | 1   | DIMA |
| 39 | ASL2     | 0      | IO1616-3 | 6   |      |
| 40 | BSL7     | 0      | IO1616-3 | 7   |      |
| 41 | CSL3     | 0      | IO1616-3 | 8   |      |

| ID | Output  | Invert | Unit     | Bit | Flag |
|----|---------|--------|----------|-----|------|
| 42 | DSL10   | 0      | IO1616-3 | 9   |      |
| 43 | ESL15   | 0      | IO1616-3 | 10  |      |
| 44 | FSL20   | 0      | IO1616-3 | 11  |      |
| 45 | DET43_1 | 0      | IO1616-3 | 12  |      |
| 46 | DET46_2 | 0      | IO1616-3 | 13  |      |

## APPLICATION BUILDING BLOCKS

## User Parameters

| ID | Name        | DEF | MIN | MAX |
|----|-------------|-----|-----|-----|
| 1  | ST1A43H_EXT | 1   | 0   | 1   |
| 2  | ST1B45H_EXT | 1   | 0   | 1   |
| 3  | ST2F35H_EXT | 1   | 0   | 1   |
| 4  | ST1A42C_SW  | 0   | 0   | 1   |
| 5  | ST1A43H_SW  | 0   | 0   | 1   |
| 6  | ST1B44C_SW  | 0   | 0   | 1   |
| 7  | ST1B45H_SW  | 0   | 0   | 1   |
| 8  | ST2F34C_SW  | 0   | 0   | 1   |
| 9  | ST2F35H_SW  | 0   | 0   | 1   |
| 10 | DET40_1_SW  | 0   | 0   | 1   |
| 11 | DET41_1_SW  | 0   | 0   | 1   |
| 12 | DET42_1_SW  | 0   | 0   | 1   |
| 13 | DET36_2_SW  | 0   | 0   | 1   |
| 14 | DET37_2_SW  | 0   | 0   | 1   |
| 15 | DET38_2_SW  | 0   | 0   | 1   |
| 16 | DET39_2_SW  | 0   | 0   | 1   |
| 17 | DET40_2_SW  | 0   | 0   | 1   |
| 18 | DET41_2_SW  | 0   | 0   | 1   |
| 19 | Q7_8SW      | 0   | 0   | 1   |
| 20 | DET46_2_SW  | 0   | 0   | 1   |

## Memory Elements

| ID | Timer  | Duration |
|----|--------|----------|
| 1  | GREENA | 0        |
| 2  | GREENB | 0        |
| 3  | GREENF | 0        |
| 4  | CRBRST | 0        |

## Event Pulses

| ID | Name         | Type | R | InType | On   | OFF  |
|----|--------------|------|---|--------|------|------|
| 1  | CrbPulse1    | 3    | 0 | 0      | 1200 | 20   |
| 2  | CrbPulse2    | 3    | 0 | 0      | 1200 | 20   |
| 3  | St1a41cpulse | 1    | 0 | 1      | 50   | 20   |
| 4  | St1a42hold   | 1    | 0 | 1      | 70   | 50   |
| 5  | Sta42hoff    | 2    | 1 | 0      | 80   | 0    |
| 6  | Sta42hOR     | 2    | 1 | 0      | 600  | 0    |
| 7  | Stb43cPulse  | 1    | 0 | 1      | 50   | 20   |
| 8  | St1b44hold   | 1    | 0 | 1      | 70   | 50   |
| 9  | St1b44off    | 2    | 1 | 0      | 80   | 0    |
| 10 | St1b44OR     | 2    | 1 | 0      | 600  | 0    |
| 11 | St2f34cpulse | 1    | 0 | 1      | 50   | 20   |
| 12 | St2f35hold   | 1    | 0 | 1      | 70   | 50   |
| 13 | St2f35hoff   | 2    | 1 | 0      | 80   | 0    |
| 14 | St2f35hOR    | 2    | 1 | 0      | 600  | 0    |
| 15 | Axq          | 2    | 0 | 0      | 0    | 20   |
| 16 | Axqpulse     | 1    | 0 | 1      | 0    | 20   |
| 17 | AxqOR        | 1    | 0 | 2      | 0    | 1200 |
| 18 | q1           | 2    | 0 | 0      | 0    | 20   |
| 19 | Q1Pulse      | 1    | 0 | 1      | 0    | 20   |
| 20 | Q1OR         | 1    | 0 | 2      | 0    | 1800 |
| 21 | q3           | 2    | 0 | 0      | 0    | 20   |
| 22 | Q3pulse      | 1    | 0 | 1      | 0    | 20   |
| 23 | Q3OR         | 1    | 0 | 2      | 0    | 1800 |
| 24 | cln          | 2    | 0 | 0      | 0    | 20   |
| 25 | CINpulse     | 1    | 0 | 1      | 0    | 20   |
| 26 | CINOR        | 1    | 0 | 2      | 0    | 1200 |
| 27 | Dq           | 2    | 0 | 0      | 0    | 20   |
| 28 | DQpulse      | 1    | 0 | 1      | 0    | 20   |
| 29 | DQOR         | 1    | 0 | 2      | 0    | 1800 |
| 30 | Ex           | 2    | 0 | 0      | 0    | 20   |
| 31 | EXpulse      | 1    | 0 | 1      | 0    | 20   |
| 32 | ExOR         | 1    | 0 | 2      | 0    | 1200 |

| ID | Name      | Type | R | InType | On   | OFF  |
|----|-----------|------|---|--------|------|------|
| 33 | Eq        | 2    | 0 | 0      | 0    | 20   |
| 34 | EQpulse   | 1    | 0 | 1      | 0    | 20   |
| 35 | EQOR      | 1    | 0 | 2      | 0    | 1200 |
| 36 | q5        | 2    | 0 | 0      | 0    | 20   |
| 37 | Q5pulse   | 1    | 0 | 1      | 0    | 20   |
| 38 | Q5OR      | 1    | 0 | 2      | 0    | 1800 |
| 39 | q6        | 2    | 0 | 0      | 0    | 20   |
| 40 | Q6pulse   | 1    | 0 | 1      | 0    | 20   |
| 41 | Q6OR      | 1    | 0 | 2      | 0    | 1800 |
| 42 | Nodemand  | 2    | 1 | 0      | 150  | 0    |
| 43 | Crbdrop1  | 2    | 1 | 0      | 6000 | 0    |
| 44 | Crbdrop2  | 2    | 1 | 0      | 6000 | 0    |
| 45 | St1Det31  | 1    | 0 | 1      | 0    | 20   |
| 46 | St2Det31  | 1    | 0 | 1      | 0    | 20   |
| 47 | St1Det32  | 1    | 0 | 1      | 0    | 20   |
| 48 | St2Det32  | 1    | 0 | 1      | 0    | 20   |
| 49 | Det43_1   | 1    | 0 | 1      | 0    | 20   |
| 50 | Det46_2   | 1    | 0 | 1      | 0    | 20   |
| 51 | Det43_1OR | 1    | 0 | 2      | 0    | 1200 |
| 52 | Det46_2OR | 1    | 0 | 2      | 0    | 1200 |

**VM FUNCTIONS**

## OTU

```
rf_2(arg) = cfa;  
urG1() = (stgc(0)==1) && (stgr(0,0,0));  
urDR1() = dr(A);  
urG2() = (stgc(0)==2) && (stgr(0,0,0));  
urDR2() = dr(B);  
urG3() = (stgc(0)==3) && (stgr(0,0,0));  
urDR3() = dr(G);  
urG4() = (stgc(1)==4) && (stgr(1,0,0));  
urDR4() = dr(C) ||dr(F);  
urG5() = (stgc(1)==5) && (stgr(1,0,0));  
urDR5() = dr(D) ||dr(E);  
urG6() = (stgc(1)==6) && (stgr(1,0,0));  
urDR6() = dr(C) ||dr(E) ||dr(I);  
urG7() = (stgc(1)==7) && (stgr(1,0,0));  
urDR7() = dr(H);
```

## CLF

## UTC

```
r_uf1() = fcg(C);  
r_uf2() = fcg(E);
```

## PSVP

## Hurry call

## Phase delays

## Phase delays

## Streams

```
roffsync() = okoff(0) && okoff(1);  
mac1_swon(t) = yellow_period(0,t);  
macon1() = minon(xp)==0;  
macoff1() = (macm(xp) <= 1) && (mact(xp) <= tson(7));  
mac2_swon(t) = yellow_period(1,t);  
macon2() = minon(xp)==0;  
macoff2() = (macm(xp) <= 1) && (mact(xp) <= tson(7));
```

## Detectors

| Phases                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pd_ALL(ph)<br><br>if ((xsf(XSF_PSET_ERR) != AUTOSET_STATE_DONE) && (xsf(XSF_PSET_ERR) != AUTOSET_STATE_ERROR)) then return (1); endif<br>end<br><br>pe_ALL(ph) = ngp1(ph); |

| Timing sets |
|-------------|
|             |

| Dummy detectors                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vmDET1() = ddo(AX1)    ddo(AX3)    ddo(AX4);<br><br>vmDET2() = ddo(CIN1)    ddo(CIN4)    ddo(CIN6);<br><br>vmDET3() = ddo(DQ1)    ddo(DQ2);<br><br>vmDET4() = ddo(EX14)    ddo(EX16)    ddo(EX17);<br><br>vmDET5() = ddo(EQ1);<br><br>vmDET6() = ddo(Q1)    ddo(Q2);<br><br>vmDET7() = ddo(Q3)    ddo(Q4);<br><br>vmDET8() = ddo(Q5);<br><br>vmDET9() = ddo(Q6); |

| Modes                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rHCH() = rar(xp);<br><br>rUTC() = ufav(xp)  ufpv(xp);<br><br>rHCL() = hfn();<br><br>rMAN() = mpman(xp);<br><br>rCLF() = clfp && (clfi == 0);<br><br>rVA() = 1;<br><br>rFT() = 1;<br><br>rSCLF() = clfp && (mpclfi(xp)    clfmp);<br><br>rSVA() = mpva(xp);<br><br>rSFT() = mpft(xp); |

| Integral OTU                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| otu_dstate(d) = get(h_xdet_sts, d) & DET_BEZET_MASK;<br><br>otu_dfault(d) = get(h_xdet_sts, d) & DET_FAULT_MASK;<br><br>otu_dcnt(d) = get(h_xdet_cnt, d); |

| Conflict extension red |
|------------------------|
|                        |

| Stage moves - HCH                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------|
| mHCH1_3d() = rar(xp);<br><br>mHCH2_3d() = rar(xp);<br><br>mHCH4_7d() = rar(xp);<br><br>mHCH5_7d() = rar(xp);<br><br>mHCH6_7d() = rar(xp); |

| Stage moves - HCL   |
|---------------------|
| mHCL1_2d() = FALSE; |
| mHCL1_3d() = FALSE; |
| mHCL2_3d() = FALSE; |
| mHCL2_1d() = FALSE; |
| mHCL3_1d() = FALSE; |
| mHCL3_2d() = FALSE; |
| mHCL4_5d() = FALSE; |
| mHCL4_6d() = FALSE; |
| mHCL4_7d() = FALSE; |
| mHCL5_6d() = FALSE; |
| mHCL5_7d() = FALSE; |
| mHCL5_4d() = FALSE; |
| mHCL6_7d() = FALSE; |
| mHCL6_4d() = FALSE; |
| mHCL6_5d() = FALSE; |
| mHCL7_4d() = FALSE; |
| mHCL7_5d() = FALSE; |
| mHCL7_6d() = FALSE; |

| Stage moves - VA                                |
|-------------------------------------------------|
| mVA1_2d() = dSTGd(1, 2);                        |
| mVA1_2e() = dSTGe(1, 2);                        |
| mVA1_2i() = FALSE;                              |
| mVA1_3d() = evp(42) && (mtcf(7)==0);            |
| mVA1_3e() = dSTGe(1, 3);                        |
| mVA1_3i() = FALSE;                              |
| mVA2_3d() = evp(42) && (mtcf(7)==0);            |
| mVA2_3e() = dSTGe(2, 3);                        |
| mVA2_3i() = FALSE;                              |
| mVA2_1d() = dr(A)    (evp(42) && mtcf(7));      |
| mVA2_1e() = dSTGe(2, 1);                        |
| mVA2_1i() = FALSE;                              |
| mVA3_1d() = dr(A)    (evp(42) && mtcf(7));      |
| mVA3_1e() = dSTGe(3, 1);                        |
| mVA3_1i() = FALSE;                              |
| mVA3_2d() = dSTGd(3, 2);                        |
| mVA3_2e() = dSTGe(3, 2);                        |
| mVA3_2i() = FALSE;                              |
| mVA4_5d() = dSTGd(4, 5);                        |
| mVA4_5e() = dSTGe(4, 5);                        |
| mVA4_5i() = FALSE;                              |
| mVA4_6d() = dSTGd(4, 6);                        |
| mVA4_6e() = dSTGe(4, 6);                        |
| mVA4_6i() = FALSE;                              |
| mVA4_7d() = dr(H)    (evp(42) && (mtcf(7)==0)); |
| mVA4_7e() = dSTGe(4, 7);                        |
| mVA4_7i() = FALSE;                              |
| mVA5_6d() = dSTGd(5, 6);                        |

```
mVA5_6e() = dSTGe(5, 6);
mVA5_6i() = FALSE;
mVA5_7d() = dr(H) || (evp(42) && (mtcf(7)==0));
mVA5_7e() = dSTGe(5, 7);
mVA5_7i() = FALSE;
mVA5_4d() = dr(C) || dr(F) || (evp(42) && mtcf(7));
mVA5_4e() = dSTGe(5, 4);
mVA5_4i() = FALSE;
mVA6_7d() = dr(H) || (evp(42) && (mtcf(7)==0));
mVA6_7e() = dSTGe(6, 7);
mVA6_7i() = FALSE;
mVA6_4d() = dr(C) || dr(F) || (evp(42) && mtcf(7));
mVA6_4e() = dSTGe(6, 4);
mVA6_4i() = FALSE;
mVA6_5d() = dSTGd(6, 5);
mVA6_5e() = dSTGe(6, 5);
mVA6_5i() = FALSE;
mVA7_4d() = dr(C) || dr(F) || (evp(42) && mtcf(7));
mVA7_4e() = dSTGe(7, 4);
mVA7_4i() = FALSE;
mVA7_5d() = dSTGd(7, 5);
mVA7_5e() = dSTGe(7, 5);
mVA7_5i() = FALSE;
mVA7_6d() = dSTGd(7, 6);
mVA7_6e() = dSTGe(7, 6);
mVA7_6i() = FALSE;
```

#### Stage moves - FT

```
mFT1_2d() = dSTGd(1, 2);
mFT1_2e() = dSTGe(1, 2);
mFT1_2i() = FALSE;
mFT1_3d() = dSTGd(1, 3);
mFT1_3e() = dSTGe(1, 3);
mFT1_3i() = FALSE;
mFT2_3d() = dSTGd(2, 3);
mFT2_3e() = dSTGe(2, 3);
mFT2_3i() = FALSE;
mFT2_1d() = dSTGd(2, 1);
mFT2_1e() = dSTGe(2, 1);
mFT2_1i() = FALSE;
mFT3_1d() = dSTGd(3, 1);
mFT3_1e() = dSTGe(3, 1);
mFT3_1i() = FALSE;
mFT3_2d() = dSTGd(3, 2);
mFT3_2e() = dSTGe(3, 2);
mFT3_2i() = FALSE;
mFT4_5d() = dSTGd(4, 5);
mFT4_5e() = dSTGe(4, 5);
mFT4_5i() = FALSE;
```



```
mFT4_6d() = dSTGd(4, 6);
mFT4_6e() = dSTGe(4, 6);
mFT4_6i() = FALSE;
mFT4_7d() = dSTGd(4, 7);
mFT4_7e() = dSTGe(4, 7);
mFT4_7i() = FALSE;
mFT5_6d() = dSTGd(5, 6);
mFT5_6e() = dSTGe(5, 6);
mFT5_6i() = FALSE;
mFT5_7d() = dSTGd(5, 7);
mFT5_7e() = dSTGe(5, 7);
mFT5_7i() = FALSE;
mFT5_4d() = dSTGd(5, 4);
mFT5_4e() = dSTGe(5, 4);
mFT5_4i() = FALSE;
mFT6_7d() = dSTGd(6, 7);
mFT6_7e() = dSTGe(6, 7);
mFT6_7i() = FALSE;
mFT6_4d() = dSTGd(6, 4);
mFT6_4e() = dSTGe(6, 4);
mFT6_4i() = FALSE;
mFT6_5d() = dSTGd(6, 5);
mFT6_5e() = dSTGe(6, 5);
mFT6_5i() = FALSE;
mFT7_4d() = dSTGd(7, 4);
mFT7_4e() = dSTGe(7, 4);
mFT7_4i() = FALSE;
mFT7_5d() = dSTGd(7, 5);
mFT7_5e() = dSTGe(7, 5);
mFT7_5i() = FALSE;
mFT7_6d() = dSTGd(7, 6);
mFT7_6e() = dSTGe(7, 6);
mFT7_6i() = FALSE;
```

#### Stage moves - CLF

```
mCLF1_2d() = dCLFd(1, 2);
mCLF1_2i() = dCLFi(1, 2);
mCLF1_3d() = dCLFd(1, 3);
mCLF1_3i() = dCLFi(1, 3);
mCLF2_3d() = dCLFd(2, 3);
mCLF2_3i() = dCLFi(2, 3);
mCLF2_1d() = dCLFd(2, 1);
mCLF2_1i() = dCLFi(2, 1);
mCLF3_1d() = dCLFd(3, 1);
mCLF3_1i() = dCLFi(3, 1);
mCLF3_2d() = dCLFd(3, 2);
mCLF3_2i() = dCLFi(3, 2);
mCLF4_5d() = dCLFd(4, 5);
mCLF4_5i() = dCLFi(4, 5);
mCLF4_6d() = dCLFd(4, 6);
```

```
mCLF4_6i() = dCLFi(4, 6);
mCLF4_7d() = dCLFd(4, 7);
mCLF4_7i() = dCLFi(4, 7);
mCLF5_6d() = dCLFd(5, 6);
mCLF5_6i() = dCLFi(5, 6);
mCLF5_7d() = dCLFd(5, 7);
mCLF5_7i() = dCLFi(5, 7);
mCLF5_4d() = dCLFd(5, 4);
mCLF5_4i() = dCLFi(5, 4);
mCLF6_7d() = dCLFd(6, 7);
mCLF6_7i() = dCLFi(6, 7);
mCLF6_4d() = dCLFd(6, 4);
mCLF6_4i() = dCLFi(6, 4);
mCLF6_5d() = dCLFd(6, 5);
mCLF6_5i() = dCLFi(6, 5);
mCLF7_4d() = dCLFd(7, 4);
mCLF7_4i() = dCLFi(7, 4);
mCLF7_5d() = dCLFd(7, 5);
mCLF7_5i() = dCLFi(7, 5);
mCLF7_6d() = dCLFd(7, 6);
mCLF7_6i() = dCLFi(7, 6);
```

#### Stage moves - UTC

```
mUTC1_2d() = dUTCd(1, 2);
mUTC1_2i() = dUTCi(1, 2);
mUTC1_3d() = dUTCd(1, 3);
mUTC1_3i() = dUTCi(1, 3);
mUTC2_3d() = dUTCd(2, 3);
mUTC2_3i() = dUTCi(2, 3);
mUTC2_1d() = dUTCd(2, 1);
mUTC2_1i() = dUTCi(2, 1);
mUTC3_1d() = dUTCd(3, 1);
mUTC3_1i() = dUTCi(3, 1);
mUTC3_2d() = dUTCd(3, 2);
mUTC3_2i() = dUTCi(3, 2);
mUTC4_5d() = dUTCd(4, 5);
mUTC4_5i() = dUTCi(4, 5);
mUTC4_6d() = dUTCd(4, 6);
mUTC4_6i() = dUTCi(4, 6);
mUTC4_7d() = dUTCd(4, 7);
mUTC4_7i() = dUTCi(4, 7);
mUTC5_6d() = dUTCd(5, 6);
mUTC5_6i() = dUTCi(5, 6);
mUTC5_7d() = dUTCd(5, 7);
mUTC5_7i() = dUTCi(5, 7);
mUTC5_4d() = dUTCd(5, 4);
mUTC5_4i() = dUTCi(5, 4);
mUTC6_7d() = dUTCd(6, 7);
mUTC6_7i() = dUTCi(6, 7);
```

```
mUTC6_4d() = dUTCd(6, 4);
mUTC6_4i() = dUTCi(6, 4);
mUTC6_5d() = dUTCd(6, 5);
mUTC6_5i() = dUTCi(6, 5);
mUTC7_4d() = dUTCd(7, 4);
mUTC7_4i() = dUTCi(7, 4);
mUTC7_5d() = dUTCd(7, 5);
mUTC7_5i() = dUTCi(7, 5);
mUTC7_6d() = dUTCd(7, 6);
mUTC7_6i() = dUTCi(7, 6);
```

#### Stage moves - PSVP

#### Stage moves - MAN

```
mMAN1_2d() = mstg(xp)==2;
mMAN1_3d() = mstg(xp)==3;
mMAN2_3d() = mstg(xp)==3;
mMAN2_1d() = mstg(xp)==1;
mMAN3_1d() = mstg(xp)==1;
mMAN3_2d() = mstg(xp)==2;
mMAN4_5d() = mstg(xp)==5;
mMAN4_6d() = mstg(xp)==6;
mMAN4_7d() = mstg(xp)==7;
mMAN5_6d() = mstg(xp)==6;
mMAN5_7d() = mstg(xp)==7;
mMAN5_4d() = mstg(xp)==4;
mMAN6_7d() = mstg(xp)==7;
mMAN6_4d() = mstg(xp)==4;
mMAN6_5d() = mstg(xp)==5;
mMAN7_4d() = mstg(xp)==4;
mMAN7_5d() = mstg(xp)==5;
mMAN7_6d() = mstg(xp)==6;
```

#### Stage moves - General

```
dSTGd(f,t) = drs(t);
dSTGe(f,t) = exm(t);
dUTCd(f,t) = uF(t) || (uFD(t) && (uD(t) || drs(t)));
dUTCi(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd(f,t) = cIM(t) || (cDD(t) && drs(t)) || (cPS(t) && drs(t));
dCLFi(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dPSVPd(f,t) = drs(t);
dPSVPe(f,t) = exm(t);
dSTGd1() = dr(A);
dSTGe1() = er(A);
dPSVPd1() = pdp(A);
dPSVPe1() = pep(A);
dUTCd1(t) = uF(t) || (uFD(t) && (uD(t) || dr(A)));
dUTCi1(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
```

```
dCLFd1(t) = cIM(t) || (cDD(t) && (dr(A))) || (cPS(t) && (dr(A)));
dCLFi1(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dSTGd2() = dr(B);
dSTGe2() = er(B);
dPSVPd2() = pdp(B);
dPSVPe2() = pep(B);
dUTCd2(t) = uF(t) || (uFD(t) && (uD(t) || dr(B)));
dUTCi2(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd2(t) = cIM(t) || (cDD(t) && (dr(B))) || (cPS(t) && (dr(B)));
dCLFi2(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dSTGd3() = dr(G);
dSTGe3() = er(G);
dPSVPd3() = pdp(G);
dPSVPe3() = pep(G);
dUTCd3(t) = uF(t) || (uFD(t) && (uD(t) || dr(G)));
dUTCi3(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd3(t) = cIM(t) || (cDD(t) && (dr(G))) || (cPS(t) && (dr(G)));
dCLFi3(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dSTGd4() = dr(C) ||dr(F);
dSTGe4() = er(C) ||er(F);
dPSVPd4() = pdp(C) ||pdp(F);
dPSVPe4() = pep(C) ||pep(F);
dUTCd4(t) = uF(t) || (uFD(t) && (uD(t) || dr(C) ||dr(F)));
dUTCi4(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd4(t) = cIM(t) || (cDD(t) && (dr(C) ||dr(F))) || (cPS(t) && (dr(C) ||dr(F)));
dCLFi4(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dSTGd5() = dr(D) ||dr(E);
dSTGe5() = er(D) ||er(E);
dPSVPd5() = pdp(D) ||pdp(E);
dPSVPe5() = pep(D) ||pep(E);
dUTCd5(t) = uF(t) || (uFD(t) && (uD(t) || dr(D) ||dr(E)));
dUTCi5(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd5(t) = cIM(t) || (cDD(t) && (dr(D) ||dr(E))) || (cPS(t) && (dr(D) ||dr(E)));
dCLFi5(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dSTGd6() = dr(C) ||dr(E) ||dr(I);
dSTGe6() = er(C) ||er(E) ||er(I);
dPSVPd6() = pdp(C) ||pdp(E) ||pdp(I);
dPSVPe6() = pep(C) ||pep(E) ||pep(I);
dUTCd6(t) = uF(t) || (uFD(t) && (uD(t) || dr(C) ||dr(E) ||dr(I)));
dUTCi6(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd6(t) = cIM(t) || (cDD(t) && (dr(C) ||dr(E) ||dr(I))) || (cPS(t) && (dr(C) ||dr(E) ||dr(I)));
dCLFi6(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
dSTGd7() = dr(H);
dSTGe7() = er(H);
dPSVPd7() = pdp(H);
dPSVPe7() = pep(H);
dUTCd7(t) = uF(t) || (uFD(t) && (uD(t) || dr(H)));
dUTCi7(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));
dCLFd7(t) = cIM(t) || (cDD(t) && (dr(H))) || (cPS(t) && (dr(H)));
dCLFi7(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
```

**User functions**

```
post_100ms() = Mem || Outputs1 || Outputs2 || Outputs3 || Leds;
```

```
Mem()
if evp(4) then
wmem(GREENA,1);
else
if fca(A) then
wmem(GREENA,0);
endif
endif
```

```
if evp(8) then
wmem(GREENB,1);
else
if fca(B) then
wmem(GREENB,0);
endif
endif
```

```
if evp(12) then
wmem(GREENF,1);
else
if fca(F) then
wmem(GREENF,0);
endif
endif
```

```
if b(0) then
wmem(CRBRST,1);
else
if evp(43) then
wmem(CRBRST,0);
endif
endif
```

```
end
```

```
Outputs1()
cout(ST1A42C,evp(3) && UP(3));
```

```
if evp(4) && UP(4) then
cout(ST1A43H,1);
else
if mem(GREENA) && er(A) && (evp(6)==0) && UP(4) then
cout(ST1A43H,1);
else
if evp(5) && UP(4) then
cout(ST1A43H,0);
else
if evp(6) && UP(4) then
cout(ST1A43H,0);
endif
endif
endif
endif
```

```
cout(ST1B44C,evp(7) && UP(5));
```

```
if evp(8) && UP(6) then
cout(ST1B45H,1);
else
if mem(GREENB) && er(B) && (evp(10)==0) && UP(6) then
cout(ST1B45H,1);
else
if evp(9) && UP(6) then
cout(ST1B45H,0);
else
if evp(10) && UP(6) then
cout(ST1B45H,0);
endif
endif
endif
endif
```

```
cout(ST2F34C,evp(11) && UP(7));
```

```
if evp(12) && UP(8) then
cout(ST2F35H,1);
else
if mem(GREENF) && er(F) && (evp(14)==0) && UP(8) then
cout(ST2F35H,1);
else
if evp(13) && UP(8) then
cout(ST2F35H,0);
else
if evp(14) && UP(8) then
cout(ST2F35H,0);
endif
endif
endif
endif
```

```
end
```

| User functions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <pre>Outputs2() if evp(16) &amp;&amp; (evp(17)==0) &amp;&amp; UP(9) then cout(DET40_1,1); else cout(DET40_1,0); endif  if (evp(19) &amp;&amp; (evp(20)==0) &amp;&amp; UP(10))    (evp(49) &amp;&amp; (evp(51)==0) &amp;&amp; UP(18)) then cout(DET41_1,1); else cout(DET41_1,0); endif  if evp(22) &amp;&amp; (evp(23)==0) &amp;&amp; UP(11) then cout(DET42_1,1); else cout(DET42_1,0); endif  if evp(25) &amp;&amp; (evp(26)==0) &amp;&amp; UP(12) then cout(DET36_2,1); else cout(DET36_2,0); endif  if evp(28) &amp;&amp; (evp(29)==0) &amp;&amp; UP(13) then cout(DET37_2,1); else cout(DET37_2,0); endif  if evp(31) &amp;&amp; (evp(32)==0) &amp;&amp; UP(14) then cout(DET38_2,1); else cout(DET38_2,0); endif  if evp(34) &amp;&amp; (evp(35)==0) &amp;&amp; UP(15) then cout(DET39_2,1); else cout(DET39_2,0); endif  if evp(37) &amp;&amp; (evp(38)==0) &amp;&amp; UP(16) then cout(DET40_2,1); else cout(DET40_2,0); endif  if evp(40) &amp;&amp; (evp(41)==0) &amp;&amp; UP(17) then cout(DET41_2,1); else cout(DET41_2,0); endif end  Outputs3() if mpauto(xp) &amp;&amp; (evp(1)==0) &amp;&amp; (evp(43)==0) &amp;&amp; (evp(44)==0) then cout(MCRB1,1); else cout(MCRB1,0); endif  if mpauto(xp) &amp;&amp; (evp(2)==0) &amp;&amp; (evp(43)==0) &amp;&amp; (evp(44)==0) then cout(MCRB2,1); else cout(MCRB2,0); endif  cout(ST1DET31,evp(45)); cout(ST2DET31,evp(46)); cout(ST1DET32,evp(47)); cout(ST2DET32,evp(48)); cout(ASL2,ddo(ASL2a)    ddo(ASL2b)    ddo(ASL2c)); cout(BSL7,ddo(BSL7a)    ddo(BSL7b)    ddo(BSL7c)    ddo(BSL7d)); cout(CSL3,ddo(CSL3a)    ddo(CSL3b)    ddo(CSL3c)); cout(DSL10,ddo(DSL10a)    ddo(DSL10b)    ddo(DSL10c)); cout(ESL15,ddo(ESL15a)    ddo(ESL15b)    ddo(ESL15c)); cout(FSL20,ddo(FSL20a)    ddo(FSL20b)    ddo(FSL20c)    ddo(FSL20d)); cout(DET43_1,evp(49) &amp;&amp; (evp(51)==0) &amp;&amp; UP(18)); cout(DET46_2,evp(50) &amp;&amp; (evp(52)==0) &amp;&amp; UP(19)); end  Leds() cmled(0,ddo(Q1)); cmled(1,ddo(Q2)); cmled(2,ddo(Q3));  if evp(43)    evp(44) then cmled(3,2); else cmled(3,0); endif end</pre> |

## SYSTEM PARAMETERS

### UK Parameters

| Name                   | Description                                                                                                            | Min | Max  | Def | -   |
|------------------------|------------------------------------------------------------------------------------------------------------------------|-----|------|-----|-----|
| MAN_TIMEOUT            | Manual control timeout                                                                                                 | 60  | 600  | 300 | 300 |
| MAN_DEMAND_ERROR       | Duration of the manual demand error indication                                                                         | 0   | 60   | 5   | 5   |
| MAN_ENABLE             | Manual control enabled.                                                                                                | 0   | 1    | 1   | 1   |
| DFM_FUNC               | Bit mask specifying behavior of DFM indicator                                                                          | 0   | 999  | 1   | 1   |
| CLF_TIMER_SYNC         | Duration of the CLF group Timer Synchronisation Signal                                                                 | 0   | 0    | 0   | 0   |
| UTC_TS                 | Time in HH:MM used for COTU_TS                                                                                         | 0   | 2359 | 0   | 0   |
| UTC_FORCE_TIMEOUT      | The force bit watchdog timeout                                                                                         | 120 | 300  | 200 | 200 |
| UTC_FORCE_ACCEPT       | The force accept timeout in system ticks.                                                                              | 1   | 10   | 4   | 4   |
| UTC_LO_DELAY           | Delay in seconds before COTU_LO changes is accepted.                                                                   | 0   | 99   | 10  | 10  |
| UTC_RT_HOUR            | Hours used for RT reply bit (-1 = any hour).                                                                           | -1  | 23   | 0   | 0   |
| UTC_RT_MIN             | Minutes used for RT reply bit (-1 = any minute).                                                                       | -1  | 59   | 0   | 0   |
| UTC_RT_SEC             | Seconds used for RT reply bit                                                                                          | -1  | 59   | 0   | 0   |
| UTC_RT_DURATION        | Duration of the RT reply bit in seconds                                                                                | 1   | 10   | 3   | 3   |
| UTC_CG_DURATION        | Duration of the CG reply bit in seconds                                                                                | 1   | 10   | 3   | 3   |
| UTC_TSR_DURATION       | Duration of the TSR reply bit in seconds                                                                               | 1   | 10   | 3   | 3   |
| UTC_G1G2_FUNC          | Bit mask specifying behavior of G1/G2 reply bits                                                                       | 0   | 255  | 1   | 1   |
| UTC_RR_FUNC            | Bit mask specifying behavior of RR reply bit                                                                           | 0   | 255  | 14  | 14  |
| UTC_PV_ACCEPT          | The PV accept time in system ticks                                                                                     | 0   | 255  | 0   | 0   |
| UTC_PV_HOLD            | The PV hold time in system ticks                                                                                       | 0   | 255  | 0   | 0   |
| UKSTG_DIM_ALARM        | The maximum time [in hours] for dimmed operation<br>(-1 = solar cell disabled, 0 = enabled without timeout processing) | -1  | 100  | 24  | 24  |
| UKSTG_DIM_FILTER       | The call/cancel delay [in sec] for the DIM relais                                                                      | 0   | 255  | 0   | 0   |
| UTC_CRB_PULSE_ON_TIME  | CRB On Timer                                                                                                           | 0   | 1800 | 600 | 600 |
| UTC_CRB_PULSE_OFF_TIME | CRB Off Timer                                                                                                          | 0   | 10   | 2   | 2   |

### System Parameters

| Name              | Description                                                         | Min | Max   | -     |
|-------------------|---------------------------------------------------------------------|-----|-------|-------|
| SYS_TSRC          | System time source type; 0 = crystal, 1 = mains frequency (default) | 1   | 1     | 1     |
| MMI8408           | XMMI: 8 x 40 MMI                                                    | 0   | 1     | 1     |
| XIN_L             | XIN_L: Number of logging lines                                      | 1   | 999   | 10    |
| XOUT_L            | XOUT_L: Number of logging lines                                     | 1   | 999   | 10    |
| XDET_L            | XDET_L: Number of logging lines                                     | 1   | 999   | 100   |
| XDET_F            | XDET_F: Status in case of fault                                     | 0   | 2     | 0     |
| XSG_L             | XSG_L: Number of logging lines                                      | 0   | 999   | 10    |
| XHTTP             | XHTTP: Presence of web server                                       | 0   | 1     | 1     |
| XHTTP_PORT        | XHTTP_PORT: Webserver port                                          | 0   | 65535 | 80    |
| XHTTP_SES         | XHTTP_SES:                                                          | 0   | 65535 | 200   |
| XDLS              | XDLS: Daylight saving                                               | 0   | 1     | 1     |
| XLM_MAL           | XLM_MAL: Go to major alarm if power reference(s) are not set        | 0   | 1     | 0     |
| XLM_RLM           | XLM_RLM: RLM callback interval in 0.1 [s]                           | 0   | 100   | 10    |
| XLM_T             | XLM_T: Tracking off / on                                            | 0   | 20    | 5     |
| XLM_TF            | XLM_TF: Tracking filter                                             | 1   | 20    | 8     |
| XLM_NV            | XLM_NV: Nominal (bright) voltage                                    | 0   | 240   | 230   |
| XLM_MON           | XLM_MON: Monitoring type                                            | 0   | 10    | 3     |
| XLM_AC            | XLM_AC: Automatic calibration                                       | 0   | 1     | 1     |
| XLM_DIM           | XLM_DIM: Bright Din Calibration off / on                            | 0   | 1     | 1     |
| CLF_SYNC          | CLF Synchronisation option.                                         | 0   | 3     | 0     |
| CLF_SYNC_WDAY     | CLF Weekly sync is done on..                                        | 1   | 7     | 1     |
| CLF_TIMER_SYNC    | Duration of the CLF group Timer Synchronisation Signal              | 0   | 2400  | 200   |
| CLF_NON_BASE_TIME | Select base time or non base time (0 or 1)                          | 0   | 1     | 0     |
| XIOTU_RTS         | RTS activated after # received characters (use 1, 2 or 3)           | 1   | 3     | 1     |
| XIOTU_SCOOT       | Default bit number used for scoot counted detectors (0 to 7)        | 0   | 7     | 0     |
| XIOTU_CTS         | CTS timeout per 10ms                                                | 4   | 10    | 6     |
| UKMP_TYPE         | UK Manual panel type (0=std, 1=ped, 2=multiple stages)              | 0   | 2     | 2     |
| ENGTERM_SIM_PORT  | Engterm simulation socket                                           | 0   | 99999 | 50001 |
| ENGTERM_BAUD      | Engterm baudrate                                                    | 0   | 99999 | 9600  |
| HCH_ALLRED        | Use HCH for all red stage moves                                     | 0   | 1     | 1     |
| HCH_SWOFF         | Use HCH for switch off stage moves                                  | 0   | 1     | 0     |
| PT_SYNC           | Synchronize move to part time mode                                  | 0   | 1     | 1     |
| CLF_MANUAL_STEP   | Enable the Manual Step                                              | 0   | 1     | 0     |
| CLF_DEFAULT_PLAN  |                                                                     | -1  | 999   | 0     |
| CLF_MANUAL_MEMOS  | Memo for the manual step                                            | 0   | 1     | 0     |

| Name              | Description       | Min | Max | - |
|-------------------|-------------------|-----|-----|---|
| COMPRESS_HARDWARE | Compress Hardware | 0   | 1   | 0 |



**MEMO FIELDS**

| <b>HISTORY</b> |                                                                   |
|----------------|-------------------------------------------------------------------|
| Description    | Text in the History text block between: --CREDAT-- and --UPDATE-- |
| Contents       | * This is memofield HISTORY                                       |

| <b>B_HISTORY</b> |                                                                                |
|------------------|--------------------------------------------------------------------------------|
| Description      | Text in the History text block between: --CREDAT-- and --UPDATE-- (AMSEC1.CNF) |
| Contents         | ; This is memofield HISTORY_B                                                  |

| <b>ABC_INC</b> |                                                                        |
|----------------|------------------------------------------------------------------------|
| Description    | Code at the end of the file before the end of file remark (AMSEC1.CNF) |
| Contents       | ; This is memofield AMSEC_INC                                          |

| <b>XP1_INC</b> |                                                                                 |
|----------------|---------------------------------------------------------------------------------|
| Description    | Code at the begin of the file, juts below History, under the heading 'XP1_INC'. |
| Contents       | /* This is memofield XP1_INC */                                                 |

| <b>XP2_INC</b> |                                                                             |
|----------------|-----------------------------------------------------------------------------|
| Description    | Code under the heading 'XP2_INC', just before the 'XIN INPUTS' definitions. |
| Contents       | /* This is memofield XP2_INC */                                             |

| <b>XP3_INC</b> |                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description    | Code under the heading 'XP3_INC', at the end of the file.                                                                                             |
| Contents       | <pre>/* This is memofield XP3_INC */ P("MPDISO.R1") { P(0);D(1); P(1);D(1); P(2);D(1); P(3);D(1); P(4);D(1); P(5);D(1); P(6);D(1); P(7);D(1); }</pre> |

| <b>SADAT_INC</b> |                                      |
|------------------|--------------------------------------|
| Description      | Code at end of the file. (SADAT.CNF) |
| Contents         | /* This is memofield SADAT_INC */    |

| <b>DESCRIPTION</b> |                                 |
|--------------------|---------------------------------|
| Description        | Detailed project description    |
| Contents           | * This is memofield DESCRIPTION |

| <b>VMFUNC_INC1</b> |                                     |
|--------------------|-------------------------------------|
| Description        | VMFUNC process conditions           |
| Contents           | /* This is memofield VMFUNC_INC1 */ |

| <b>VMFUNC_INC2</b> |                                     |
|--------------------|-------------------------------------|
| Description        | VMFUNC process conditions           |
| Contents           | /* This is memofield VMFUNC_INC2 */ |

## HARDWARE CONFIGURATION

| Number of Devices | *  | Optional Devices      | *           |
|-------------------|----|-----------------------|-------------|
| LCM               | 2  | Manual panel type     | Multi stage |
| MTS4E             | 11 | Dimming Operating     | 2           |
| IO1616            | 3  | Manual Panel Flashing | 1           |
| Dummy Detectors   | 9  | Solar Cell Monitor    | Disabled    |

## Configuration

| LCM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MTS4E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | IO1616-IN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IO1616-OUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DEVICE: LCM<br>--- 01 ---<br>01: A (R)<br>02: A (A)<br>03: A (G)<br>04: B (R)<br>05: B (A)<br>06: B (G)<br>07: C (R)<br>08: C (A)<br>09: C (G)<br>10: D (R)<br>11: D (A)<br>12: D (G)<br>--- 02 ---<br>01: E (R)<br>02: E (A)<br>03: E (G)<br>04: F (R)<br>05: F (A)<br>06: F (G)<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>--- 03 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>--- 04 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>--- 05 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>--- 06 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>--- 07 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: - | DEVICE: MTS4E<br>--- 01 ---<br>01: CIN1<br>02: CSL3a<br>03: CSL3b<br>04: CSL3c<br>--- 02 ---<br>01: CIN4<br>02: CIN6<br>03: DIN8<br>04: DX9<br>--- 03 ---<br>01: DSL10a<br>02: DSL10b<br>03: DSL10c<br>04: DIN11<br>--- 04 ---<br>01: DX12<br>02: DX13<br>03: EX14<br>04: ESL15a<br>--- 05 ---<br>01: ESL15b<br>02: ESL15c<br>03: EX16<br>04: EX17<br>--- 06 ---<br>01: FIN18<br>02: FX19<br>03: FSL20a<br>04: FSL20b<br>--- 07 ---<br>01: FSL20c<br>02: FSL20d<br>03: FIN21<br>04: FX22<br>--- 08 ---<br>01: FIN23<br>02: FX24<br>03: FIN25<br>04: FX26<br>--- 09 ---<br>01: Q5<br>02: Q6<br>03: DQ1<br>04: DQ2<br>--- 10 ---<br>01: EQ1<br>02: Q7<br>03: Q8<br>04: -<br>--- 11 ---<br>01: CX2<br>02: CX5<br>03: CX7<br>04: -<br>--- 12 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>--- 13 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>--- 14 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>--- 15 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>--- 16 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>--- 17 ---<br>01: -<br>02: -<br>03: -<br>04: - | DEVICE: IO1616-IN<br>--- 01 ---<br>01: UTC_I1<br>02: UTC_I2<br>03: UTC_I3<br>04: UTC_I4<br>05: UTC_I5<br>06: UTC_I6<br>07: UTC_I7<br>08: UTC_I8<br>09: UTC_I9<br>10: UTC_I10<br>11: UTC_I11<br>12: UTC_I12<br>13: UTC_I13<br>14: UTC_I14<br>15: UTC_I15<br>16: UTC_I16<br>--- 02 ---<br>01: AX1<br>02: ASL2a<br>03: ASL2b<br>04: ASL2c<br>05: AX3<br>06: AX4<br>07: BIN5<br>08: BX6<br>09: BSL7a<br>10: BSL7b<br>11: BSL7c<br>12: BSL7d<br>13: BIN8<br>14: BX9<br>15: BIN10<br>16: BX11<br>--- 03 ---<br>01: BIN12<br>02: BX13<br>03: Q1<br>04: Q2<br>05: Q3<br>06: Q4<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>13: -<br>14: -<br>15: -<br>16: -<br>--- 04 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>13: -<br>14: -<br>15: -<br>16: -<br>--- 05 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>13: -<br>14: -<br>15: -<br>16: - | DEVICE: IO1616-OUT<br>--- 01 ---<br>01: UTC_O1<br>02: UTC_O2<br>03: UTC_O3<br>04: UTC_O4<br>05: UTC_O5<br>06: UTC_O6<br>07: UTC_O7<br>08: UTC_O8<br>09: UTC_O9<br>10: UTC_O10<br>11: UTC_O11<br>12: UTC_O12<br>13: UTC_O13<br>14: UTC_O14<br>15: UTC_O15<br>16: UTC_O16<br>--- 02 ---<br>01: ST1A42C<br>02: ST1A43H<br>03: ST1B44C<br>04: ST1B45H<br>05: ST2F34C<br>06: ST2F35H<br>07: DET40_1<br>08: DET41_1<br>09: DET42_1<br>10: DET36_2<br>11: DET37_2<br>12: DET38_2<br>13: DET39_2<br>14: DET40_2<br>15: DET41_2<br>16: MCRB1<br>--- 03 ---<br>01: MCRB2<br>02: ST1DET31<br>03: ST2DET31<br>04: ST1DET32<br>05: ST2DET32<br>06: ASL2<br>07: BSL7<br>08: CSL3<br>09: DSL10<br>10: ESL15<br>11: FSL20<br>12: DET43_1<br>13: DET46_2<br>14: -<br>15: -<br>16: -<br>--- 04 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>13: -<br>14: -<br>15: -<br>16: -<br>--- 05 ---<br>01: -<br>02: -<br>03: -<br>04: -<br>05: -<br>06: -<br>07: -<br>08: -<br>09: -<br>10: -<br>11: -<br>12: -<br>13: -<br>14: -<br>15: -<br>16: - |

| LCM        | MTS4E      | IO1616-IN  | IO1616-OUT |
|------------|------------|------------|------------|
| 07: -      | --- 18 --- | --- 06 --- | --- 06 --- |
| 08: -      | 01: -      | 01: -      | 01: -      |
| 09: -      | 02: -      | 02: -      | 02: -      |
| 10: -      | 03: -      | 03: -      | 03: -      |
| 11: -      | 04: -      | 04: -      | 04: -      |
| 12: -      | --- 19 --- | 05: -      | 05: -      |
| --- 08 --- | 01: -      | 06: -      | 06: -      |
| 01: -      | 02: -      | 07: -      | 07: -      |
| 02: -      | 03: -      | 08: -      | 08: -      |
| 03: -      | 04: -      | 09: -      | 09: -      |
| 04: -      | --- 20 --- | 10: -      | 10: -      |
| 05: -      | 01: -      | 11: -      | 11: -      |
| 06: -      | 02: -      | 12: -      | 12: -      |
| 07: -      | 03: -      | 13: -      | 13: -      |
| 08: -      | 04: -      | 14: -      | 14: -      |
| 09: -      | --- 21 --- | 15: -      | 15: -      |
| 10: -      | 01: -      | 16: -      | 16: -      |
| 11: -      | 02: -      | --- 07 --- | --- 07 --- |
| 12: -      | 03: -      | 01: -      | 01: -      |
| --- 09 --- | 04: -      | 02: -      | 02: -      |
| 01: -      | --- 22 --- | 03: -      | 03: -      |
| 02: -      | 01: -      | 04: -      | 04: -      |
| 03: -      | 02: -      | 05: -      | 05: -      |
| 04: -      | 03: -      | 06: -      | 06: -      |
| 05: -      | 04: -      | 07: -      | 07: -      |
| 06: -      | --- 23 --- | 08: -      | 08: -      |
| 07: -      | 01: -      | 09: -      | 09: -      |
| 08: -      | 02: -      | 10: -      | 10: -      |
| 09: -      | 03: -      | 11: -      | 11: -      |
| 10: -      | 04: -      | 12: -      | 12: -      |
| 11: -      | --- 24 --- | 13: -      | 13: -      |
| 12: -      | 01: -      | 14: -      | 14: -      |
|            | 02: -      | 15: -      | 15: -      |
|            | 03: -      | 16: -      | 16: -      |
|            | 04: -      | --- 08 --- | --- 08 --- |
|            | --- 25 --- | 01: -      | 01: -      |
|            | 01: -      | 02: -      | 02: -      |
|            | 02: -      | 03: -      | 03: -      |
|            | 03: -      | 04: -      | 04: -      |
|            | 04: -      | 05: -      | 05: -      |
|            | --- 26 --- | 06: -      | 06: -      |
|            | 01: -      | 07: -      | 07: -      |
|            | 02: -      | 08: -      | 08: -      |
|            | 03: -      | 09: -      | 09: -      |
|            | 04: -      | 10: -      | 10: -      |
|            | --- 27 --- | 11: -      | 11: -      |
|            | 01: -      | 12: -      | 12: -      |
|            | 02: -      | 13: -      | 13: -      |
|            | 03: -      | 14: -      | 14: -      |
|            | 04: -      | 15: -      | 15: -      |
|            | --- 28 --- | 16: -      | 16: -      |
|            | 01: -      |            |            |
|            | 02: -      |            |            |
|            | 03: -      |            |            |
|            | 04: -      |            |            |
|            | --- 29 --- |            |            |
|            | 01: -      |            |            |
|            | 02: -      |            |            |
|            | 03: -      |            |            |
|            | 04: -      |            |            |
|            | --- 30 --- |            |            |
|            | 01: -      |            |            |
|            | 02: -      |            |            |
|            | 03: -      |            |            |
|            | 04: -      |            |            |
|            | --- 31 --- |            |            |
|            | 01: -      |            |            |
|            | 02: -      |            |            |
|            | 03: -      |            |            |
|            | 04: -      |            |            |
|            | --- 32 --- |            |            |
|            | 01: -      |            |            |
|            | 02: -      |            |            |
|            | 03: -      |            |            |
|            | 04: -      |            |            |

## IOT State

| LCM         | MTS4E        | IO1616-IN     | IO1616-OUT    |
|-------------|--------------|---------------|---------------|
| LCM         | MTS4E        | IO1616-IN     | IO1616-OUT    |
| Unit Addr * | Unit Addr *  | Unit Addr *   | Unit Addr *   |
| =====       | =====        | =====         | =====         |
| 01 01 A (R) | 01 01 CIN1   | 01 01 UTC_I1  | 01 01 UTC_O1  |
| 01 02 A (A) | 01 02 CSL3a  | 01 02 UTC_I2  | 01 02 UTC_O2  |
| 01 03 A (G) | 01 03 CSL3b  | 01 03 UTC_I3  | 01 03 UTC_O3  |
| 01 04 B (R) | 01 04 CSL3c  | 01 04 UTC_I4  | 01 04 UTC_O4  |
| 01 05 B (A) |              | 01 05 UTC_I5  | 01 05 UTC_O5  |
| 01 06 B (G) | 02 01 CIN4   | 01 06 UTC_I6  | 01 06 UTC_O6  |
| 01 07 C (R) | 02 02 CIN6   | 01 07 UTC_I7  | 01 07 UTC_O7  |
| 01 08 C (A) | 02 03 DIN8   | 01 08 UTC_I8  | 01 08 UTC_O8  |
| 01 09 C (G) | 02 04 DX9    | 01 09 UTC_I9  | 01 09 UTC_O9  |
| 01 10 D (R) |              | 01 10 UTC_I10 | 01 10 UTC_O10 |
| 01 11 D (A) | 03 01 DSL10a | 01 11 UTC_I11 | 01 11 UTC_O11 |
| 01 12 D (G) | 03 02 DSL10b | 01 12 UTC_I12 | 01 12 UTC_O12 |
|             | 03 03 DSL10c | 01 13 UTC_I13 | 01 13 UTC_O13 |
| 02 01 E (R) | 03 04 DIN11  | 01 14 UTC_I14 | 01 14 UTC_O14 |
| 02 02 E (A) |              | 01 15 UTC_I15 | 01 15 UTC_O15 |

| LCM         | MTS4E        | IO1616-IN     | IO1616-OUT     |
|-------------|--------------|---------------|----------------|
| 02 03 E (G) | 04 01 DX12   | 01 16 UTC_I16 | 01 16 UTC_O16  |
| 02 04 F (R) | 04 02 DX13   |               |                |
| 02 05 F (A) | 04 03 EX14   | 02 01 AX1     | 02 01 ST1A42C  |
| 02 06 F (G) | 04 04 ESL15a | 02 02 ASL2a   | 02 02 ST1A43H  |
|             |              | 02 03 ASL2b   | 02 03 ST1B44C  |
|             | 05 01 ESL15b | 02 04 ASL2c   | 02 04 ST1B45H  |
|             | 05 02 ESL15c | 02 05 AX3     | 02 05 ST2F34C  |
|             | 05 03 EX16   | 02 06 AX4     | 02 06 ST2F35H  |
|             | 05 04 EX17   | 02 07 BIN5    | 02 07 DET40_1  |
|             |              | 02 08 BX6     | 02 08 DET41_1  |
|             | 06 01 FIN18  | 02 09 BSL7a   | 02 09 DET42_1  |
|             | 06 02 FX19   | 02 10 BSL7b   | 02 10 DET36_2  |
|             | 06 03 FSL20a | 02 11 BSL7c   | 02 11 DET37_2  |
|             | 06 04 FSL20b | 02 12 BSL7d   | 02 12 DET38_2  |
|             |              | 02 13 BIN8    | 02 13 DET39_2  |
|             | 07 01 FSL20c | 02 14 BX9     | 02 14 DET40_2  |
|             | 07 02 FSL20d | 02 15 BIN10   | 02 15 DET41_2  |
|             | 07 03 FIN21  | 02 16 BX11    | 02 16 MCRB1    |
|             | 07 04 FX22   |               |                |
|             |              | 03 01 BIN12   | 03 01 MCRB2    |
|             | 08 01 FIN23  | 03 02 BX13    | 03 02 ST1DET31 |
|             | 08 02 FX24   | 03 03 Q1      | 03 03 ST2DET31 |
|             | 08 03 FIN25  | 03 04 Q2      | 03 04 ST1DET32 |
|             | 08 04 FX26   | 03 05 Q3      | 03 05 ST2DET32 |
|             |              | 03 06 Q4      | 03 06 ASL2     |
|             | 09 01 Q5     |               | 03 07 BSL7     |
|             | 09 02 Q6     |               | 03 08 CSL3     |
|             | 09 03 DQ1    |               | 03 09 DSL10    |
|             | 09 04 DQ2    |               | 03 10 ESL15    |
|             |              |               | 03 11 FSL20    |
|             | 10 01 EQ1    |               | 03 12 DET43_1  |
|             | 10 02 Q7     |               | 03 13 DET46_2  |
|             | 10 03 Q8     |               |                |
|             |              |               |                |
|             | 11 01 CX2    |               |                |
|             | 11 02 CX5    |               |                |
|             | 11 03 CX7    |               |                |

**LAMP MONITORING****Phase Lamp Types**

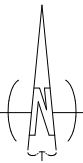
| ID | Phase | Description                    | Type | Red           | Amber         | Green         | Wait | MonR A      | Action A | MonR B | Action B | MonA        | MonG        |
|----|-------|--------------------------------|------|---------------|---------------|---------------|------|-------------|----------|--------|----------|-------------|-------------|
| 1  | A     | North Circulatory              | T    | Elite TLED 48 | Elite TLED 48 | Elite TLED 48 | -    | Maintenance | None     | None   | None     | Maintenance | Maintenance |
| 2  | B     | A50 Inbound                    | T    | Elite TLED 48 | Elite TLED 48 | Elite TLED 48 | -    | Maintenance | None     | None   | None     | Maintenance | Maintenance |
| 3  | C     | A46 South Circulatory          | T    | Elite TLED 48 | Elite TLED 48 | Elite TLED 48 | -    | Maintenance | None     | None   | None     | Maintenance | Maintenance |
| 4  | D     | A46 Westbound Slip             | T    | Elite TLED 48 | Elite TLED 48 | Elite TLED 48 | -    | Maintenance | None     | None   | None     | Maintenance | Maintenance |
| 5  | E     | A50 South Circulatory          | T    | Elite TLED 48 | Elite TLED 48 | Elite TLED 48 | -    | Maintenance | None     | None   | None     | Maintenance | Maintenance |
| 6  | F     | A50 Inbound                    | T    | Elite TLED 48 | Elite TLED 48 | Elite TLED 48 | -    | Maintenance | None     | None   | None     | Maintenance | Maintenance |
| 7  | G     | Dummy Stream1 All Red Stage3   | -    | -             | -             | -             | -    | None        | None     | None   | None     | None        | None        |
| 8  | H     | Dummy Stream 2 All Red Stage 7 | -    | -             | -             | -             | -    | None        | None     | None   | None     | None        | None        |
| 9  | I     | Dummy Confirm For Stage 6      | -    | -             | -             | -             | -    | None        | None     | None   | None     | None        | None        |

Report executed at 3/26/2014 10:27 AM

# Appendix D

## A46/A50/Leicester Road Geometry





|                               |                            |                |                  |
|-------------------------------|----------------------------|----------------|------------------|
| Date of 1st Issue<br>30.03.26 | Description<br>First Issue | Drawn by<br>OT | Checked by<br>JC |
|-------------------------------|----------------------------|----------------|------------------|

Key:

X.Xm      Key Dimensions

Notes:

1. Drawing units are in metres unless specified otherwise.



A3 SCALE  
As shown

Drawing Title  
**Sacheverell Way, Groby**  
**A46/A50 Geometry**

Client  
**Bloor Homes**

Drawing Status  
**For Information**

27 Park Street  
Leamington Spa  
CV32 4QN  
E: info@ttc-transportplanning.com

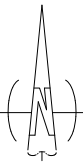


1:1000

Drawing Number  
**211040-06**

Revision  
-



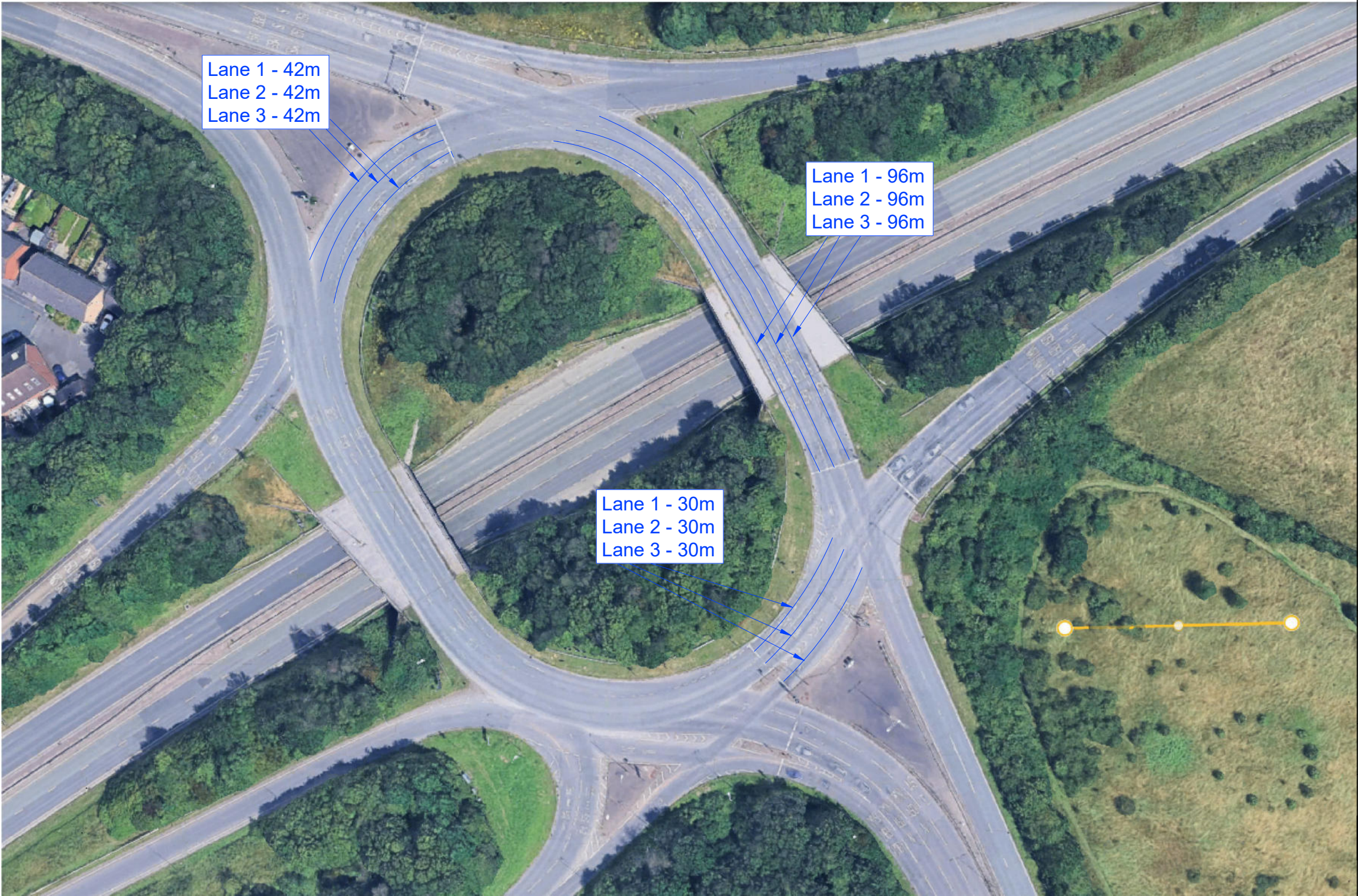


Key:

X.Xm      Key Dimensions

Notes:

1. Drawing units are in metres unless specified otherwise.



A3 SCALE  
As shown

Drawing Title  
**Sacheverell Way, Groby**  
**A46/A50 Geometry**

Client  
**Bloor Homes**

Drawing Status  
**For Information**

27 Park Street  
Leamington Spa  
CV32 4QN  
E: info@ttc-transportplanning.com



1:1000

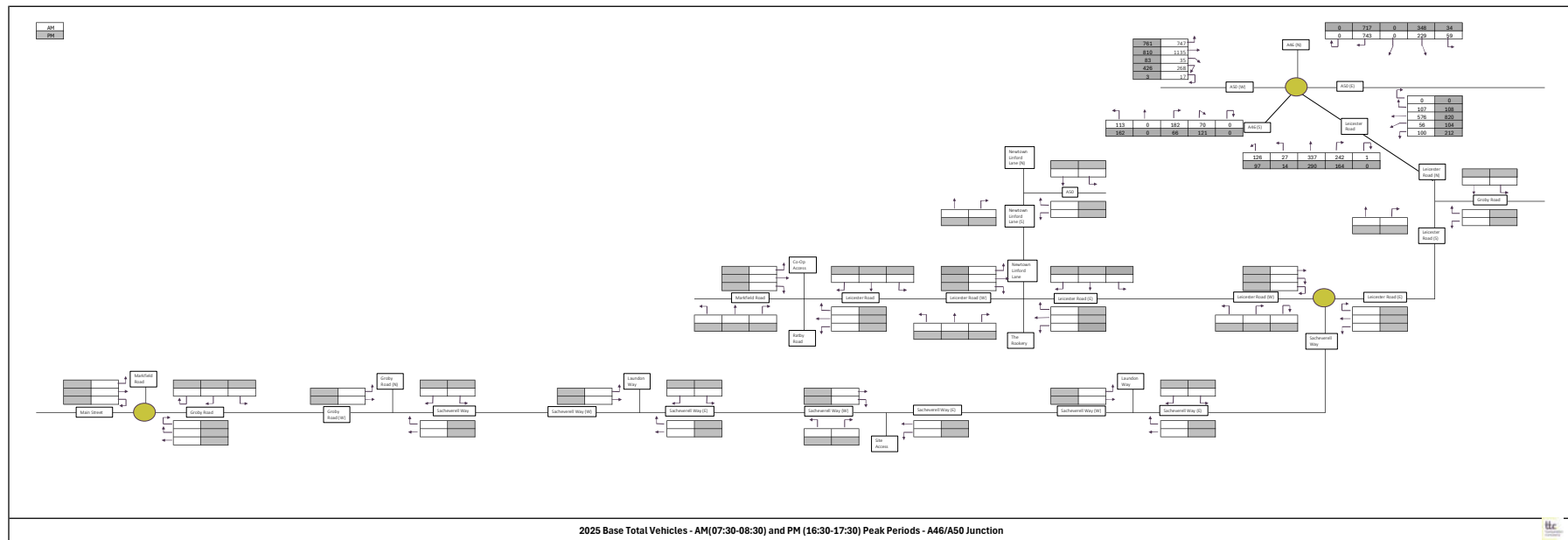
Drawing Number  
**211040-07**

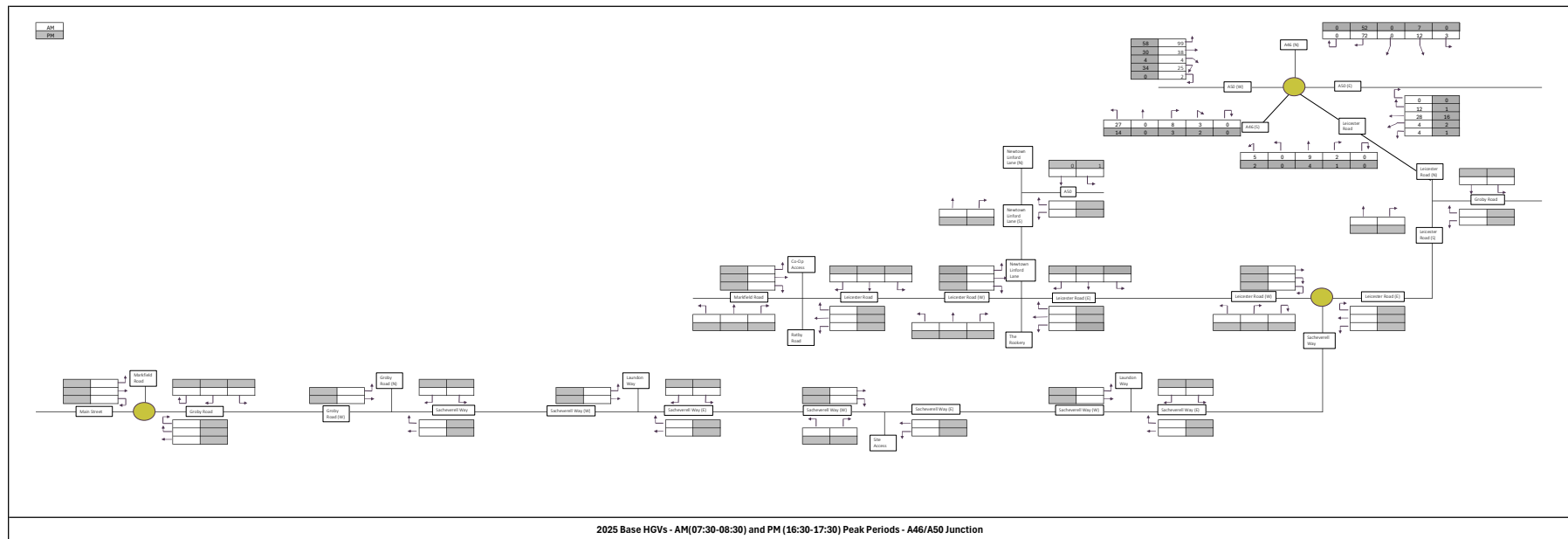
Revision  
-



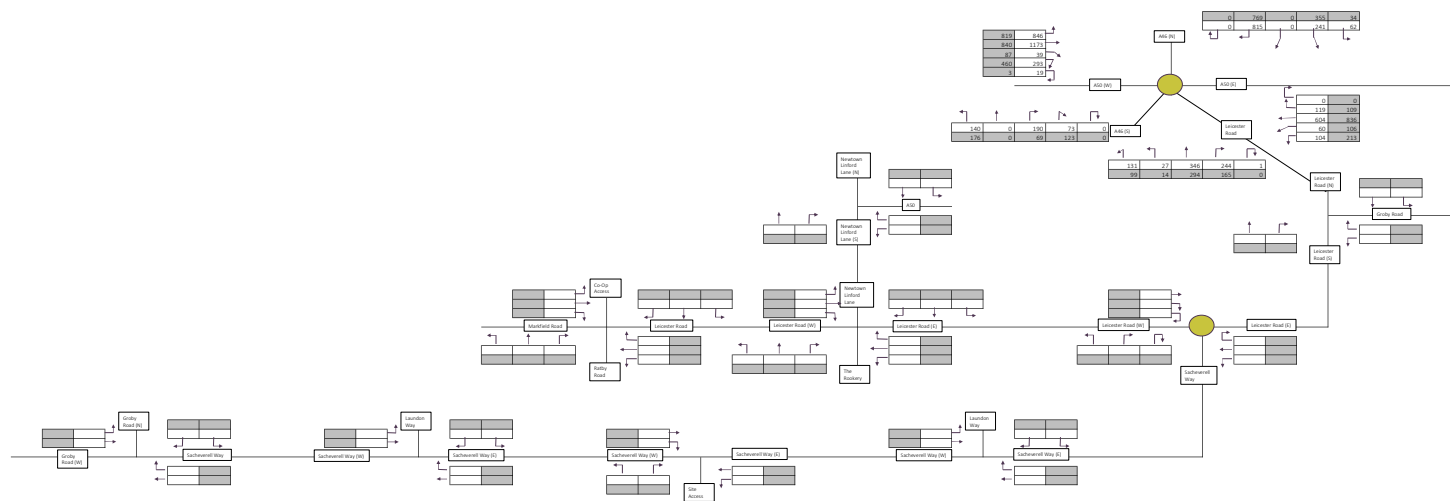
# Appendix E

## Traffic Flow Diagrams

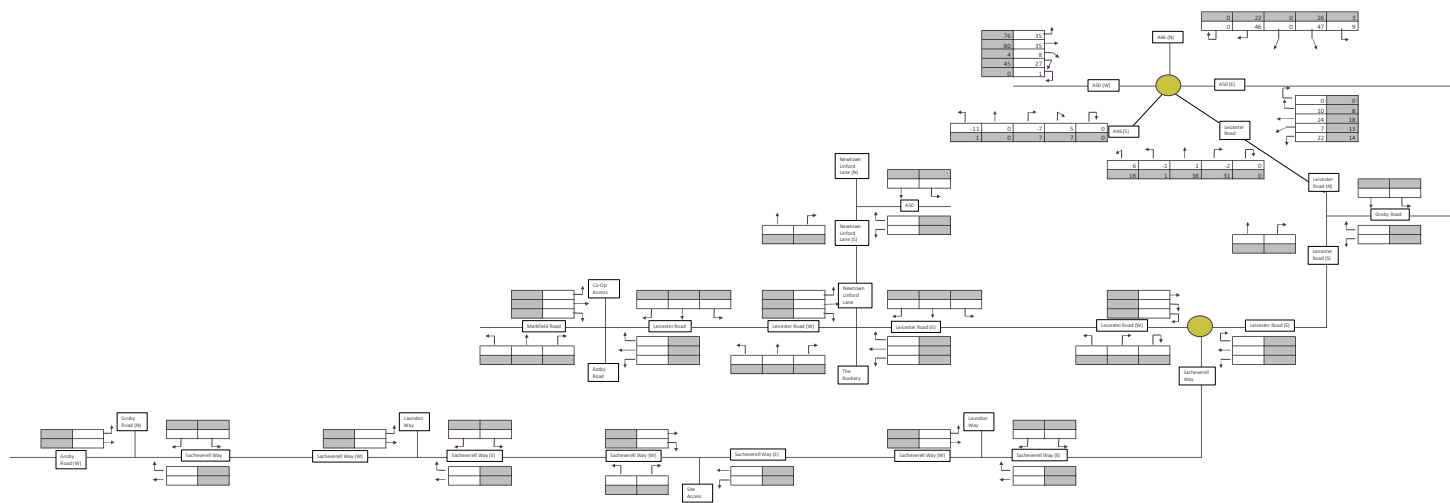


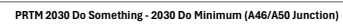


AM  
PM

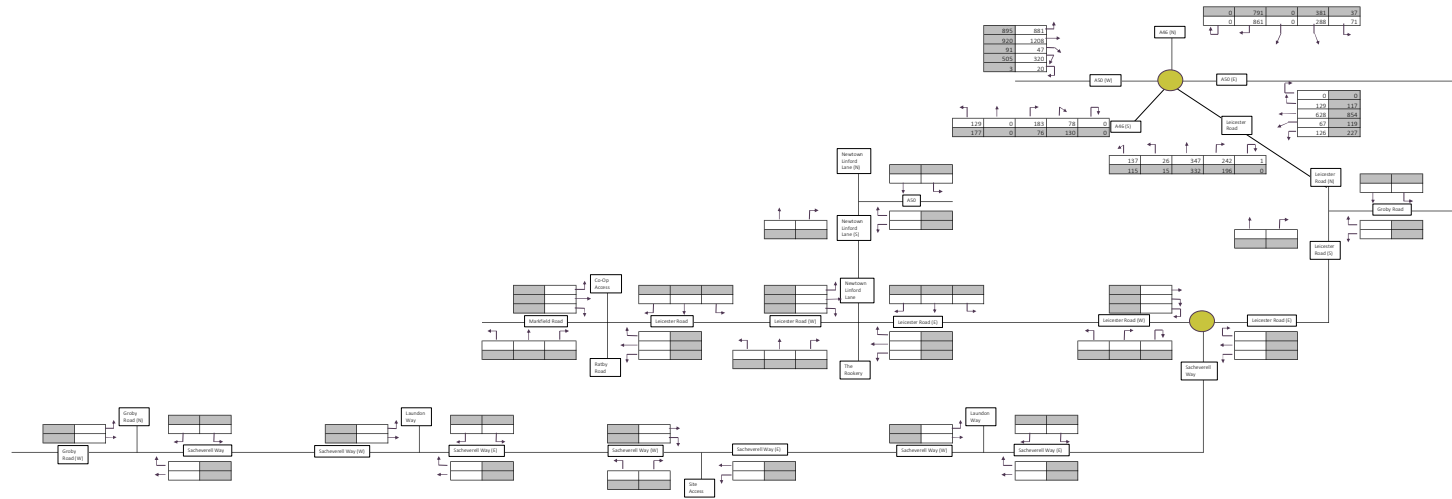


2025 Base PCUs - AM(07:30-08:30) and PM (16:30-17:30) Peak Periods - A46/A50 Junction





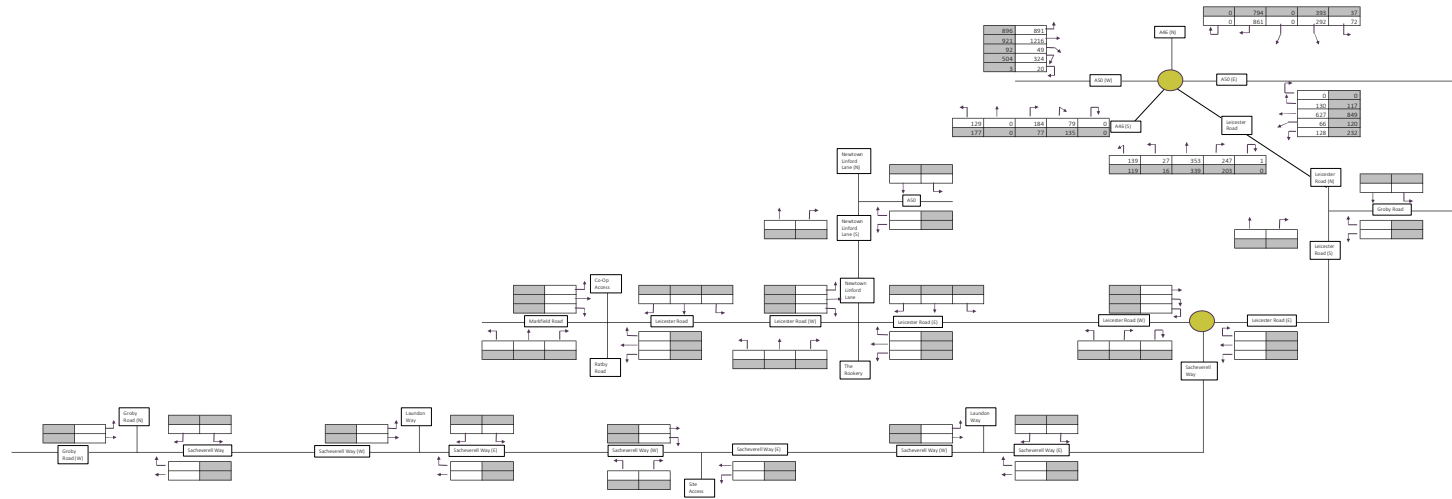
AM  
PM



Calculated 2030 Do Minimum - AM(07:30-08:30) and PM (16:30-17:30) Peak Periods - A46/A50 Junction

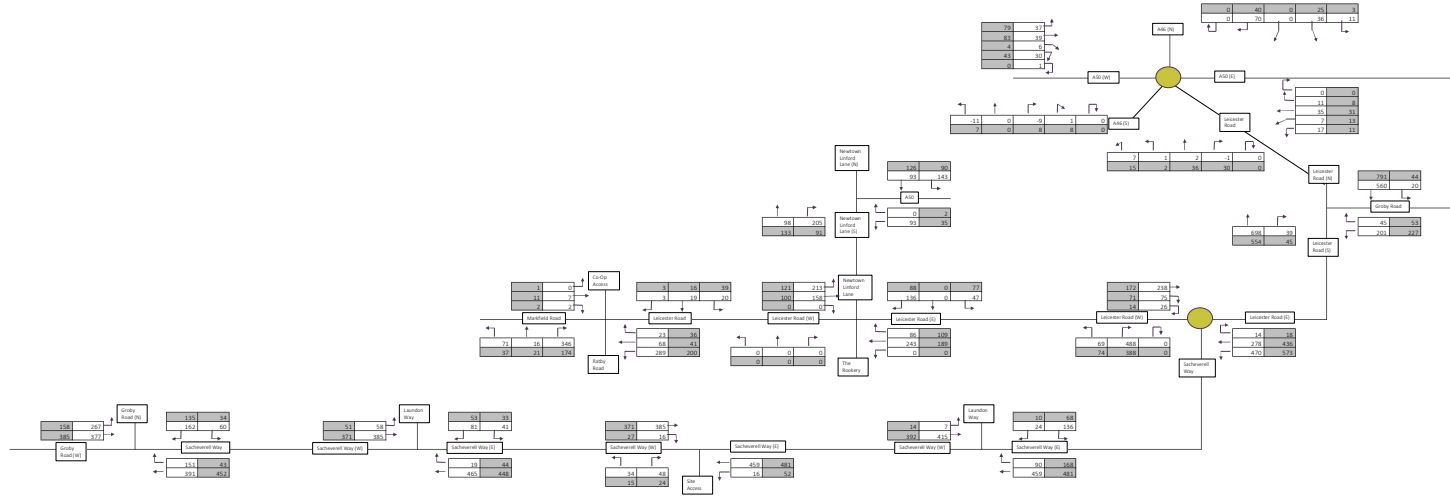


AM  
PM

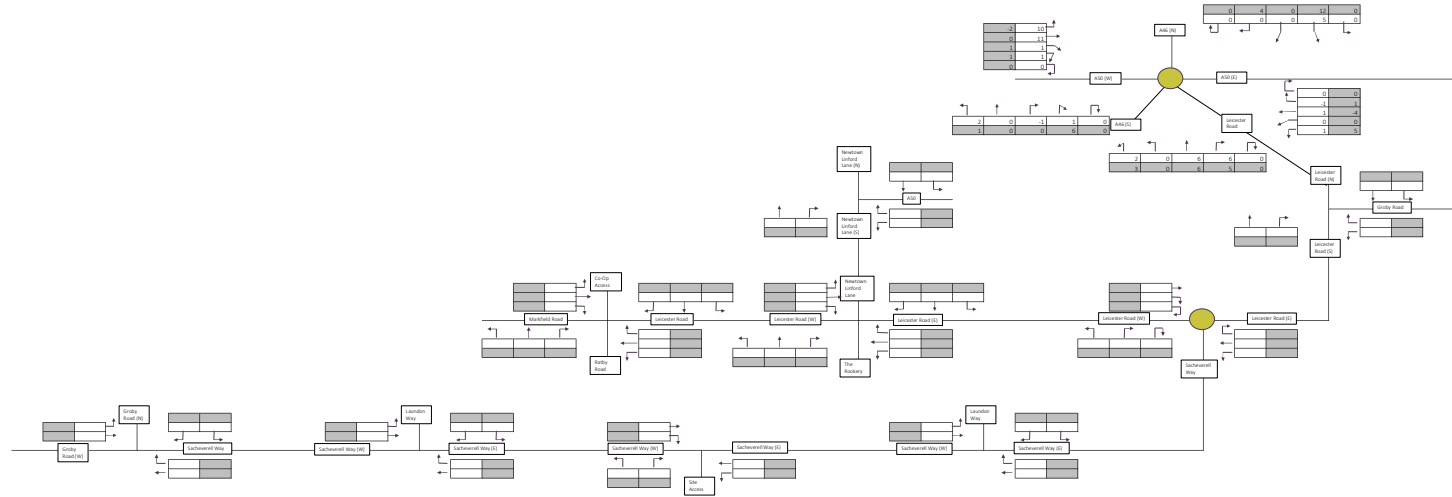


Calculated 2030 DoSomething - AM(07:30-08:30) and PM (16:30-17:30) Peak Periods - A46/A50 Junction













# Appendix F

## TRICS Outputs

Audit Code: 0044e4f7-ef1d-4f25-a522-235a62ab6f27

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 03 - RESIDENTIAL

Category: A - HOUSES PRIVATELY OWNED

Selected Vehicle Type: Total Vehicles

Selected regions and areas:

|    |                                |                         |
|----|--------------------------------|-------------------------|
| 02 | SOUTH EAST                     |                         |
|    | ES                             | EAST SUSSEX<br>4 days   |
|    | EX                             | ESSEX<br>1 day          |
|    | HC                             | HAMPSHIRE<br>7 days     |
|    | KC                             | KENT<br>4 days          |
|    | MW                             | MEDWAY<br>1 day         |
|    | SC                             | SURREY<br>3 days        |
|    | SP                             | SOUTHAMPTON<br>1 day    |
|    | WB                             | WEST BERKSHIRE<br>1 day |
|    | WS                             | WEST SUSSEX<br>10 days  |
| 04 | EAST ANGLIA                    |                         |
|    | CA                             | CAMBRIDGESHIRE<br>1 day |
|    | NF                             | NORFOLK<br>3 days       |
|    | SF                             | SUFFOLK<br>2 days       |
| 05 | EAST MIDLANDS                  |                         |
|    | DY                             | DERBY<br>1 day          |
| 06 | WEST MIDLANDS                  |                         |
|    | ST                             | STAFFORDSHIRE<br>1 day  |
| 07 | YORKSHIRE & NORTH LINCOLNSHIRE |                         |
|    | YO                             | YORK<br>1 day           |
| 11 | SCOTLAND                       |                         |
|    | FA                             | FALKIRK<br>1 day        |
| 13 | MUNSTER                        |                         |
|    | WA                             | WATERFORD<br>1 day      |
| 15 | GREATER DUBLIN                 |                         |
|    | DL                             | DUBLIN<br>1 day         |
| 17 | ULSTER (NORTHERN IRELAND)      |                         |
|    | AN                             | ANTRIM<br>1 day         |

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

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#### Primary Filtering Selection:

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

|                         |                           |
|-------------------------|---------------------------|
| Parameter:              | DWELLS                    |
| Actual Range:           | 101 to 398 (units:DWELLS) |
| Range Selected by User: | 100 to 400 (units:DWELLS) |
| Parking Spaces Range:   | 6 - 2824                  |

#### Public Transport Provision:

|               |                      |
|---------------|----------------------|
| Selection by: | All Surveys Included |
| Date Range:   | 01/01/10 to 26/11/25 |

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

#### Selected survey days:

|           |         |
|-----------|---------|
| Friday    | 2 days  |
| Monday    | 8 days  |
| Thursday  | 11 days |
| Tuesday   | 12 days |
| Wednesday | 12 days |

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

#### Selected survey types:

|                     |    |
|---------------------|----|
| Manual count        | 45 |
| Direction ATC Count | 0  |

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

#### Selected Locations:

|               |         |
|---------------|---------|
| Edge of Town  | 39 days |
| Suburban Area | 6 days  |

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

#### Selected Location Sub Categories:

|                  |         |
|------------------|---------|
| Development Zone | 1 days  |
| No Sub Category  | 1 days  |
| Out of Town      | 2 days  |
| Residential Zone | 40 days |
| Village          | 1 days  |

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

#### Inclusion of Servicing Vehicle Counts:

|                             |         |
|-----------------------------|---------|
| Servicing vehicles Excluded | 7 days  |
| Servicing vehicles Included | 8 days  |
| Servicing vehicles Unknown  | 30 days |

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Secondary Filtering Selection:

Use Class:

|    |            |
|----|------------|
| C3 | 45 surveys |
|----|------------|

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.*

Population within 500m Range:

365 - 8961

Population within 1 mile:

|                  |            |
|------------------|------------|
| 10,001 to 15,000 | 17 surveys |
| 15,001 to 20,000 | 8 surveys  |
| 20,001 to 25,000 | 10 surveys |
| 25,001 to 50,000 | 3 surveys  |
| 5,001 to 10,000  | 7 surveys  |

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

Population within 5 miles:

|                    |            |
|--------------------|------------|
| 100,001 to 125,000 | 5 surveys  |
| 125,001 to 250,000 | 20 surveys |
| 250,001 to 500,000 | 5 surveys  |
| 50,001 to 75,000   | 7 surveys  |
| 500,001 or More    | 1 surveys  |
| 75,001 to 100,000  | 7 surveys  |

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

Car ownership within 5 miles:

|            |            |
|------------|------------|
| 0.6 to 1.0 | 10 surveys |
| 1.1 to 1.5 | 32 surveys |
| 1.6 to 2.0 | 3 surveys  |

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



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Petrol filling station:

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

Travel Plan:

|     |            |
|-----|------------|
| No  | 13 surveys |
| No  | 3 surveys  |
| Yes | 29 surveys |

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

PTAL Rating:

|                 |            |
|-----------------|------------|
| No PTAL Present | 45 surveys |
|-----------------|------------|

*This data displays the number of surveys within the selected set by PTAL rating category.*

COVID-19 Restrictions:

**Yes - At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions**



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|                                                                                                                                                                        |                   |                                 |                       |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------|-----------------------|---------------------|
| <b>1</b><br>BALLINDERRY ROAD<br>LISBURN<br>Suburban Area<br>Residential Zone<br>Number of dwellings: 204.00 DWELLS<br>Survey date: Tuesday 29/10/2013                  | <b>AN-03-A-08</b> | <b>HOUSES &amp; FLATS</b>       | <b>ANTRIM</b>         | Survey Type: Manual |
| <b>2</b><br>EDDINGTON AVENUE<br>CAMBRIDGE<br>EDDINGTON<br>Edge of Town<br>Development Zone<br>Number of dwellings: 153.00 DWELLS<br>Survey date: Thursday 28/11/2024   | <b>CA-03-A-09</b> | <b>MIXED HOUSES &amp; FLATS</b> | <b>CAMBRIDGESHIRE</b> | Survey Type: Manual |
| <b>3</b><br>UPPER KILMACUD ROAD<br>DUBLIN<br>DUNDRUM<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 147.00 DWELLS<br>Survey date: Friday 30/04/2010       | <b>DL-03-A-06</b> | <b>DETACHED</b>                 | <b>DUBLIN</b>         | Survey Type: Manual |
| <b>4</b><br>RADBOURNE LANE<br>DERBY<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 371.00 DWELLS<br>Survey date: Tuesday 10/07/2018                       | <b>DY-03-A-01</b> | <b>MIXED HOUSES</b>             | <b>DERBY</b>          | Survey Type: Manual |
| <b>5</b><br>SHEPHAM LANE<br>POLEGATE<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 212.00 DWELLS<br>Survey date:                                         | <b>ES-03-A-03</b> | <b>MIXED HOUSES &amp; FLATS</b> | <b>EAST SUSSEX</b>    | Survey Type: Manual |
| <b>6</b><br>WATERGATE<br>BEXHILL-ON-SEA<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 139.00 DWELLS<br>Survey date: Thursday 28/09/2023                  | <b>ES-03-A-10</b> | <b>MIXED HOUSES &amp; FLATS</b> | <b>EAST SUSSEX</b>    | Survey Type: Manual |
| <b>7</b><br>RATTLE ROAD<br>NEAR EASTBOURNE<br>STONE CROSS<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 120.00 DWELLS<br>Survey date: Tuesday 30/04/2024 | <b>ES-03-A-14</b> | <b>MIXED HOUSES &amp; FLATS</b> | <b>EAST SUSSEX</b>    | Survey Type: Manual |
| <b>8</b><br>WRESTWOOD ROAD<br>BEXHILL-ON-SEA                                                                                                                           | <b>ES-03-A-19</b> | <b>MIXED HOUSES &amp; FLATS</b> | <b>EAST SUSSEX</b>    |                     |



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Edge of Town  
Residential Zone  
Number of dwellings: 190.00 DWELLS  
Survey date: Wednesday 09/10/2024  
Survey Type: Manual

**9** **EX-03-A-03** **MIXED HOUSES** **ESSEX**  
KESTREL GROVE  
RAYLEIGH  
Edge of Town  
Residential Zone  
Number of dwellings: 123.00 DWELLS  
Survey date:  
Survey Type: Manual

**10** **FA-03-A-02** **MIXED HOUSES** **FALKIRK**  
ROSEBANK AVENUE & SPRINGFIELD DRIVE  
FALKIRK  
Suburban Area  
Residential Zone  
Number of dwellings: 161.00 DWELLS  
Survey date: Wednesday 29/05/2013  
Survey Type: Manual

**11** **HC-03-A-26** **MIXED HOUSES & FLATS** **HAMPSHIRE**  
BOTLEY ROAD  
WHITELEY  
Edge of Town  
Out of Town  
Number of dwellings: 270.00 DWELLS  
Survey date: Thursday 24/06/2021  
Survey Type: Manual

**12** **HC-03-A-28** **MIXED HOUSES & FLATS** **HAMPSHIRE**  
EAGLE AVENUE  
WATERLOOVILLE  
LOVEDEAN  
Edge of Town  
Residential Zone  
Number of dwellings: 125.00 DWELLS  
Survey date:  
Survey Type: Manual

**13** **HC-03-A-34** **MIXED HOUSES & FLATS** **HAMPSHIRE**  
STONEHAM LANE  
EASTLEIGH  
Edge of Town  
Residential Zone  
Number of dwellings: 243.00 DWELLS  
Survey date: Tuesday 14/11/2023  
Survey Type: Manual

**14** **HC-03-A-36** **MIXED HOUSES & FLATS** **HAMPSHIRE**  
HAVANT ROAD  
EMSWORTH  
Edge of Town  
Residential Zone  
Number of dwellings: 145.00 DWELLS  
Survey date: Tuesday 12/09/2023  
Survey Type: Manual

**15** **HC-03-A-39** **MIXED HOUSES & FLATS** **HAMPSHIRE**  
KILN ROAD  
LIPHOOK  
Edge of Town  
Residential Zone  
Number of dwellings: 156.00 DWELLS  
Survey date: Thursday 14/11/2024  
Survey Type: Manual



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|                                                                                                                                                                       |                   |                                     |                  |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------|------------------|---------------------|
| <b>16</b><br>CROW LANE<br>RINGWOOD<br>CROW<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 195.00 DWELLS<br>Survey date:                                  | <b>HC-03-A-41</b> | <b>MIXED HOUSES &amp; FLATS</b>     | <b>HAMPSHIRE</b> | Survey Type: Manual |
| <b>17</b><br>EAGLE AVENUE<br>WATERLOOVILLE<br>LOVEDEAN<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 289.00 DWELLS<br>Survey date: Wednesday 26/11/2025 | <b>HC-03-A-46</b> | <b>MIXED HOUSES &amp; FLATS</b>     | <b>HAMPSHIRE</b> | Survey Type: Manual |
| <b>18</b><br>KILN BARN ROAD<br>AYLESFORD<br>DITTON<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 110.00 DWELLS<br>Survey date: Friday 22/09/2017        | <b>KC-03-A-04</b> | <b>SEMI-DETACHED &amp; TERRACED</b> | <b>KENT</b>      | Survey Type: Manual |
| <b>19</b><br>MARGATE ROAD<br>HERNE BAY<br>Suburban Area<br>Residential Zone<br>Number of dwellings: 363.00 DWELLS<br>Survey date: Wednesday 27/09/2017                | <b>KC-03-A-06</b> | <b>MIXED HOUSES &amp; FLATS</b>     | <b>KENT</b>      | Survey Type: Manual |
| <b>20</b><br>RECVLVER ROAD<br>HERNE BAY<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 288.00 DWELLS<br>Survey date: Wednesday 27/09/2017                | <b>KC-03-A-07</b> | <b>MIXED HOUSES</b>                 | <b>KENT</b>      | Survey Type: Manual |
| <b>21</b><br>COLDHARBOUR ROAD<br>GRAVESEND<br>Edge of Town<br>No Sub Category<br>Number of dwellings: 375.00 DWELLS<br>Survey date:                                   | <b>KC-03-A-11</b> | <b>MIXED HOUSES &amp; FLATS</b>     | <b>KENT</b>      | Survey Type: Manual |
| <b>22</b><br>OTTERHAM QUAY LANE<br>RAINHAM<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 295.00 DWELLS<br>Survey date:                                  | <b>MW-03-A-03</b> | <b>MIXED HOUSES</b>                 | <b>MEDWAY</b>    | Survey Type: Manual |
| <b>23</b><br>BEAUFORT WAY<br>GREAT YARMOUTH                                                                                                                           | <b>NF-03-A-06</b> | <b>MIXED HOUSES</b>                 | <b>NORFOLK</b>   |                     |



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BRADWELL

Edge of Town

Residential Zone

Number of dwellings: 275.00 DWELLS

Survey date:

Survey Type: Manual

24 NF-03-A-35 MIXED HOUSES & FLATS NORFOLK

REPTON AVENUE

NORWICH

Edge of Town

Residential Zone

Number of dwellings: 116.00 DWELLS

Survey date: Wednesday 28/09/2022

Survey Type: Manual

25 NF-03-A-52 MIXED HOUSES NORFOLK

LYNNSPORT WAY

KING'S LYNN

Suburban Area

Residential Zone

Number of dwellings: 130.00 DWELLS

Survey date: Tuesday 07/11/2023

Survey Type: Manual

26 SC-03-A-05 MIXED HOUSES SURREY

REIGATE ROAD

HORLEY

Edge of Town

Residential Zone

Number of dwellings: 207.00 DWELLS

Survey date:

Survey Type: Manual

27 SC-03-A-12 MIXED HOUSES & FLATS SURREY

AARONS HILL

GODALMING

Edge of Town

Residential Zone

Number of dwellings: 252.00 DWELLS

Survey date: Wednesday 12/06/2024

Survey Type: Manual

28 SC-03-A-14 MIXED HOUSES & FLATS SURREY

HOLLOWAY HILL

CHERTSEY

Edge of Town

Residential Zone

Number of dwellings: 186.00 DWELLS

Survey date: Tuesday 22/10/2024

Survey Type: Manual

29 SF-03-A-09 MIXED HOUSES & FLATS SUFFOLK

FOXHALL ROAD

IPSWICH

Suburban Area

Residential Zone

Number of dwellings: 179.00 DWELLS

Survey date: Thursday 24/06/2021

Survey Type: Manual

30 SF-03-A-10 TERRACED & SEMI-DETACHED SUFFOLK

LOVETOFTS DRIVE

IPSWICH

WHITEHOUSE

Edge of Town

Residential Zone

Number of dwellings: 149.00 DWELLS

Survey date: Tuesday 22/06/2021

Survey Type: Manual



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|                                                                                                                                                                               |                   |                                     |                       |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------|-----------------------|---------------------|
| <b>31</b><br>BARNFIELD WAY<br>NEAR SOUTHAMPTON<br>HEDGE END<br>Edge of Town<br>Out of Town<br>Number of dwellings: 250.00 DWELLS<br>Survey date: Thursday 03/10/2024          | <b>SP-03-A-03</b> | <b>MIXED HOUSES &amp; FLATS</b>     | <b>SOUTHAMPTON</b>    | Survey Type: Manual |
| <b>32</b><br>BEACONSIDE<br>STAFFORD<br>MARSTON GATE<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 248.00 DWELLS<br>Survey date: Wednesday 22/11/2017            | <b>ST-03-A-07</b> | <b>DETACHED &amp; SEMI-DETACHED</b> | <b>STAFFORDSHIRE</b>  | Survey Type: Manual |
| <b>33</b><br>MAYPARK LANE<br>WATERFORD<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 280.00 DWELLS<br>Survey date: Tuesday 24/06/2014                           | <b>WA-03-A-04</b> | <b>DETACHED</b>                     | <b>WATERFORD</b>      | Survey Type: Manual |
| <b>34</b><br>DORKING WAY<br>READING<br>CALCOT<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 199.00 DWELLS<br>Survey date: Thursday 12/09/2024                   | <b>WB-03-A-04</b> | <b>MIXED HOUSES</b>                 | <b>WEST BERKSHIRE</b> | Survey Type: Manual |
| <b>35</b><br>HILLS FARM LANE<br>HORSHAM<br>BROADBRIDGE HEATH<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 151.00 DWELLS<br>Survey date: Thursday 11/12/2014    | <b>WS-03-A-04</b> | <b>MIXED HOUSES</b>                 | <b>WEST SUSSEX</b>    | Survey Type: Manual |
| <b>36</b><br>ROUNDSTONE LANE<br>ANGMERING<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 180.00 DWELLS<br>Survey date: Thursday 19/04/2018                       | <b>WS-03-A-08</b> | <b>MIXED HOUSES</b>                 | <b>WEST SUSSEX</b>    | Survey Type: Manual |
| <b>37</b><br>LITTLEHAMPTON ROAD<br>WORTHING<br>WEST DURRINGTON<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 197.00 DWELLS<br>Survey date: Wednesday 23/06/2021 | <b>WS-03-A-13</b> | <b>MIXED HOUSES &amp; FLATS</b>     | <b>WEST SUSSEX</b>    | Survey Type: Manual |



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|                                                                                                                                                               |            |                      |             |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------|-------------|---------------------|
| 38<br>TODDINGTON LANE<br>LITTLEHAMPTON<br>WICK<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 117.00 DWELLS<br>Survey date: Wednesday 20/10/2021 | WS-03-A-14 | MIXED HOUSES         | WEST SUSSEX | Survey Type: Manual |
| 39<br>SHOPWHYKE ROAD<br>CHICHESTER<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 129.00 DWELLS<br>Survey date: Tuesday 19/03/2024               | WS-03-A-22 | MIXED HOUSES & FLATS | WEST SUSSEX | Survey Type: Manual |
| 40<br>TURNERS HILL ROAD<br>EAST GRINSTEAD<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 197.00 DWELLS<br>Survey date: Tuesday 14/05/2024        | WS-03-A-23 | MIXED HOUSES & FLATS | WEST SUSSEX | Survey Type: Manual |
| 41<br>MADGWICK LANE<br>CHICHESTER<br>WESTHAMPNETT<br>Edge of Town<br>Village<br>Number of dwellings: 300.00 DWELLS<br>Survey date: Thursday 23/05/2024        | WS-03-A-24 | MIXED HOUSES         | WEST SUSSEX | Survey Type: Manual |
| 42<br>RUSPER ROAD<br>HORSHAM<br>NORTH HORSHAM<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 165.00 DWELLS<br>Survey date: Tuesday 24/09/2024    | WS-03-A-26 | MIXED HOUSES & FLATS | WEST SUSSEX | Survey Type: Manual |
| 43<br>SHOPWHYKE ROAD<br>CHICHESTER<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 398.00 DWELLS<br>Survey date: Wednesday 18/06/2025             | WS-03-A-28 | MIXED HOUSES & FLATS | WEST SUSSEX | Survey Type: Manual |
| 44<br>OCKLEY LANE<br>HASOCKS<br>Edge of Town<br>Residential Zone<br>Number of dwellings: 355.00 DWELLS<br>Survey date: Thursday 18/09/2025                    | WS-03-A-29 | MIXED HOUSES & FLATS | WEST SUSSEX | Survey Type: Manual |
| 45<br>WATER LANE<br>YORK                                                                                                                                      | YO-03-A-02 | MIXED HOUSES & FLATS | YORK        |                     |



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CLIFTON MOOR  
Suburban Area  
Residential Zone  
Number of dwellings: 212.00 DWELLS  
Survey date: Wednesday 18/09/2024

Survey Type: Manual

**DESELECTED SURVEYS**

| Site Ref              | Survey Date | Reason for Deselection                  |
|-----------------------|-------------|-----------------------------------------|
| ES-03-A-08 12-10-2022 | 12-10-2022  | Removed: Site re-surveyed by ES-03-A-19 |
| HC-03-A-24 10-11-2021 | 10-11-2021  | Removed: Site re-surveyed by HC-03-A-34 |
| HC-03-A-29 30-06-2022 | 30-06-2022  | Removed: Site re-surveyed by HC-03-A-33 |
| HC-03-A-33 04-07-2023 | 04-07-2023  | Removed: Site re-surveyed by HC-03-A-38 |
| HC-03-A-35 31-10-2023 | 31-10-2023  | Removed: Site re-surveyed by HC-03-A-46 |
| HC-03-A-38 26-06-2024 | 26-06-2024  | Removed: Site re-surveyed by HC-03-A-41 |
| NF-03-A-13 11-09-2018 | 11-09-2018  | Removed: Site re-surveyed by NF-03-A-06 |
| NF-03-A-14 05-10-2017 | 05-10-2017  | Removed: Site re-surveyed by NF-03-A-13 |
| SP-03-A-02 12-10-2021 | 12-10-2021  | Removed: Site re-surveyed by SP-03-A-03 |
| WB-03-A-03 09-09-2022 | 09-09-2022  | Removed: Site re-surveyed by WB-03-A-04 |
| WS-03-A-09 05-07-2018 | 05-07-2018  | Removed: Site re-surveyed by WS-03-A-13 |
| WS-03-A-12 16-06-2021 | 16-06-2021  | Removed: Site re-surveyed by WS-03-A-24 |
| WS-03-A-27 20-09-2024 | 20-09-2024  | Removed: Site re-surveyed by WS-03-A-29 |



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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

Total Vehicles

Calculation factor: 1 DWELLS

\*BOLD print indicates peak (busiest) period

| Time Range          | No. Days | Ave. DWELLS | Arrivals | Departures | Totals |
|---------------------|----------|-------------|----------|------------|--------|
| 00:00-01:00         |          |             |          |            |        |
| 01:00-02:00         |          |             |          |            |        |
| 02:00-03:00         |          |             |          |            |        |
| 03:00-04:00         |          |             |          |            |        |
| 04:00-05:00         |          |             |          |            |        |
| 05:00-06:00         |          |             |          |            |        |
| 06:00-07:00         |          |             |          |            |        |
| 07:00-08:00         | 45       | 212         | 0.073    | 0.282      | 0.355  |
| 08:00-09:00         | 45       | 212         | 0.147    | 0.368      | 0.515  |
| 09:00-10:00         | 45       | 212         | 0.128    | 0.167      | 0.295  |
| 10:00-11:00         | 45       | 212         | 0.114    | 0.139      | 0.253  |
| 11:00-12:00         | 45       | 212         | 0.124    | 0.138      | 0.262  |
| 12:00-13:00         | 45       | 212         | 0.148    | 0.144      | 0.292  |
| 13:00-14:00         | 45       | 212         | 0.156    | 0.149      | 0.305  |
| 14:00-15:00         | 45       | 212         | 0.155    | 0.178      | 0.333  |
| 15:00-16:00         | 45       | 212         | 0.255    | 0.173      | 0.428  |
| 16:00-17:00         | 45       | 212         | 0.267    | 0.160      | 0.427  |
| 17:00-18:00         | 45       | 212         | 0.333    | 0.163      | 0.496  |
| 18:00-19:00         | 45       | 212         | 0.265    | 0.150      | 0.415  |
| 19:00-20:00         |          |             |          |            |        |
| 20:00-21:00         |          |             |          |            |        |
| 21:00-22:00         |          |             |          |            |        |
| 22:00-23:00         |          |             |          |            |        |
| 23:00-00:00         |          |             |          |            |        |
| <b>Total Rates:</b> |          |             | 2.165    | 2.211      | 4.376  |

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

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

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Audit Code: 0044e4f7-ef1d-4f25-a522-235a62ab6f27

---

Parameter Summary:

|                                               |                           |
|-----------------------------------------------|---------------------------|
| Trip rate parameter range selected:           | 100 - 400 (units: DWELLS) |
| Survey date date range:                       | 30/04/2010 - 26/11/2025   |
| Number of weekdays (Monday-Friday):           | 45                        |
| Number of Saturdays:                          | 0                         |
| Number of Sundays:                            | 0                         |
| Surveys automatically removed from selection: | 13                        |
| Surveys manually removed from selection:      | 0                         |

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

# Appendix G

## Adjusted Queue Length Surveys

**JOB REF:** 14555

**JOB NAME:** GROBY

**SITE:** 4

DATE: 24/06/2025

**LOCATION:** A46 SLIP ROADS (E) / A50 (S) / LEICESTER ROAD / A46 SLIP ROADS (W) / A50 (N)

DAY: TUESDAY

NOTE: Queue Lengths recorded by the number of vehicles queuing at each 5-minute interval, by lane  
+ Represents where the queue either stretched out of sight or back to the next junction.

| TIME | ARM A              |        |        | ARM B   |        |        |        | ARM C          |        | ARM D              |        | ARM E   |        |        |        |
|------|--------------------|--------|--------|---------|--------|--------|--------|----------------|--------|--------------------|--------|---------|--------|--------|--------|
|      | A46 SLIP ROADS (E) |        |        | ASO (S) |        |        |        | LEICESTER ROAD |        | A46 SLIP ROADS (W) |        | ASO (N) |        |        |        |
|      | LANE 1             | LANE 2 | LANE 3 | LANE 1  | LANE 2 | LANE 3 | LANE 4 | LANE 1         | LANE 2 | LANE 1             | LANE 2 | LANE 1  | LANE 2 | LANE 3 | LANE 4 |

### Queue Length Surveys - Adjusted for PCUs and on Site Observations

07:30-08:30

|       |    |    |    |   |    |   |   |   |    |   |   |    |    |    |    |       |    |    |    |    |    |    |   |   |    |   |    |    |    |    |    |
|-------|----|----|----|---|----|---|---|---|----|---|---|----|----|----|----|-------|----|----|----|----|----|----|---|---|----|---|----|----|----|----|----|
| 07:30 | 6  | 7  | 9  | 4 | 10 | 9 | 4 | 3 | 9  | 4 | 4 | 20 | 12 | 17 | 4  | 16:30 | 22 | 8  | 35 | 5  | 10 | 7  | 3 | 2 | 17 | 4 | 8  | 18 | 10 | 11 | 6  |
| 07:35 | 6  | 8  | 9  | 4 | 8  | 8 | 3 | 3 | 11 | 6 | 6 | 15 | 9  | 11 | 7  | 16:35 | 23 | 8  | 36 | 7  | 13 | 8  | 4 | 2 | 11 | 2 | 6  | 22 | 12 | 12 | 11 |
| 07:40 | 6  | 10 | 14 | 4 | 9  | 9 | 3 | 4 | 10 | 4 | 4 | 27 | 11 | 11 | 4  | 16:40 | 22 | 9  | 36 | 5  | 6  | 9  | 4 | 1 | 16 | 3 | 2  | 13 | 4  | 8  | 4  |
| 07:45 | 10 | 12 | 16 | 6 | 7  | 7 | 2 | 3 | 17 | 4 | 6 | 19 | 7  | 12 | 4  | 16:45 | 24 | 11 | 35 | 2  | 8  | 6  | 1 | 3 | 14 | 3 | 1  | 12 | 3  | 7  | 3  |
| 07:50 | 11 | 9  | 14 | 3 | 6  | 5 | 4 | 1 | 18 | 5 | 3 | 18 | 8  | 12 | 5  | 16:50 | 25 | 7  | 40 | 11 | 9  | 14 | 2 | 2 | 9  | 2 | 3  | 5  | 3  | 5  | 7  |
| 07:55 | 11 | 10 | 13 | 2 | 9  | 7 | 3 | 2 | 14 | 2 | 5 | 21 | 7  | 10 | 5  | 16:55 | 24 | 7  | 41 | 5  | 6  | 4  | 3 | 3 | 13 | 4 | 3  | 10 | 5  | 4  | 5  |
| 08:00 | 5  | 7  | 12 | 2 | 5  | 6 | 2 | 2 | 12 | 4 | 3 | 22 | 10 | 10 | 6  | 17:00 | 23 | 8  | 32 | 15 | 10 | 14 | 3 | 1 | 16 | 3 | 5  | 11 | 7  | 9  | 6  |
| 08:05 | 8  | 10 | 25 | 3 | 7  | 7 | 4 | 7 | 13 | 3 | 6 | 13 | 11 | 12 | 6  | 17:05 | 23 | 7  | 34 | 9  | 5  | 7  | 2 | 1 | 10 | 2 | 6  | 10 | 11 | 10 | 12 |
| 08:10 | 8  | 11 | 27 | 4 | 6  | 6 | 3 | 2 | 18 | 3 | 6 | 14 | 12 | 13 | 5  | 17:10 | 25 | 8  | 35 | 6  | 6  | 9  | 3 | 2 | 14 | 7 | 3  | 20 | 10 | 9  | 24 |
| 08:15 | 25 | 10 | 28 | 2 | 7  | 5 | 1 | 2 | 17 | 5 | 7 | 23 | 10 | 11 | 5  | 17:15 | 24 | 8  | 30 | 10 | 7  | 8  | 4 | 3 | 15 | 0 | 9  | 8  | 8  | 7  | 13 |
| 08:20 | 28 | 9  | 30 | 4 | 6  | 7 | 2 | 4 | 8  | 4 | 5 | 22 | 13 | 16 | 11 | 17:20 | 23 | 11 | 26 | 9  | 14 | 14 | 2 | 3 | 17 | 1 | 10 | 17 | 5  | 4  | 10 |
| 08:25 | 25 | 10 | 30 | 2 | 7  | 5 | 3 | 2 | 14 | 5 | 7 | 25 | 8  | 12 | 5  | 17:25 | 6  | 11 | 24 | 9  | 18 | 20 | 3 | 3 | 11 | 3 | 7  | 26 | 8  | 8  | 1  |

## PCU Conversion

|       |    |    |    |   |    |   |   |   |    |   |   |    |    |    |    |       |    |    |    |    |    |    |   |   |    |   |    |    |    |    |    |
|-------|----|----|----|---|----|---|---|---|----|---|---|----|----|----|----|-------|----|----|----|----|----|----|---|---|----|---|----|----|----|----|----|
| 07:30 | 7  | 8  | 10 | 4 | 11 | 9 | 4 | 3 | 9  | 4 | 4 | 22 | 13 | 18 | 4  | 16:30 | 23 | 8  | 37 | 5  | 10 | 7  | 3 | 2 | 17 | 4 | 8  | 19 | 11 | 12 | 6  |
| 07:35 | 7  | 9  | 10 | 4 | 8  | 8 | 3 | 3 | 11 | 7 | 7 | 16 | 10 | 12 | 8  | 16:35 | 24 | 8  | 38 | 7  | 13 | 8  | 4 | 2 | 11 | 2 | 6  | 23 | 13 | 13 | 12 |
| 07:40 | 7  | 11 | 15 | 4 | 9  | 9 | 3 | 4 | 10 | 4 | 4 | 29 | 12 | 12 | 4  | 16:40 | 23 | 9  | 38 | 5  | 6  | 9  | 4 | 3 | 16 | 3 | 2  | 14 | 4  | 8  | 4  |
| 07:45 | 11 | 13 | 17 | 6 | 7  | 7 | 2 | 3 | 17 | 4 | 7 | 20 | 8  | 13 | 4  | 16:45 | 25 | 12 | 37 | 2  | 8  | 6  | 1 | 3 | 14 | 3 | 1  | 13 | 3  | 7  | 3  |
| 07:50 | 12 | 10 | 15 | 3 | 6  | 5 | 4 | 1 | 18 | 6 | 3 | 19 | 9  | 13 | 5  | 16:50 | 26 | 7  | 42 | 11 | 9  | 14 | 2 | 2 | 9  | 2 | 3  | 5  | 3  | 5  | 7  |
| 07:55 | 12 | 11 | 14 | 2 | 9  | 7 | 3 | 2 | 14 | 2 | 6 | 23 | 8  | 11 | 5  | 16:55 | 25 | 7  | 43 | 5  | 6  | 4  | 3 | 3 | 13 | 4 | 3  | 11 | 5  | 4  | 5  |
| 08:00 | 5  | 8  | 13 | 2 | 5  | 6 | 2 | 2 | 12 | 4 | 3 | 24 | 11 | 11 | 6  | 17:00 | 24 | 8  | 34 | 15 | 10 | 14 | 3 | 1 | 16 | 3 | 5  | 12 | 7  | 10 | 6  |
| 08:05 | 9  | 11 | 17 | 3 | 7  | 7 | 4 | 7 | 13 | 3 | 7 | 14 | 12 | 13 | 6  | 17:05 | 24 | 7  | 36 | 9  | 5  | 7  | 2 | 1 | 10 | 2 | 6  | 11 | 12 | 11 | 13 |
| 08:10 | 9  | 12 | 29 | 4 | 6  | 6 | 3 | 2 | 18 | 3 | 7 | 15 | 13 | 14 | 5  | 17:10 | 26 | 8  | 37 | 6  | 6  | 9  | 3 | 2 | 14 | 7 | 3  | 21 | 11 | 10 | 25 |
| 08:15 | 27 | 11 | 30 | 2 | 7  | 5 | 1 | 2 | 17 | 6 | 8 | 25 | 11 | 12 | 5  | 17:15 | 25 | 8  | 32 | 10 | 7  | 8  | 4 | 3 | 15 | 0 | 9  | 8  | 8  | 7  | 14 |
| 08:20 | 30 | 10 | 33 | 4 | 6  | 7 | 2 | 4 | 8  | 4 | 6 | 24 | 14 | 17 | 12 | 17:20 | 24 | 12 | 27 | 9  | 14 | 14 | 2 | 3 | 17 | 1 | 11 | 18 | 5  | 4  | 11 |
| 08:25 | 27 | 11 | 33 | 2 | 7  | 5 | 3 | 2 | 14 | 6 | 8 | 27 | 9  | 13 | 5  | 17:25 | 6  | 12 | 25 | 9  | 18 | 20 | 3 | 3 | 11 | 3 | 7  | 28 | 8  | 8  | 1  |

|            |    |    |    |   |   |   |   |   |    |   |   |    |    |    |   |    |   |    |   |   |    |   |   |    |   |   |    |   |   |   |
|------------|----|----|----|---|---|---|---|---|----|---|---|----|----|----|---|----|---|----|---|---|----|---|---|----|---|---|----|---|---|---|
| MaxAverage | 13 | 10 | 21 | 4 | 8 | 7 | 3 | 3 | 14 | 5 | 6 | 21 | 11 | 13 | 6 | 23 | 9 | 35 | 8 | 9 | 10 | 3 | 2 | 14 | 3 | 6 | 15 | 8 | 8 | 9 |
|------------|----|----|----|---|---|---|---|---|----|---|---|----|----|----|---|----|---|----|---|---|----|---|---|----|---|---|----|---|---|---|

**Key**

Manually Adjusted x

# Appendix H

## LinSig Outputs

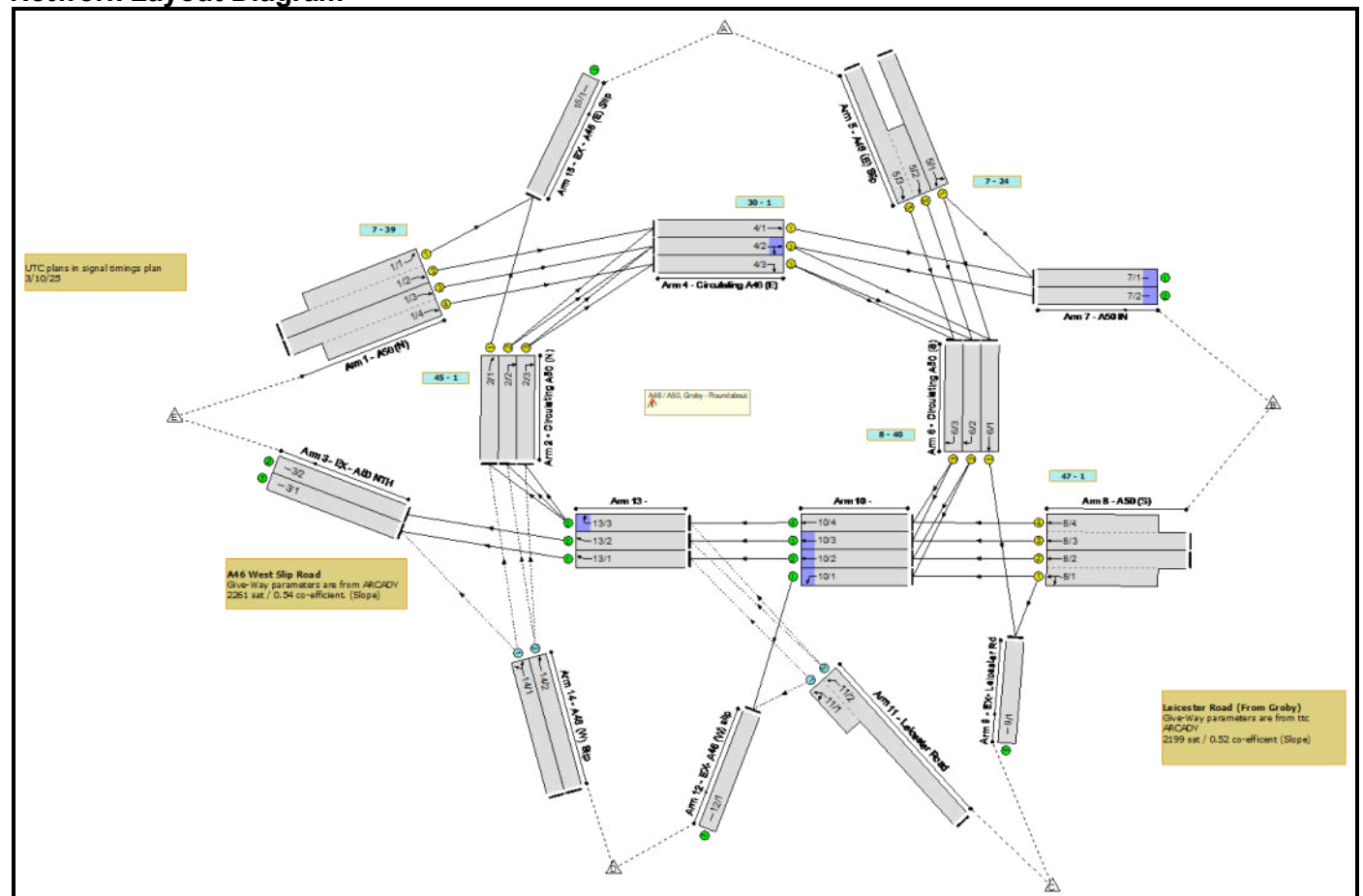
# Full Input Data And Results

## Full Input Data And Results

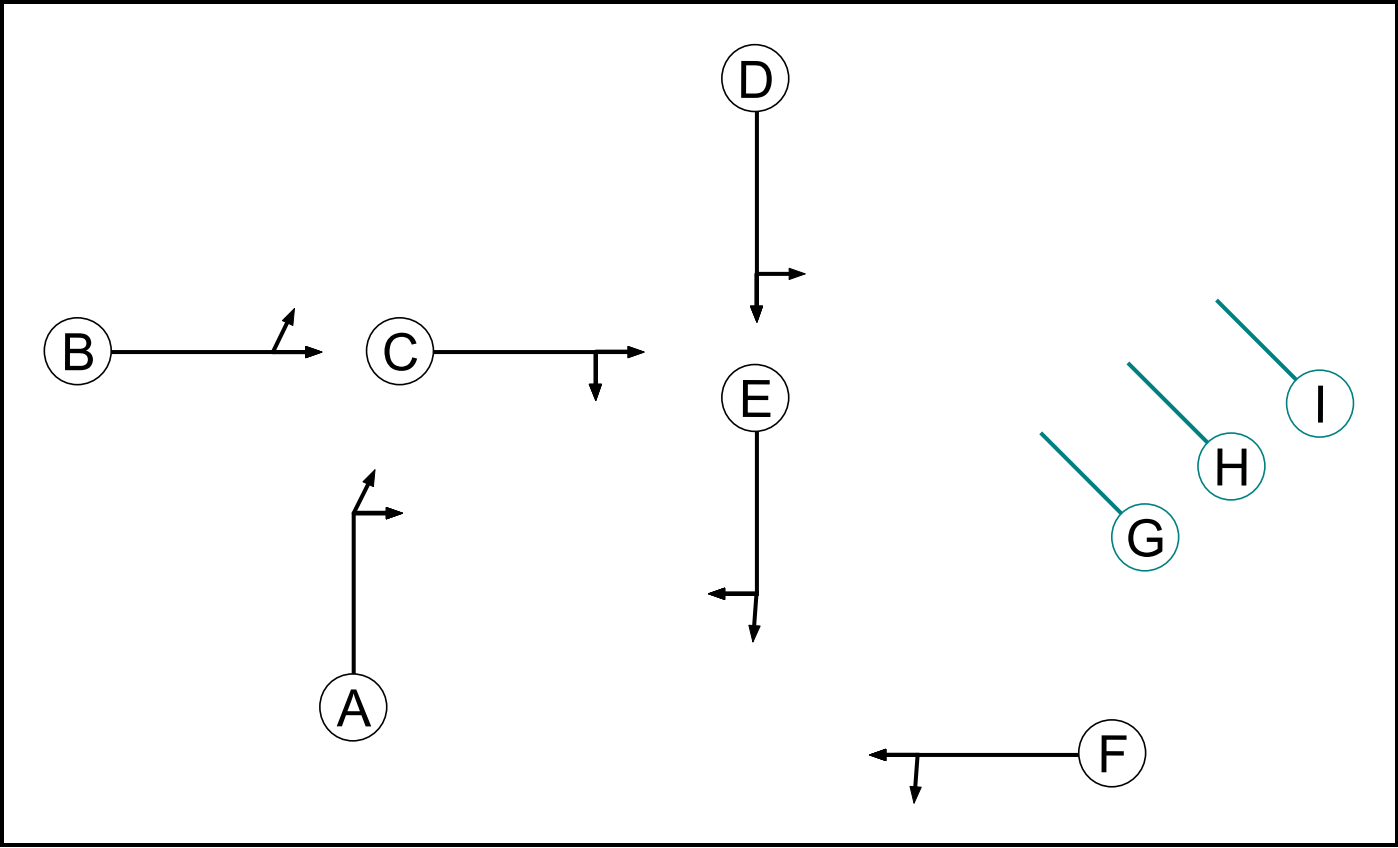
### User and Project Details

|                    |                                                                      |
|--------------------|----------------------------------------------------------------------|
| Project:           | Land off Sacheverell Way, Groby                                      |
| Title:             | A50/A46 Rbt, Groby, Leicestershire                                   |
| Location:          | Groby                                                                |
| Additional detail: |                                                                      |
| File name:         | A46-A50 Rbt Existing + Calibration + NH Comments Both peaks LF.lsg3x |
| Author:            | LF/JC                                                                |
| Company:           | TTC                                                                  |
| Address:           |                                                                      |

### Network Layout Diagram



Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|--------------|------------|----------|
| A          | Traffic    | 1            |              | 7          | 7        |
| B          | Traffic    | 1            |              | 7          | 7        |
| C          | Traffic    | 2            |              | 7          | 7        |
| D          | Traffic    | 2            |              | 7          | 7        |
| E          | Traffic    | 2            |              | 7          | 7        |
| F          | Traffic    | 2            |              | 7          | 7        |
| G          | Dummy      | 1            |              | 4          | 4        |
| H          | Dummy      |              |              | 4          | 4        |
| I          | Dummy      | 2            |              | 1          | 1        |

Phase Intergreens Matrix

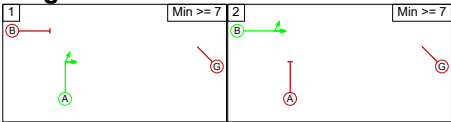
| Terminating Phase | Starting Phase |   |   |   |   |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|---|---|---|---|
|                   |                | A | B | C | D | E | F | G | H | I |
|                   | A              |   | 6 | - | - | - | - | 3 | - | - |
|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

Phases in Stage

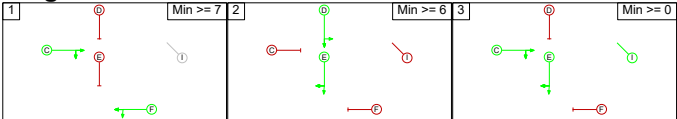
| Stream | Stage No. | Phases in Stage |
|--------|-----------|-----------------|
| 1      | 1         | A               |
| 1      | 2         | B               |
| 2      | 1         | C F             |
| 2      | 2         | D E             |
| 2      | 3         | C E I           |

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 1           | E     | Losing | 4     | 4          |



Prohibited Stage Change

Stage Stream: 1

|            | To Stage |   |   |
|------------|----------|---|---|
| From Stage |          | 1 | 2 |
|            | 1        |   | 6 |
|            | 2        | 6 |   |

Stage Stream: 2

|            | To Stage |    |   |   |
|------------|----------|----|---|---|
| From Stage |          | 1  | 2 | 3 |
|            | 1        |    | 7 | 7 |
|            | 2        | 11 |   | 6 |
|            | 3        | 7  | 6 |   |

## Full Input Data And Results

**Give-Way Lane Input Data**

| Junction: A46 / A50, Groby - Roundabout |             |                                            |                                            |                  |                     |                 |                             |                                  |     |                           |                                     |
|-----------------------------------------|-------------|--------------------------------------------|--------------------------------------------|------------------|---------------------|-----------------|-----------------------------|----------------------------------|-----|---------------------------|-------------------------------------|
| Lane                                    | Movement    | Max Flow<br>when<br>Giving Way<br>(PCU/Hr) | Min Flow<br>when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Lane | Opp. Lane<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | Non-Blocking<br>Storage<br>(PCU) | RTF | Right Turn<br>Move up (s) | Max Turns<br>in Intergreen<br>(PCU) |
| 11/1<br>(Leicester Road)                | 12/1 (Left) | 600                                        | 0                                          | 10/1             | 0.52                | All             | -                           | -                                | -   | -                         | -                                   |
|                                         |             |                                            |                                            | 10/2             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/3             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/4             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         | 13/1 (Left) | 600                                        | 0                                          | 10/1             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/2             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/3             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/4             | 0.52                | All             |                             |                                  |     |                           |                                     |
| 11/2<br>(Leicester Road)                | 13/2 (Left) | 1600                                       | 0                                          | 10/1             | 0.52                | All             | -                           | -                                | -   | -                         | -                                   |
|                                         |             |                                            |                                            | 10/2             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/3             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/4             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         | 13/3 (Left) | 1600                                       | 0                                          | 10/1             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/2             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/3             | 0.52                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 10/4             | 0.52                | All             |                             |                                  |     |                           |                                     |
| 14/1<br>(A46 (W) Slip)                  | 2/1 (Ahead) | 1130                                       | 0                                          | 13/1             | 0.54                | All             | -                           | -                                | -   | -                         | -                                   |
|                                         |             |                                            |                                            | 13/2             | 0.54                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 13/3             | 0.54                | All             |                             |                                  |     |                           |                                     |
|                                         | 3/1 (Left)  | 1130                                       | 0                                          | 13/1             | 0.54                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 13/2             | 0.54                | All             |                             |                                  |     |                           |                                     |
|                                         |             |                                            |                                            | 13/3             | 0.54                | All             |                             |                                  |     |                           |                                     |
| 14/2                                    | 2/2 (Ahead) | 2261                                       | 0                                          | 13/1             | 0.54                | All             | -                           | -                                | -   | -                         | -                                   |

Full Input Data And Results

|                |             |      |   |      |      |     |  |  |  |  |  |
|----------------|-------------|------|---|------|------|-----|--|--|--|--|--|
| (A46 (W) Slip) |             |      |   | 13/2 | 0.54 | All |  |  |  |  |  |
|                |             |      |   | 13/3 | 0.54 | All |  |  |  |  |  |
|                |             |      |   | 13/1 | 0.54 | All |  |  |  |  |  |
|                | 2/3 (Ahead) | 1130 | 0 | 13/2 | 0.54 | All |  |  |  |  |  |
|                |             |      |   | 13/3 | 0.54 | All |  |  |  |  |  |

## Full Input Data And Results

## Lane Input Data

| Junction: A46 / A50, Groby - Roundabout |           |        |             |           |                       |               |                                   |                |          |               |              |                    |
|-----------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|--------------|--------------------|
| Lane                                    | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns        | Turning Radius (m) |
| 1/1<br>(A50 (N))                        | U         | B      | 2           | 3         | 26.0                  | Geom          | -                                 | 3.80           | 0.00     | Y             | Arm 15 Ahead | 170.00             |
| 1/2<br>(A50 (N))                        | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 4 Ahead  | Inf                |
| 1/3<br>(A50 (N))                        | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.60           | 0.00     | N             | Arm 4 Ahead  | Inf                |
| 1/4<br>(A50 (N))                        | U         | B      | 2           | 3         | 26.0                  | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 4 Ahead  | Inf                |
| 2/1<br>(Circulating A50 (N))            | U         | A      | 2           | 3         | 7.3                   | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 15 Ahead | 55.00              |
| 2/2<br>(Circulating A50 (N))            | U         | A      | 2           | 3         | 7.3                   | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 4 Right  | 41.00              |
| 2/3<br>(Circulating A50 (N))            | U         | A      | 2           | 3         | 7.3                   | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 4 Right  | 40.00              |
| 3/1<br>(EX - A50 NTH)                   | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -            | -                  |
| 3/2<br>(EX - A50 NTH)                   | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -            | -                  |
| 4/1<br>(Circulating A46 (E))            | U         | C      | 2           | 3         | 16.7                  | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 7 Ahead  | Inf                |
| 4/2<br>(Circulating A46 (E))            | U         | C      | 2           | 3         | 16.7                  | Geom          | -                                 | 3.60           | 0.00     | N             | Arm 6 Right  | 30.00              |
|                                         |           |        |             |           |                       |               |                                   |                |          |               | Arm 7 Ahead  | Inf                |
| 4/3<br>(Circulating A46 (E))            | U         | C      | 2           | 3         | 16.7                  | Geom          | -                                 | 3.60           | 0.00     | Y             | Arm 6 Right  | 24.00              |
| 5/1<br>(A46 (E) Slip)                   | U         | D      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.65           | 5.00     | Y             | Arm 6 Ahead  | 100.00             |
|                                         |           |        |             |           |                       |               |                                   |                |          |               | Arm 7 Left   | 16.00              |
| 5/2<br>(A46 (E) Slip)                   | U         | D      | 2           | 3         | 10.0                  | Geom          | -                                 | 3.50           | 5.00     | Y             | Arm 6 Ahead  | 100.00             |
| 5/3<br>(A46 (E) Slip)                   | U         | D      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.30           | 5.00     | Y             | Arm 6 Ahead  | 135.00             |
| 6/1<br>(Circulating A50 (S))            | U         | E      | 2           | 3         | 5.2                   | Geom          | -                                 | 3.65           | 0.00     | Y             | Arm 9 Ahead  | Inf                |
| 6/2<br>(Circulating A50 (S))            | U         | E      | 2           | 3         | 5.2                   | Geom          | -                                 | 3.65           | 0.00     | N             | Arm 10 Right | 45.00              |
| 6/3<br>(Circulating A50 (S))            | U         | E      | 2           | 3         | 5.2                   | Geom          | -                                 | 3.65           | 0.00     | Y             | Arm 10 Right | 44.00              |

## Full Input Data And Results

|                                |   |   |   |   |      |      |      |      |      |   |                 |        |
|--------------------------------|---|---|---|---|------|------|------|------|------|---|-----------------|--------|
| 7/1<br>(A50 IN )               | U |   | 2 | 3 | 60.0 | User | 1900 | -    | -    | - | -               | -      |
| 7/2<br>(A50 IN )               | U |   | 2 | 3 | 60.0 | User | 1900 | -    | -    | - | -               | -      |
| 8/1<br>(A50 (S))               | U | F | 2 | 3 | 20.0 | Geom | -    | 3.65 | 0.00 | Y | Arm 9<br>Left   | 16.00  |
|                                |   |   |   |   |      |      |      |      |      |   | Arm 10<br>Ahead | 100.00 |
| 8/2<br>(A50 (S))               | U | F | 2 | 3 | 60.0 | Geom | -    | 3.65 | 0.00 | N | Arm 10<br>Ahead | 90.00  |
| 8/3<br>(A50 (S))               | U | F | 2 | 3 | 60.0 | Geom | -    | 3.60 | 0.00 | N | Arm 10<br>Ahead | 90.00  |
| 8/4<br>(A50 (S))               | U | F | 2 | 3 | 17.0 | Geom | -    | 3.60 | 0.00 | Y | Arm 10<br>Ahead | 87.00  |
| 9/1<br>(EX-<br>Leicester Rd)   | U |   | 2 | 3 | 60.0 | Inf  | -    | -    | -    | - | -               | -      |
| 10/1                           | U |   | 2 | 3 | 10.4 | User | 1800 | -    | -    | - | -               | -      |
| 10/2                           | U |   | 2 | 3 | 10.4 | User | 1800 | -    | -    | - | -               | -      |
| 10/3                           | U |   | 2 | 3 | 10.4 | User | 1800 | -    | -    | - | -               | -      |
| 10/4                           | U |   | 2 | 3 | 10.4 | User | 1800 | -    | -    | - | -               | -      |
| 11/1<br>(Leicester<br>Road)    | O |   | 2 | 3 | 7.8  | User | 3000 | -    | -    | - | -               | -      |
| 11/2<br>(Leicester<br>Road)    | O |   | 2 | 3 | 60.0 | User | 3000 | -    | -    | - | -               | -      |
| 12/1<br>(EX- A46 (W)<br>slip)  | U |   | 2 | 3 | 60.0 | Inf  | -    | -    | -    | - | -               | -      |
| 13/1                           | U |   | 2 | 3 | 16.5 | User | 1800 | -    | -    | - | -               | -      |
| 13/2                           | U |   | 2 | 3 | 16.5 | User | 1800 | -    | -    | - | -               | -      |
| 13/3                           | U |   | 2 | 3 | 16.5 | User | 1800 | -    | -    | - | -               | -      |
| 14/1<br>(A46 (W)<br>Slip)      | O |   | 2 | 3 | 60.0 | User | 3000 | -    | -    | - | -               | -      |
| 14/2<br>(A46 (W)<br>Slip)      | O |   | 2 | 3 | 60.0 | User | 3000 | -    | -    | - | -               | -      |
| 15/1<br>(EX - A46 (E)<br>Slip) | U |   | 2 | 3 | 60.0 | Inf  | -    | -    | -    | - | -               | -      |

**Traffic Flow Groups**

| Flow Group                                                             | Start Time | End Time | Duration | Formula |
|------------------------------------------------------------------------|------------|----------|----------|---------|
| 1: '2025 Base NH AM Peak'                                              | 08:00      | 09:00    | 01:00    |         |
| 2: '2025 Base NH PM Peak'                                              | 17:00      | 18:00    | 01:00    |         |
| 3: '2030 Do Minimum NH AM Peak'                                        | 08:00      | 09:00    | 01:00    |         |
| 4: '2030 Do Minimum NH PM Peak'                                        | 17:00      | 18:00    | 01:00    |         |
| 5: '2030 Do Minimum Sens NH AM Peak'                                   | 08:00      | 09:00    | 01:00    |         |
| 6: '2030 Do Minimum Sens NH PM Peak'                                   | 17:00      | 18:00    | 01:00    |         |
| 7: '2030 Do Something NH AM Peak'                                      | 08:00      | 09:00    | 01:00    |         |
| 8: '2030 Do Something NH PM Peak'                                      | 17:00      | 18:00    | 01:00    |         |
| 9: '2030 Do Something Sens NH AM Peak'                                 | 08:00      | 09:00    | 01:00    |         |
| 10: '2030 Do Something Sens NH PM Peak'                                | 17:00      | 18:00    | 01:00    |         |
| 11: '2025 Base NH AM Peak Dev Peak'                                    | 08:00      | 09:00    | 01:00    |         |
| 12: '2025 Base NH PM Peak Dev Peak'                                    | 17:00      | 18:00    | 01:00    |         |
| 13: '2030 Do Minimum NH AM Peak Dev Peak'                              | 08:00      | 09:00    | 01:00    |         |
| 14: '2030 Do Minimum NH PM Peak Dev Peak'                              | 17:00      | 18:00    | 01:00    |         |
| 15: '2030 Do Minimum Sens NH AM Peak Dev Peak'                         | 08:00      | 09:00    | 01:00    |         |
| 16: '2030 Do Minimum Sens NH PM Peak Dev Peak'                         | 17:00      | 18:00    | 01:00    |         |
| 17: '2030 Do Something NH AM Peak Dev Peak'                            | 08:00      | 09:00    | 01:00    |         |
| 18: '2030 Do Something NH PM Peak Dev Peak'                            | 17:00      | 18:00    | 01:00    |         |
| 19: '2030 Do Something Sens NH AM Peak Dev Peak'                       | 08:00      | 09:00    | 01:00    |         |
| 20: '2030 Do Something Sens NH PM Peak Dev Peak'                       | 17:00      | 18:00    | 01:00    |         |
| 21: '2030 Do Something Sens NH AM Peak Dev Peak + Re-assignment Check' | 08:00      | 09:00    | 01:00    |         |

Scenario 1: '2025 Base AM Highway Peak' (FG1: '2025 Base NH AM Peak', Plan 1: 'Staging Plan No. 1')  
Traffic Flows, Desired  
Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
| Origin |             | A    | B    | C   | D   | E    | Tot. |
|        | A           | 0    | 62   | 241 | 0   | 815  | 1118 |
|        | B           | 119  | 0    | 104 | 60  | 604  | 887  |
|        | C           | 346  | 244  | 1   | 131 | 27   | 749  |
|        | D           | 0    | 190  | 73  | 0   | 140  | 403  |
|        | E           | 846  | 1173 | 39  | 293 | 19   | 2370 |
|        | Tot.        | 1311 | 1669 | 458 | 484 | 1605 | 5527 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 1:<br>2025 Base AM<br>Highway Peak |
|------------------------------------------------|---------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                             |
| 1/1<br>(short)                                 | 846                                         |
| 1/2<br>(with short)                            | 1390(In)<br>544(Out)                        |
| 1/3<br>(with short)                            | 980(In)<br>668(Out)                         |
| 1/4<br>(short)                                 | 312                                         |
| 2/1                                            | 465                                         |
| 2/2                                            | 272                                         |
| 2/3                                            | 236                                         |
| 3/1                                            | 931                                         |
| 3/2                                            | 674                                         |
| 4/1                                            | 806                                         |
| 4/2                                            | 914                                         |
| 4/3                                            | 312                                         |
| 5/1                                            | 303                                         |
| 5/2<br>(short)                                 | 451                                         |
| 5/3<br>(with short)                            | 815(In)<br>364(Out)                         |
| 6/1                                            | 354                                         |
| 6/2                                            | 757                                         |
| 6/3                                            | 370                                         |
| 7/1                                            | 868                                         |
| 7/2                                            | 801                                         |
| 8/1<br>(short)                                 | 164                                         |
| 8/2<br>(with short)                            | 491(In)<br>327(Out)                         |
| 8/3<br>(with short)                            | 396(In)<br>277(Out)                         |
| 8/4<br>(short)                                 | 119                                         |
| 9/1                                            | 458                                         |
| 10/1                                           | 353                                         |
| 10/2                                           | 791                                         |
| 10/3                                           | 647                                         |
| 10/4                                           | 119                                         |
| 11/1<br>(short)                                | 131                                         |
| 11/2<br>(with short)                           | 749(In)<br>618(Out)                         |
| 12/1                                           | 484                                         |
| 13/1                                           | 791                                         |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 674  |
| 13/3 | 710  |
| 14/1 | 140  |
| 14/2 | 263  |
| 15/1 | 1311 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 12.4 %           | 2102              | 2102                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 87.6 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 79.5 %<br>20.5 % | 1717              | 1717                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 63.4 %           | 1859              | 1859                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 36.6 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

## Scenario 2: '2025 Base PM Highway Peak' (FG2: '2025 Base NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 34   | 355 | 0   | 769  | 1158 |
|        | B           | 109  | 0    | 213 | 106 | 836  | 1264 |
|        | C           | 294  | 165  | 0   | 99  | 14   | 572  |
|        | D           | 0    | 69   | 123 | 0   | 176  | 368  |
|        | E           | 819  | 840  | 87  | 460 | 3    | 2209 |
|        | Tot.        | 1222 | 1108 | 778 | 665 | 1798 | 5571 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 2:<br>2025 Base PM<br>Highway Peak |
|------------------------------------------------|---------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                             |
| 1/1<br>(short)                                 | 819                                         |
| 1/2<br>(with short)                            | 1067(In)<br>248(Out)                        |
| 1/3<br>(with short)                            | 1142(In)<br>679(Out)                        |
| 1/4<br>(short)                                 | 463                                         |
| 2/1                                            | 403                                         |
| 2/2                                            | 234                                         |
| 2/3                                            | 123                                         |
| 3/1                                            | 903                                         |
| 3/2                                            | 895                                         |
| 4/1                                            | 482                                         |
| 4/2                                            | 802                                         |
| 4/3                                            | 463                                         |
| 5/1                                            | 389                                         |
| 5/2<br>(short)                                 | 312                                         |
| 5/3<br>(with short)                            | 769(In)<br>457(Out)                         |
| 6/1                                            | 565                                         |
| 6/2                                            | 773                                         |
| 6/3                                            | 459                                         |
| 7/1                                            | 516                                         |
| 7/2                                            | 592                                         |
| 8/1<br>(short)                                 | 319                                         |
| 8/2<br>(with short)                            | 733(In)<br>414(Out)                         |
| 8/3<br>(with short)                            | 531(In)<br>422(Out)                         |
| 8/4<br>(short)                                 | 109                                         |
| 9/1                                            | 778                                         |
| 10/1                                           | 566                                         |
| 10/2                                           | 727                                         |
| 10/3                                           | 881                                         |
| 10/4                                           | 109                                         |
| 11/1<br>(short)                                | 99                                          |
| 11/2<br>(with short)                           | 572(In)<br>473(Out)                         |
| 12/1                                           | 665                                         |
| 13/1                                           | 727                                         |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 895  |
| 13/3 | 568  |
| 14/1 | 176  |
| 14/2 | 192  |
| 15/1 | 1222 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 26.2 %          | 2088              | 2088                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 73.8 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 91.3 %<br>8.7 % | 1732              | 1732                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 66.8 %          | 1855              | 1855                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 33.2 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 3: '2030 Do Minimum AM Highway Peak'** (FG3: '2030 Do Minimum NH AM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 71   | 288 | 0   | 861  | 1220 |
|        | B           | 129  | 0    | 126 | 67  | 628  | 950  |
|        | C           | 347  | 242  | 0   | 137 | 26   | 752  |
|        | D           | 0    | 183  | 78  | 0   | 129  | 390  |
|        | E           | 881  | 1208 | 47  | 320 | 20   | 2476 |
|        | Tot.        | 1357 | 1704 | 539 | 524 | 1664 | 5788 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 3:<br>2030 Do Minimum AM<br>Highway Peak |
|------------------------------------------------|---------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                   |
| 1/1<br>(short)                                 | 881                                               |
| 1/2<br>(with short)                            | 1426(In)<br>545(Out)                              |
| 1/3<br>(with short)                            | 1050(In)<br>710(Out)                              |
| 1/4<br>(short)                                 | 340                                               |
| 2/1                                            | 476                                               |
| 2/2                                            | 302                                               |
| 2/3                                            | 207                                               |
| 3/1                                            | 912                                               |
| 3/2                                            | 752                                               |
| 4/1                                            | 844                                               |
| 4/2                                            | 914                                               |
| 4/3                                            | 346                                               |
| 5/1                                            | 359                                               |
| 5/2<br>(short)                                 | 453                                               |
| 5/3<br>(with short)                            | 861(In)<br>408(Out)                               |
| 6/1                                            | 413                                               |
| 6/2                                            | 799                                               |
| 6/3                                            | 408                                               |
| 7/1                                            | 915                                               |
| 7/2                                            | 789                                               |
| 8/1<br>(short)                                 | 187                                               |
| 8/2<br>(with short)                            | 497(In)<br>310(Out)                               |
| 8/3<br>(with short)                            | 453(In)<br>318(Out)                               |
| 8/4<br>(short)                                 | 135                                               |
| 9/1                                            | 539                                               |
| 10/1                                           | 387                                               |
| 10/2                                           | 783                                               |
| 10/3                                           | 726                                               |
| 10/4                                           | 135                                               |
| 11/1<br>(short)                                | 137                                               |
| 11/2<br>(with short)                           | 752(In)<br>615(Out)                               |
| 12/1                                           | 524                                               |
| 13/1                                           | 783                                               |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 752  |
| 13/3 | 724  |
| 14/1 | 129  |
| 14/2 | 261  |
| 15/1 | 1357 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 13.7 %           | 2101              | 2101                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 86.3 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 80.2 %<br>19.8 % | 1717              | 1717                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 67.4 %           | 1854              | 1854                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 32.6 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 4: '2030 Do Minimum PM Highway Peak'** (FG4: '2030 Do Minimum NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 37   | 381 | 0   | 791  | 1209 |
|        | B           | 117  | 0    | 227 | 119 | 854  | 1317 |
|        | C           | 332  | 196  | 0   | 115 | 15   | 658  |
|        | D           | 0    | 76   | 130 | 0   | 177  | 383  |
|        | E           | 895  | 920  | 91  | 505 | 3    | 2414 |
|        | Tot.        | 1344 | 1229 | 829 | 739 | 1840 | 5981 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 4:<br>2030 Do Minimum PM<br>Highway Peak |
|------------------------------------------------|---------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                   |
| 1/1<br>(short)                                 | 895                                               |
| 1/2<br>(with short)                            | 1143(In)<br>248(Out)                              |
| 1/3<br>(with short)                            | 1271(In)<br>763(Out)                              |
| 1/4<br>(short)                                 | 508                                               |
| 2/1                                            | 449                                               |
| 2/2                                            | 285                                               |
| 2/3                                            | 136                                               |
| 3/1                                            | 1028                                              |
| 3/2                                            | 812                                               |
| 4/1                                            | 518                                               |
| 4/2                                            | 895                                               |
| 4/3                                            | 527                                               |
| 5/1                                            | 418                                               |
| 5/2<br>(short)                                 | 394                                               |
| 5/3<br>(with short)                            | 791(In)<br>397(Out)                               |
| 6/1                                            | 602                                               |
| 6/2                                            | 920                                               |
| 6/3                                            | 398                                               |
| 7/1                                            | 555                                               |
| 7/2                                            | 674                                               |
| 8/1<br>(short)                                 | 346                                               |
| 8/2<br>(with short)                            | 801(In)<br>455(Out)                               |
| 8/3<br>(with short)                            | 516(In)<br>399(Out)                               |
| 8/4<br>(short)                                 | 117                                               |
| 9/1                                            | 829                                               |
| 10/1                                           | 643                                               |
| 10/2                                           | 851                                               |
| 10/3                                           | 797                                               |
| 10/4                                           | 117                                               |
| 11/1<br>(short)                                | 96                                                |
| 11/2<br>(with short)                           | 658(In)<br>562(Out)                               |
| 12/1                                           | 739                                               |
| 13/1                                           | 851                                               |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 812  |
| 13/3 | 664  |
| 14/1 | 177  |
| 14/2 | 206  |
| 15/1 | 1344 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 24.7 %          | 2089              | 2089                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 75.3 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 91.1 %<br>8.9 % | 1732              | 1732                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 65.6 %          | 1856              | 1856                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 34.4 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 5: '2030 Do Minimum Sens AM Highway Peak'** (FG5: '2030 Do Minimum Sens NH AM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 73   | 277 | 0   | 885  | 1235 |
|        | B           | 130  | 0    | 121 | 67  | 639  | 957  |
|        | C           | 348  | 243  | 0   | 138 | 28   | 757  |
|        | D           | 0    | 181  | 74  | 0   | 129  | 384  |
|        | E           | 883  | 1212 | 45  | 323 | 20   | 2483 |
|        | Tot.        | 1361 | 1709 | 517 | 528 | 1701 | 5816 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 5:<br>2030 Do Minimum<br>Sens AM Highway<br>Peak |
|------------------------------------------------|-----------------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                           |
| 1/1<br>(short)                                 | 883                                                       |
| 1/2<br>(with short)                            | 1422(In)<br>539(Out)                                      |
| 1/3<br>(with short)                            | 1061(In)<br>718(Out)                                      |
| 1/4<br>(short)                                 | 343                                                       |
| 2/1                                            | 478                                                       |
| 2/2                                            | 320                                                       |
| 2/3                                            | 294                                                       |
| 3/1                                            | 876                                                       |
| 3/2                                            | 825                                                       |
| 4/1                                            | 852                                                       |
| 4/2                                            | 966                                                       |
| 4/3                                            | 396                                                       |
| 5/1                                            | 350                                                       |
| 5/2<br>(short)                                 | 432                                                       |
| 5/3<br>(with short)                            | 885(In)<br>453(Out)                                       |
| 6/1                                            | 459                                                       |
| 6/2                                            | 814                                                       |
| 6/3                                            | 467                                                       |
| 7/1                                            | 925                                                       |
| 7/2                                            | 784                                                       |
| 8/1<br>(short)                                 | 72                                                        |
| 8/2<br>(with short)                            | 381(In)<br>309(Out)                                       |
| 8/3<br>(with short)                            | 576(In)<br>330(Out)                                       |
| 8/4<br>(short)                                 | 246                                                       |
| 9/1                                            | 517                                                       |
| 10/1                                           | 390                                                       |
| 10/2                                           | 747                                                       |
| 10/3                                           | 797                                                       |
| 10/4                                           | 246                                                       |
| 11/1<br>(short)                                | 138                                                       |
| 11/2<br>(with short)                           | 757(In)<br>619(Out)                                       |
| 12/1                                           | 528                                                       |



Full Input Data And Results

|      |      |
|------|------|
| 13/1 | 747  |
| 13/2 | 825  |
| 13/3 | 837  |
| 14/1 | 129  |
| 14/2 | 255  |
| 15/1 | 1361 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 18.8 %           | 2095              | 2095                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 81.2 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 79.1 %<br>20.9 % | 1716              | 1716                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 80.6 %           | 1836              | 1836                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 19.4 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 6: '2030 Do Minimum Sens Highway PM'** (FG6: '2030 Do Minimum Sens NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 37   | 380 | 0   | 809  | 1226 |
|        | B           | 117  | 0    | 224 | 119 | 867  | 1327 |
|        | C           | 330  | 195  | 0   | 114 | 16   | 655  |
|        | D           | 0    | 77   | 131 | 0   | 183  | 391  |
|        | E           | 898  | 923  | 91  | 503 | 3    | 2418 |
|        | Tot.        | 1345 | 1232 | 826 | 736 | 1878 | 6017 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 6:<br>2030 Do Minimum<br>Sens Highway PM |
|------------------------------------------------|---------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                   |
| 1/1<br>(short)                                 | 898                                               |
| 1/2<br>(with short)                            | 1316(In)<br>418(Out)                              |
| 1/3<br>(with short)                            | 1102(In)<br>596(Out)                              |
| 1/4<br>(short)                                 | 506                                               |
| 2/1                                            | 447                                               |
| 2/2                                            | 253                                               |
| 2/3                                            | 174                                               |
| 3/1                                            | 892                                               |
| 3/2                                            | 986                                               |
| 4/1                                            | 654                                               |
| 4/2                                            | 763                                               |
| 4/3                                            | 530                                               |
| 5/1                                            | 417                                               |
| 5/2<br>(short)                                 | 248                                               |
| 5/3<br>(with short)                            | 809(In)<br>561(Out)                               |
| 6/1                                            | 602                                               |
| 6/2                                            | 752                                               |
| 6/3                                            | 587                                               |
| 7/1                                            | 691                                               |
| 7/2                                            | 541                                               |
| 8/1<br>(short)                                 | 343                                               |
| 8/2<br>(with short)                            | 823(In)<br>480(Out)                               |
| 8/3<br>(with short)                            | 504(In)<br>387(Out)                               |
| 8/4<br>(short)                                 | 117                                               |
| 9/1                                            | 826                                               |
| 10/1                                           | 622                                               |
| 10/2                                           | 729                                               |
| 10/3                                           | 974                                               |
| 10/4                                           | 117                                               |
| 11/1<br>(short)                                | 118                                               |
| 11/2<br>(with short)                           | 655(In)<br>537(Out)                               |
| 12/1                                           | 736                                               |
| 13/1                                           | 733                                               |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 986  |
| 13/3 | 642  |
| 14/1 | 159  |
| 14/2 | 232  |
| 15/1 | 1345 |

## Lane Saturation Flows

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 29.1 %          | 2085              | 2085                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 70.9 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 91.1 %<br>8.9 % | 1732              | 1732                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 65.3 %          | 1857              | 1857                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 34.7 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 7: '2030 Do Something AM Highway Peak'** (FG7: '2030 Do Something NH AM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 72   | 292 | 0   | 861  | 1225 |
|        | B           | 130  | 0    | 128 | 66  | 627  | 951  |
|        | C           | 353  | 247  | 1   | 139 | 27   | 767  |
|        | D           | 0    | 184  | 79  | 0   | 129  | 392  |
|        | E           | 891  | 1216 | 49  | 324 | 20   | 2500 |
|        | Tot.        | 1374 | 1719 | 549 | 529 | 1664 | 5835 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 7:<br>2030 Do Something<br>AM Highway Peak |
|------------------------------------------------|-----------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                     |
| 1/1<br>(short)                                 | 891                                                 |
| 1/2<br>(with short)                            | 1474(In)<br>583(Out)                                |
| 1/3<br>(with short)                            | 1026(In)<br>682(Out)                                |
| 1/4<br>(short)                                 | 344                                                 |
| 2/1                                            | 483                                                 |
| 2/2                                            | 270                                                 |
| 2/3                                            | 241                                                 |
| 3/1                                            | 925                                                 |
| 3/2                                            | 739                                                 |
| 4/1                                            | 839                                                 |
| 4/2                                            | 937                                                 |
| 4/3                                            | 344                                                 |
| 5/1                                            | 364                                                 |
| 5/2<br>(short)                                 | 436                                                 |
| 5/3<br>(with short)                            | 861(In)<br>425(Out)                                 |
| 6/1                                            | 421                                                 |
| 6/2                                            | 776                                                 |
| 6/3                                            | 429                                                 |
| 7/1                                            | 911                                                 |
| 7/2                                            | 808                                                 |
| 8/1<br>(short)                                 | 194                                                 |
| 8/2<br>(with short)                            | 538(In)<br>344(Out)                                 |
| 8/3<br>(with short)                            | 413(In)<br>283(Out)                                 |
| 8/4<br>(short)                                 | 130                                                 |
| 9/1                                            | 549                                                 |
| 10/1                                           | 390                                                 |
| 10/2                                           | 796                                                 |
| 10/3                                           | 712                                                 |
| 10/4                                           | 130                                                 |
| 11/1<br>(short)                                | 139                                                 |
| 11/2<br>(with short)                           | 767(In)<br>628(Out)                                 |
| 12/1                                           | 529                                                 |
| 13/1                                           | 796                                                 |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 739  |
| 13/3 | 731  |
| 14/1 | 129  |
| 14/2 | 263  |
| 15/1 | 1374 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 13.8 %           | 2101              | 2101                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 86.2 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 80.2 %<br>19.8 % | 1717              | 1717                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 66.0 %           | 1856              | 1856                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 34.0 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 8: '2030 Do Something PM Highway Peak'** (FG8: '2030 Do Something NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 37   | 393 | 0   | 794  | 1224 |
|        | B           | 117  | 0    | 232 | 120 | 849  | 1318 |
|        | C           | 339  | 203  | 0   | 119 | 16   | 677  |
|        | D           | 0    | 77   | 135 | 0   | 177  | 389  |
|        | E           | 896  | 921  | 92  | 504 | 3    | 2416 |
|        | Tot.        | 1352 | 1238 | 852 | 743 | 1839 | 6024 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 8:<br>2030 Do Something<br>PM Highway Peak |
|------------------------------------------------|-----------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                     |
| 1/1<br>(short)                                 | 896                                                 |
| 1/2<br>(with short)                            | 1211(In)<br>315(Out)                                |
| 1/3<br>(with short)                            | 1205(In)<br>698(Out)                                |
| 1/4<br>(short)                                 | 507                                                 |
| 2/1                                            | 456                                                 |
| 2/2                                            | 286                                                 |
| 2/3                                            | 139                                                 |
| 3/1                                            | 963                                                 |
| 3/2                                            | 876                                                 |
| 4/1                                            | 587                                                 |
| 4/2                                            | 841                                                 |
| 4/3                                            | 517                                                 |
| 5/1                                            | 430                                                 |
| 5/2<br>(short)                                 | 320                                                 |
| 5/3<br>(with short)                            | 794(In)<br>474(Out)                                 |
| 6/1                                            | 620                                                 |
| 6/2                                            | 835                                                 |
| 6/3                                            | 476                                                 |
| 7/1                                            | 624                                                 |
| 7/2                                            | 614                                                 |
| 8/1<br>(short)                                 | 352                                                 |
| 8/2<br>(with short)                            | 813(In)<br>461(Out)                                 |
| 8/3<br>(with short)                            | 505(In)<br>388(Out)                                 |
| 8/4<br>(short)                                 | 117                                                 |
| 9/1                                            | 852                                                 |
| 10/1                                           | 634                                                 |
| 10/2                                           | 782                                                 |
| 10/3                                           | 864                                                 |
| 10/4                                           | 117                                                 |
| 11/1<br>(short)                                | 113                                                 |
| 11/2<br>(with short)                           | 677(In)<br>564(Out)                                 |
| 12/1                                           | 743                                                 |
| 13/1                                           | 786                                                 |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 876  |
| 13/3 | 669  |
| 14/1 | 177  |
| 14/2 | 212  |
| 15/1 | 1352 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 27.0 %          | 2087              | 2087                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 73.0 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 91.4 %<br>8.6 % | 1732              | 1732                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 65.9 %          | 1856              | 1856                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 34.1 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 9: '2030 Do Something Sens AM Highway Peak'** (FG9: '2030 Do Something Sens NH AM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 73   | 227 | 0   | 885  | 1185 |
|        | B           | 130  | 0    | 121 | 67  | 639  | 957  |
|        | C           | 348  | 243  | 1   | 138 | 28   | 758  |
|        | D           | 0    | 181  | 74  | 0   | 129  | 384  |
|        | E           | 883  | 1212 | 45  | 323 | 20   | 2483 |
|        | Tot.        | 1361 | 1709 | 468 | 528 | 1701 | 5767 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 9:<br>2030 Do Something<br>Sens AM Highway<br>Peak |
|------------------------------------------------|-------------------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                             |
| 1/1<br>(short)                                 | 883                                                         |
| 1/2<br>(with short)                            | 1410(In)<br>527(Out)                                        |
| 1/3<br>(with short)                            | 1073(In)<br>730(Out)                                        |
| 1/4<br>(short)                                 | 343                                                         |
| 2/1                                            | 478                                                         |
| 2/2                                            | 330                                                         |
| 2/3                                            | 286                                                         |
| 3/1                                            | 875                                                         |
| 3/2                                            | 826                                                         |
| 4/1                                            | 851                                                         |
| 4/2                                            | 969                                                         |
| 4/3                                            | 396                                                         |
| 5/1                                            | 300                                                         |
| 5/2<br>(short)                                 | 432                                                         |
| 5/3<br>(with short)                            | 885(In)<br>453(Out)                                         |
| 6/1                                            | 411                                                         |
| 6/2                                            | 813                                                         |
| 6/3                                            | 468                                                         |
| 7/1                                            | 924                                                         |
| 7/2                                            | 785                                                         |
| 8/1<br>(short)                                 | 71                                                          |
| 8/2<br>(with short)                            | 380(In)<br>309(Out)                                         |
| 8/3<br>(with short)                            | 577(In)<br>330(Out)                                         |
| 8/4<br>(short)                                 | 247                                                         |
| 9/1                                            | 468                                                         |
| 10/1                                           | 390                                                         |
| 10/2                                           | 746                                                         |
| 10/3                                           | 798                                                         |
| 10/4                                           | 247                                                         |
| 11/1<br>(short)                                | 138                                                         |
| 11/2<br>(with short)                           | 758(In)<br>620(Out)                                         |
| 12/1                                           | 528                                                         |



Full Input Data And Results

|      |      |
|------|------|
| 13/1 | 746  |
| 13/2 | 826  |
| 13/3 | 839  |
| 14/1 | 129  |
| 14/2 | 255  |
| 15/1 | 1361 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 19.0 %           | 2095              | 2095                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 81.0 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 75.7 %<br>24.3 % | 1712              | 1712                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 80.3 %           | 1836              | 1836                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 19.7 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 10: '2030 Do Something Sens PM Highway Peak'** (FG10: '2030 Do Something Sens NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 37   | 380 | 0   | 809  | 1226 |
|        | B           | 117  | 0    | 224 | 119 | 867  | 1327 |
|        | C           | 330  | 195  | 0   | 114 | 16   | 655  |
|        | D           | 0    | 77   | 131 | 0   | 183  | 391  |
|        | E           | 898  | 923  | 91  | 503 | 3    | 2418 |
|        | Tot.        | 1345 | 1232 | 826 | 736 | 1878 | 6017 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 10:<br>2030 Do Something<br>Sens PM Highway<br>Peak |
|------------------------------------------------|--------------------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                              |
| 1/1<br>(short)                                 | 898                                                          |
| 1/2<br>(with short)                            | 1307(In)<br>409(Out)                                         |
| 1/3<br>(with short)                            | 1111(In)<br>605(Out)                                         |
| 1/4<br>(short)                                 | 506                                                          |
| 2/1                                            | 447                                                          |
| 2/2                                            | 253                                                          |
| 2/3                                            | 168                                                          |
| 3/1                                            | 920                                                          |
| 3/2                                            | 958                                                          |
| 4/1                                            | 630                                                          |
| 4/2                                            | 787                                                          |
| 4/3                                            | 524                                                          |
| 5/1                                            | 417                                                          |
| 5/2<br>(short)                                 | 268                                                          |
| 5/3<br>(with short)                            | 809(In)<br>541(Out)                                          |
| 6/1                                            | 602                                                          |
| 6/2                                            | 774                                                          |
| 6/3                                            | 559                                                          |
| 7/1                                            | 667                                                          |
| 7/2                                            | 565                                                          |
| 8/1<br>(short)                                 | 343                                                          |
| 8/2<br>(with short)                            | 822(In)<br>479(Out)                                          |
| 8/3<br>(with short)                            | 505(In)<br>388(Out)                                          |
| 8/4<br>(short)                                 | 117                                                          |
| 9/1                                            | 826                                                          |
| 10/1                                           | 622                                                          |
| 10/2                                           | 750                                                          |
| 10/3                                           | 947                                                          |
| 10/4                                           | 117                                                          |
| 11/1<br>(short)                                | 119                                                          |
| 11/2<br>(with short)                           | 655(In)<br>536(Out)                                          |
| 12/1                                           | 736                                                          |

Full Input Data And Results

|      |      |
|------|------|
| 13/1 | 755  |
| 13/2 | 958  |
| 13/3 | 642  |
| 14/1 | 165  |
| 14/2 | 226  |
| 15/1 | 1345 |

## Lane Saturation Flows

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 28.2 %          | 2086              | 2086                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 71.8 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 91.1 %<br>8.9 % | 1732              | 1732                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 65.3 %          | 1857              | 1857                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 34.7 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 11: '2025 Base AM Dev Peak'** (FG11: '2025 Base NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

## Traffic Flows, Desired

### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 98   | 232 | 0   | 715  | 1045 |
|        | B           | 105  | 0    | 117 | 50  | 446  | 718  |
|        | C           | 328  | 273  | 0   | 113 | 30   | 744  |
|        | D           | 0    | 189  | 76  | 0   | 155  | 420  |
|        | E           | 916  | 1148 | 61  | 314 | 20   | 2459 |
|        | Tot.        | 1349 | 1708 | 486 | 477 | 1366 | 5386 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 11:<br>2025 Base AM Dev<br>Peak |
|------------------------------------------------|------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                          |
| 1/1<br>(short)                                 | 916                                      |
| 1/2<br>(with short)                            | 1451(In)<br>535(Out)                     |
| 1/3<br>(with short)                            | 1008(In)<br>674(Out)                     |
| 1/4<br>(short)                                 | 334                                      |
| 2/1                                            | 433                                      |
| 2/2                                            | 304                                      |
| 2/3                                            | 234                                      |
| 3/1                                            | 810                                      |
| 3/2                                            | 556                                      |
| 4/1                                            | 832                                      |
| 4/2                                            | 915                                      |
| 4/3                                            | 334                                      |
| 5/1                                            | 330                                      |
| 5/2<br>(short)                                 | 418                                      |
| 5/3<br>(with short)                            | 715(In)<br>297(Out)                      |
| 6/1                                            | 369                                      |
| 6/2                                            | 750                                      |
| 6/3                                            | 299                                      |
| 7/1                                            | 930                                      |
| 7/2                                            | 778                                      |
| 8/1<br>(short)                                 | 167                                      |
| 8/2<br>(with short)                            | 386(In)<br>219(Out)                      |
| 8/3<br>(with short)                            | 332(In)<br>227(Out)                      |
| 8/4<br>(short)                                 | 105                                      |
| 9/1                                            | 486                                      |
| 10/1                                           | 364                                      |
| 10/2                                           | 655                                      |
| 10/3                                           | 526                                      |
| 10/4                                           | 105                                      |
| 11/1<br>(short)                                | 113                                      |
| 11/2<br>(with short)                           | 744(In)<br>631(Out)                      |
| 12/1                                           | 477                                      |
| 13/1                                           | 655                                      |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 556  |
| 13/3 | 706  |
| 14/1 | 155  |
| 14/2 | 265  |
| 15/1 | 1349 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 15.0 %           | 2099              | 2099                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 85.0 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 70.3 %<br>29.7 % | 1705              | 1705                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 70.1 %           | 1850              | 1850                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 29.9 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 12: '2025 Base PM Dev Peak'** (FG12: '2025 Base NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 24   | 343 | 0   | 758  | 1125 |
|        | B           | 108  | 0    | 211 | 101 | 813  | 1233 |
|        | C           | 239  | 184  | 0   | 82  | 19   | 524  |
|        | D           | 0    | 71   | 149 | 0   | 181  | 401  |
|        | E           | 788  | 733  | 58  | 308 | 5    | 1892 |
|        | Tot.        | 1135 | 1012 | 761 | 491 | 1776 | 5175 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 12:<br>2025 Base PM Dev<br>Peak |
|------------------------------------------------|------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                          |
| 1/1<br>(short)                                 | 788                                      |
| 1/2<br>(with short)                            | 1003(In)<br>215(Out)                     |
| 1/3<br>(with short)                            | 889(In)<br>576(Out)                      |
| 1/4<br>(short)                                 | 313                                      |
| 2/1                                            | 347                                      |
| 2/2                                            | 231                                      |
| 2/3                                            | 173                                      |
| 3/1                                            | 1050                                     |
| 3/2                                            | 726                                      |
| 4/1                                            | 444                                      |
| 4/2                                            | 751                                      |
| 4/3                                            | 313                                      |
| 5/1                                            | 367                                      |
| 5/2<br>(short)                                 | 427                                      |
| 5/3<br>(with short)                            | 758(In)<br>331(Out)                      |
| 6/1                                            | 550                                      |
| 6/2                                            | 737                                      |
| 6/3                                            | 334                                      |
| 7/1                                            | 468                                      |
| 7/2                                            | 544                                      |
| 8/1<br>(short)                                 | 312                                      |
| 8/2<br>(with short)                            | 752(In)<br>440(Out)                      |
| 8/3<br>(with short)                            | 481(In)<br>373(Out)                      |
| 8/4<br>(short)                                 | 108                                      |
| 9/1                                            | 761                                      |
| 10/1                                           | 409                                      |
| 10/2                                           | 869                                      |
| 10/3                                           | 707                                      |
| 10/4                                           | 108                                      |
| 11/1<br>(short)                                | 82                                       |
| 11/2<br>(with short)                           | 524(In)<br>442(Out)                      |
| 12/1                                           | 491                                      |
| 13/1                                           | 869                                      |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 726  |
| 13/3 | 531  |
| 14/1 | 181  |
| 14/2 | 220  |
| 15/1 | 1135 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 27.6 %          | 2086              | 2086                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 72.4 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 93.5 %<br>6.5 % | 1735              | 1735                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 67.6 %          | 1853              | 1853                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 32.4 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 13: '2030 Do Minimum AM Dev Peak'** (FG13: '2030 Do Minimum NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 107  | 279 | 0   | 761  | 1147 |
|        | B           | 115  | 0    | 139 | 57  | 470  | 781  |
|        | C           | 329  | 271  | 0   | 119 | 29   | 748  |
|        | D           | 0    | 182  | 81  | 0   | 144  | 407  |
|        | E           | 951  | 1183 | 69  | 341 | 21   | 2565 |
|        | Tot.        | 1395 | 1743 | 568 | 517 | 1425 | 5648 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 13:<br>2030 Do Minimum AM<br>Dev Peak |
|------------------------------------------------|------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                |
| 1/1<br>(short)                                 | 951                                            |
| 1/2<br>(with short)                            | 1440(In)<br>489(Out)                           |
| 1/3<br>(with short)                            | 1125(In)<br>763(Out)                           |
| 1/4<br>(short)                                 | 362                                            |
| 2/1                                            | 444                                            |
| 2/2                                            | 317                                            |
| 2/3                                            | 217                                            |
| 3/1                                            | 822                                            |
| 3/2                                            | 603                                            |
| 4/1                                            | 803                                            |
| 4/2                                            | 983                                            |
| 4/3                                            | 362                                            |
| 5/1                                            | 386                                            |
| 5/2<br>(short)                                 | 416                                            |
| 5/3<br>(with short)                            | 761(In)<br>345(Out)                            |
| 6/1                                            | 429                                            |
| 6/2                                            | 776                                            |
| 6/3                                            | 347                                            |
| 7/1                                            | 910                                            |
| 7/2                                            | 833                                            |
| 8/1<br>(short)                                 | 196                                            |
| 8/2<br>(with short)                            | 439(In)<br>243(Out)                            |
| 8/3<br>(with short)                            | 342(In)<br>227(Out)                            |
| 8/4<br>(short)                                 | 115                                            |
| 9/1                                            | 568                                            |
| 10/1                                           | 398                                            |
| 10/2                                           | 678                                            |
| 10/3                                           | 574                                            |
| 10/4                                           | 115                                            |
| 11/1<br>(short)                                | 119                                            |
| 11/2<br>(with short)                           | 748(In)<br>629(Out)                            |
| 12/1                                           | 517                                            |
| 13/1                                           | 678                                            |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 603  |
| 13/3 | 715  |
| 14/1 | 144  |
| 14/2 | 263  |
| 15/1 | 1395 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 15.3 %           | 2099              | 2099                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 84.7 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 72.3 %<br>27.7 % | 1707              | 1707                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 70.9 %           | 1849              | 1849                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 29.1 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 14: '2030 Do Minimum PM Dev Peak'** (FG14: '2030 Do Minimum NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 27   | 369 | 0   | 780  | 1176 |
|        | B           | 116  | 0    | 225 | 114 | 831  | 1286 |
|        | C           | 277  | 215  | 0   | 98  | 20   | 610  |
|        | D           | 0    | 78   | 156 | 0   | 182  | 416  |
|        | E           | 864  | 813  | 62  | 353 | 5    | 2097 |
|        | Tot.        | 1257 | 1133 | 812 | 565 | 1818 | 5585 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 14:<br>2030 Do Minimum PM<br>Dev Peak |
|------------------------------------------------|------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                |
| 1/1<br>(short)                                 | 864                                            |
| 1/2<br>(with short)                            | 1105(In)<br>241(Out)                           |
| 1/3<br>(with short)                            | 992(In)<br>634(Out)                            |
| 1/4<br>(short)                                 | 358                                            |
| 2/1                                            | 393                                            |
| 2/2                                            | 255                                            |
| 2/3                                            | 194                                            |
| 3/1                                            | 1075                                           |
| 3/2                                            | 743                                            |
| 4/1                                            | 496                                            |
| 4/2                                            | 828                                            |
| 4/3                                            | 358                                            |
| 5/1                                            | 396                                            |
| 5/2<br>(short)                                 | 449                                            |
| 5/3<br>(with short)                            | 780(In)<br>331(Out)                            |
| 6/1                                            | 587                                            |
| 6/2                                            | 804                                            |
| 6/3                                            | 334                                            |
| 7/1                                            | 523                                            |
| 7/2                                            | 610                                            |
| 8/1<br>(short)                                 | 339                                            |
| 8/2<br>(with short)                            | 781(In)<br>442(Out)                            |
| 8/3<br>(with short)                            | 505(In)<br>389(Out)                            |
| 8/4<br>(short)                                 | 116                                            |
| 9/1                                            | 812                                            |
| 10/1                                           | 467                                            |
| 10/2                                           | 893                                            |
| 10/3                                           | 723                                            |
| 10/4                                           | 116                                            |
| 11/1<br>(short)                                | 98                                             |
| 11/2<br>(with short)                           | 610(In)<br>512(Out)                            |
| 12/1                                           | 565                                            |
| 13/1                                           | 893                                            |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 743  |
| 13/3 | 608  |
| 14/1 | 182  |
| 14/2 | 234  |
| 15/1 | 1257 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 26.3 %          | 2088              | 2088                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 73.7 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 93.2 %<br>6.8 % | 1735              | 1735                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 66.4 %          | 1855              | 1855                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 33.6 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 15: '2030 Do Minimum Sens AM Dev Peak'** (FG15: '2030 Do Minimum Sens NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 109  | 268 | 0   | 785  | 1162 |
|        | B           | 116  | 0    | 134 | 57  | 481  | 788  |
|        | C           | 330  | 272  | 0   | 120 | 31   | 753  |
|        | D           | 0    | 180  | 77  | 0   | 144  | 401  |
|        | E           | 953  | 1187 | 67  | 344 | 21   | 2572 |
|        | Tot.        | 1399 | 1748 | 546 | 521 | 1462 | 5676 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 15:<br>2030 Do Minimum<br>Sens AM Dev Peak |
|------------------------------------------------|-----------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                     |
| 1/1<br>(short)                                 | 940                                                 |
| 1/2<br>(with short)                            | 1228(In)<br>288(Out)                                |
| 1/3<br>(with short)                            | 1344(In)<br>966(Out)                                |
| 1/4<br>(short)                                 | 378                                                 |
| 2/1                                            | 459                                                 |
| 2/2                                            | 452                                                 |
| 2/3                                            | 77                                                  |
| 3/1                                            | 843                                                 |
| 3/2                                            | 619                                                 |
| 4/1                                            | 740                                                 |
| 4/2                                            | 1043                                                |
| 4/3                                            | 378                                                 |
| 5/1                                            | 377                                                 |
| 5/2<br>(short)                                 | 448                                                 |
| 5/3<br>(with short)                            | 785(In)<br>337(Out)                                 |
| 6/1                                            | 412                                                 |
| 6/2                                            | 811                                                 |
| 6/3                                            | 352                                                 |
| 7/1                                            | 849                                                 |
| 7/2                                            | 899                                                 |
| 8/1<br>(short)                                 | 191                                                 |
| 8/2<br>(with short)                            | 423(In)<br>232(Out)                                 |
| 8/3<br>(with short)                            | 365(In)<br>249(Out)                                 |
| 8/4<br>(short)                                 | 116                                                 |
| 9/1                                            | 546                                                 |
| 10/1                                           | 401                                                 |
| 10/2                                           | 699                                                 |
| 10/3                                           | 588                                                 |
| 10/4                                           | 129                                                 |
| 11/1<br>(short)                                | 120                                                 |
| 11/2<br>(with short)                           | 753(In)<br>633(Out)                                 |
| 12/1                                           | 521                                                 |
| 13/1                                           | 699                                                 |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 619  |
| 13/3 | 731  |
| 14/1 | 144  |
| 14/2 | 257  |
| 15/1 | 1399 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 13.8 %           | 2100              | 2100                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 86.2 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 71.1 %<br>28.9 % | 1706              | 1706                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 70.2 %           | 1850              | 1850                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 29.8 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 16: '2030 Do Minimum Sens PM Dev Peak'** (FG16: '2030 Do Minimum Sens NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 27   | 368 | 0   | 798  | 1193 |
|        | B           | 116  | 0    | 222 | 114 | 844  | 1296 |
|        | C           | 275  | 214  | 0   | 97  | 21   | 607  |
|        | D           | 0    | 79   | 157 | 0   | 188  | 424  |
|        | E           | 867  | 816  | 62  | 351 | 5    | 2101 |
|        | Tot.        | 1258 | 1136 | 809 | 562 | 1856 | 5621 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 16:<br>2030 Do Minimum<br>Sens PM Dev Peak |
|------------------------------------------------|-----------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                     |
| 1/1<br>(short)                                 | 867                                                 |
| 1/2<br>(with short)                            | 1076(In)<br>209(Out)                                |
| 1/3<br>(with short)                            | 1025(In)<br>669(Out)                                |
| 1/4<br>(short)                                 | 356                                                 |
| 2/1                                            | 391                                                 |
| 2/2                                            | 281                                                 |
| 2/3                                            | 169                                                 |
| 3/1                                            | 1079                                                |
| 3/2                                            | 777                                                 |
| 4/1                                            | 489                                                 |
| 4/2                                            | 839                                                 |
| 4/3                                            | 356                                                 |
| 5/1                                            | 395                                                 |
| 5/2<br>(short)                                 | 435                                                 |
| 5/3<br>(with short)                            | 798(In)<br>363(Out)                                 |
| 6/1                                            | 587                                                 |
| 6/2                                            | 788                                                 |
| 6/3                                            | 366                                                 |
| 7/1                                            | 516                                                 |
| 7/2                                            | 620                                                 |
| 8/1<br>(short)                                 | 336                                                 |
| 8/2<br>(with short)                            | 790(In)<br>454(Out)                                 |
| 8/3<br>(with short)                            | 506(In)<br>390(Out)                                 |
| 8/4<br>(short)                                 | 116                                                 |
| 9/1                                            | 809                                                 |
| 10/1                                           | 465                                                 |
| 10/2                                           | 891                                                 |
| 10/3                                           | 756                                                 |
| 10/4                                           | 116                                                 |
| 11/1<br>(short)                                | 97                                                  |
| 11/2<br>(with short)                           | 607(In)<br>510(Out)                                 |
| 12/1                                           | 562                                                 |
| 13/1                                           | 891                                                 |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 777  |
| 13/3 | 605  |
| 14/1 | 188  |
| 14/2 | 236  |
| 15/1 | 1258 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 26.1 %          | 2088              | 2088                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 73.9 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 93.2 %<br>6.8 % | 1735              | 1735                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 66.1 %          | 1856              | 1856                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 33.9 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 17: '2030 Do Something AM Dev Peak'** (FG17: '2030 Do Something NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 108  | 283 | 0   | 761  | 1152 |
|        | B           | 116  | 0    | 141 | 56  | 469  | 782  |
|        | C           | 335  | 276  | 0   | 121 | 30   | 762  |
|        | D           | 0    | 183  | 82  | 0   | 144  | 409  |
|        | E           | 961  | 1191 | 71  | 345 | 21   | 2589 |
|        | Tot.        | 1412 | 1758 | 577 | 522 | 1425 | 5694 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 17:<br>2030 Do Something<br>AM Dev Peak |
|------------------------------------------------|--------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                  |
| 1/1<br>(short)                                 | 961                                              |
| 1/2<br>(with short)                            | 1500(In)<br>539(Out)                             |
| 1/3<br>(with short)                            | 1089(In)<br>723(Out)                             |
| 1/4<br>(short)                                 | 366                                              |
| 2/1                                            | 451                                              |
| 2/2                                            | 316                                              |
| 2/3                                            | 225                                              |
| 3/1                                            | 791                                              |
| 3/2                                            | 634                                              |
| 4/1                                            | 850                                              |
| 4/2                                            | 953                                              |
| 4/3                                            | 366                                              |
| 5/1                                            | 391                                              |
| 5/2<br>(short)                                 | 422                                              |
| 5/3<br>(with short)                            | 761(In)<br>339(Out)                              |
| 6/1                                            | 436                                              |
| 6/2                                            | 786                                              |
| 6/3                                            | 341                                              |
| 7/1                                            | 958                                              |
| 7/2                                            | 800                                              |
| 8/1<br>(short)                                 | 197                                              |
| 8/2<br>(with short)                            | 403(In)<br>206(Out)                              |
| 8/3<br>(with short)                            | 379(In)<br>263(Out)                              |
| 8/4<br>(short)                                 | 116                                              |
| 9/1                                            | 577                                              |
| 10/1                                           | 401                                              |
| 10/2                                           | 647                                              |
| 10/3                                           | 604                                              |
| 10/4                                           | 116                                              |
| 11/1<br>(short)                                | 121                                              |
| 11/2<br>(with short)                           | 762(In)<br>641(Out)                              |
| 12/1                                           | 522                                              |
| 13/1                                           | 647                                              |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 634  |
| 13/3 | 727  |
| 14/1 | 144  |
| 14/2 | 265  |
| 15/1 | 1412 |

**Lane Saturation Flows**

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 16.1 %           | 2098              | 2098                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 83.9 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 72.4 %<br>27.6 % | 1707              | 1707                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 71.6 %           | 1848              | 1848                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 28.4 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 18: '2030 Do Something PM Dev Peak'** (FG18: '2030 Do Something NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 27   | 381 | 0   | 783  | 1191 |
|        | B           | 116  | 0    | 230 | 115 | 826  | 1287 |
|        | C           | 284  | 222  | 0   | 102 | 21   | 629  |
|        | D           | 0    | 79   | 161 | 0   | 182  | 422  |
|        | E           | 865  | 814  | 63  | 352 | 5    | 2099 |
|        | Tot.        | 1265 | 1142 | 835 | 569 | 1817 | 5628 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 18:<br>2030 Do Something<br>PM Dev Peak |
|------------------------------------------------|--------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                  |
| 1/1<br>(short)                                 | 865                                              |
| 1/2<br>(with short)                            | 1126(In)<br>261(Out)                             |
| 1/3<br>(with short)                            | 973(In)<br>616(Out)                              |
| 1/4<br>(short)                                 | 357                                              |
| 2/1                                            | 400                                              |
| 2/2                                            | 273                                              |
| 2/3                                            | 190                                              |
| 3/1                                            | 1049                                             |
| 3/2                                            | 768                                              |
| 4/1                                            | 526                                              |
| 4/2                                            | 813                                              |
| 4/3                                            | 358                                              |
| 5/1                                            | 408                                              |
| 5/2<br>(short)                                 | 422                                              |
| 5/3<br>(with short)                            | 783(In)<br>361(Out)                              |
| 6/1                                            | 605                                              |
| 6/2                                            | 778                                              |
| 6/3                                            | 363                                              |
| 7/1                                            | 553                                              |
| 7/2                                            | 589                                              |
| 8/1<br>(short)                                 | 344                                              |
| 8/2<br>(with short)                            | 786(In)<br>442(Out)                              |
| 8/3<br>(with short)                            | 501(In)<br>384(Out)                              |
| 8/4<br>(short)                                 | 117                                              |
| 9/1                                            | 835                                              |
| 10/1                                           | 467                                              |
| 10/2                                           | 867                                              |
| 10/3                                           | 747                                              |
| 10/4                                           | 117                                              |
| 11/1<br>(short)                                | 102                                              |
| 11/2<br>(with short)                           | 629(In)<br>527(Out)                              |
| 12/1                                           | 569                                              |
| 13/1                                           | 867                                              |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 768  |
| 13/3 | 623  |
| 14/1 | 182  |
| 14/2 | 240  |
| 15/1 | 1265 |

## Lane Saturation Flows

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 27.6 %          | 2086              | 2086                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 72.4 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 93.4 %<br>6.6 % | 1735              | 1735                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 66.9 %          | 1855              | 1855                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 33.1 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 19: '2030 Do Something Sens AM Dev Peak'** (FG19: '2030 Do Something Sens NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 109  | 273 | 0   | 785  | 1167 |
|        | B           | 115  | 0    | 135 | 57  | 482  | 789  |
|        | C           | 336  | 278  | 0   | 122 | 31   | 767  |
|        | D           | 0    | 179  | 78  | 0   | 146  | 403  |
|        | E           | 963  | 1198 | 68  | 345 | 21   | 2595 |
|        | Tot.        | 1414 | 1764 | 554 | 524 | 1465 | 5721 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 19:<br>2030 Do Something<br>Sens AM Dev Peak |
|------------------------------------------------|-------------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                       |
| 1/1<br>(short)                                 | 963                                                   |
| 1/2<br>(with short)                            | 1466(In)<br>503(Out)                                  |
| 1/3<br>(with short)                            | 1129(In)<br>763(Out)                                  |
| 1/4<br>(short)                                 | 366                                                   |
| 2/1                                            | 451                                                   |
| 2/2                                            | 349                                                   |
| 2/3                                            | 186                                                   |
| 3/1                                            | 823                                                   |
| 3/2                                            | 642                                                   |
| 4/1                                            | 851                                                   |
| 4/2                                            | 950                                                   |
| 4/3                                            | 366                                                   |
| 5/1                                            | 382                                                   |
| 5/2<br>(short)                                 | 416                                                   |
| 5/3<br>(with short)                            | 785(In)<br>369(Out)                                   |
| 6/1                                            | 419                                                   |
| 6/2                                            | 779                                                   |
| 6/3                                            | 372                                                   |
| 7/1                                            | 960                                                   |
| 7/2                                            | 804                                                   |
| 8/1<br>(short)                                 | 192                                                   |
| 8/2<br>(with short)                            | 435(In)<br>243(Out)                                   |
| 8/3<br>(with short)                            | 354(In)<br>239(Out)                                   |
| 8/4<br>(short)                                 | 115                                                   |
| 9/1                                            | 554                                                   |
| 10/1                                           | 402                                                   |
| 10/2                                           | 677                                                   |
| 10/3                                           | 611                                                   |
| 10/4                                           | 115                                                   |
| 11/1<br>(short)                                | 122                                                   |
| 11/2<br>(with short)                           | 767(In)<br>645(Out)                                   |
| 12/1                                           | 524                                                   |
| 13/1                                           | 677                                                   |



Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 642  |
| 13/3 | 729  |
| 14/1 | 146  |
| 14/2 | 257  |
| 15/1 | 1414 |

## Lane Saturation Flows

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 15.4 %           | 2099              | 2099                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 84.6 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 71.5 %<br>28.5 % | 1706              | 1706                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 70.3 %           | 1850              | 1850                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 29.7 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 20: '2030 Do Something Sens PM Dev Peak'** (FG20: '2030 Do Something Sens NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 27   | 380 | 0   | 802  | 1209 |
|        | B           | 117  | 0    | 227 | 114 | 840  | 1298 |
|        | C           | 281  | 219  | 0   | 100 | 21   | 621  |
|        | D           | 0    | 79   | 163 | 0   | 189  | 431  |
|        | E           | 865  | 816  | 63  | 352 | 5    | 2101 |
|        | Tot.        | 1263 | 1141 | 833 | 566 | 1857 | 5660 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                           | Scenario 20:<br>2030 Do Something<br>Sens PM Dev Peak |
|------------------------------------------------|-------------------------------------------------------|
| <b>Junction: A46 / A50, Groby - Roundabout</b> |                                                       |
| 1/1<br>(short)                                 | 865                                                   |
| 1/2<br>(with short)                            | 1121(In)<br>256(Out)                                  |
| 1/3<br>(with short)                            | 980(In)<br>623(Out)                                   |
| 1/4<br>(short)                                 | 357                                                   |
| 2/1                                            | 398                                                   |
| 2/2                                            | 270                                                   |
| 2/3                                            | 191                                                   |
| 3/1                                            | 1074                                                  |
| 3/2                                            | 783                                                   |
| 4/1                                            | 518                                                   |
| 4/2                                            | 822                                                   |
| 4/3                                            | 357                                                   |
| 5/1                                            | 407                                                   |
| 5/2<br>(short)                                 | 431                                                   |
| 5/3<br>(with short)                            | 802(In)<br>371(Out)                                   |
| 6/1                                            | 606                                                   |
| 6/2                                            | 785                                                   |
| 6/3                                            | 374                                                   |
| 7/1                                            | 545                                                   |
| 7/2                                            | 596                                                   |
| 8/1<br>(short)                                 | 341                                                   |
| 8/2<br>(with short)                            | 793(In)<br>452(Out)                                   |
| 8/3<br>(with short)                            | 505(In)<br>388(Out)                                   |
| 8/4<br>(short)                                 | 117                                                   |
| 9/1                                            | 833                                                   |
| 10/1                                           | 466                                                   |
| 10/2                                           | 885                                                   |
| 10/3                                           | 762                                                   |
| 10/4                                           | 117                                                   |
| 11/1<br>(short)                                | 100                                                   |
| 11/2<br>(with short)                           | 621(In)<br>521(Out)                                   |
| 12/1                                           | 566                                                   |
| 13/1                                           | 885                                                   |

Full Input Data And Results

|      |      |
|------|------|
| 13/2 | 783  |
| 13/3 | 617  |
| 14/1 | 189  |
| 14/2 | 242  |
| 15/1 | 1263 |

## Lane Saturation Flows

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                 |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.   | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %         | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %         | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %         | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %         | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %         | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                 | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %         | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 27.5 %          | 2086              | 2086                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 72.5 %          |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %         | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 93.4 %<br>6.6 % | 1735              | 1735                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %         | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %         | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %         | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %         | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %         | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                 | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 66.6 %          | 1855              | 1855                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 33.4 %          |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %         | 2080              | 2080                     |

## Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

**Scenario 21: '2030 Do Something Sens AM Dev Peak Reassignment Check'** (FG21: '2030 Do Something Sens NH AM Peak Dev Peak + Re-assignment Check', Plan 1: 'Staging Plan No. 1')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |      |      |     |     |      |      |
|--------|-------------|------|------|-----|-----|------|------|
|        |             | A    | B    | C   | D   | E    | Tot. |
| Origin | A           | 0    | 109  | 273 | 0   | 785  | 1167 |
|        | B           | 115  | 0    | 135 | 57  | 482  | 789  |
|        | C           | 348  | 287  | 0   | 126 | 31   | 792  |
|        | D           | 0    | 179  | 78  | 0   | 146  | 403  |
|        | E           | 953  | 1187 | 68  | 342 | 21   | 2571 |
|        | Tot.        | 1416 | 1762 | 554 | 525 | 1465 | 5722 |
|        |             |      |      |     |     |      |      |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                    | Scenario 21:<br>2030 Do Something<br>Sens AM Dev Peak<br>Reassignment Check |
|-----------------------------------------|-----------------------------------------------------------------------------|
| Junction: A46 / A50, Groby - Roundabout |                                                                             |
| 1/1<br>(short)                          | 953                                                                         |
| 1/2<br>(with short)                     | 1503(In)<br>550(Out)                                                        |
| 1/3<br>(with short)                     | 1068(In)<br>705(Out)                                                        |
| 1/4<br>(short)                          | 363                                                                         |
| 2/1                                     | 463                                                                         |
| 2/2                                     | 293                                                                         |
| 2/3                                     | 251                                                                         |
| 3/1                                     | 872                                                                         |
| 3/2                                     | 593                                                                         |
| 4/1                                     | 832                                                                         |
| 4/2                                     | 967                                                                         |
| 4/3                                     | 363                                                                         |
| 5/1                                     | 382                                                                         |
| 5/2<br>(short)                          | 450                                                                         |
| 5/3<br>(with short)                     | 785(In)<br>335(Out)                                                         |
| 6/1                                     | 419                                                                         |
| 6/2                                     | 812                                                                         |
| 6/3                                     | 336                                                                         |
| 7/1                                     | 941                                                                         |
| 7/2                                     | 821                                                                         |
| 8/1<br>(short)                          | 192                                                                         |
| 8/2<br>(with short)                     | 448(In)<br>256(Out)                                                         |
| 8/3<br>(with short)                     | 341(In)<br>226(Out)                                                         |
| 8/4<br>(short)                          | 115                                                                         |
| 9/1                                     | 554                                                                         |
| 10/1                                    | 399                                                                         |
| 10/2                                    | 726                                                                         |
| 10/3                                    | 562                                                                         |
| 10/4                                    | 115                                                                         |
| 11/1<br>(short)                         | 126                                                                         |
| 11/2<br>(with short)                    | 792(In)<br>666(Out)                                                         |
| 12/1                                    | 525                                                                         |



Full Input Data And Results

|      |      |
|------|------|
| 13/1 | 726  |
| 13/2 | 593  |
| 13/3 | 750  |
| 14/1 | 146  |
| 14/2 | 257  |
| 15/1 | 1416 |

## Lane Saturation Flows

| Junction: A46 / A50, Groby - Roundabout |                                                   |          |               |                           |                    |                  |                   |                          |
|-----------------------------------------|---------------------------------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| Lane                                    | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns             | Turning Radius (m) | Turning Prop.    | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A50 (N))                        | 3.80                                              | 0.00     | Y             | Arm 15 Ahead              | 170.00             | 100.0 %          | 1978              | 1978                     |
| 1/2<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 1/3<br>(A50 (N))                        | 3.60                                              | 0.00     | N             | Arm 4 Ahead               | Inf                | 100.0 %          | 2115              | 2115                     |
| 1/4<br>(A50 (N))                        | 3.60                                              | 0.00     | Y             | Arm 4 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 2/1<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 15 Ahead              | 55.00              | 100.0 %          | 1923              | 1923                     |
| 2/2<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 41.00              | 100.0 %          | 1905              | 1905                     |
| 2/3<br>(Circulating A50 (N))            | 3.60                                              | 0.00     | Y             | Arm 4 Right               | 40.00              | 100.0 %          | 1904              | 1904                     |
| 3/1<br>(EX - A50 NTH Lane 1)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 3/2<br>(EX - A50 NTH Lane 2)            | Infinite Saturation Flow                          |          |               |                           |                    |                  | Inf               | Inf                      |
| 4/1<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 7 Ahead               | Inf                | 100.0 %          | 1975              | 1975                     |
| 4/2<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | N             | Arm 6 Right               | 30.00              | 15.1 %           | 2099              | 2099                     |
|                                         |                                                   |          |               | Arm 7 Ahead               | Inf                | 84.9 %           |                   |                          |
| 4/3<br>(Circulating A46 (E))            | 3.60                                              | 0.00     | Y             | Arm 6 Right               | 24.00              | 100.0 %          | 1859              | 1859                     |
| 5/1<br>(A46 (E) Slip)                   | 3.65                                              | 5.00     | Y             | Arm 6 Ahead<br>Arm 7 Left | 100.00<br>16.00    | 71.5 %<br>28.5 % | 1706              | 1706                     |
| 5/2<br>(A46 (E) Slip)                   | 3.50                                              | 5.00     | Y             | Arm 6 Ahead               | 100.00             | 100.0 %          | 1729              | 1729                     |
| 5/3<br>(A46 (E) Slip)                   | 3.30                                              | 5.00     | Y             | Arm 6 Ahead               | 135.00             | 100.0 %          | 1716              | 1716                     |
| 6/1<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 9 Ahead               | Inf                | 100.0 %          | 1980              | 1980                     |
| 6/2<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | N             | Arm 10 Right              | 45.00              | 100.0 %          | 2052              | 2052                     |
| 6/3<br>(Circulating A50 (S))            | 3.65                                              | 0.00     | Y             | Arm 10 Right              | 44.00              | 100.0 %          | 1915              | 1915                     |
| 7/1<br>(A50 IN Lane 1)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 7/2<br>(A50 IN Lane 2)                  | This lane uses a directly entered Saturation Flow |          |               |                           |                    |                  | 1900              | 1900                     |
| 8/1<br>(A50 (S))                        | 3.65                                              | 0.00     | Y             | Arm 9 Left                | 16.00              | 70.3 %           | 1850              | 1850                     |
|                                         |                                                   |          |               | Arm 10 Ahead              | 100.00             | 29.7 %           |                   |                          |
| 8/2<br>(A50 (S))                        | 3.65                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2085              | 2085                     |
| 8/3<br>(A50 (S))                        | 3.60                                              | 0.00     | N             | Arm 10 Ahead              | 90.00              | 100.0 %          | 2080              | 2080                     |

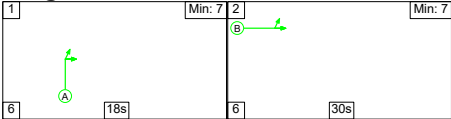
Full Input Data And Results

|                                    |                                                   |      |   |              |       |         |      |      |
|------------------------------------|---------------------------------------------------|------|---|--------------|-------|---------|------|------|
| 8/4<br>(A50 (S))                   | 3.60                                              | 0.00 | Y | Arm 10 Ahead | 87.00 | 100.0 % | 1942 | 1942 |
| 9/1<br>(EX- Leicester Rd Lane 1)   | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 10/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 10/4                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 11/1<br>(Leicester Road Lane 1)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 11/2<br>(Leicester Road Lane 2)    | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 12/1<br>(EX- A46 (W) slip Lane 1)  | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |
| 13/1                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/2                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 13/3                               | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 1800 | 1800 |
| 14/1<br>(A46 (W) Slip Lane 1)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 14/2<br>(A46 (W) Slip Lane 2)      | This lane uses a directly entered Saturation Flow |      |   |              |       |         | 3000 | 3000 |
| 15/1<br>(EX - A46 (E) Slip Lane 1) | Infinite Saturation Flow                          |      |   |              |       |         | Inf  | Inf  |

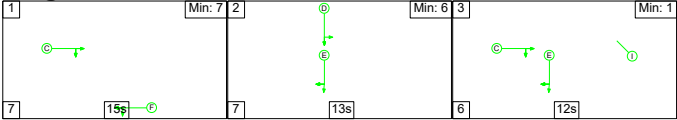
Scenario 1: '2025 Base AM Highway Peak' (FG1: '2025 Base NH AM Peak', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

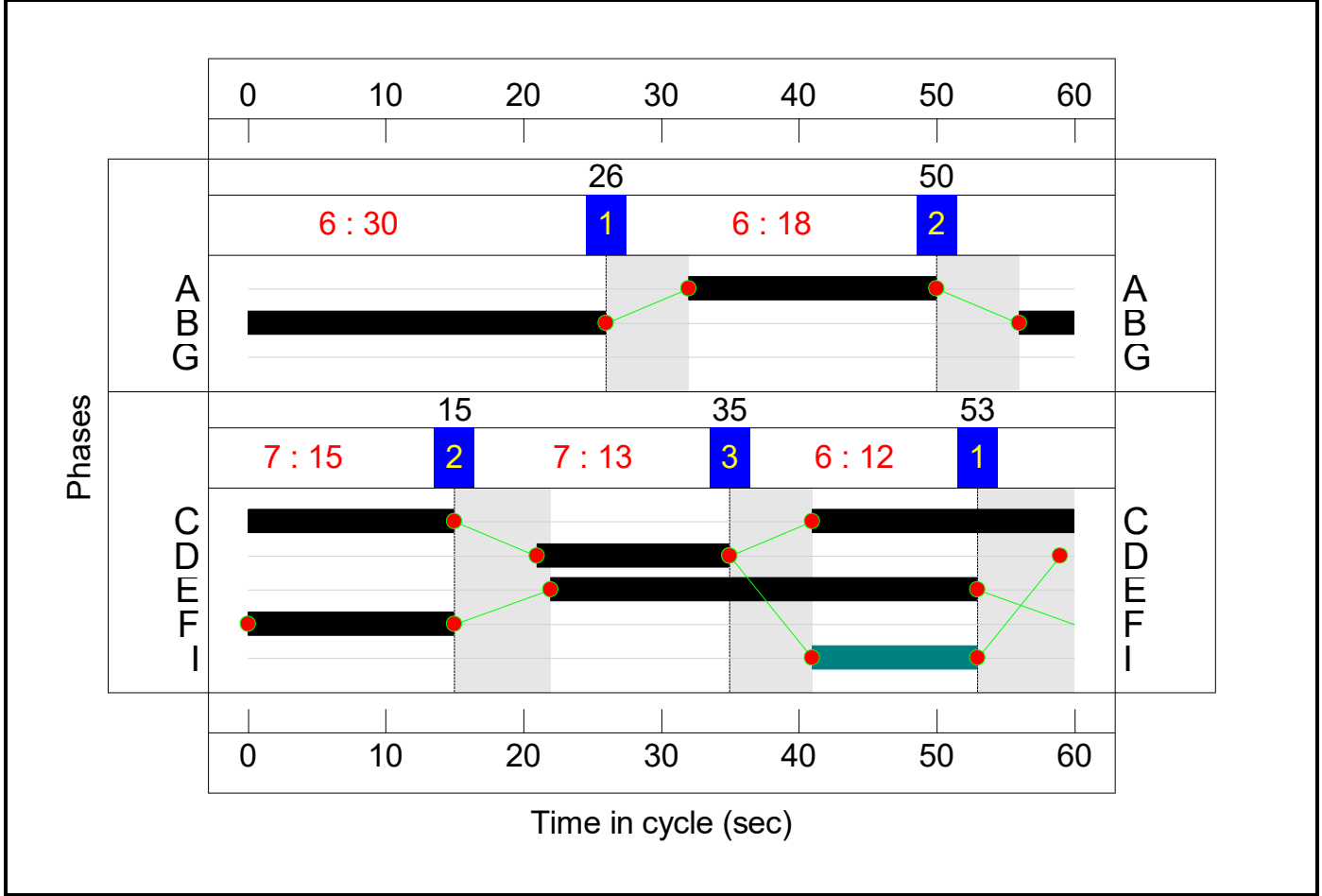
Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 18 | 30 |
| Change Point | 26 | 50 |

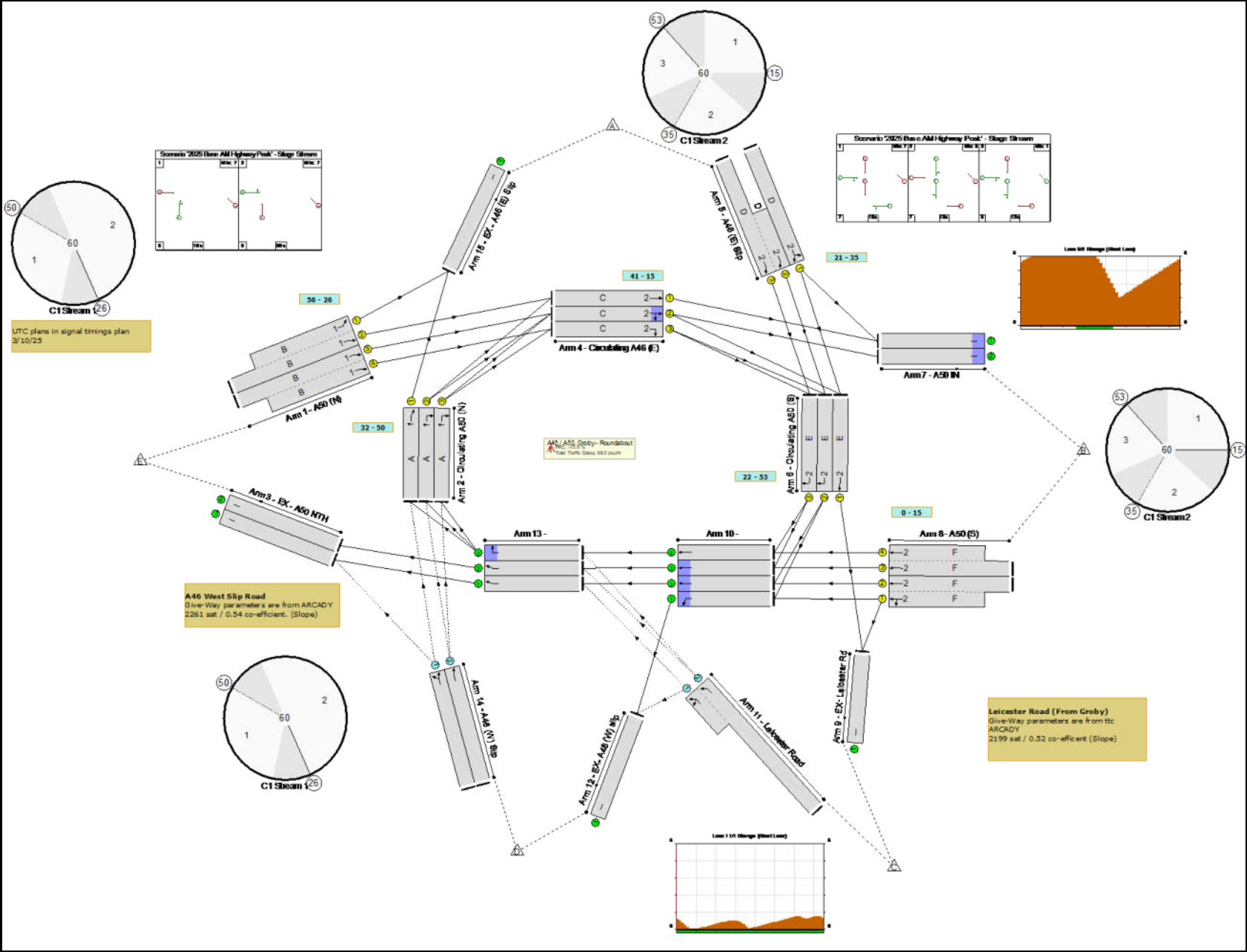
Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 15 | 13 | 12 |
| Change Point | 53 | 15 | 35 |

Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)   |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|---------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>104.3%</b> |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>104.3%</b> |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1390              | 1975:1978         | 774+1022       | 70.3 : 82.8%  |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 980               | 2115:1975         | 1093+586       | 61.1 : 53.2%  |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 465               | 1923              | 609            | 76.4%         |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 272               | 1905              | 603            | 45.1%         |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 236               | 1904              | 603            | 39.1%         |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 931               | Inf               | Inf            | 0.0%          |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 674               | Inf               | Inf            | 0.0%          |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 34              | -               | 806               | 1975              | 1152           | 70.0%         |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 34              | -               | 914               | 2102              | 1226           | 74.5%         |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 34              | -               | 312               | 1859              | 1084           | 28.8%         |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 14              | -               | 303               | 1717              | 429            | 70.6%         |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 14              | -               | 815               | 1716:1729         | 404+432        | 90.1 : 104.3% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 31              | -               | 354               | 1980              | 1056           | 33.5%         |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 31              | -               | 757               | 2052              | 1094           | 67.5%         |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 31              | -               | 370               | 1915              | 1021           | 36.2%         |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 868  | 1900      | 1900    | 45.7%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 801  | 1900      | 1900    | 42.2%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 15 | - | 491  | 2085:1859 | 556+418 | 58.8 : 39.2% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 15 | - | 396  | 2080:1942 | 555+238 | 49.9 : 49.9% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 458  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 353  | 1800      | 1800    | 19.6%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 791  | 1800      | 1800    | 42.9%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 647  | 1800      | 1800    | 35.9%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 119  | 1800      | 1800    | 6.6%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 749  | 3000:3000 | 733+156 | 84.3 : 83.9% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 484  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 791  | 1800      | 1800    | 42.9%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 674  | 1800      | 1800    | 37.4%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 710  | 1800      | 1800    | 39.4%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 140  | 3000      | 222     | 63.2%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 263  | 3000      | 371     | 70.8%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1311 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1901</b>           | <b>0</b>                     | <b>0</b>                    | <b>31.8</b>           | <b>36.7</b>                  | <b>0.0</b>                         | <b>68.5</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1901</b>           | <b>0</b>                     | <b>0</b>                    | <b>31.8</b>           | <b>36.7</b>                  | <b>0.0</b>                         | <b>68.5</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1390           | 1390          | -                     | -                            | -                           | 4.3                   | 1.7                          | -                                  | 6.0<br>(2.1+3.9)    | 15.6<br>(14.1:16.6)       | 11.8                             | 1.7                        | 13.4                 |
| 1/3+1/4                                            | 980            | 980           | -                     | -                            | -                           | 2.6                   | 0.7                          | -                                  | 3.3<br>(2.4+0.9)    | 12.2<br>(12.8:10.9)       | 7.8                              | 0.7                        | 8.5                  |
| 2/1                                                | 465            | 465           | -                     | -                            | -                           | 2.1                   | 1.6                          | -                                  | 3.7                 | 28.8                      | 7.5                              | 1.6                        | 9.1                  |
| 2/2                                                | 272            | 272           | -                     | -                            | -                           | 1.2                   | 0.4                          | -                                  | 1.7                 | 21.9                      | 3.9                              | 0.4                        | 4.3                  |
| 2/3                                                | 236            | 236           | -                     | -                            | -                           | 1.1                   | 0.3                          | -                                  | 1.4                 | 21.7                      | 3.4                              | 0.3                        | 3.7                  |
| 3/1                                                | 912            | 912           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 674            | 674           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 806            | 806           | -                     | -                            | -                           | 2.0                   | 1.2                          | -                                  | 3.1                 | 13.9                      | 8.9                              | 1.2                        | 10.0                 |
| 4/2                                                | 914            | 914           | -                     | -                            | -                           | 2.9                   | 1.5                          | -                                  | 4.3                 | 17.0                      | 10.4                             | 1.5                        | 11.9                 |
| 4/3                                                | 312            | 312           | -                     | -                            | -                           | 0.6                   | 0.2                          | -                                  | 0.8                 | 9.3                       | 2.2                              | 0.2                        | 2.4                  |
| 5/1                                                | 303            | 303           | -                     | -                            | -                           | 1.7                   | 1.2                          | -                                  | 2.9                 | 34.5                      | 4.5                              | 1.2                        | 5.7                  |
| 5/3+5/2                                            | 815            | 796           | -                     | -                            | -                           | 5.5                   | 19.3                         | -                                  | 24.7<br>(6.6+18.1)  | 109.2<br>(65.1:144.8)     | 7.8                              | 19.3                       | 27.1                 |
| 6/1                                                | 354            | 354           | -                     | -                            | -                           | 0.6                   | 0.3                          | -                                  | 0.8                 | 8.3                       | 1.8                              | 0.3                        | 2.0                  |
| 6/2                                                | 738            | 738           | -                     | -                            | -                           | 0.6                   | 0.0                          | -                                  | 0.6                 | 3.0                       | 9.1                              | 0.0                        | 9.1                  |
| 6/3                                                | 370            | 370           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.8                       | 0.1                              | 0.3                        | 0.3                  |
| 7/1                                                | 868            | 868           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.9                       | 4.2                              | 0.4                        | 4.7                  |
| 7/2                                                | 801            | 801           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 2.1                              | 0.4                        | 2.5                  |
| 8/2+8/1                                            | 491            | 491           | -                     | -                            | -                           | 2.5                   | 0.5                          | -                                  | 3.1<br>(2.1+1.0)    | 22.4<br>(22.9:21.4)       | 4.7                              | 0.5                        | 5.2                  |
| 8/3+8/4                                            | 396            | 396           | -                     | -                            | -                           | 2.0                   | 0.5                          | -                                  | 2.5<br>(1.8+0.7)    | 22.7<br>(23.1:21.7)       | 3.8                              | 0.5                        | 4.3                  |
| 9/1                                                | 458            | 458           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

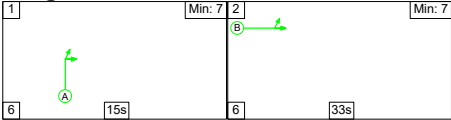


## Full Input Data And Results

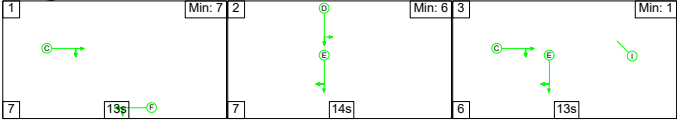
[illegible]

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

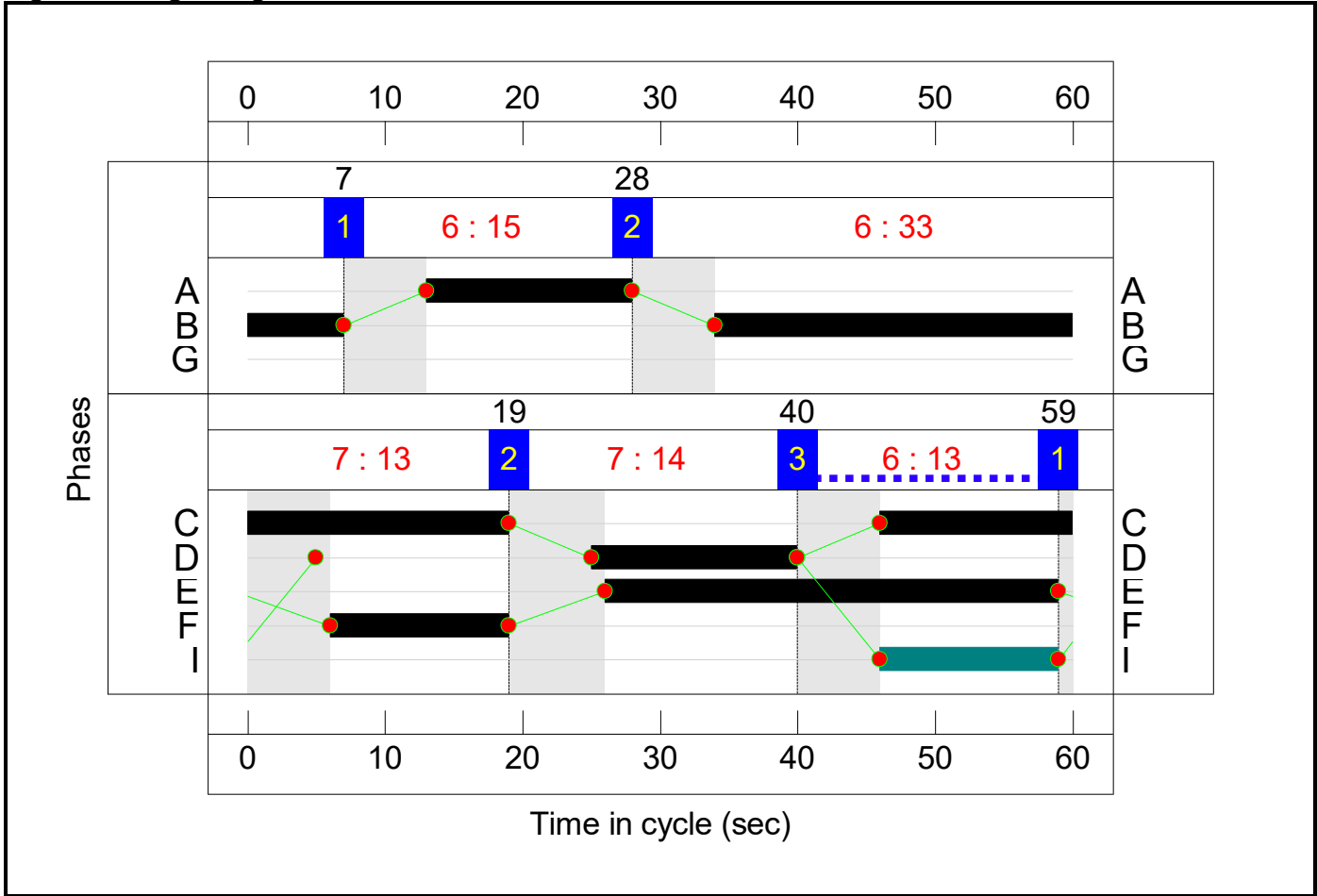
Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 33 |
| Change Point | 7  | 28 |

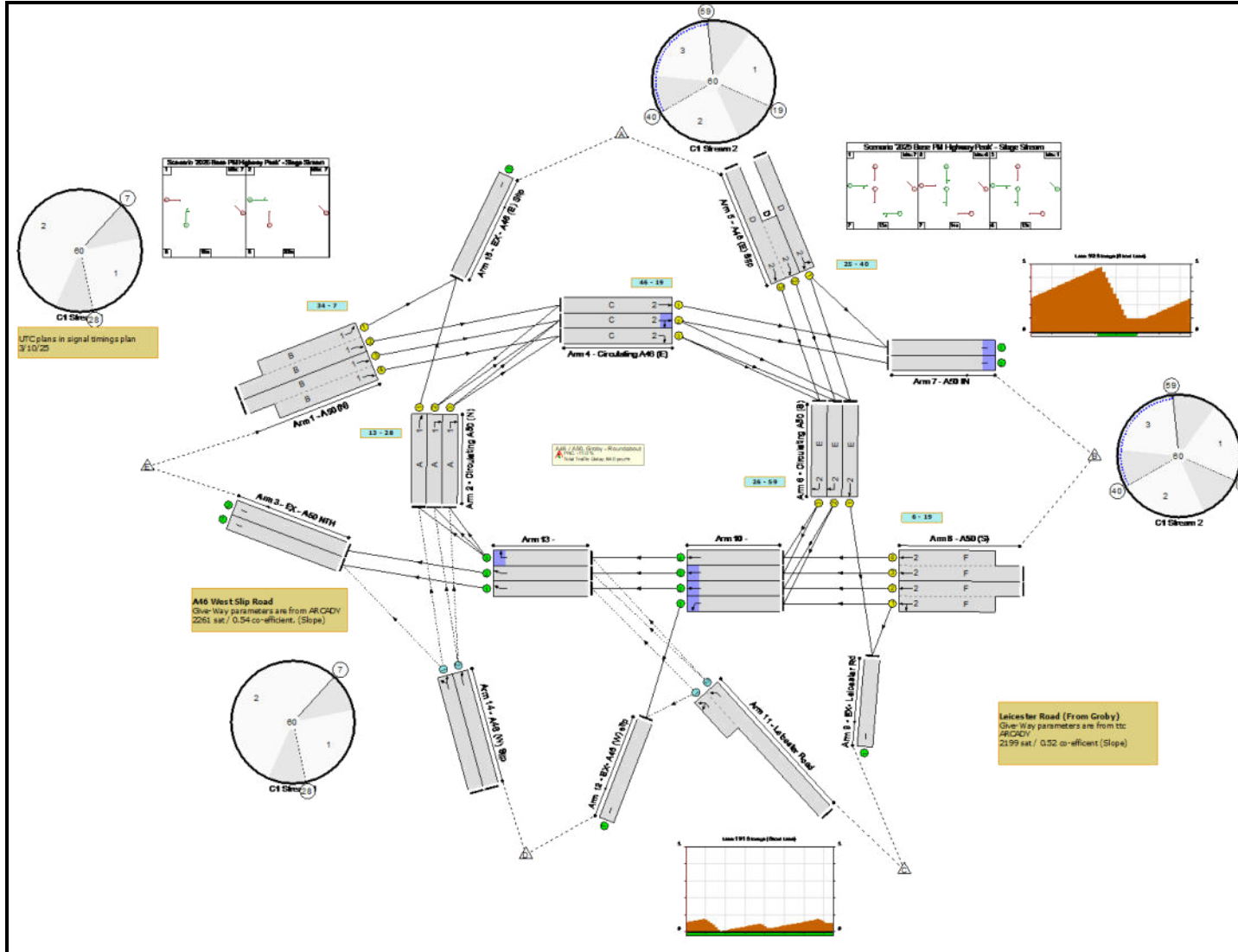
Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 14 | 13 |
| Change Point | 59 | 19 | 40 |

Signal Timings Diagram



### Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 99.9%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 99.9%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1067              | 1975:1978         | 338+1121       | 73.3 : 73.1% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1142              | 2115:1975         | 1199+834       | 56.7 : 55.5% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 403               | 1923              | 513            | 78.6%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 234               | 1905              | 508            | 46.1%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 123               | 1904              | 508            | 24.2%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 903               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 895               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 33              | -               | 482               | 1975              | 1119           | 43.1%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 33              | -               | 802               | 2088              | 1183           | 67.8%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 33              | -               | 463               | 1859              | 1053           | 44.0%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 15              | -               | 389               | 1732              | 462            | 84.2%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 15              | -               | 769               | 1716:1729         | 458+312        | 99.9 : 99.9% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 565               | 1980              | 1122           | 50.4%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 773               | 2052              | 1163           | 66.5%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 459               | 1915              | 1085           | 42.3%        |

## Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 516  | 1900      | 1900    | 27.2%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 592  | 1900      | 1900    | 31.2%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 13 | - | 733  | 2085:1855 | 487+433 | 85.1 : 73.7% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 13 | - | 531  | 2080:1942 | 485+125 | 87.0 : 87.0% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 778  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 566  | 1800      | 1800    | 31.4%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 727  | 1800      | 1800    | 40.4%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 881  | 1800      | 1800    | 48.9%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 109  | 1800      | 1800    | 6.1%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 572  | 3000:3000 | 596+101 | 79.4 : 98.0% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 665  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 727  | 1800      | 1800    | 40.4%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 895  | 1800      | 1800    | 49.7%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 568  | 1800      | 1800    | 31.6%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 176  | 3000      | 252     | 69.7%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 192  | 3000      | 371     | 51.7%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1222 | 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: A50/A46 Rbt, Groby, Leicestershire | -              | -             | 1512                  | 0                            | 0                           | 29.4                  | 34.6                         | 0.0                                | 64.0                | -                         | -                                | -                          | -                    |
| A46 / A50, Groby - Roundabout               | -              | -             | 1512                  | 0                            | 0                           | 29.4                  | 34.6                         | 0.0                                | 64.0                | -                         | -                                | -                          | -                    |
| 1/2+1/1                                     | 1067           | 1067          | -                     | -                            | -                           | 2.6                   | 1.4                          | -                                  | 4.0<br>(0.8+3.2)    | 13.4<br>(11.0:14.2)       | 10.0                             | 1.4                        | 11.4                 |
| 1/3+1/4                                     | 1142           | 1142          | -                     | -                            | -                           | 2.5                   | 0.6                          | -                                  | 3.2<br>(1.9+1.2)    | 9.9 (10.3:9.4)            | 7.2                              | 0.6                        | 7.8                  |
| 2/1                                         | 403            | 403           | -                     | -                            | -                           | 1.7                   | 1.8                          | -                                  | 3.5                 | 30.9                      | 5.1                              | 1.8                        | 6.9                  |
| 2/2                                         | 234            | 234           | -                     | -                            | -                           | 0.9                   | 0.4                          | -                                  | 1.3                 | 20.6                      | 3.3                              | 0.4                        | 3.7                  |
| 2/3                                         | 123            | 123           | -                     | -                            | -                           | 0.5                   | 0.2                          | -                                  | 0.7                 | 20.7                      | 1.8                              | 0.2                        | 1.9                  |
| 3/1                                         | 903            | 903           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                         | 895            | 895           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                         | 482            | 482           | -                     | -                            | -                           | 1.7                   | 0.4                          | -                                  | 2.1                 | 15.8                      | 6.5                              | 0.4                        | 6.9                  |
| 4/2                                         | 802            | 802           | -                     | -                            | -                           | 1.4                   | 1.0                          | -                                  | 2.4                 | 10.9                      | 10.5                             | 1.0                        | 11.5                 |
| 4/3                                         | 463            | 463           | -                     | -                            | -                           | 0.1                   | 0.4                          | -                                  | 0.5                 | 4.1                       | 3.8                              | 0.4                        | 4.1                  |
| 5/1                                         | 389            | 389           | -                     | -                            | -                           | 2.2                   | 2.5                          | -                                  | 4.7                 | 43.9                      | 6.1                              | 2.5                        | 8.5                  |
| 5/3+5/2                                     | 769            | 769           | -                     | -                            | -                           | 4.5                   | 13.6                         | -                                  | 18.1<br>(10.9+7.2)  | 84.8<br>(85.7:83.4)       | 7.5                              | 13.6                       | 21.1                 |
| 6/1                                         | 565            | 565           | -                     | -                            | -                           | 0.3                   | 0.5                          | -                                  | 0.8                 | 5.2                       | 1.0                              | 0.5                        | 1.5                  |
| 6/2                                         | 773            | 773           | -                     | -                            | -                           | 1.1                   | 0.0                          | -                                  | 1.1                 | 5.3                       | 7.8                              | 0.0                        | 7.8                  |
| 6/3                                         | 459            | 459           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 2.9                       | 0.0                              | 0.4                        | 0.4                  |
| 7/1                                         | 516            | 516           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 1.7                              | 0.2                        | 1.9                  |
| 7/2                                         | 592            | 592           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                     | 733            | 733           | -                     | -                            | -                           | 4.4                   | 1.9                          | -                                  | 6.3<br>(3.6+2.7)    | 31.2<br>(31.5:30.8)       | 6.6                              | 1.9                        | 8.5                  |
| 8/3+8/4                                     | 531            | 531           | -                     | -                            | -                           | 3.2                   | 3.1                          | -                                  | 6.3<br>(5.1+1.2)    | 42.4<br>(43.1:39.7)       | 6.7                              | 3.1                        | 9.8                  |
| 9/1                                         | 778            | 778           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

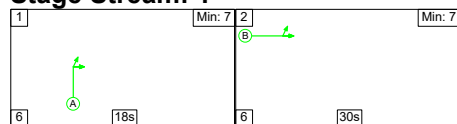
[illegible]

## Full Input Data And Results

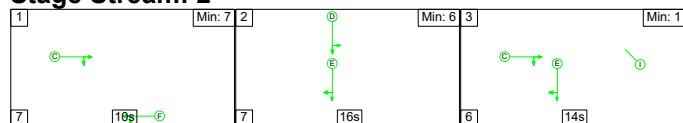
**Scenario 3: '2030 Do Minimum AM Highway Peak'** (FG3: '2030 Do Minimum NH AM Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

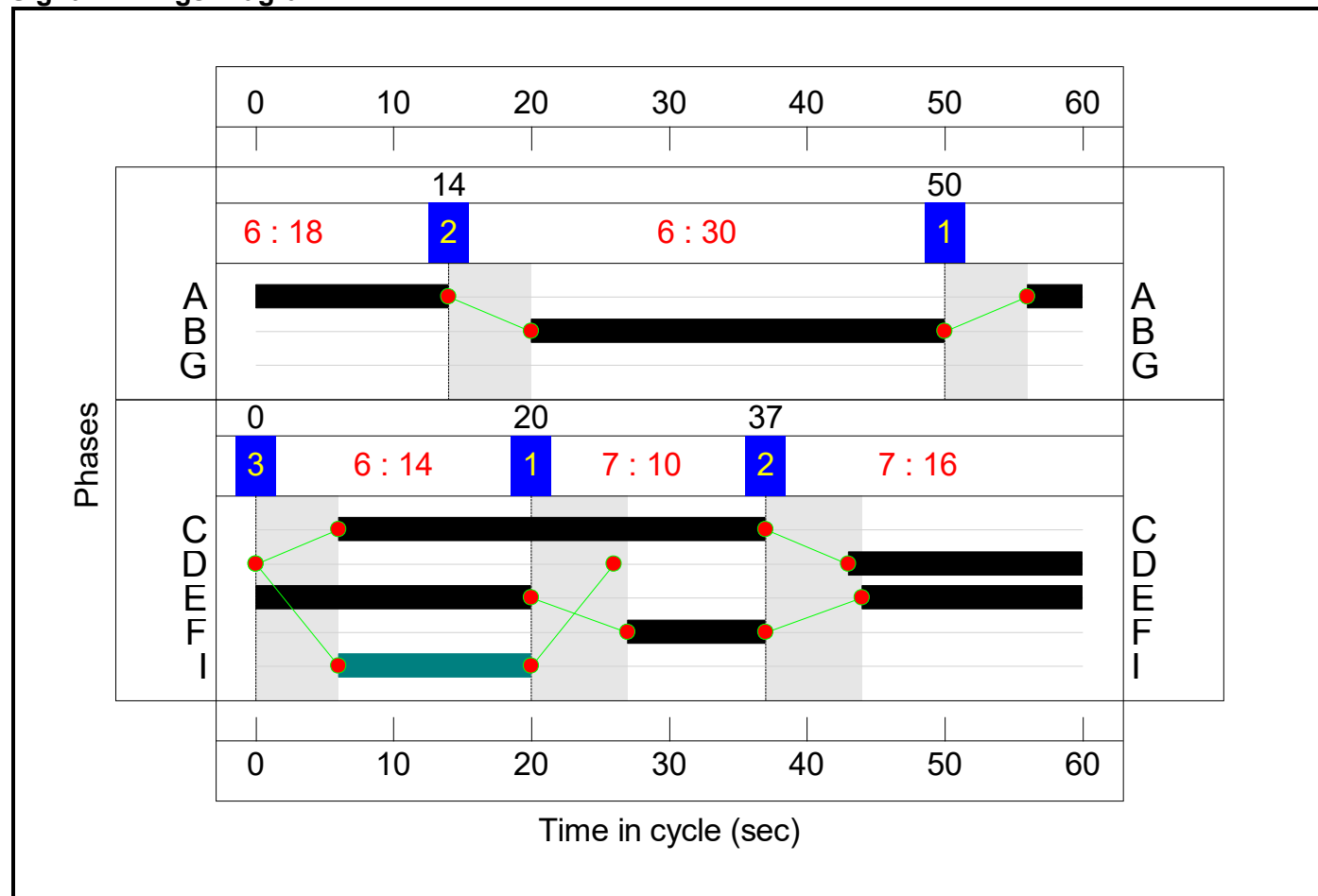
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 18 | 30 |
| Change Point | 50 | 14 |

#### Stage Stream: 2

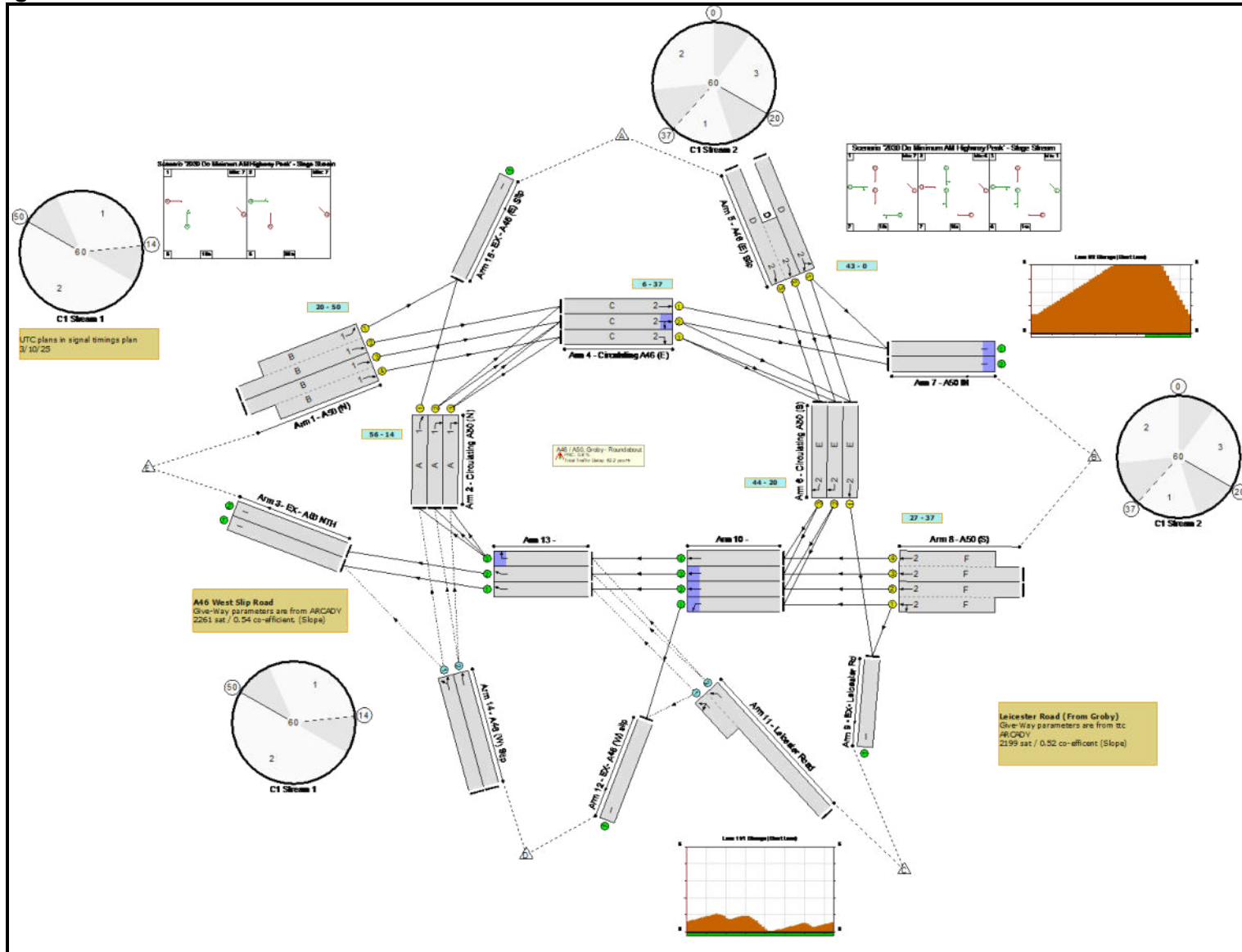
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 16 | 14 |
| Change Point | 20 | 37 | 0  |

### Signal Timings Diagram





## Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 89.5%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 89.5%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1426              | 1975:1978         | 756+1022       | 72.1 : 86.2% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1050              | 2115:1975         | 1093+602       | 65.0 : 56.5% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 476               | 1923              | 609            | 78.2%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 302               | 1905              | 603            | 50.1%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 207               | 1904              | 603            | 34.3%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 912               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 752               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 844               | 1975              | 1053           | 80.1%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 914               | 2101              | 1121           | 81.6%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 346               | 1859              | 991            | 34.9%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 359               | 1717              | 515            | 69.7%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 861               | 1716:1729         | 493+519        | 82.8 : 87.3% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 413               | 1980              | 1221           | 33.8%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 799               | 2052              | 1265           | 63.1%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 408               | 1915              | 1181           | 34.5%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 915  | 1900      | 1900    | 48.2%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 789  | 1900      | 1900    | 41.5%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 10 | - | 497  | 2085:1854 | 382+340 | 81.1 : 55.0% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 10 | - | 453  | 2080:1942 | 381+162 | 83.4 : 83.4% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 539  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 387  | 1800      | 1800    | 21.5%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 783  | 1800      | 1800    | 43.5%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 726  | 1800      | 1800    | 40.3%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 135  | 1800      | 1800    | 7.5%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 752  | 3000:3000 | 696+153 | 88.4 : 89.5% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 524  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 783  | 1800      | 1800    | 43.5%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 752  | 1800      | 1800    | 41.8%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 724  | 1800      | 1800    | 40.2%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 129  | 3000      | 223     | 57.8%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 261  | 3000      | 479     | 54.5%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1357 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1894</b>           | <b>0</b>                     | <b>0</b>                    | <b>36.8</b>           | <b>25.3</b>                  | <b>0.0</b>                         | <b>62.2</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1894</b>           | <b>0</b>                     | <b>0</b>                    | <b>36.8</b>           | <b>25.3</b>                  | <b>0.0</b>                         | <b>62.2</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1426           | 1426          | -                     | -                            | -                           | 4.6                   | 2.0                          | -                                  | 6.6<br>(2.2+4.3)    | 16.6<br>(14.7:17.7)       | 12.7                             | 2.0                        | 14.7                 |
| 1/3+1/4                                            | 1050           | 1050          | -                     | -                            | -                           | 2.9                   | 0.8                          | -                                  | 3.7<br>(2.6+1.1)    | 12.7<br>(13.3:11.3)       | 8.5                              | 0.8                        | 9.3                  |
| 2/1                                                | 476            | 476           | -                     | -                            | -                           | 2.4                   | 1.7                          | -                                  | 4.1                 | 31.3                      | 7.8                              | 1.7                        | 9.5                  |
| 2/2                                                | 302            | 302           | -                     | -                            | -                           | 1.7                   | 0.5                          | -                                  | 2.2                 | 25.7                      | 4.8                              | 0.5                        | 5.3                  |
| 2/3                                                | 207            | 207           | -                     | -                            | -                           | 1.0                   | 0.3                          | -                                  | 1.3                 | 22.2                      | 2.9                              | 0.3                        | 3.2                  |
| 3/1                                                | 912            | 912           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 752            | 752           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 844            | 844           | -                     | -                            | -                           | 3.0                   | 2.0                          | -                                  | 5.0                 | 21.3                      | 10.7                             | 2.0                        | 12.6                 |
| 4/2                                                | 914            | 914           | -                     | -                            | -                           | 4.2                   | 2.2                          | -                                  | 6.3                 | 25.0                      | 11.6                             | 2.2                        | 13.8                 |
| 4/3                                                | 346            | 346           | -                     | -                            | -                           | 0.9                   | 0.3                          | -                                  | 1.2                 | 12.5                      | 2.9                              | 0.3                        | 3.2                  |
| 5/1                                                | 359            | 359           | -                     | -                            | -                           | 1.9                   | 1.1                          | -                                  | 3.0                 | 30.0                      | 5.3                              | 1.1                        | 6.4                  |
| 5/3+5/2                                            | 861            | 861           | -                     | -                            | -                           | 4.7                   | 2.8                          | -                                  | 7.5<br>(3.5+4.0)    | 31.2<br>(30.8:31.5)       | 7.0                              | 2.8                        | 9.8                  |
| 6/1                                                | 413            | 413           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.7                 | 6.5                       | 1.8                              | 0.3                        | 2.1                  |
| 6/2                                                | 799            | 799           | -                     | -                            | -                           | 0.5                   | 0.0                          | -                                  | 0.5                 | 2.3                       | 8.6                              | 0.0                        | 8.6                  |
| 6/3                                                | 408            | 408           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.3                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                                | 915            | 915           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.5                 | 2.0                       | 6.0                              | 0.5                        | 6.4                  |
| 7/2                                                | 789            | 789           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 2.2                              | 0.4                        | 2.6                  |
| 8/2+8/1                                            | 497            | 497           | -                     | -                            | -                           | 3.2                   | 1.1                          | -                                  | 4.3<br>(2.7+1.6)    | 31.0<br>(31.4:30.2)       | 4.9                              | 1.1                        | 6.0                  |
| 8/3+8/4                                            | 453            | 453           | -                     | -                            | -                           | 2.9                   | 2.4                          | -                                  | 5.3<br>(3.8+1.5)    | 42.0<br>(42.6:40.5)       | 5.0                              | 2.4                        | 7.4                  |
| 9/1                                                | 539            | 539           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

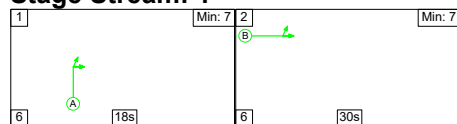
|           |      |      |                                        |   |     |                                          |     |   |                  |                     |     |     |      |
|-----------|------|------|----------------------------------------|---|-----|------------------------------------------|-----|---|------------------|---------------------|-----|-----|------|
| 10/1      | 387  | 387  | -                                      | - | -   | 0.0                                      | 0.1 | - | 0.1              | 1.3                 | 0.0 | 0.1 | 0.1  |
| 10/2      | 783  | 783  | -                                      | - | -   | 0.0                                      | 0.4 | - | 0.4              | 2.0                 | 4.1 | 0.4 | 4.5  |
| 10/3      | 726  | 726  | -                                      | - | -   | 0.0                                      | 0.3 | - | 0.3              | 1.7                 | 2.1 | 0.3 | 2.4  |
| 10/4      | 135  | 135  | -                                      | - | -   | 0.0                                      | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0  |
| 11/2+11/1 | 752  | 752  | 1504                                   | 0 | 0   | 2.0                                      | 3.6 | - | 5.6<br>(4.4+1.2) | 26.6<br>(25.6:31.2) | 9.4 | 3.6 | 13.0 |
| 12/1      | 524  | 524  | -                                      | - | -   | 0.0                                      | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0  |
| 13/1      | 783  | 783  | -                                      | - | -   | 0.0                                      | 0.4 | - | 0.4              | 1.8                 | 0.0 | 0.4 | 0.4  |
| 13/2      | 752  | 752  | -                                      | - | -   | 0.0                                      | 0.4 | - | 0.4              | 1.7                 | 0.0 | 0.4 | 0.4  |
| 13/3      | 724  | 724  | -                                      | - | -   | 0.0                                      | 0.3 | - | 0.3              | 1.7                 | 0.0 | 0.3 | 0.3  |
| 14/1      | 129  | 129  | 129                                    | 0 | 0   | 0.2                                      | 0.7 | - | 0.9              | 24.0                | 0.9 | 0.7 | 1.5  |
| 14/2      | 261  | 261  | 261                                    | 0 | 0   | 0.4                                      | 0.6 | - | 1.0              | 13.1                | 1.6 | 0.6 | 2.2  |
| 15/1      | 1357 | 1357 | -                                      | - | -   | 0.0                                      | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0  |
| C1        |      |      | Stream: 1 PRC for Signalled Lanes (%): |   | 4.4 | Total Delay for Signalled Lanes (pcuHr): |     |   | 17.82            | Cycle Time (s):     |     | 60  |      |
| C1        |      |      | Stream: 2 PRC for Signalled Lanes (%): |   | 3.1 | Total Delay for Signalled Lanes (pcuHr): |     |   | 34.05            | Cycle Time (s):     |     | 60  |      |
|           |      |      | PRC Over All Lanes (%):                |   | 0.6 | Total Delay Over All Lanes(pcuHr):       |     |   | 62.16            |                     |     |     |      |

## Full Input Data And Results

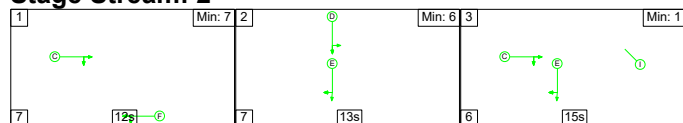
**Scenario 4: '2030 Do Minimum PM Highway Peak'** (FG4: '2030 Do Minimum NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

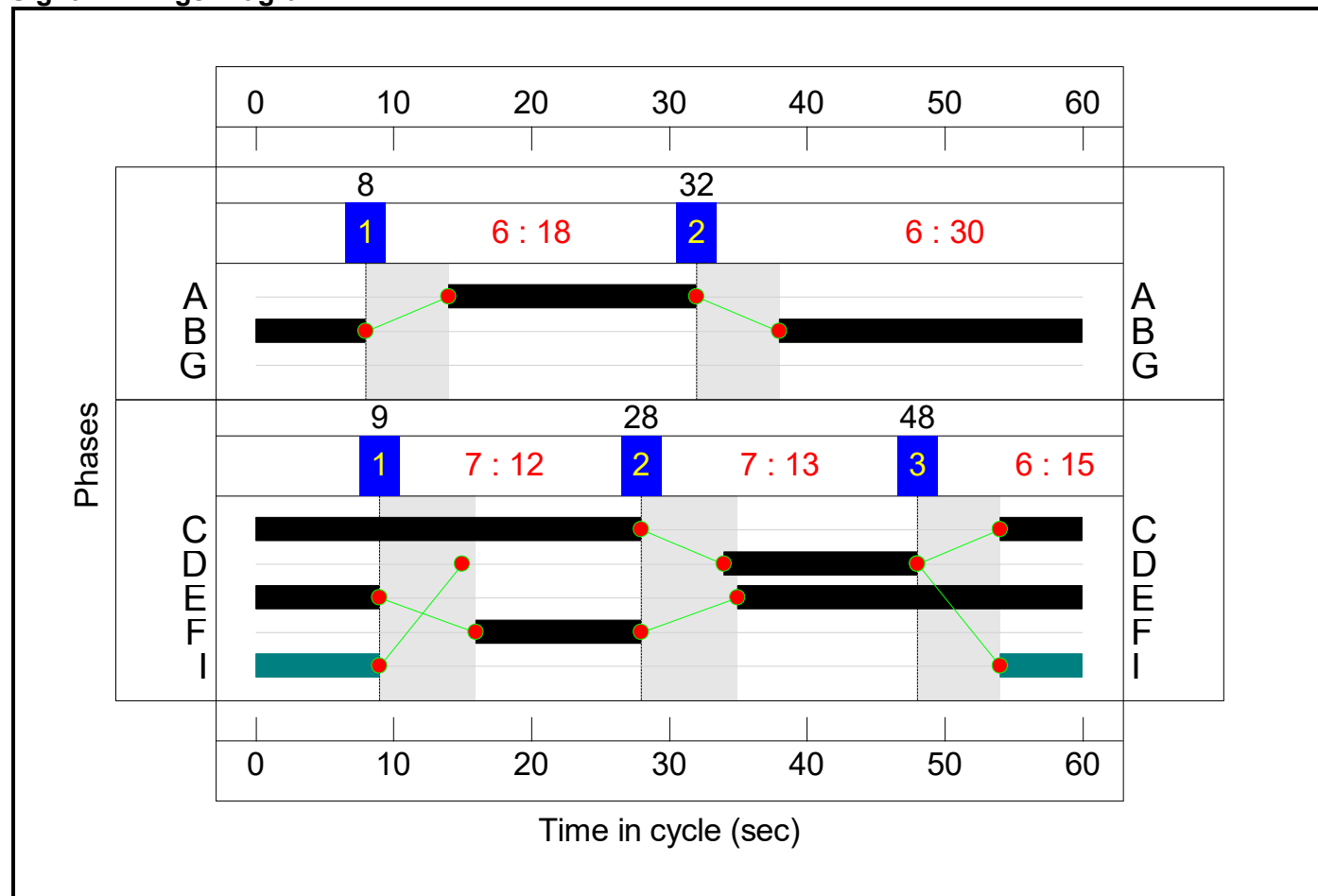
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 18 | 30 |
| Change Point | 8  | 32 |

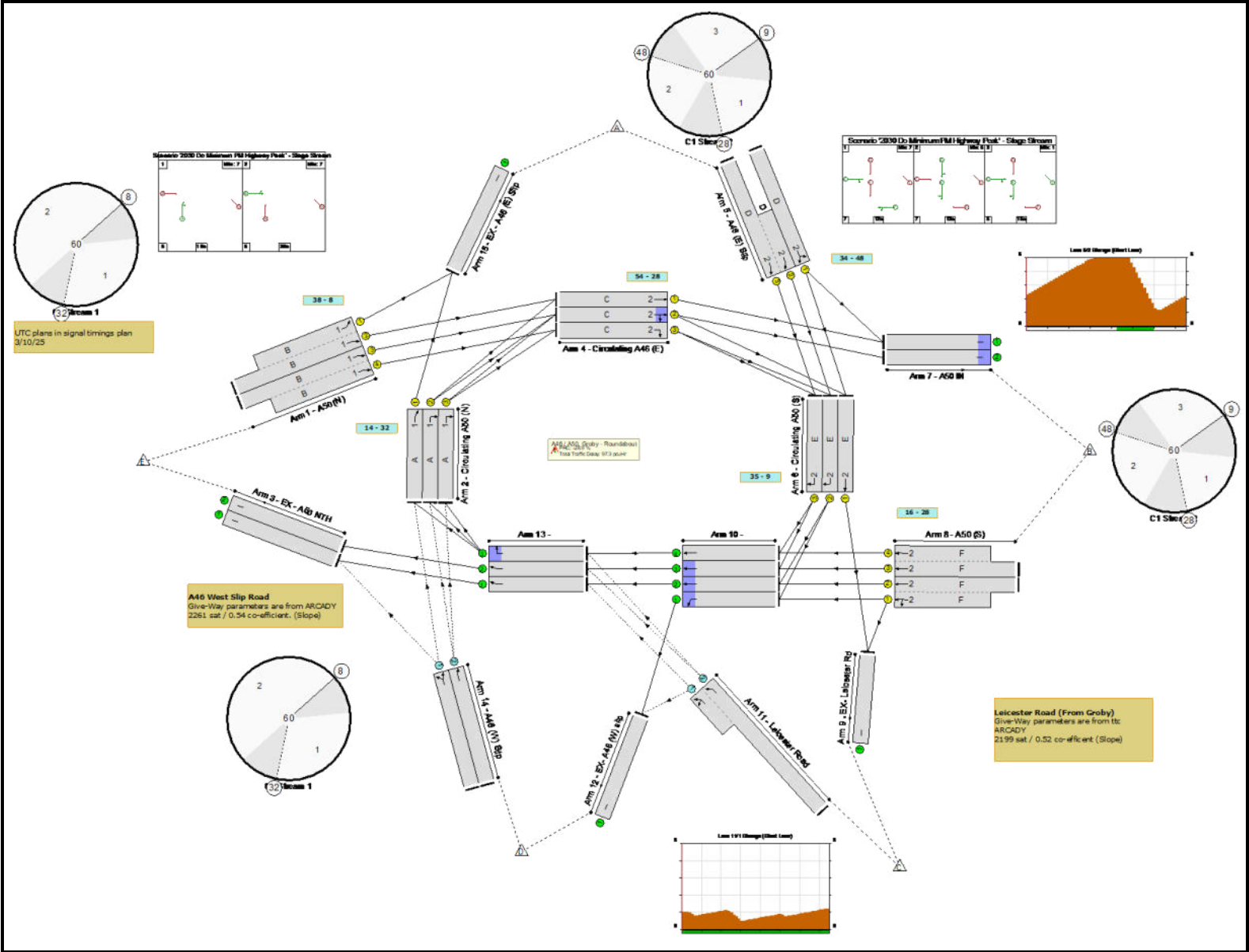
#### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 12 | 13 | 15 |
| Change Point | 9  | 28 | 48 |

### Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)   |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|---------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>116.0%</b> |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>116.0%</b> |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1143              | 1975:1978         | 283+1022       | 87.6 : 87.6%  |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1271              | 2115:1975         | 1093+822       | 69.8 : 61.8%  |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 449               | 1923              | 609            | 71.6%         |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 285               | 1905              | 603            | 46.0%         |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 136               | 1904              | 603            | 22.4%         |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1028              | Inf               | Inf            | 0.0%          |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 812               | Inf               | Inf            | 0.0%          |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 34              | -               | 518               | 1975              | 1152           | 44.3%         |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 34              | -               | 895               | 2089              | 1219           | 73.4%         |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 34              | -               | 527               | 1859              | 1084           | 48.5%         |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 14              | -               | 418               | 1732              | 433            | 96.5%         |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 14              | -               | 791               | 1716:1729         | 429+432        | 92.5 : 91.2%  |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 34              | -               | 602               | 1980              | 1155           | 52.1%         |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 34              | -               | 920               | 2052              | 1197           | 76.8%         |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 34              | -               | 398               | 1915              | 1117           | 35.6%         |



# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |                   |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|-------------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 555  | 1900      | 1900    | 28.8%             |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 674  | 1900      | 1900    | 35.5%             |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 12 | - | 801  | 2085:1856 | 452+402 | 100.7 :<br>86.0%  |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 12 | - | 516  | 2080:1942 | 451+132 | 88.5 :<br>88.5%   |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 829  | Inf       | Inf     | 0.0%              |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 643  | 1800      | 1800    | 35.7%             |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 851  | 1800      | 1800    | 47.1%             |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 797  | 1800      | 1800    | 44.3%             |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 117  | 1800      | 1800    | 6.5%              |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 658  | 3000:3000 | 540+83  | 104.2 :<br>116.0% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 739  | Inf       | Inf     | 0.0%              |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 851  | 1800      | 1800    | 47.1%             |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 812  | 1800      | 1800    | 45.1%             |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 664  | 1800      | 1800    | 35.7%             |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 177  | 3000      | 260     | 68.0%             |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 206  | 3000      | 409     | 50.4%             |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1344 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1628</b>           | <b>0</b>                     | <b>0</b>                    | <b>35.9</b>           | <b>61.4</b>                  | <b>0.0</b>                         | <b>97.3</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1628</b>           | <b>0</b>                     | <b>0</b>                    | <b>35.9</b>           | <b>61.4</b>                  | <b>0.0</b>                         | <b>97.3</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1143           | 1143          | -                     | -                            | -                           | 3.7                   | 3.4                          | -                                  | 7.1<br>(1.3+5.8)    | 22.4<br>(18.7:23.5)       | 12.9                             | 3.4                        | 16.3                 |
| 1/3+1/4                                            | 1271           | 1271          | -                     | -                            | -                           | 3.7                   | 1.0                          | -                                  | 4.6<br>(2.9+1.7)    | 13.1<br>(13.8:12.2)       | 9.5                              | 1.0                        | 10.5                 |
| 2/1                                                | 436            | 436           | -                     | -                            | -                           | 2.7                   | 1.2                          | -                                  | 3.9                 | 32.2                      | 6.0                              | 1.2                        | 7.3                  |
| 2/2                                                | 277            | 277           | -                     | -                            | -                           | 1.0                   | 0.4                          | -                                  | 1.5                 | 18.9                      | 3.2                              | 0.4                        | 3.7                  |
| 2/3                                                | 135            | 135           | -                     | -                            | -                           | 0.4                   | 0.1                          | -                                  | 0.5                 | 14.3                      | 1.6                              | 0.1                        | 1.7                  |
| 3/1                                                | 1025           | 1025          | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 811            | 811           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 510            | 510           | -                     | -                            | -                           | 1.1                   | 0.4                          | -                                  | 1.5                 | 10.6                      | 5.1                              | 0.4                        | 5.5                  |
| 4/2                                                | 895            | 895           | -                     | -                            | -                           | 1.3                   | 1.4                          | -                                  | 2.6                 | 10.5                      | 12.2                             | 1.4                        | 13.6                 |
| 4/3                                                | 526            | 526           | -                     | -                            | -                           | 0.5                   | 0.5                          | -                                  | 1.0                 | 6.8                       | 6.4                              | 0.5                        | 6.9                  |
| 5/1                                                | 418            | 418           | -                     | -                            | -                           | 2.6                   | 7.1                          | -                                  | 9.7                 | 83.7                      | 6.9                              | 7.1                        | 14.0                 |
| 5/3+5/2                                            | 791            | 791           | -                     | -                            | -                           | 4.8                   | 4.9                          | -                                  | 9.8<br>(4.9+4.9)    | 44.4<br>(44.4:44.3)       | 6.4                              | 4.9                        | 11.3                 |
| 6/1                                                | 602            | 602           | -                     | -                            | -                           | 0.5                   | 0.5                          | -                                  | 1.0                 | 6.0                       | 3.9                              | 0.5                        | 4.5                  |
| 6/2                                                | 919            | 919           | -                     | -                            | -                           | 0.9                   | 0.0                          | -                                  | 0.9                 | 3.7                       | 7.5                              | 0.0                        | 7.5                  |
| 6/3                                                | 398            | 398           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.5                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                                | 547            | 547           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.1                              | 0.2                        | 0.3                  |
| 7/2                                                | 674            | 674           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |
| 8/2+8/1                                            | 801            | 798           | -                     | -                            | -                           | 5.2                   | 7.8                          | -                                  | 13.0<br>(8.2+4.8)   | 58.4<br>(64.7:50.3)       | 7.6                              | 7.8                        | 15.4                 |
| 8/3+8/4                                            | 516            | 516           | -                     | -                            | -                           | 3.2                   | 3.5                          | -                                  | 6.7<br>(5.2+1.4)    | 46.4<br>(47.2:44.0)       | 6.4                              | 3.5                        | 9.9                  |
| 9/1                                                | 829            | 829           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

|           |      |      |      |   |   |     |      |   |                    |                        |      |      |      |
|-----------|------|------|------|---|---|-----|------|---|--------------------|------------------------|------|------|------|
| 10/1      | 642  | 642  | -    | - | - | 0.0 | 0.3  | - | 0.3                | 1.6                    | 0.0  | 0.3  | 0.3  |
| 10/2      | 848  | 848  | -    | - | - | 0.1 | 0.4  | - | 0.5                | 2.2                    | 4.7  | 0.4  | 5.1  |
| 10/3      | 797  | 797  | -    | - | - | 0.0 | 0.4  | - | 0.4                | 1.9                    | 3.6  | 0.4  | 4.0  |
| 10/4      | 117  | 117  | -    | - | - | 0.0 | 0.0  | - | 0.0                | 1.1                    | 0.0  | 0.0  | 0.0  |
| 11/2+11/1 | 658  | 622  | 1245 | 0 | 0 | 3.4 | 24.5 | - | 27.9<br>(19.5+8.5) | 152.8<br>(124.8:317.0) | 24.2 | 24.5 | 48.7 |
| 12/1      | 725  | 725  | -    | - | - | 0.0 | 0.0  | - | 0.0                | 0.0                    | 0.0  | 0.0  | 0.0  |
| 13/1      | 848  | 848  | -    | - | - | 0.0 | 0.4  | - | 0.4                | 1.9                    | 0.0  | 0.4  | 0.4  |
| 13/2      | 811  | 811  | -    | - | - | 0.0 | 0.4  | - | 0.4                | 1.8                    | 0.0  | 0.4  | 0.4  |
| 13/3      | 642  | 642  | -    | - | - | 0.0 | 0.3  | - | 0.3                | 1.6                    | 1.7  | 0.3  | 1.9  |
| 14/1      | 177  | 177  | 177  | 0 | 0 | 0.5 | 1.0  | - | 1.5                | 31.0                   | 2.5  | 1.0  | 3.5  |
| 14/2      | 206  | 206  | 206  | 0 | 0 | 0.3 | 0.5  | - | 0.8                | 14.3                   | 1.2  | 0.5  | 1.7  |
| 15/1      | 1331 | 1331 | -    | - | - | 0.0 | 0.0  | - | 0.0                | 0.0                    | 0.0  | 0.0  | 0.0  |

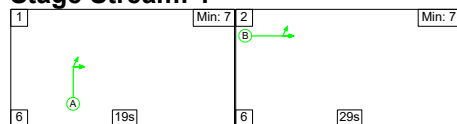
|    |           |                              |       |                                           |       |                 |    |
|----|-----------|------------------------------|-------|-------------------------------------------|-------|-----------------|----|
| C1 | Stream: 1 | PRC for Signalised Lanes (%) | 2.8   | Total Delay for Signalised Lanes (pcuHr): | 17.65 | Cycle Time (s): | 60 |
| C1 | Stream: 2 | PRC for Signalised Lanes (%) | -11.9 | Total Delay for Signalised Lanes (pcuHr): | 46.48 | Cycle Time (s): | 60 |
|    |           | PRC Over All Lanes (%)       | -28.9 | Total Delay Over All Lanes (pcuHr):       | 97.29 |                 |    |

# Full Input Data And Results

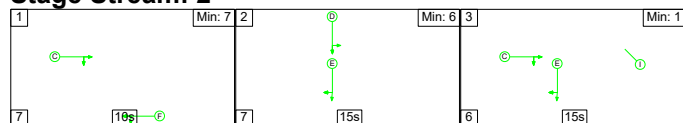
**Scenario 5: '2030 Do Minimum Sens AM Highway Peak'** (FG5: '2030 Do Minimum Sens NH AM Peak', Plan 1: 'Staging Plan No. 1')

## Stage Sequence Diagram

### Stage Stream: 1



### Stage Stream: 2



## Stage Timings

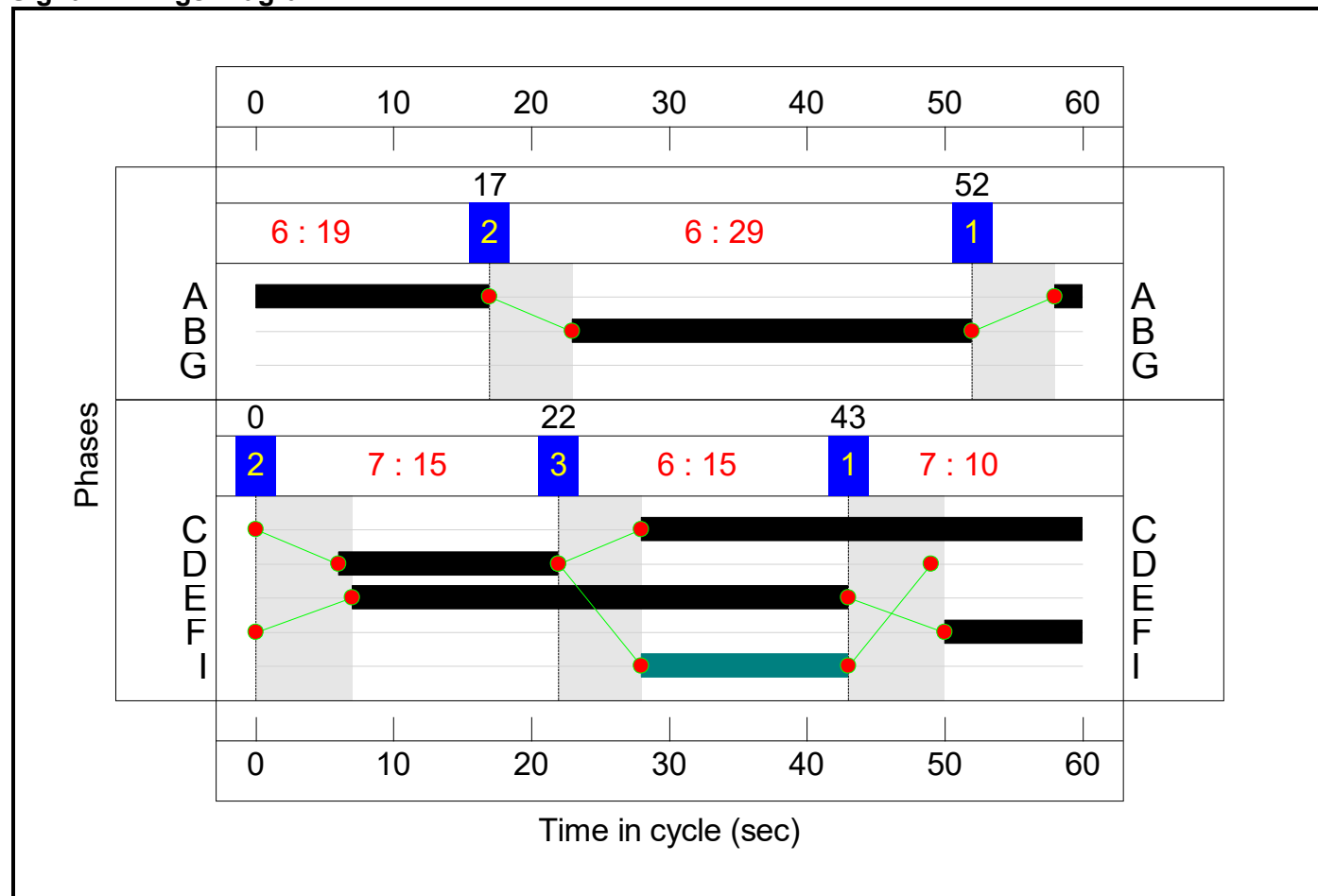
### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 19 | 29 |
| Change Point | 52 | 17 |

### Stage Stream: 2

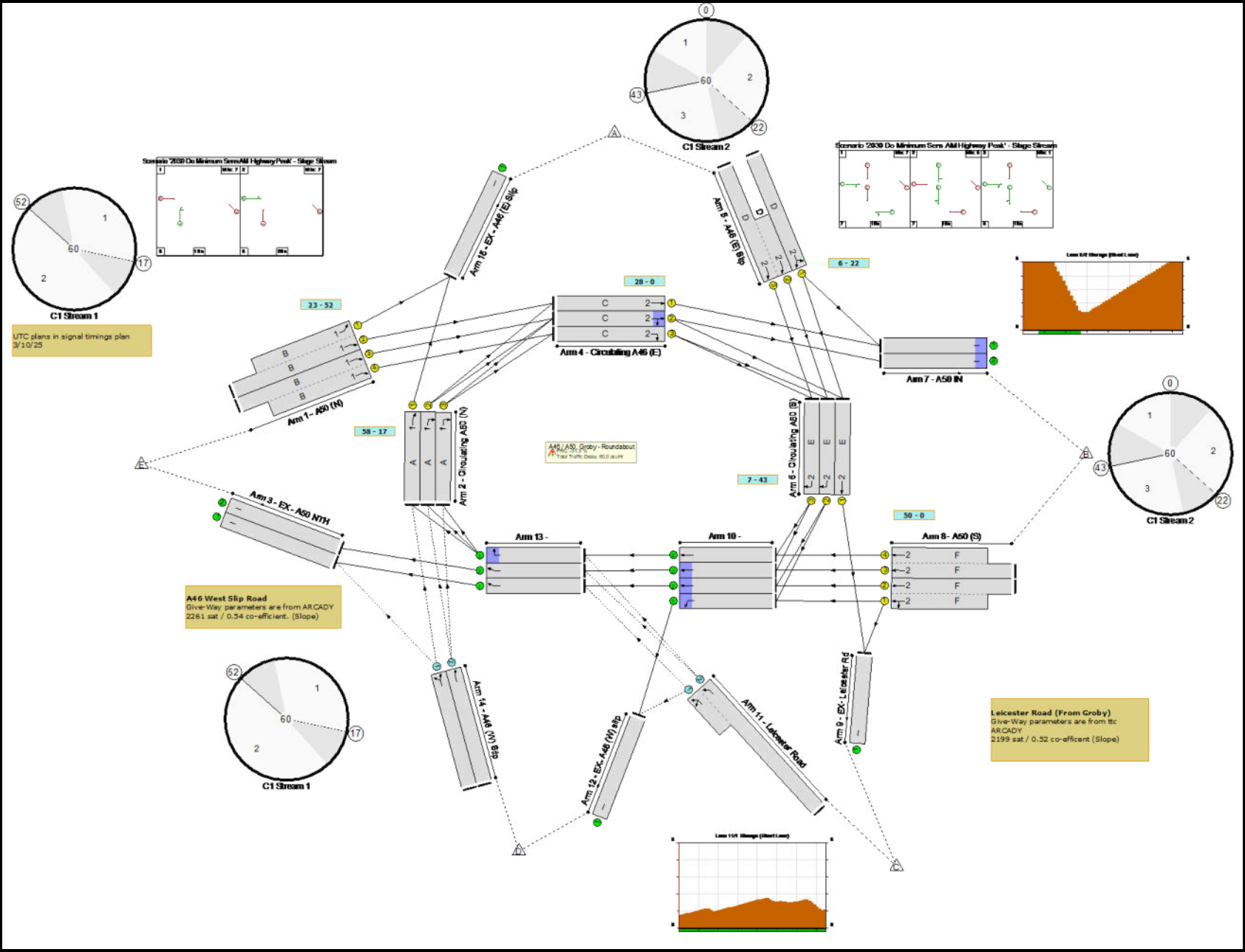
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 15 | 15 |
| Change Point | 43 | 0  | 22 |

## Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)   |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|---------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>118.4%</b> |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>118.4%</b> |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 29              | -               | 1422              | 1975:1978         | 741+989        | 72.7 : 89.3%  |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 29              | -               | 1061              | 2115:1975         | 1058+589       | 67.9 : 58.2%  |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 19              | -               | 478               | 1923              | 641            | 74.6%         |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 19              | -               | 320               | 1905              | 635            | 50.4%         |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 19              | -               | 294               | 1904              | 635            | 46.3%         |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 876               | Inf               | Inf            | 0.0%          |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 825               | Inf               | Inf            | 0.0%          |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 852               | 1975              | 1086           | 78.4%         |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 966               | 2095              | 1152           | 83.8%         |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 396               | 1859              | 1022           | 38.7%         |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 350               | 1716              | 486            | 72.0%         |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 885               | 1716:1729         | 486+490        | 93.2 : 88.2%  |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 459               | 1980              | 1221           | 37.6%         |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 814               | 2052              | 1265           | 64.3%         |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 467               | 1915              | 1181           | 39.5%         |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |               |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|---------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 925  | 1900      | 1900    | 48.7%         |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 784  | 1900      | 1900    | 41.3%         |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 10 | - | 381  | 2085:1836 | 382+89  | 80.8 : 80.8%  |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 10 | - | 576  | 2080:1942 | 381+356 | 86.5 : 69.1%  |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 517  | Inf       | Inf     | 0.0%          |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 390  | 1800      | 1800    | 21.7%         |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 747  | 1800      | 1800    | 41.5%         |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 797  | 1800      | 1800    | 44.3%         |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 246  | 1800      | 1800    | 13.7%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 757  | 3000:3000 | 656+117 | 94.4 : 118.4% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 528  | Inf       | Inf     | 0.0%          |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 747  | 1800      | 1800    | 41.5%         |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 825  | 1800      | 1800    | 45.8%         |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 837  | 1800      | 1800    | 46.5%         |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 129  | 3000      | 218     | 59.0%         |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 255  | 3000      | 428     | 59.6%         |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1361 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | 1855                  | 0                            | 0                           | 34.1                  | 45.9                         | 0.0                                | 80.0                | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | 1855                  | 0                            | 0                           | 34.1                  | 45.9                         | 0.0                                | 80.0                | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1422           | 1422          | -                     | -                            | -                           | 4.9                   | 2.3                          | -                                  | 7.1 (2.4+4.7)       | 18.1 (16.1:19.3)          | 13.2                             | 2.3                        | 15.5                 |
| 1/3+1/4                                            | 1061           | 1061          | -                     | -                            | -                           | 3.1                   | 0.9                          | -                                  | 4.0 (2.9+1.2)       | 13.7 (14.4:12.1)          | 9.0                              | 0.9                        | 9.9                  |
| 2/1                                                | 478            | 478           | -                     | -                            | -                           | 1.4                   | 1.4                          | -                                  | 2.9                 | 21.5                      | 5.5                              | 1.4                        | 6.9                  |
| 2/2                                                | 320            | 320           | -                     | -                            | -                           | 1.4                   | 0.5                          | -                                  | 1.9                 | 21.0                      | 4.8                              | 0.5                        | 5.3                  |
| 2/3                                                | 294            | 294           | -                     | -                            | -                           | 1.0                   | 0.4                          | -                                  | 1.4                 | 17.2                      | 2.8                              | 0.4                        | 3.3                  |
| 3/1                                                | 876            | 876           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 825            | 825           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 852            | 852           | -                     | -                            | -                           | 2.4                   | 1.8                          | -                                  | 4.2                 | 17.6                      | 12.4                             | 1.8                        | 14.2                 |
| 4/2                                                | 966            | 966           | -                     | -                            | -                           | 1.9                   | 2.5                          | -                                  | 4.4                 | 16.3                      | 14.0                             | 2.5                        | 16.5                 |
| 4/3                                                | 396            | 396           | -                     | -                            | -                           | 0.3                   | 0.3                          | -                                  | 0.6                 | 5.5                       | 1.2                              | 0.3                        | 1.5                  |
| 5/1                                                | 350            | 350           | -                     | -                            | -                           | 1.9                   | 1.3                          | -                                  | 3.1                 | 32.3                      | 5.2                              | 1.3                        | 6.5                  |
| 5/3+5/2                                            | 885            | 885           | -                     | -                            | -                           | 5.1                   | 4.4                          | -                                  | 9.5 (4.9+4.6)       | 38.8 (39.0:38.6)          | 7.3                              | 4.4                        | 11.7                 |
| 6/1                                                | 459            | 459           | -                     | -                            | -                           | 0.2                   | 0.3                          | -                                  | 0.5                 | 3.6                       | 0.6                              | 0.3                        | 0.9                  |
| 6/2                                                | 814            | 814           | -                     | -                            | -                           | 0.8                   | 0.0                          | -                                  | 0.8                 | 3.6                       | 7.4                              | 0.0                        | 7.4                  |
| 6/3                                                | 467            | 467           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.4                 | 2.7                       | 0.1                              | 0.3                        | 0.4                  |
| 7/1                                                | 925            | 925           | -                     | -                            | -                           | 0.1                   | 0.5                          | -                                  | 0.5                 | 2.1                       | 8.1                              | 0.5                        | 8.5                  |
| 7/2                                                | 784            | 784           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 3.8                              | 0.4                        | 4.1                  |
| 8/2+8/1                                            | 381            | 381           | -                     | -                            | -                           | 2.4                   | 2.0                          | -                                  | 4.5 (3.7+0.8)       | 42.1 (42.6:39.9)          | 4.9                              | 2.0                        | 6.9                  |
| 8/3+8/4                                            | 576            | 576           | -                     | -                            | -                           | 3.7                   | 1.7                          | -                                  | 5.5 (3.2+2.3)       | 34.3 (34.7:33.8)          | 5.3                              | 1.7                        | 7.1                  |
| 9/1                                                | 517            | 517           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |



## Full Input Data And Results

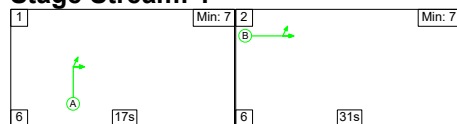
[illegible]

## Full Input Data And Results

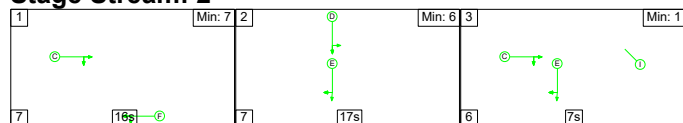
**Scenario 6: '2030 Do Minimum Sens Highway PM'** (FG6: '2030 Do Minimum Sens NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

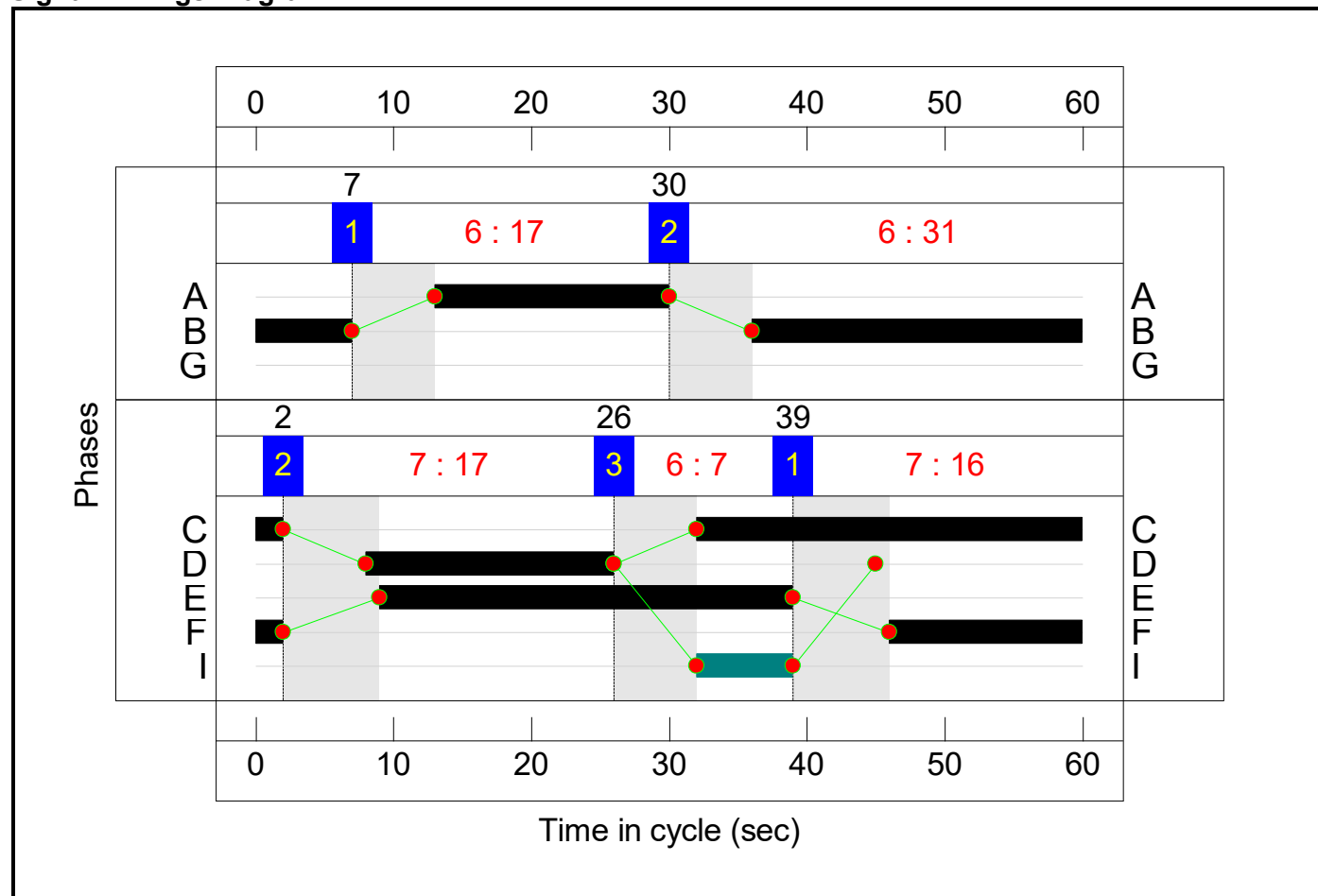
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 17 | 31 |
| Change Point | 7  | 30 |

#### Stage Stream: 2

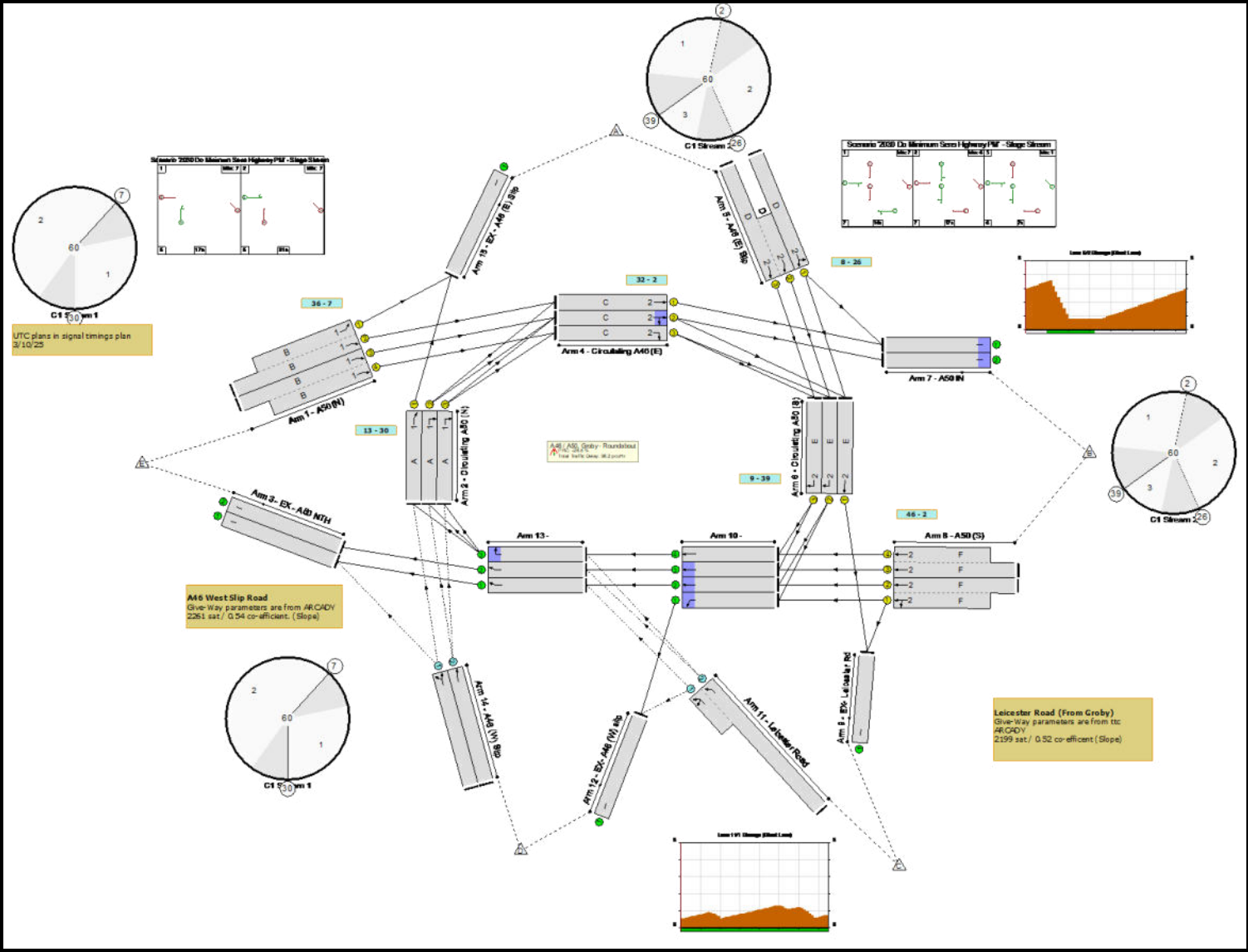
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 16 | 17 | 7  |
| Change Point | 39 | 2  | 26 |

### Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)    |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|----------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 114.1%         |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 114.1%         |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 31              | -               | 1316              | 1975:1978         | 547+1055       | 76.4 : 85.1%   |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 31              | -               | 1102              | 2115:1975         | 1108+941       | 53.8 : 53.8%   |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 17              | -               | 447               | 1923              | 577            | 77.5%          |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 17              | -               | 253               | 1905              | 572            | 44.3%          |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 17              | -               | 174               | 1904              | 571            | 30.5%          |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 892               | Inf               | Inf            | 0.0%           |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 986               | Inf               | Inf            | 0.0%           |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 30              | -               | 654               | 1975              | 1020           | 64.1%          |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 30              | -               | 763               | 2085              | 1077           | 70.8%          |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 30              | -               | 530               | 1859              | 960            | 55.2%          |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 18              | -               | 417               | 1732              | 548            | 76.0%          |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 18              | -               | 809               | 1716:1729         | 543+240        | 103.2 : 103.2% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 30              | -               | 602               | 1980              | 1023           | 58.8%          |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 30              | -               | 752               | 2052              | 1060           | 70.9%          |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 30              | -               | 587               | 1915              | 989            | 57.5%          |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |               |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|---------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 691  | 1900      | 1900    | 36.4%         |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 541  | 1900      | 1900    | 28.5%         |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 16 | - | 823  | 2085:1857 | 591+526 | 81.3 : 65.2%  |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 16 | - | 504  | 2080:1942 | 589+178 | 65.7 : 65.7%  |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 826  | Inf       | Inf     | 0.0%          |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 622  | 1800      | 1800    | 34.6%         |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 729  | 1800      | 1800    | 40.5%         |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 974  | 1800      | 1800    | 53.1%         |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 117  | 1800      | 1800    | 6.5%          |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 655  | 3000:3000 | 538+103 | 99.9 : 114.1% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 736  | Inf       | Inf     | 0.0%          |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 733  | 1800      | 1800    | 40.7%         |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 986  | 1800      | 1800    | 53.8%         |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 642  | 1800      | 1800    | 35.7%         |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 159  | 3000      | 178     | 89.2%         |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 232  | 3000      | 277     | 83.7%         |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1345 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1672</b>           | <b>0</b>                     | <b>0</b>                    | <b>35.7</b>           | <b>60.4</b>                  | <b>0.0</b>                         | <b>96.2</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1672</b>           | <b>0</b>                     | <b>0</b>                    | <b>35.7</b>           | <b>60.4</b>                  | <b>0.0</b>                         | <b>96.2</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1316           | 1316          | -                     | -                            | -                           | 3.9                   | 2.3                          | -                                  | 6.2<br>(1.7+4.5)    | 17.0<br>(14.5:18.2)       | 12.7                             | 2.3                        | 15.0                 |
| 1/3+1/4                                            | 1102           | 1102          | -                     | -                            | -                           | 2.7                   | 0.6                          | -                                  | 3.3<br>(1.8+1.5)    | 10.9<br>(11.0:10.7)       | 6.3                              | 0.6                        | 6.9                  |
| 2/1                                                | 447            | 447           | -                     | -                            | -                           | 1.8                   | 1.7                          | -                                  | 3.4                 | 27.8                      | 6.5                              | 1.7                        | 8.1                  |
| 2/2                                                | 253            | 253           | -                     | -                            | -                           | 1.0                   | 0.4                          | -                                  | 1.4                 | 19.3                      | 3.0                              | 0.4                        | 3.4                  |
| 2/3                                                | 174            | 174           | -                     | -                            | -                           | 0.6                   | 0.2                          | -                                  | 0.8                 | 17.3                      | 1.8                              | 0.2                        | 2.0                  |
| 3/1                                                | 892            | 892           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 968            | 968           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 654            | 654           | -                     | -                            | -                           | 1.4                   | 0.9                          | -                                  | 2.3                 | 12.6                      | 5.9                              | 0.9                        | 6.8                  |
| 4/2                                                | 763            | 763           | -                     | -                            | -                           | 1.6                   | 1.2                          | -                                  | 2.9                 | 13.4                      | 5.7                              | 1.2                        | 6.9                  |
| 4/3                                                | 530            | 530           | -                     | -                            | -                           | 1.0                   | 0.6                          | -                                  | 1.6                 | 11.1                      | 2.9                              | 0.6                        | 3.5                  |
| 5/1                                                | 417            | 417           | -                     | -                            | -                           | 2.1                   | 1.5                          | -                                  | 3.7                 | 31.8                      | 6.3                              | 1.5                        | 7.8                  |
| 5/3+5/2                                            | 809            | 791           | -                     | -                            | -                           | 4.8                   | 21.9                         | -                                  | 26.7<br>(18.9+7.8)  | 119.0<br>(121.2:113.9)    | 9.6                              | 21.9                       | 31.6                 |
| 6/1                                                | 602            | 602           | -                     | -                            | -                           | 1.5                   | 0.7                          | -                                  | 2.2                 | 13.2                      | 8.9                              | 0.7                        | 9.6                  |
| 6/2                                                | 752            | 752           | -                     | -                            | -                           | 2.4                   | 0.0                          | -                                  | 2.4                 | 11.6                      | 10.2                             | 0.0                        | 10.2                 |
| 6/3                                                | 569            | 569           | -                     | -                            | -                           | 0.2                   | 0.7                          | -                                  | 0.8                 | 5.3                       | 0.4                              | 0.7                        | 1.0                  |
| 7/1                                                | 691            | 691           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 1.1                              | 0.3                        | 1.4                  |
| 7/2                                                | 541            | 541           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.3                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                            | 823            | 823           | -                     | -                            | -                           | 4.5                   | 1.4                          | -                                  | 5.9<br>(3.5+2.4)    | 25.6<br>(26.1:25.0)       | 7.3                              | 1.4                        | 8.7                  |
| 8/3+8/4                                            | 504            | 504           | -                     | -                            | -                           | 2.6                   | 0.9                          | -                                  | 3.5<br>(2.8+0.8)    | 25.1<br>(25.7:23.2)       | 5.6                              | 0.9                        | 6.5                  |
| 9/1                                                | 826            | 826           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

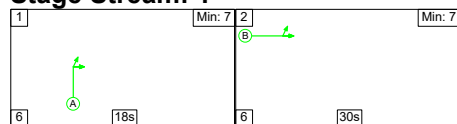
|           |      |      |                                                                                                                   |                       |   |     |      |   |                                                                                                                            |                         |                                    |          |      |
|-----------|------|------|-------------------------------------------------------------------------------------------------------------------|-----------------------|---|-----|------|---|----------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------|----------|------|
| 10/1      | 622  | 622  | -                                                                                                                 | -                     | - | 0.0 | 0.3  | - | 0.3                                                                                                                        | 1.7                     | 3.5                                | 0.3      | 3.8  |
| 10/2      | 729  | 729  | -                                                                                                                 | -                     | - | 0.1 | 0.3  | - | 0.4                                                                                                                        | 1.9                     | 4.7                                | 0.3      | 5.1  |
| 10/3      | 956  | 956  | -                                                                                                                 | -                     | - | 0.0 | 0.6  | - | 0.6                                                                                                                        | 2.2                     | 2.7                                | 0.6      | 3.2  |
| 10/4      | 117  | 117  | -                                                                                                                 | -                     | - | 0.0 | 0.0  | - | 0.0                                                                                                                        | 1.1                     | 0.0                                | 0.0      | 0.0  |
| 11/2+11/1 | 655  | 640  | 1281                                                                                                              | 0                     | 0 | 2.4 | 17.1 | - | 19.5<br>(9.6+9.9)                                                                                                          | 107.3<br>(64.6:302.0)   | 8.8                                | 17.1     | 25.9 |
| 12/1      | 722  | 722  | -                                                                                                                 | -                     | - | 0.0 | 0.0  | - | 0.0                                                                                                                        | 0.0                     | 0.0                                | 0.0      | 0.0  |
| 13/1      | 733  | 733  | -                                                                                                                 | -                     | - | 0.0 | 0.3  | - | 0.3                                                                                                                        | 1.7                     | 0.0                                | 0.3      | 0.3  |
| 13/2      | 968  | 968  | -                                                                                                                 | -                     | - | 0.0 | 0.6  | - | 0.6                                                                                                                        | 2.2                     | 0.0                                | 0.6      | 0.6  |
| 13/3      | 642  | 642  | -                                                                                                                 | -                     | - | 0.0 | 0.3  | - | 0.3                                                                                                                        | 1.6                     | 2.1                                | 0.3      | 2.4  |
| 14/1      | 159  | 159  | 159                                                                                                               | 0                     | 0 | 0.5 | 3.1  | - | 3.6                                                                                                                        | 80.6                    | 2.5                                | 3.1      | 5.6  |
| 14/2      | 232  | 232  | 232                                                                                                               | 0                     | 0 | 0.5 | 2.3  | - | 2.9                                                                                                                        | 44.6                    | 3.4                                | 2.3      | 5.7  |
| 15/1      | 1345 | 1345 | -                                                                                                                 | -                     | - | 0.0 | 0.0  | - | 0.0                                                                                                                        | 0.0                     | 0.0                                | 0.0      | 0.0  |
|           |      |      | C1 Stream: 1 PRC for Signalled Lanes (%):<br>C1 Stream: 2 PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%): | 5.7<br>-14.7<br>-26.8 |   |     |      |   | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes(pcuHr): | 15.18<br>52.04<br>96.19 | Cycle Time (s):<br>Cycle Time (s): | 60<br>60 |      |

## Full Input Data And Results

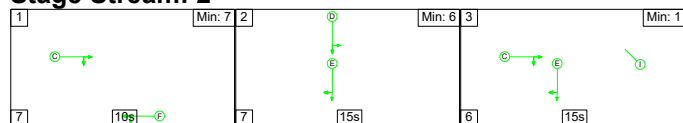
**Scenario 7: '2030 Do Something AM Highway Peak'** (FG7: '2030 Do Something NH AM Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

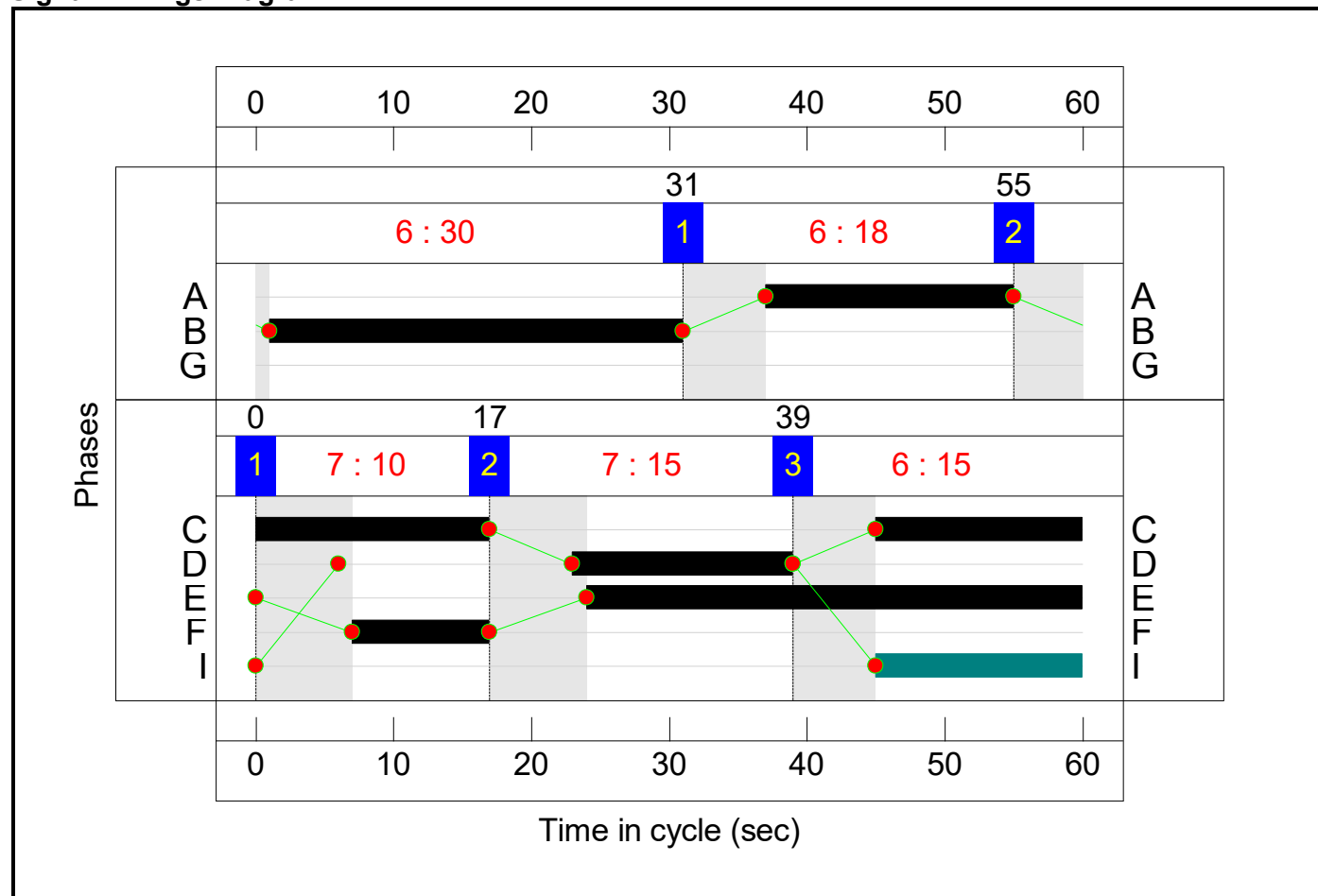
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 18 | 30 |
| Change Point | 31 | 55 |

#### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 15 | 15 |
| Change Point | 0  | 17 | 39 |

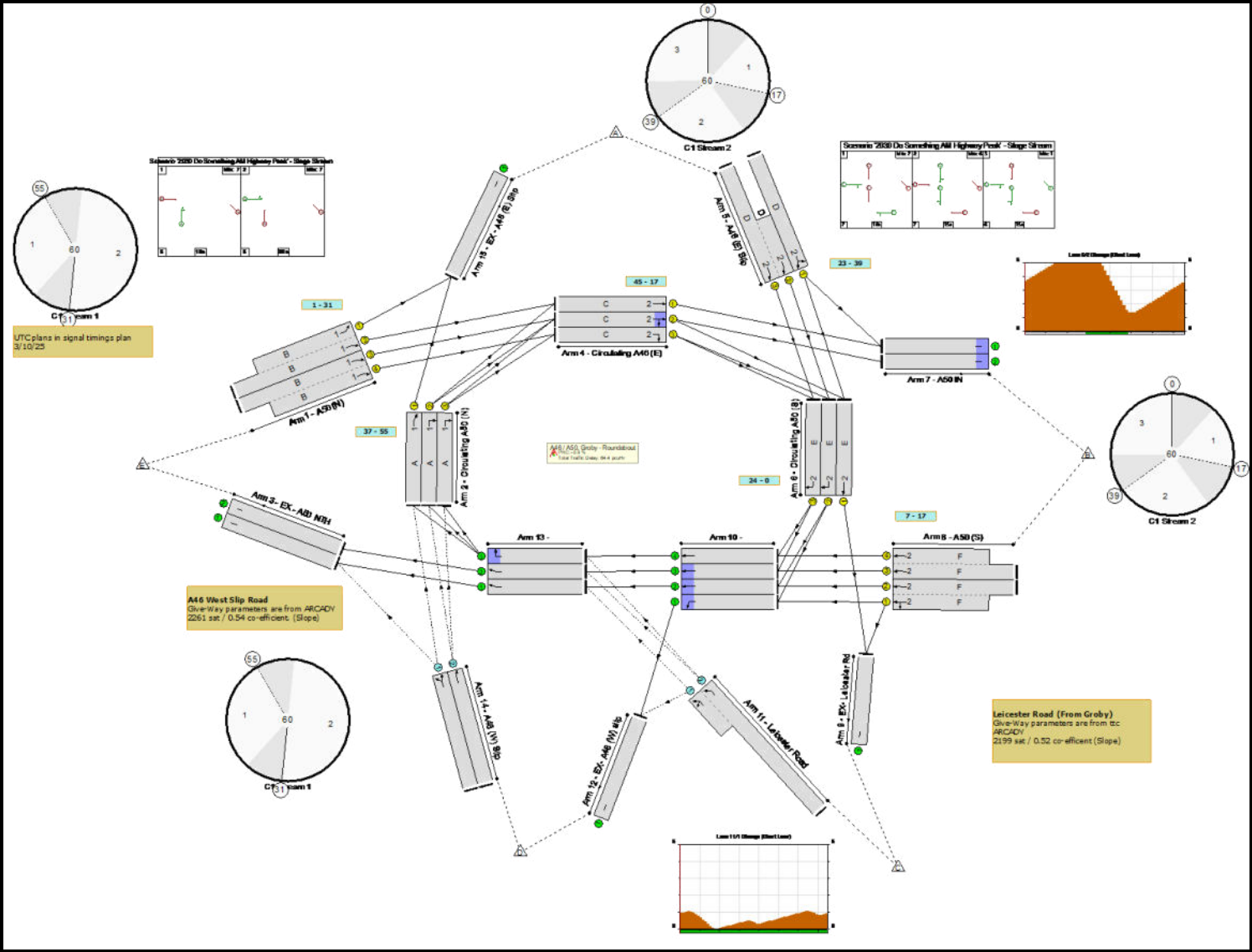
### Signal Timings Diagram





Full Input Data And Results

Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 90.8%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 90.8%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1474              | 1975:1978         | 782+1022       | 74.6 : 87.2% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1026              | 2115:1975         | 1093+637       | 62.4 : 54.0% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 483               | 1923              | 609            | 79.3%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 270               | 1905              | 603            | 44.8%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 241               | 1904              | 603            | 40.0%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 925               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 739               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 839               | 1975              | 1086           | 77.2%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 937               | 2101              | 1156           | 81.1%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 344               | 1859              | 1022           | 33.6%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 364               | 1717              | 486            | 74.8%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 861               | 1716:1729         | 486+490        | 87.4 : 89.0% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 421               | 1980              | 1221           | 34.5%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 776               | 2052              | 1265           | 61.3%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 429               | 1915              | 1181           | 36.3%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 911  | 1900      | 1900    | 47.9%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 808  | 1900      | 1900    | 42.5%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 10 | - | 538  | 2085:1856 | 382+340 | 90.0 : 57.0% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 10 | - | 413  | 2080:1942 | 381+320 | 74.2 : 40.7% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 549  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 390  | 1800      | 1800    | 21.7%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 796  | 1800      | 1800    | 44.2%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 712  | 1800      | 1800    | 39.6%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 130  | 1800      | 1800    | 7.2%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 767  | 3000:3000 | 692+153 | 90.8 : 90.8% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 529  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 796  | 1800      | 1800    | 44.2%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 739  | 1800      | 1800    | 41.1%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 731  | 1800      | 1800    | 40.6%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 129  | 3000      | 225     | 57.2%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 263  | 3000      | 378     | 69.5%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1374 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1926</b>           | <b>0</b>                     | <b>0</b>                    | <b>38.1</b>           | <b>26.2</b>                  | <b>0.0</b>                         | <b>64.4</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1926</b>           | <b>0</b>                     | <b>0</b>                    | <b>38.1</b>           | <b>26.2</b>                  | <b>0.0</b>                         | <b>64.4</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1474           | 1474          | -                     | -                            | -                           | 4.8                   | 2.2                          | -                                  | 7.0<br>(2.5+4.5)    | 17.0<br>(15.3:18.1)       | 12.9                             | 2.2                        | 15.1                 |
| 1/3+1/4                                            | 1026           | 1026          | -                     | -                            | -                           | 2.8                   | 0.7                          | -                                  | 3.5<br>(2.4+1.1)    | 12.3<br>(12.9:11.0)       | 8.0                              | 0.7                        | 8.7                  |
| 2/1                                                | 483            | 483           | -                     | -                            | -                           | 2.6                   | 1.9                          | -                                  | 4.5                 | 33.2                      | 8.0                              | 1.9                        | 9.8                  |
| 2/2                                                | 270            | 270           | -                     | -                            | -                           | 1.5                   | 0.4                          | -                                  | 1.9                 | 25.1                      | 4.1                              | 0.4                        | 4.5                  |
| 2/3                                                | 241            | 241           | -                     | -                            | -                           | 1.3                   | 0.3                          | -                                  | 1.7                 | 25.0                      | 3.8                              | 0.3                        | 4.1                  |
| 3/1                                                | 925            | 925           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 739            | 739           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 839            | 839           | -                     | -                            | -                           | 3.3                   | 1.7                          | -                                  | 5.0                 | 21.4                      | 11.1                             | 1.7                        | 12.8                 |
| 4/2                                                | 937            | 937           | -                     | -                            | -                           | 4.1                   | 2.1                          | -                                  | 6.2                 | 23.9                      | 12.5                             | 2.1                        | 14.6                 |
| 4/3                                                | 344            | 344           | -                     | -                            | -                           | 1.0                   | 0.3                          | -                                  | 1.2                 | 13.0                      | 3.1                              | 0.3                        | 3.4                  |
| 5/1                                                | 364            | 364           | -                     | -                            | -                           | 2.0                   | 1.5                          | -                                  | 3.4                 | 33.9                      | 5.5                              | 1.5                        | 6.9                  |
| 5/3+5/2                                            | 861            | 861           | -                     | -                            | -                           | 4.9                   | 3.5                          | -                                  | 8.4<br>(4.2+4.3)    | 35.3<br>(35.2:35.3)       | 6.9                              | 3.5                        | 10.4                 |
| 6/1                                                | 421            | 421           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.7                 | 6.4                       | 1.8                              | 0.3                        | 2.1                  |
| 6/2                                                | 776            | 776           | -                     | -                            | -                           | 0.4                   | 0.0                          | -                                  | 0.4                 | 1.8                       | 6.9                              | 0.0                        | 6.9                  |
| 6/3                                                | 429            | 429           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.4                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                                | 911            | 911           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.5                 | 2.0                       | 6.4                              | 0.5                        | 6.9                  |
| 7/2                                                | 808            | 808           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 2.1                              | 0.4                        | 2.5                  |
| 8/2+8/1                                            | 538            | 538           | -                     | -                            | -                           | 3.5                   | 1.4                          | -                                  | 4.9<br>(3.2+1.7)    | 33.0<br>(33.6:32.0)       | 5.5                              | 1.4                        | 7.0                  |
| 8/3+8/4                                            | 413            | 413           | -                     | -                            | -                           | 2.6                   | 0.7                          | -                                  | 3.3<br>(2.3+1.0)    | 28.9<br>(29.4:27.7)       | 4.4                              | 0.7                        | 5.1                  |
| 9/1                                                | 549            | 549           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

|           |      |      |      |   |   |     |     |   |                  |                     |     |     |      |
|-----------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|------|
| 10/1      | 390  | 390  | -    | - | - | 0.0 | 0.1 | - | 0.1              | 1.3                 | 0.0 | 0.1 | 0.1  |
| 10/2      | 796  | 796  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 2.0                 | 4.0 | 0.4 | 4.4  |
| 10/3      | 712  | 712  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 1.1 | 0.3 | 1.4  |
| 10/4      | 130  | 130  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0  |
| 11/2+11/1 | 767  | 767  | 1534 | 0 | 0 | 2.2 | 4.4 | - | 6.6<br>(5.2+1.4) | 30.9<br>(29.9:35.4) | 9.8 | 4.4 | 14.2 |
| 12/1      | 529  | 529  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0  |
| 13/1      | 796  | 796  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.8                 | 0.0 | 0.4 | 0.4  |
| 13/2      | 739  | 739  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 0.0 | 0.3 | 0.3  |
| 13/3      | 731  | 731  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 0.0 | 0.3 | 0.3  |
| 14/1      | 129  | 129  | 129  | 0 | 0 | 0.2 | 0.7 | - | 0.8              | 23.7                | 0.8 | 0.7 | 1.5  |
| 14/2      | 263  | 263  | 263  | 0 | 0 | 0.4 | 1.1 | - | 1.5              | 21.1                | 3.3 | 1.1 | 4.4  |
| 15/1      | 1374 | 1374 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0  |

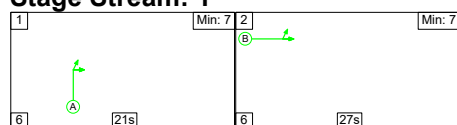
|    |           |                              |      |                                           |       |                 |    |
|----|-----------|------------------------------|------|-------------------------------------------|-------|-----------------|----|
| C1 | Stream: 1 | PRC for Signalised Lanes (%) | 3.2  | Total Delay for Signalised Lanes (pcuHr): | 18.48 | Cycle Time (s): | 60 |
| C1 | Stream: 2 | PRC for Signalised Lanes (%) | 0.0  | Total Delay for Signalised Lanes (pcuHr): | 33.99 | Cycle Time (s): | 60 |
|    |           | PRC Over All Lanes (%)       | -0.9 | Total Delay Over All Lanes (pcuHr):       | 64.36 |                 |    |

## Full Input Data And Results

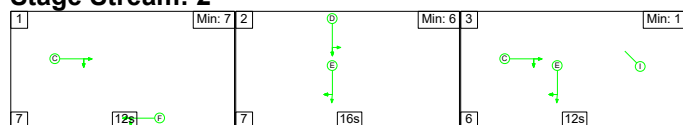
**Scenario 8: '2030 Do Something PM Highway Peak'** (FG8: '2030 Do Something NH PM Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

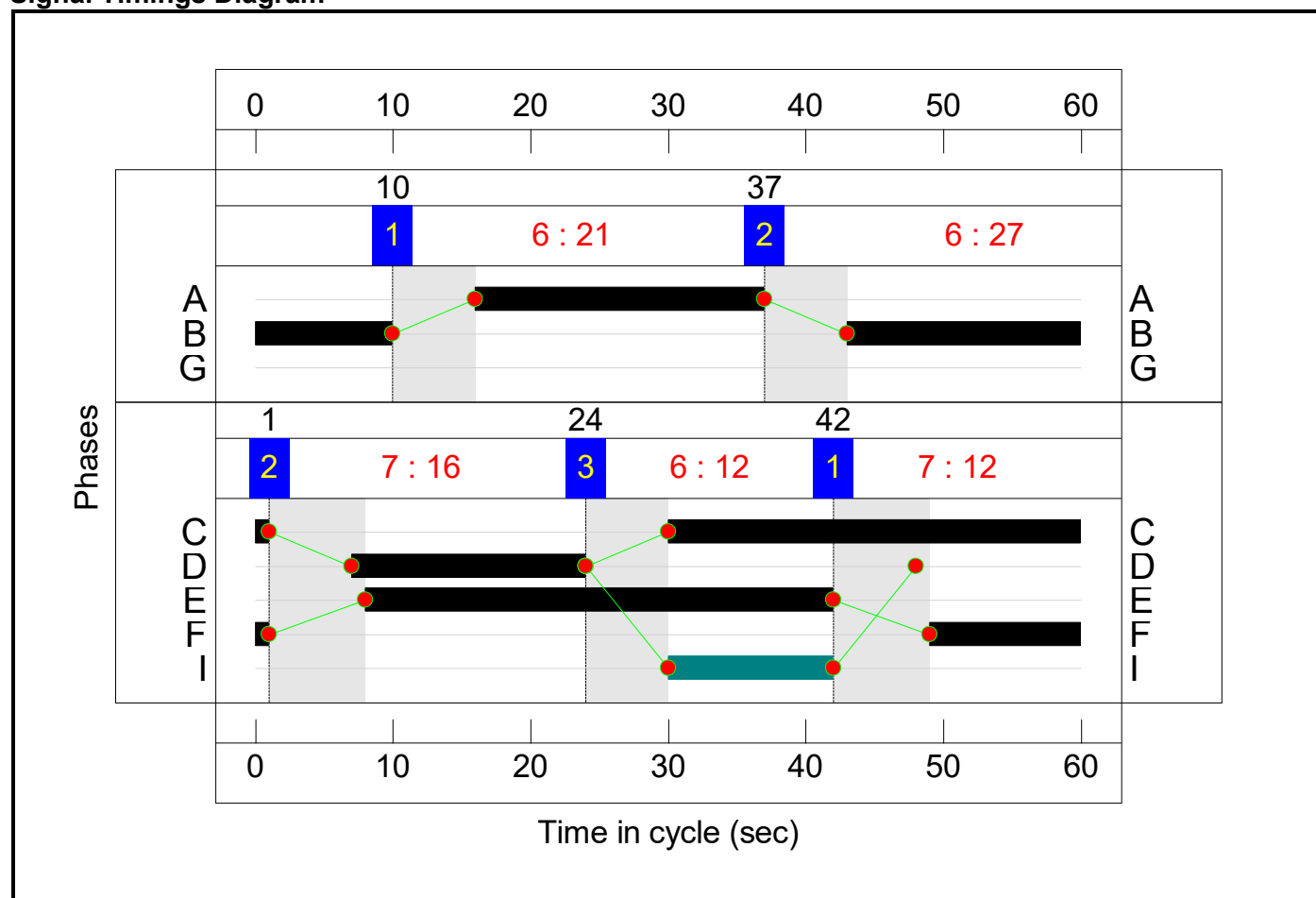
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 21 | 27 |
| Change Point | 10 | 37 |

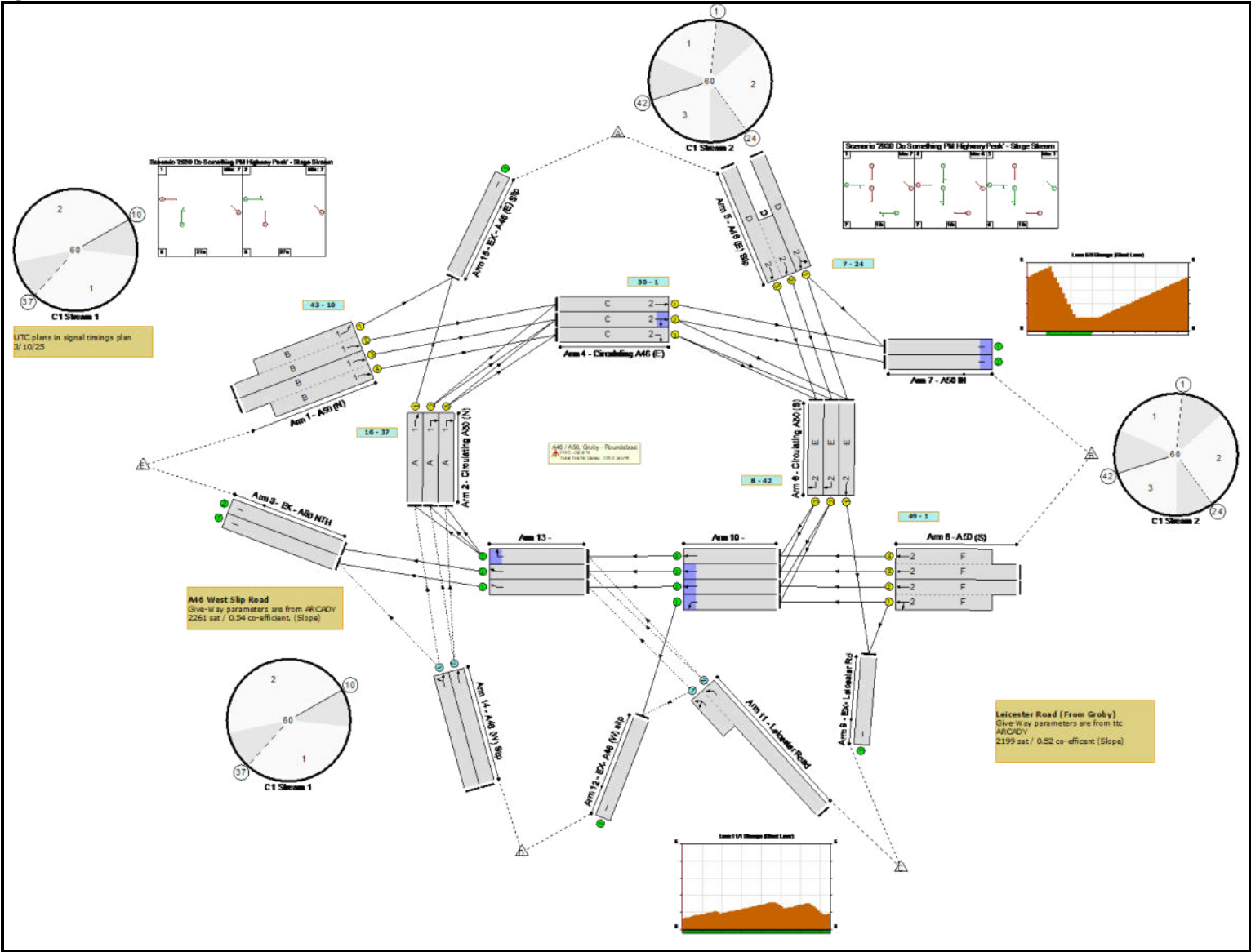
#### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 12 | 16 | 12 |
| Change Point | 42 | 1  | 24 |

### Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 119.3%       |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 119.3%       |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 27              | -               | 1211              | 1975:1978         | 325+923        | 97.1 : 97.1% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 27              | -               | 1205              | 2115:1975         | 987+864        | 70.7 : 58.7% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 21              | -               | 456               | 1923              | 705            | 64.2%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 21              | -               | 286               | 1905              | 699            | 40.6%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 21              | -               | 139               | 1904              | 698            | 19.9%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 963               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 876               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 587               | 1975              | 1053           | 55.5%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 841               | 2087              | 1113           | 75.5%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 517               | 1859              | 991            | 52.1%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 430               | 1732              | 520            | 82.8%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 794               | 1716:1729         | 515+348        | 92.1 : 92.1% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 34              | -               | 620               | 1980              | 1155           | 53.7%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 34              | -               | 835               | 2052              | 1197           | 69.7%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 34              | -               | 476               | 1915              | 1117           | 42.6%        |



# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |                |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|----------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 624  | 1900      | 1900    | 32.7%          |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 614  | 1900      | 1900    | 32.3%          |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 12 | - | 813  | 2085:1856 | 452+402 | 102.0 : 87.5%  |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 12 | - | 505  | 2080:1942 | 451+136 | 86.1 : 86.1%   |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 852  | Inf       | Inf     | 0.0%           |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 634  | 1800      | 1800    | 35.2%          |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 782  | 1800      | 1800    | 42.9%          |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 864  | 1800      | 1800    | 48.0%          |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 117  | 1800      | 1800    | 6.5%           |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 677  | 3000:3000 | 558+95  | 101.1 : 119.3% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 743  | Inf       | Inf     | 0.0%           |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 786  | 1800      | 1800    | 43.1%          |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 876  | 1800      | 1800    | 48.7%          |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 669  | 1800      | 1800    | 36.8%          |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 177  | 3000      | 227     | 77.8%          |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 212  | 3000      | 362     | 58.6%          |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1352 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1695</b>           | <b>0</b>                     | <b>0</b>                    | <b>40.9</b>           | <b>64.1</b>                  | <b>0.0</b>                         | <b>105.0</b>        | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1695</b>           | <b>0</b>                     | <b>0</b>                    | <b>40.9</b>           | <b>64.1</b>                  | <b>0.0</b>                         | <b>105.0</b>        | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1211           | 1211          | -                     | -                            | -                           | 4.8                   | 10.5                         | -                                  | 15.3 (3.6+11.7)     | 45.4 (41.4:46.8)          | 14.4                             | 10.5                       | 24.9                 |
| 1/3+1/4                                            | 1205           | 1205          | -                     | -                            | -                           | 4.1                   | 0.9                          | -                                  | 5.0 (3.0+2.0)       | 15.0 (15.5:14.3)          | 9.1                              | 0.9                        | 10.0                 |
| 2/1                                                | 452            | 452           | -                     | -                            | -                           | 1.9                   | 0.9                          | -                                  | 2.8                 | 22.4                      | 7.0                              | 0.9                        | 7.9                  |
| 2/2                                                | 284            | 284           | -                     | -                            | -                           | 1.2                   | 0.3                          | -                                  | 1.6                 | 19.7                      | 3.6                              | 0.3                        | 3.9                  |
| 2/3                                                | 139            | 139           | -                     | -                            | -                           | 0.6                   | 0.1                          | -                                  | 0.7                 | 18.3                      | 1.5                              | 0.1                        | 1.6                  |
| 3/1                                                | 953            | 953           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 876            | 876           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 585            | 585           | -                     | -                            | -                           | 1.2                   | 0.6                          | -                                  | 1.8                 | 11.3                      | 6.4                              | 0.6                        | 7.0                  |
| 4/2                                                | 841            | 841           | -                     | -                            | -                           | 3.8                   | 1.5                          | -                                  | 5.3                 | 22.8                      | 9.8                              | 1.5                        | 11.4                 |
| 4/3                                                | 517            | 517           | -                     | -                            | -                           | 1.9                   | 0.5                          | -                                  | 2.4                 | 16.8                      | 4.7                              | 0.5                        | 5.3                  |
| 5/1                                                | 430            | 430           | -                     | -                            | -                           | 2.3                   | 2.3                          | -                                  | 4.6                 | 38.7                      | 6.6                              | 2.3                        | 8.9                  |
| 5/3+5/2                                            | 794            | 794           | -                     | -                            | -                           | 4.3                   | 5.1                          | -                                  | 9.3 (5.7+3.6)       | 42.3 (43.3:41.0)          | 7.6                              | 5.1                        | 12.7                 |
| 6/1                                                | 620            | 620           | -                     | -                            | -                           | 1.2                   | 0.6                          | -                                  | 1.7                 | 10.1                      | 8.4                              | 0.6                        | 8.9                  |
| 6/2                                                | 835            | 835           | -                     | -                            | -                           | 1.1                   | 0.0                          | -                                  | 1.1                 | 4.6                       | 8.9                              | 0.0                        | 8.9                  |
| 6/3                                                | 476            | 476           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 2.8                       | 0.0                              | 0.4                        | 0.4                  |
| 7/1                                                | 622            | 622           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.3                 | 1.5                       | 1.7                              | 0.2                        | 1.9                  |
| 7/2                                                | 614            | 614           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                            | 813            | 804           | -                     | -                            | -                           | 5.4                   | 11.9                         | -                                  | 17.3 (11.9+5.4)     | 76.8 (93.3:55.1)          | 7.7                              | 11.9                       | 19.6                 |
| 8/3+8/4                                            | 505            | 505           | -                     | -                            | -                           | 3.1                   | 2.9                          | -                                  | 6.0 (4.7+1.3)       | 42.5 (43.2:40.2)          | 6.1                              | 2.9                        | 9.0                  |
| 9/1                                                | 852            | 852           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

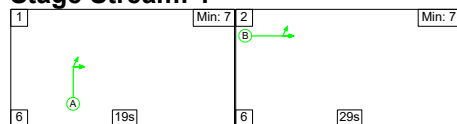
[illegible]

# Full Input Data And Results

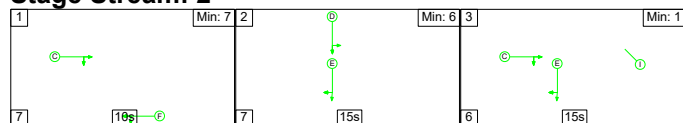
**Scenario 9: '2030 Do Something Sens AM Highway Peak'** (FG9: '2030 Do Something Sens NH AM Peak', Plan 1: 'Staging Plan No. 1')

## Stage Sequence Diagram

### Stage Stream: 1



### Stage Stream: 2



## Stage Timings

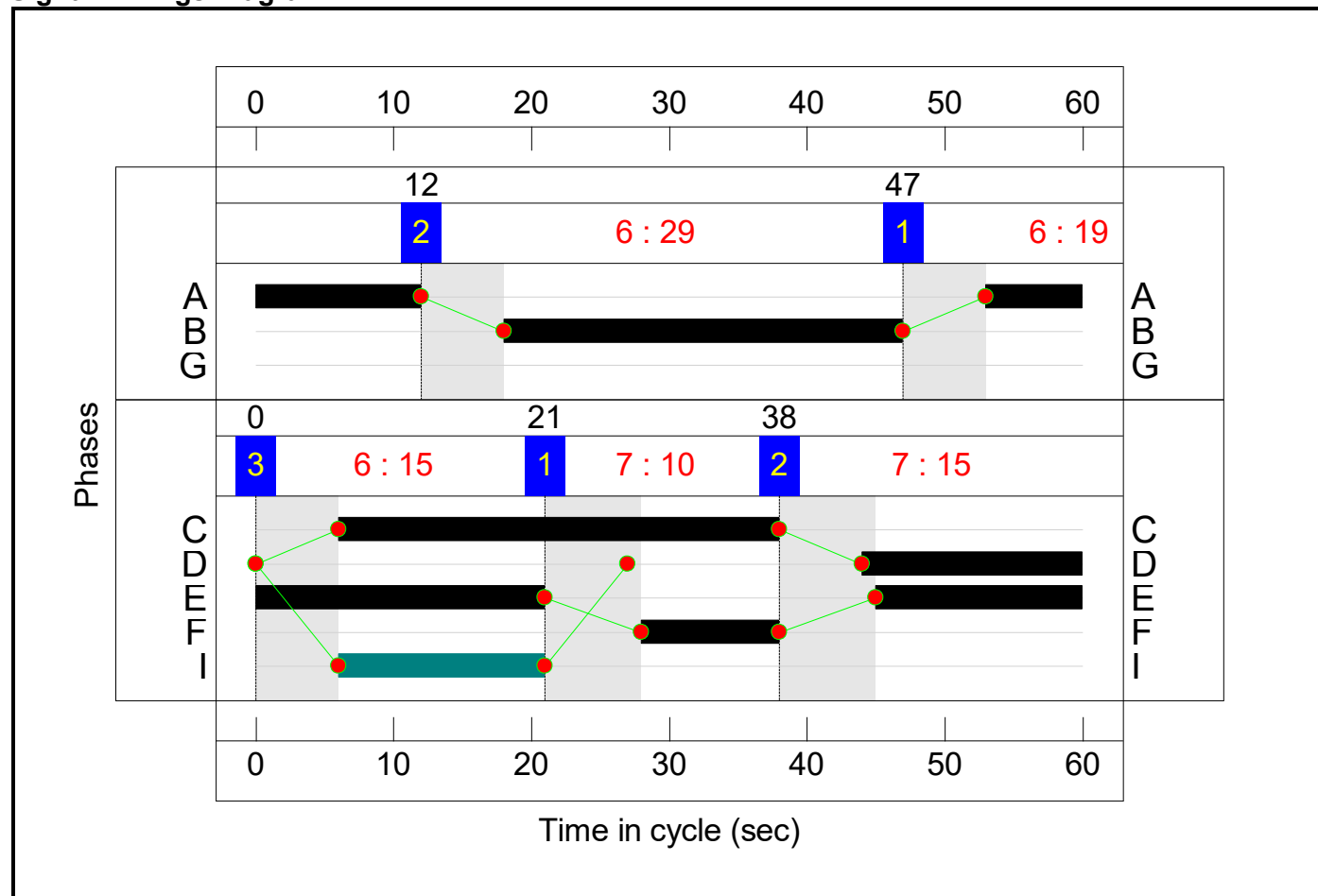
### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 19 | 29 |
| Change Point | 47 | 12 |

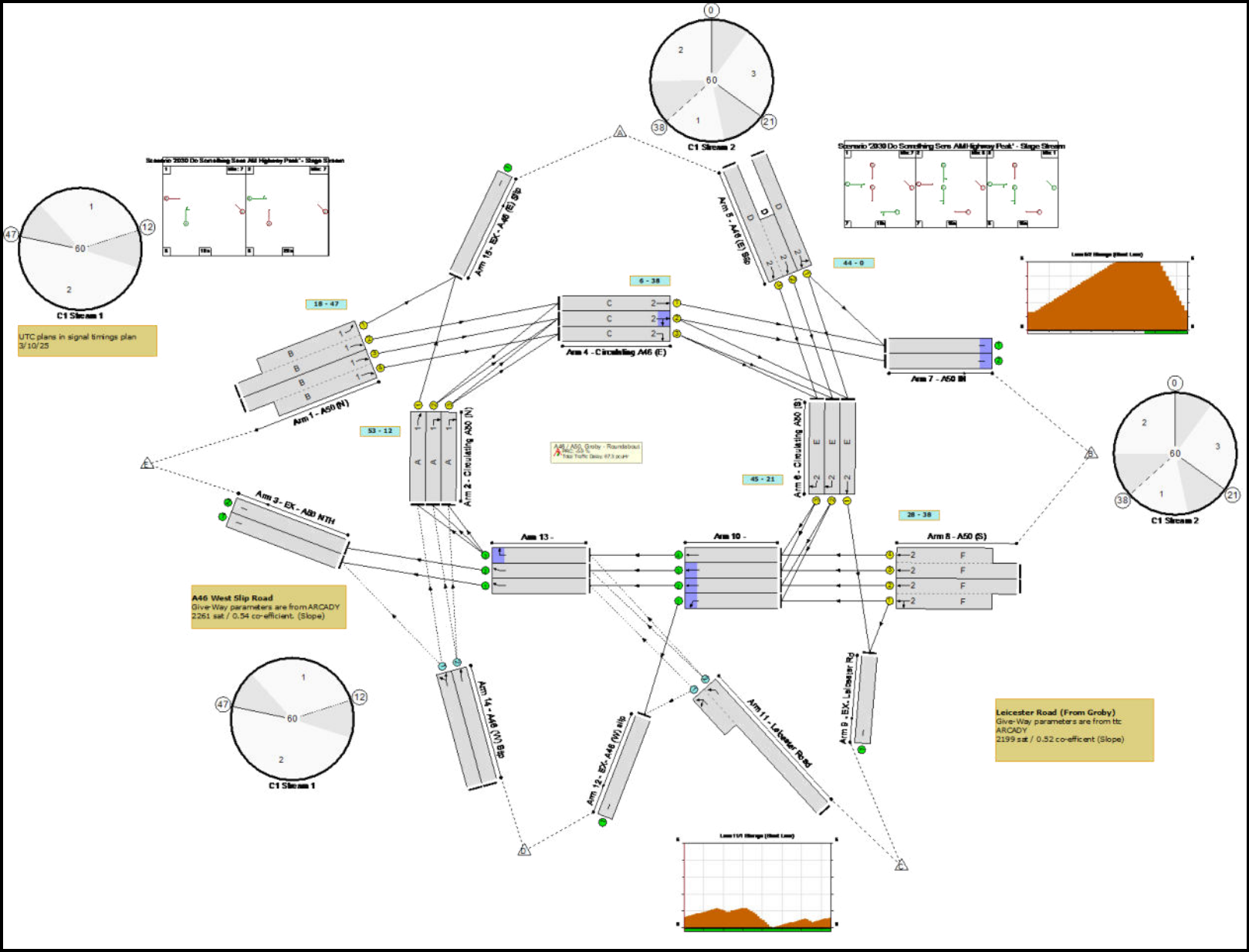
### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 15 | 15 |
| Change Point | 21 | 38 | 0  |

## Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 95.3%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 95.3%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 29              | -               | 1410              | 1975:1978         | 722+989        | 73.0 : 89.3% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 29              | -               | 1073              | 2115:1975         | 1058+579       | 69.0 : 59.3% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 19              | -               | 478               | 1923              | 641            | 74.6%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 19              | -               | 330               | 1905              | 635            | 52.0%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 19              | -               | 286               | 1904              | 635            | 45.1%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 875               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 826               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 851               | 1975              | 1086           | 78.3%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 969               | 2095              | 1152           | 84.1%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 396               | 1859              | 1022           | 38.7%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 300               | 1712              | 485            | 61.8%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 885               | 1716:1729         | 486+490        | 93.2 : 88.2% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 411               | 1980              | 1221           | 33.7%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 813               | 2052              | 1265           | 64.2%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 36              | -               | 468               | 1915              | 1181           | 39.6%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 924  | 1900      | 1900    | 48.6%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 785  | 1900      | 1900    | 41.3%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 10 | - | 380  | 2085:1836 | 382+88  | 80.8 : 80.8% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 10 | - | 577  | 2080:1942 | 381+356 | 86.5 : 69.4% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 468  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 390  | 1800      | 1800    | 21.7%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 746  | 1800      | 1800    | 41.4%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 798  | 1800      | 1800    | 44.3%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 247  | 1800      | 1800    | 13.7%        |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 758  | 3000:3000 | 659+145 | 94.1 : 95.3% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 528  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 746  | 1800      | 1800    | 41.4%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 826  | 1800      | 1800    | 45.9%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 839  | 1800      | 1800    | 46.6%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 129  | 3000      | 215     | 59.9%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 255  | 3000      | 434     | 58.7%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1361 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1900</b>           | <b>0</b>                     | <b>0</b>                    | <b>36.5</b>           | <b>30.8</b>                  | <b>0.0</b>                         | <b>67.3</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1900</b>           | <b>0</b>                     | <b>0</b>                    | <b>36.5</b>           | <b>30.8</b>                  | <b>0.0</b>                         | <b>67.3</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1410           | 1410          | -                     | -                            | -                           | 4.8                   | 2.3                          | -                                  | 7.1<br>(2.4+4.8)    | 18.2<br>(16.1:19.4)       | 13.2                             | 2.3                        | 15.5                 |
| 1/3+1/4                                            | 1073           | 1073          | -                     | -                            | -                           | 3.2                   | 0.9                          | -                                  | 4.1<br>(3.0+1.2)    | 13.9<br>(14.6:12.3)       | 9.1                              | 0.9                        | 10.1                 |
| 2/1                                                | 478            | 478           | -                     | -                            | -                           | 1.8                   | 1.4                          | -                                  | 3.3                 | 24.5                      | 7.6                              | 1.4                        | 9.0                  |
| 2/2                                                | 330            | 330           | -                     | -                            | -                           | 1.4                   | 0.5                          | -                                  | 2.0                 | 21.7                      | 4.4                              | 0.5                        | 5.0                  |
| 2/3                                                | 286            | 286           | -                     | -                            | -                           | 0.9                   | 0.4                          | -                                  | 1.3                 | 16.6                      | 4.0                              | 0.4                        | 4.4                  |
| 3/1                                                | 875            | 875           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 826            | 826           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 851            | 851           | -                     | -                            | -                           | 2.2                   | 1.8                          | -                                  | 4.0                 | 16.9                      | 9.3                              | 1.8                        | 11.0                 |
| 4/2                                                | 969            | 969           | -                     | -                            | -                           | 3.7                   | 2.6                          | -                                  | 6.2                 | 23.2                      | 10.8                             | 2.6                        | 13.4                 |
| 4/3                                                | 396            | 396           | -                     | -                            | -                           | 0.8                   | 0.3                          | -                                  | 1.1                 | 9.7                       | 2.9                              | 0.3                        | 3.2                  |
| 5/1                                                | 300            | 300           | -                     | -                            | -                           | 1.6                   | 0.8                          | -                                  | 2.4                 | 28.3                      | 4.3                              | 0.8                        | 5.1                  |
| 5/3+5/2                                            | 885            | 885           | -                     | -                            | -                           | 5.1                   | 4.4                          | -                                  | 9.5<br>(4.9+4.6)    | 38.8<br>(39.0:38.6)       | 7.3                              | 4.4                        | 11.7                 |
| 6/1                                                | 411            | 411           | -                     | -                            | -                           | 0.8                   | 0.3                          | -                                  | 1.1                 | 9.5                       | 3.9                              | 0.3                        | 4.1                  |
| 6/2                                                | 813            | 813           | -                     | -                            | -                           | 0.8                   | 0.0                          | -                                  | 0.8                 | 3.7                       | 9.9                              | 0.0                        | 9.9                  |
| 6/3                                                | 468            | 468           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.7                       | 0.2                              | 0.3                        | 0.5                  |
| 7/1                                                | 924            | 924           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.5                 | 2.0                       | 4.5                              | 0.5                        | 4.9                  |
| 7/2                                                | 785            | 785           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 1.6                              | 0.4                        | 2.0                  |
| 8/2+8/1                                            | 380            | 380           | -                     | -                            | -                           | 2.4                   | 2.0                          | -                                  | 4.4<br>(3.7+0.8)    | 42.1<br>(42.6:39.9)       | 4.9                              | 2.0                        | 6.9                  |
| 8/3+8/4                                            | 577            | 577           | -                     | -                            | -                           | 3.8                   | 1.8                          | -                                  | 5.5<br>(3.2+2.3)    | 34.4<br>(34.8:33.9)       | 5.3                              | 1.8                        | 7.1                  |
| 9/1                                                | 468            | 468           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |



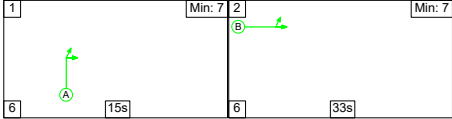
## Full Input Data And Results

|                                                                                                                                                                                                                                                                                                                  |      |      |      |   |   |     |     |   |                  |                     |     |     |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|------|
| 10/1                                                                                                                                                                                                                                                                                                             | 390  | 390  | -    | - | - | 0.0 | 0.1 | - | 0.1              | 1.3                 | 0.0 | 0.1 | 0.2  |
| 10/2                                                                                                                                                                                                                                                                                                             | 746  | 746  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.9                 | 4.1 | 0.4 | 4.5  |
| 10/3                                                                                                                                                                                                                                                                                                             | 798  | 798  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.9                 | 2.2 | 0.4 | 2.6  |
| 10/4                                                                                                                                                                                                                                                                                                             | 247  | 247  | -    | - | - | 0.0 | 0.1 | - | 0.1              | 1.2                 | 1.0 | 0.1 | 1.1  |
| 11/2+11/1                                                                                                                                                                                                                                                                                                        | 758  | 758  | 1516 | 0 | 0 | 2.4 | 6.4 | - | 8.8<br>(7.0+1.8) | 41.9<br>(40.8;46.9) | 9.8 | 6.4 | 16.3 |
| 12/1                                                                                                                                                                                                                                                                                                             | 528  | 528  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0  |
| 13/1                                                                                                                                                                                                                                                                                                             | 746  | 746  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.7                 | 0.0 | 0.4 | 0.4  |
| 13/2                                                                                                                                                                                                                                                                                                             | 826  | 826  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.8                 | 0.0 | 0.4 | 0.4  |
| 13/3                                                                                                                                                                                                                                                                                                             | 839  | 839  | -    | - | - | 0.0 | 0.4 | - | 0.5              | 2.0                 | 4.0 | 0.4 | 4.4  |
| 14/1                                                                                                                                                                                                                                                                                                             | 129  | 129  | 129  | 0 | 0 | 0.3 | 0.7 | - | 1.0              | 27.4                | 1.6 | 0.7 | 2.3  |
| 14/2                                                                                                                                                                                                                                                                                                             | 255  | 255  | 255  | 0 | 0 | 0.4 | 0.7 | - | 1.1              | 15.7                | 3.0 | 0.7 | 3.8  |
| 15/1                                                                                                                                                                                                                                                                                                             | 1361 | 1361 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0  |
| C1 Stream: 1 PRC for Signalised Lanes (%): 0.8 Total Delay for Signalised Lanes (pcuHr): 17.82 Cycle Time (s): 60<br>C1 Stream: 2 PRC for Signalised Lanes (%): -3.5 Total Delay for Signalised Lanes (pcuHr): 35.39 Cycle Time (s): 60<br>PRC Over All Lanes (%): -5.9 Total Delay Over All Lanes(pcuHr): 67.28 |      |      |      |   |   |     |     |   |                  |                     |     |     |      |

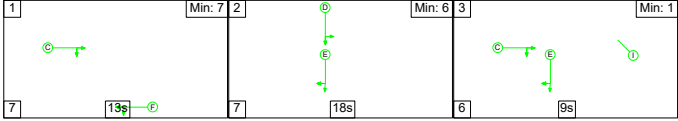
Full Input Data And Results  
**Scenario 10: '2030 Do Something Sens PM Highway Peak'** (FG10: '2030 Do Something Sens NH PM Peak', Plan 1: 'Staging Plan No. 1')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Stage Stream: 2**



**Stage Timings**

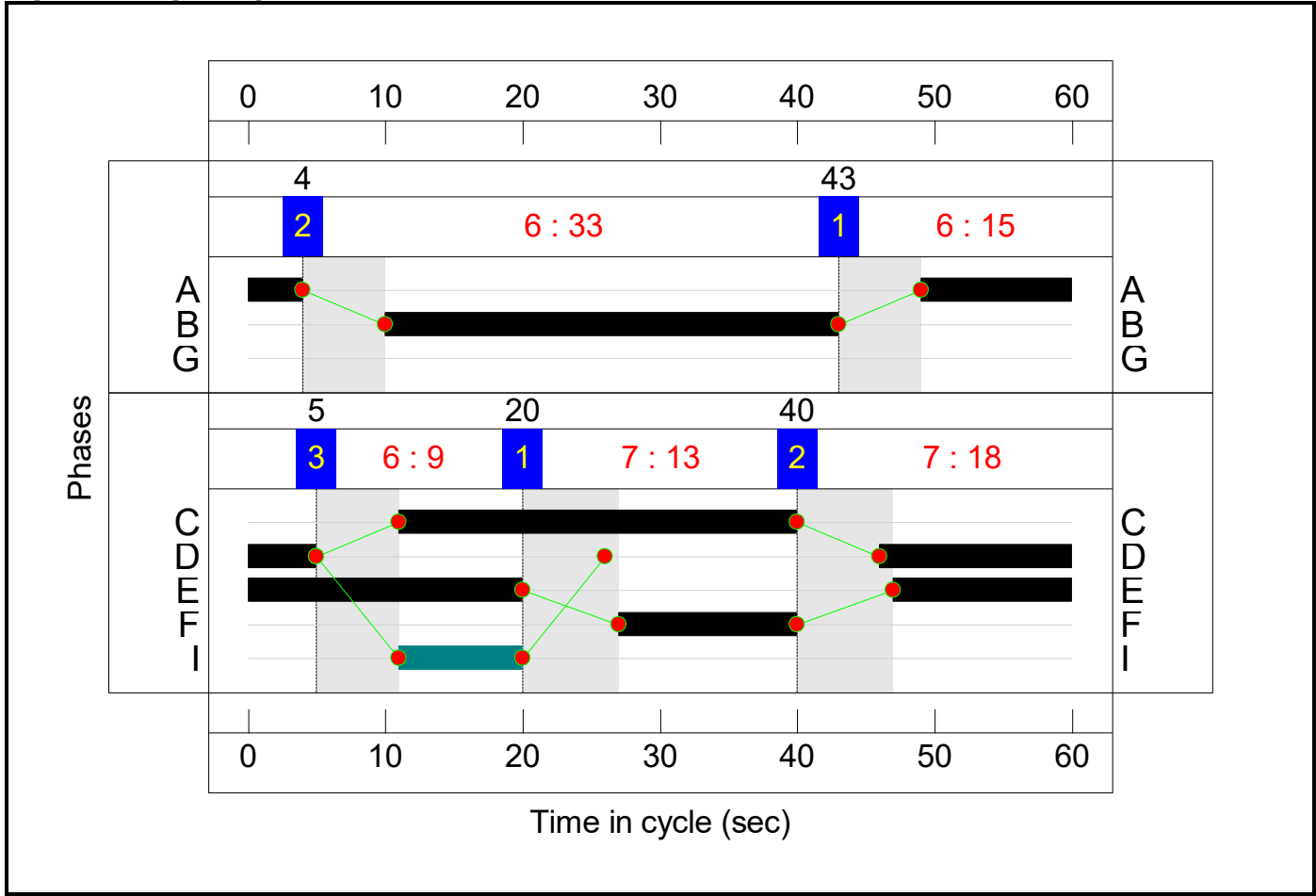
**Stage Stream: 1**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 33 |
| Change Point | 43 | 4  |

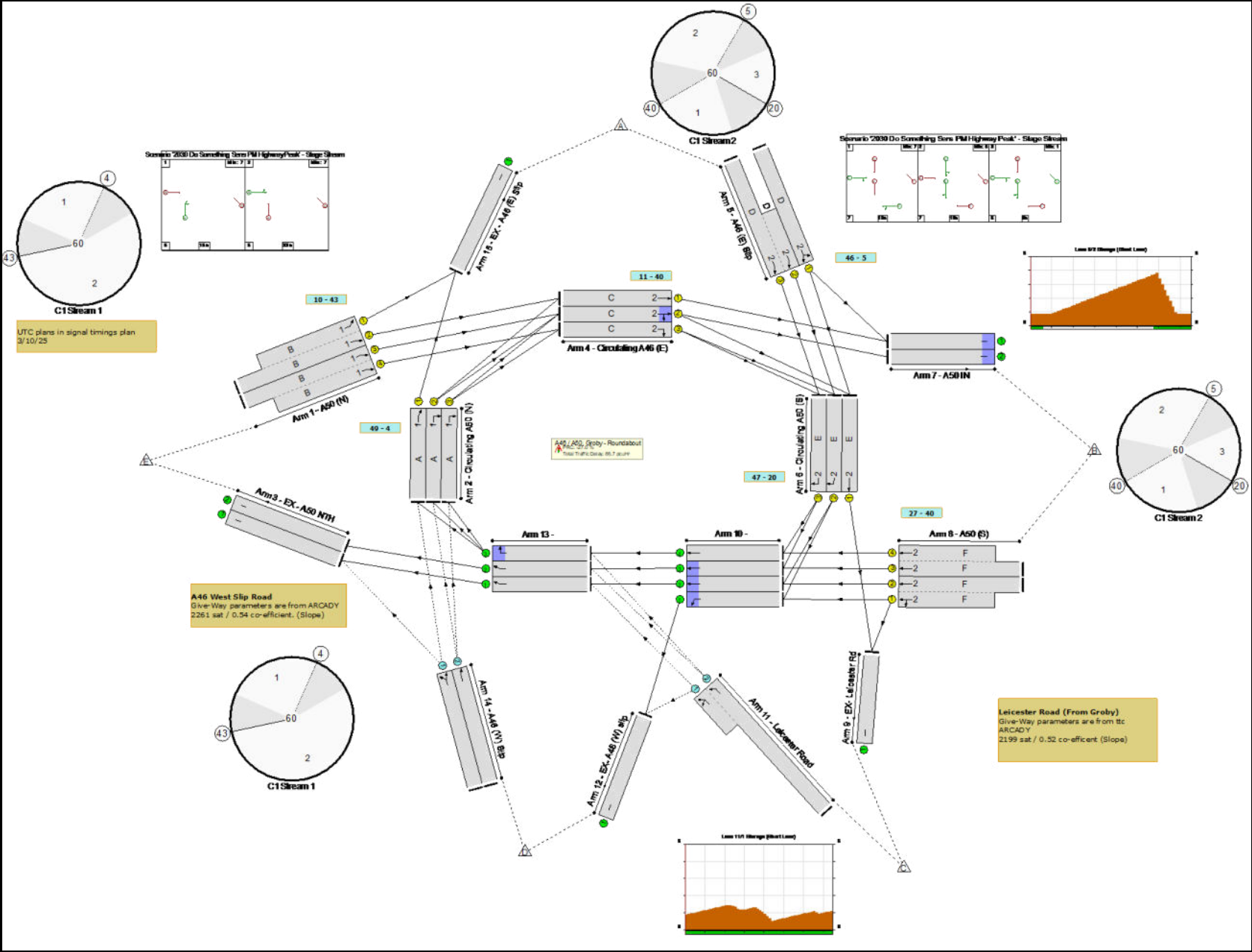
**Stage Stream: 2**

| Stage        | 1  | 2  | 3 |
|--------------|----|----|---|
| Duration     | 13 | 18 | 9 |
| Change Point | 20 | 40 | 5 |

**Signal Timings Diagram**



Full Input Data And Results  
Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 114.3%       |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 114.3%       |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1307              | 1975:1978         | 576+1121       | 70.9 : 80.1% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1111              | 2115:1975         | 1116+933       | 54.2 : 54.2% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 447               | 1923              | 513            | 87.2%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 253               | 1905              | 508            | 49.8%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 168               | 1904              | 508            | 33.1%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 920               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 958               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 29              | -               | 630               | 1975              | 987            | 63.8%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 29              | -               | 787               | 2086              | 1043           | 75.5%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 29              | -               | 524               | 1859              | 930            | 56.4%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 19              | -               | 417               | 1732              | 577            | 72.2%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 19              | -               | 809               | 1716:1729         | 572+283        | 94.6 : 94.6% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 602               | 1980              | 1122           | 53.7%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 774               | 2052              | 1163           | 66.6%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 559               | 1915              | 1085           | 51.5%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |               |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|---------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 667  | 1900      | 1900    | 35.1%         |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 565  | 1900      | 1900    | 29.7%         |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 13 | - | 822  | 2085:1857 | 487+433 | 98.5 : 79.2%  |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 13 | - | 505  | 2080:1942 | 485+146 | 79.9 : 79.9%  |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 826  | Inf       | Inf     | 0.0%          |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 622  | 1800      | 1800    | 34.6%         |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 750  | 1800      | 1800    | 41.7%         |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 947  | 1800      | 1800    | 52.6%         |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 117  | 1800      | 1800    | 6.5%          |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 655  | 3000:3000 | 544+104 | 98.5 : 114.3% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 736  | Inf       | Inf     | 0.0%          |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 755  | 1800      | 1800    | 41.9%         |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 958  | 1800      | 1800    | 53.2%         |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 642  | 1800      | 1800    | 35.7%         |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 165  | 3000      | 185     | 89.0%         |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 226  | 3000      | 279     | 81.1%         |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1345 | 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: A50/A46 Rbt, Groby, Leicestershire | -              | -             | 1671                  | 0                            | 0                           | 35.9                  | 50.8                         | 0.0                                | 86.7                | -                         | -                                | -                          | -                    |
| A46 / A50, Groby - Roundabout               | -              | -             | 1671                  | 0                            | 0                           | 35.9                  | 50.8                         | 0.0                                | 86.7                | -                         | -                                | -                          | -                    |
| 1/2+1/1                                     | 1307           | 1307          | -                     | -                            | -                           | 3.4                   | 1.7                          | -                                  | 5.0 (1.3+3.7)       | 13.9 (11.7:14.9)          | 11.7                             | 1.7                        | 13.4                 |
| 1/3+1/4                                     | 1111           | 1111          | -                     | -                            | -                           | 2.4                   | 0.6                          | -                                  | 3.0 (1.6+1.3)       | 9.7 (9.8:9.5)             | 6.1                              | 0.6                        | 6.6                  |
| 2/1                                         | 447            | 447           | -                     | -                            | -                           | 2.0                   | 3.1                          | -                                  | 5.1                 | 41.4                      | 7.2                              | 3.1                        | 10.3                 |
| 2/2                                         | 253            | 253           | -                     | -                            | -                           | 1.2                   | 0.5                          | -                                  | 1.7                 | 24.5                      | 3.8                              | 0.5                        | 4.3                  |
| 2/3                                         | 168            | 168           | -                     | -                            | -                           | 0.8                   | 0.2                          | -                                  | 1.1                 | 22.6                      | 2.2                              | 0.2                        | 2.5                  |
| 3/1                                         | 919            | 919           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                         | 958            | 958           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                         | 630            | 630           | -                     | -                            | -                           | 1.5                   | 0.9                          | -                                  | 2.4                 | 13.6                      | 6.1                              | 0.9                        | 7.0                  |
| 4/2                                         | 787            | 787           | -                     | -                            | -                           | 1.8                   | 1.5                          | -                                  | 3.3                 | 15.0                      | 6.0                              | 1.5                        | 7.5                  |
| 4/3                                         | 524            | 524           | -                     | -                            | -                           | 0.9                   | 0.6                          | -                                  | 1.6                 | 10.8                      | 2.4                              | 0.6                        | 3.1                  |
| 5/1                                         | 417            | 417           | -                     | -                            | -                           | 2.0                   | 1.3                          | -                                  | 3.3                 | 28.6                      | 6.0                              | 1.3                        | 7.3                  |
| 5/3+5/2                                     | 809            | 809           | -                     | -                            | -                           | 4.1                   | 6.8                          | -                                  | 10.9 (7.4+3.4)      | 48.3 (49.5:45.9)          | 8.7                              | 6.8                        | 15.5                 |
| 6/1                                         | 602            | 602           | -                     | -                            | -                           | 1.0                   | 0.6                          | -                                  | 1.6                 | 9.4                       | 6.1                              | 0.6                        | 6.6                  |
| 6/2                                         | 774            | 774           | -                     | -                            | -                           | 2.6                   | 0.0                          | -                                  | 2.6                 | 12.1                      | 10.4                             | 0.0                        | 10.4                 |
| 6/3                                         | 559            | 559           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.6                 | 3.6                       | 0.1                              | 0.5                        | 0.6                  |
| 7/1                                         | 667            | 667           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 1.7                              | 0.3                        | 1.9                  |
| 7/2                                         | 565            | 565           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.3                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                     | 822            | 822           | -                     | -                            | -                           | 5.1                   | 3.9                          | -                                  | 9.0 (5.3+3.7)       | 39.4 (39.9:38.7)          | 7.9                              | 3.9                        | 11.7                 |
| 8/3+8/4                                     | 505            | 505           | -                     | -                            | -                           | 2.9                   | 1.9                          | -                                  | 4.9 (3.8+1.1)       | 34.8 (35.5:32.6)          | 6.0                              | 1.9                        | 8.0                  |
| 9/1                                         | 826            | 826           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 10/1                                        | 622            | 622           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.7                       | 3.3                              | 0.3                        | 3.5                  |

## Full Input Data And Results

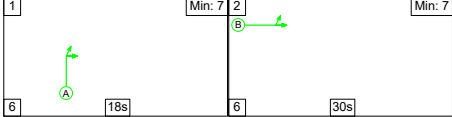
[illegible]

Full Input Data And Results

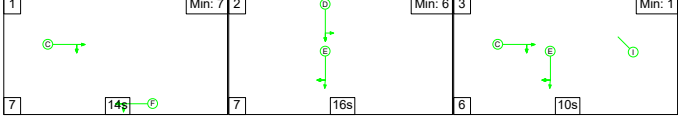
**Scenario 11: '2025 Base AM Dev Peak'** (FG11: '2025 Base NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Stage Stream: 2**



**Stage Timings**

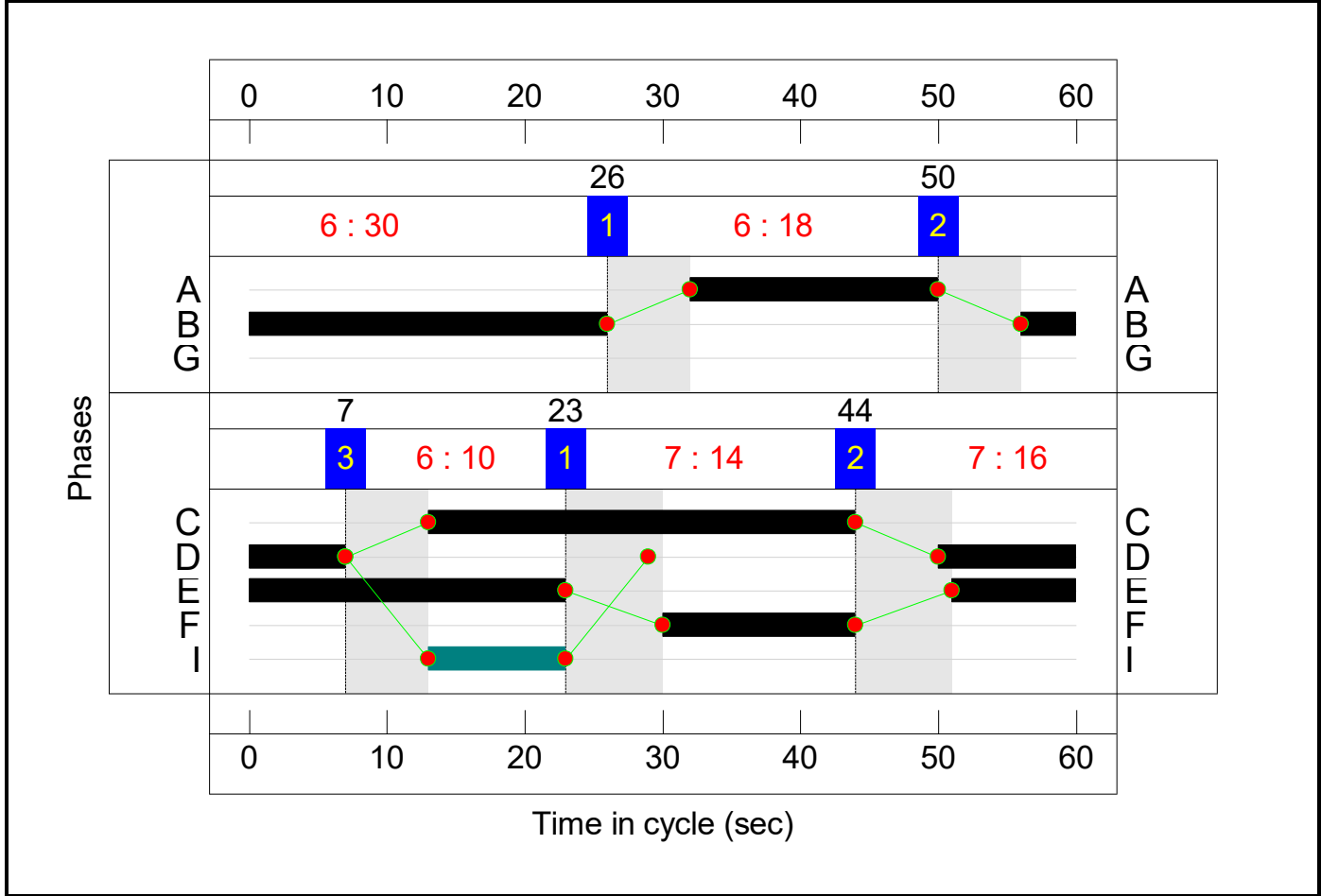
**Stage Stream: 1**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 18 | 30 |
| Change Point | 26 | 50 |

**Stage Stream: 2**

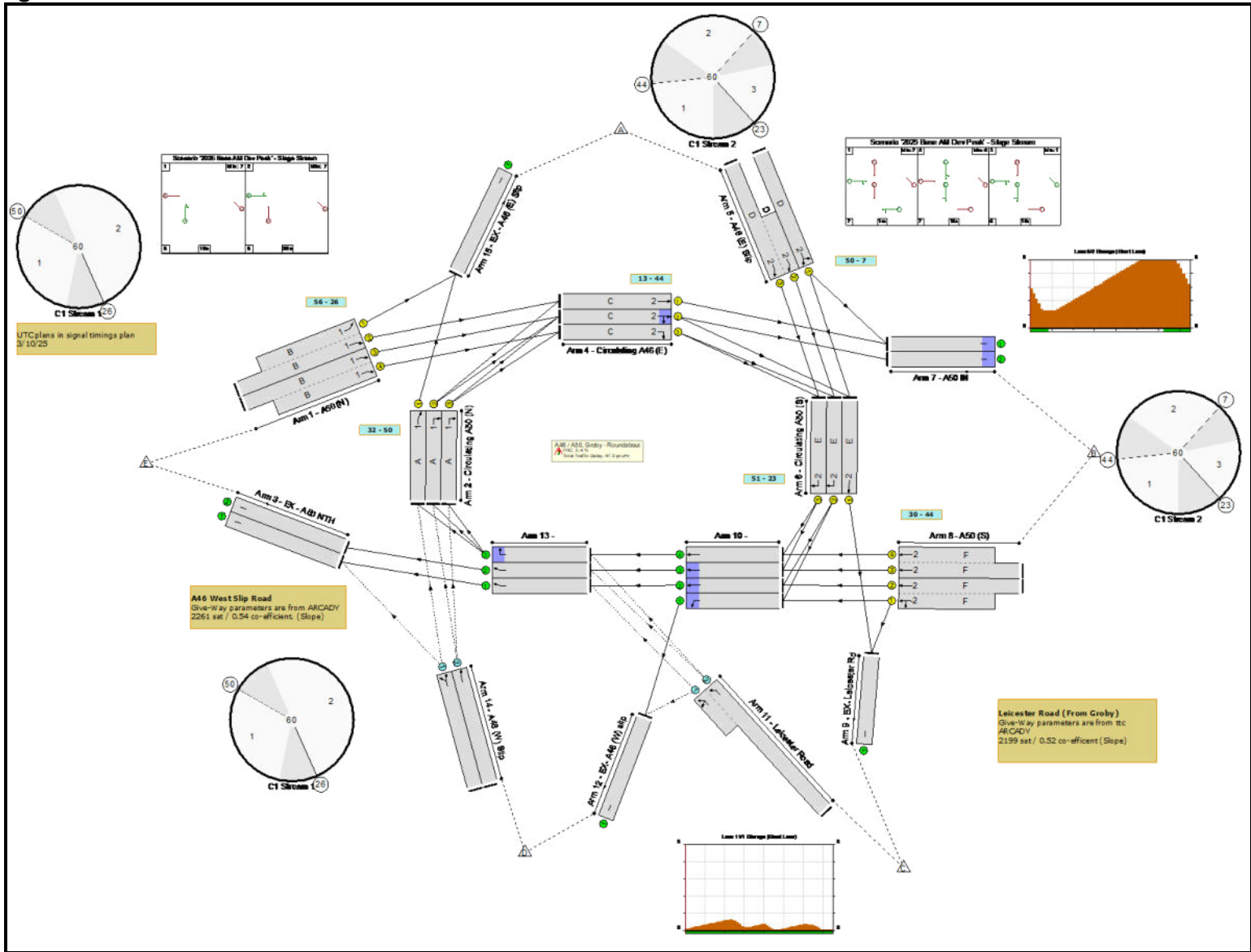
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 23 | 44 | 7  |

**Signal Timings Diagram**





## Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 89.6%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 89.6%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1451              | 1975:1978         | 718+1022       | 74.5 : 89.6% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 30              | -               | 1008              | 2115:1975         | 1093+625       | 61.7 : 53.5% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 433               | 1923              | 609            | 71.1%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 304               | 1905              | 603            | 50.4%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 18              | -               | 234               | 1904              | 603            | 38.8%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 810               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 556               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 832               | 1975              | 1053           | 79.0%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 915               | 2099              | 1119           | 81.7%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 334               | 1859              | 991            | 33.7%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 330               | 1705              | 511            | 64.5%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 715               | 1716:1729         | 369+519        | 80.6 : 80.6% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 369               | 1980              | 1089           | 33.9%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 750               | 2052              | 1129           | 66.5%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 299               | 1915              | 1053           | 28.4%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 930  | 1900      | 1900    | 48.9%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 778  | 1900      | 1900    | 40.9%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 386  | 2085:1850 | 521+462 | 42.0 : 36.1% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 332  | 2080:1942 | 520+241 | 43.7 : 43.7% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 486  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 364  | 1800      | 1800    | 20.2%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 655  | 1800      | 1800    | 36.4%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 526  | 1800      | 1800    | 29.2%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 105  | 1800      | 1800    | 5.8%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 744  | 3000:3000 | 814+154 | 77.5 : 73.3% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 477  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 655  | 1800      | 1800    | 36.4%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 556  | 1800      | 1800    | 30.9%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 706  | 1800      | 1800    | 39.2%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 155  | 3000      | 262     | 59.1%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 265  | 3000      | 427     | 62.1%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1349 | Inf       | Inf     | 0.0%         |

## Full Input Data And Results

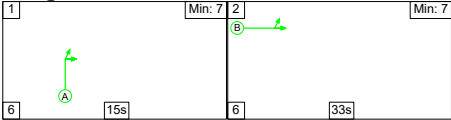
| Item                                               | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1908</b>           | <b>0</b>                     | <b>0</b>                    | <b>28.8</b>           | <b>19.1</b>                  | <b>0.0</b>                         | <b>47.9</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1908</b>           | <b>0</b>                     | <b>0</b>                    | <b>28.8</b>           | <b>19.1</b>                  | <b>0.0</b>                         | <b>47.9</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1451           | 1451          | -                     | -                            | -                           | 4.8                   | 2.5                          | -                                  | 7.2<br>(2.3+4.9)    | 17.9<br>(15.7:19.2)       | 13.7                             | 2.5                        | 16.2                 |
| 1/3+1/4                                            | 1008           | 1008          | -                     | -                            | -                           | 2.7                   | 0.7                          | -                                  | 3.4<br>(2.4+1.0)    | 12.2<br>(12.8:11.0)       | 7.9                              | 0.7                        | 8.6                  |
| 2/1                                                | 433            | 433           | -                     | -                            | -                           | 2.0                   | 1.2                          | -                                  | 3.2                 | 26.9                      | 5.6                              | 1.2                        | 6.8                  |
| 2/2                                                | 304            | 304           | -                     | -                            | -                           | 1.2                   | 0.5                          | -                                  | 1.7                 | 20.3                      | 4.0                              | 0.5                        | 4.6                  |
| 2/3                                                | 234            | 234           | -                     | -                            | -                           | 0.9                   | 0.3                          | -                                  | 1.2                 | 18.8                      | 3.0                              | 0.3                        | 3.3                  |
| 3/1                                                | 810            | 810           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 556            | 556           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 832            | 832           | -                     | -                            | -                           | 2.9                   | 1.8                          | -                                  | 4.7                 | 20.4                      | 11.7                             | 1.8                        | 13.5                 |
| 4/2                                                | 915            | 915           | -                     | -                            | -                           | 2.5                   | 2.2                          | -                                  | 4.7                 | 18.5                      | 13.0                             | 2.2                        | 15.2                 |
| 4/3                                                | 334            | 334           | -                     | -                            | -                           | 0.3                   | 0.3                          | -                                  | 0.6                 | 6.2                       | 3.7                              | 0.3                        | 4.0                  |
| 5/1                                                | 330            | 330           | -                     | -                            | -                           | 1.7                   | 0.9                          | -                                  | 2.6                 | 28.1                      | 4.8                              | 0.9                        | 5.7                  |
| 5/3+5/2                                            | 715            | 715           | -                     | -                            | -                           | 3.7                   | 2.0                          | -                                  | 5.7<br>(2.3+3.4)    | 28.9<br>(28.0:29.6)       | 6.4                              | 2.0                        | 8.4                  |
| 6/1                                                | 369            | 369           | -                     | -                            | -                           | 0.3                   | 0.3                          | -                                  | 0.6                 | 5.8                       | 1.4                              | 0.3                        | 1.6                  |
| 6/2                                                | 750            | 750           | -                     | -                            | -                           | 0.7                   | 0.0                          | -                                  | 0.7                 | 3.5                       | 4.0                              | 0.0                        | 4.0                  |
| 6/3                                                | 299            | 299           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 2.4                       | 0.0                              | 0.2                        | 0.2                  |
| 7/1                                                | 930            | 930           | -                     | -                            | -                           | 0.1                   | 0.5                          | -                                  | 0.5                 | 2.1                       | 7.1                              | 0.5                        | 7.6                  |
| 7/2                                                | 778            | 778           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.6                       | 0.0                              | 0.3                        | 0.4                  |
| 8/2+8/1                                            | 386            | 386           | -                     | -                            | -                           | 2.0                   | 0.3                          | -                                  | 2.3<br>(1.3+1.0)    | 21.7<br>(21.9:21.6)       | 3.0                              | 0.3                        | 3.4                  |
| 8/3+8/4                                            | 332            | 332           | -                     | -                            | -                           | 1.7                   | 0.4                          | -                                  | 2.1<br>(1.5+0.6)    | 22.8<br>(23.2:22.1)       | 3.2                              | 0.4                        | 3.5                  |
| 9/1                                                | 486            | 486           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

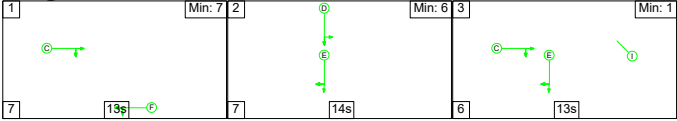
[illegible]

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

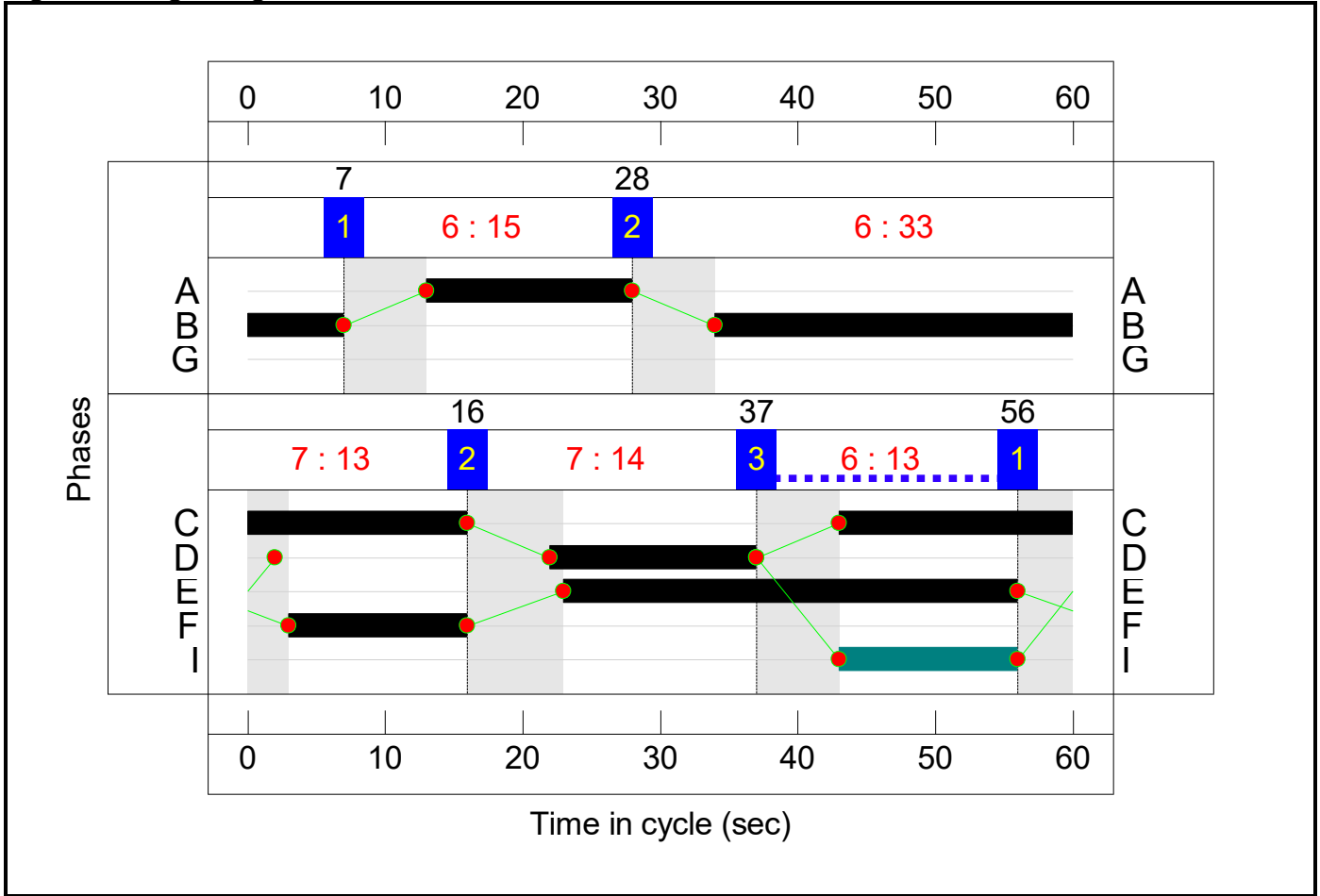
Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 33 |
| Change Point | 7  | 28 |

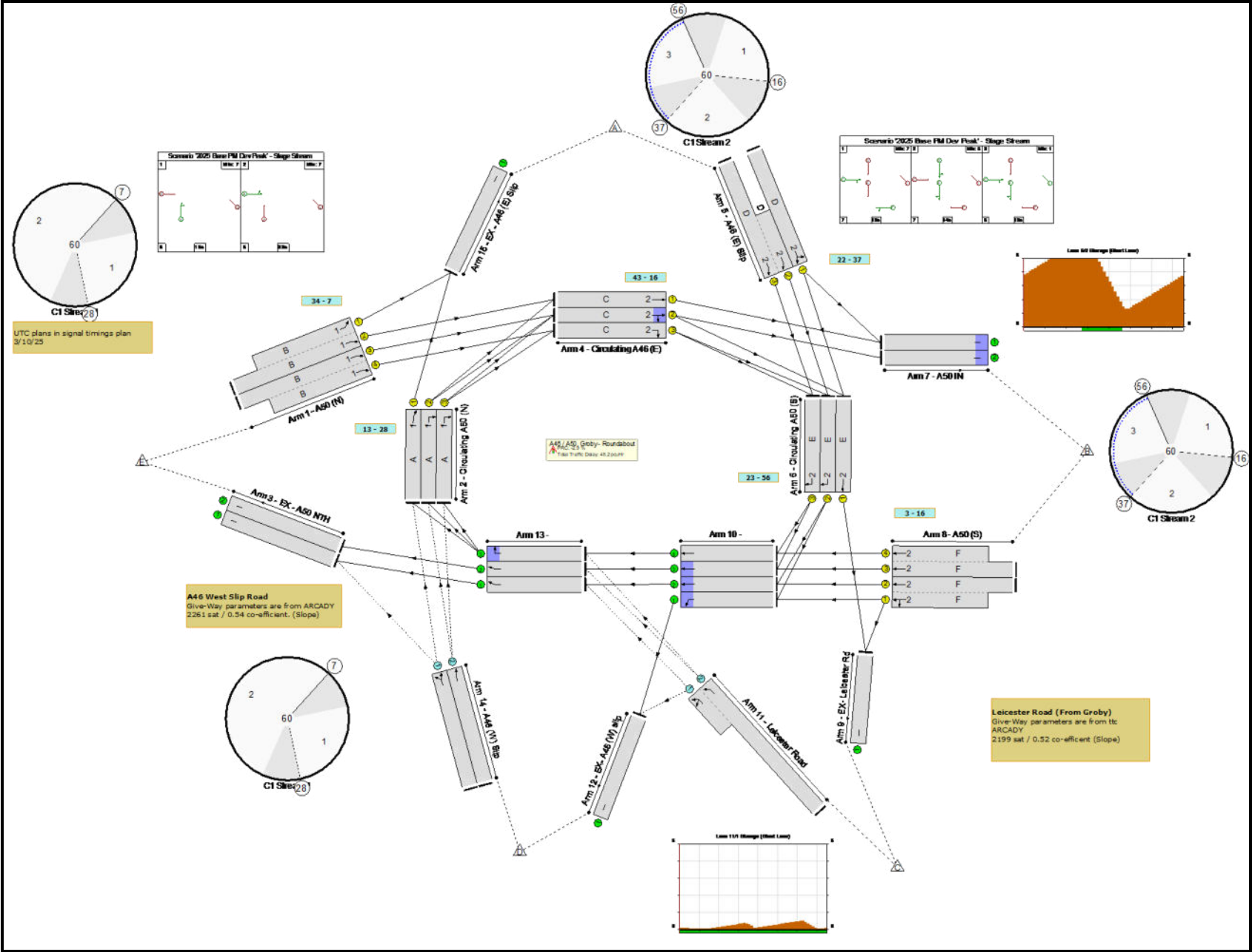
Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 14 | 13 |
| Change Point | 56 | 16 | 37 |

Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 92.6%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 92.6%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1003              | 1975:1978         | 306+1121       | 70.3 : 70.3% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 889               | 2115:1975         | 1199+727       | 48.1 : 43.1% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 347               | 1923              | 513            | 67.7%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 231               | 1905              | 508            | 45.5%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 173               | 1904              | 508            | 34.1%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1050              | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 726               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 33              | -               | 444               | 1975              | 1119           | 39.7%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 33              | -               | 751               | 2086              | 1182           | 63.5%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 33              | -               | 313               | 1859              | 1053           | 29.7%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 15              | -               | 367               | 1735              | 463            | 79.3%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 15              | -               | 758               | 1716:1729         | 359+461        | 92.3 : 92.6% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 550               | 1980              | 1122           | 49.0%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 737               | 2052              | 1163           | 63.4%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 334               | 1915              | 1085           | 30.8%        |



# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |                 |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|-----------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 468  | 1900      | 1900    | 24.6%           |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 544  | 1900      | 1900    | 28.6%           |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 13 | - | 752  | 2085:1853 | 487+432 | 90.4 :<br>72.2% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 13 | - | 481  | 2080:1942 | 485+141 | 76.9 :<br>76.9% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 761  | Inf       | Inf     | 0.0%            |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 409  | 1800      | 1800    | 22.7%           |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 869  | 1800      | 1800    | 48.3%           |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 707  | 1800      | 1800    | 39.3%           |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 108  | 1800      | 1800    | 6.0%            |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 524  | 3000:3000 | 665+133 | 66.5 :<br>61.7% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 491  | Inf       | Inf     | 0.0%            |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 869  | 1800      | 1800    | 48.3%           |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 726  | 1800      | 1800    | 40.3%           |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 531  | 1800      | 1800    | 29.5%           |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 181  | 3000      | 279     | 64.9%           |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 220  | 3000      | 389     | 56.6%           |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1135 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1449</b>           | <b>0</b>                     | <b>0</b>                    | <b>27.0</b>           | <b>21.2</b>                  | <b>0.0</b>                         | <b>48.2</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1449</b>           | <b>0</b>                     | <b>0</b>                    | <b>27.0</b>           | <b>21.2</b>                  | <b>0.0</b>                         | <b>48.2</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1003           | 1003          | -                     | -                            | -                           | 2.4                   | 1.2                          | -                                  | 3.6<br>(0.6+3.0)    | 12.9<br>(10.6:13.6)       | 9.4                              | 1.2                        | 10.6                 |
| 1/3+1/4                                            | 889            | 889           | -                     | -                            | -                           | 1.8                   | 0.4                          | -                                  | 2.3<br>(1.5+0.7)    | 9.1 (9.5:8.4)             | 5.6                              | 0.4                        | 6.0                  |
| 2/1                                                | 347            | 347           | -                     | -                            | -                           | 1.4                   | 1.0                          | -                                  | 2.4                 | 24.8                      | 4.3                              | 1.0                        | 5.3                  |
| 2/2                                                | 231            | 231           | -                     | -                            | -                           | 1.1                   | 0.4                          | -                                  | 1.5                 | 23.3                      | 3.5                              | 0.4                        | 3.9                  |
| 2/3                                                | 173            | 173           | -                     | -                            | -                           | 0.9                   | 0.3                          | -                                  | 1.2                 | 24.0                      | 2.7                              | 0.3                        | 2.9                  |
| 3/1                                                | 1050           | 1050          | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 726            | 726           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 444            | 444           | -                     | -                            | -                           | 1.4                   | 0.3                          | -                                  | 1.8                 | 14.2                      | 5.8                              | 0.3                        | 6.2                  |
| 4/2                                                | 751            | 751           | -                     | -                            | -                           | 1.5                   | 0.9                          | -                                  | 2.3                 | 11.2                      | 9.4                              | 0.9                        | 10.3                 |
| 4/3                                                | 313            | 313           | -                     | -                            | -                           | 0.1                   | 0.2                          | -                                  | 0.3                 | 3.6                       | 0.3                              | 0.2                        | 0.5                  |
| 5/1                                                | 367            | 367           | -                     | -                            | -                           | 2.1                   | 1.8                          | -                                  | 3.9                 | 38.6                      | 5.6                              | 1.8                        | 7.5                  |
| 5/3+5/2                                            | 758            | 758           | -                     | -                            | -                           | 4.4                   | 5.3                          | -                                  | 9.6<br>(4.1+5.5)    | 45.7<br>(44.9:46.4)       | 6.9                              | 5.3                        | 12.1                 |
| 6/1                                                | 550            | 550           | -                     | -                            | -                           | 0.2                   | 0.5                          | -                                  | 0.7                 | 4.5                       | 0.7                              | 0.5                        | 1.2                  |
| 6/2                                                | 737            | 737           | -                     | -                            | -                           | 0.7                   | 0.0                          | -                                  | 0.7                 | 3.4                       | 5.2                              | 0.0                        | 5.2                  |
| 6/3                                                | 334            | 334           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 2.5                       | 0.0                              | 0.2                        | 0.2                  |
| 7/1                                                | 468            | 468           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.3                       | 1.1                              | 0.2                        | 1.3                  |
| 7/2                                                | 544            | 544           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.3                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                            | 752            | 752           | -                     | -                            | -                           | 4.6                   | 2.2                          | -                                  | 6.8<br>(4.0+2.7)    | 32.4<br>(32.9:31.7)       | 7.1                              | 2.2                        | 9.3                  |
| 8/3+8/4                                            | 481            | 481           | -                     | -                            | -                           | 2.8                   | 1.6                          | -                                  | 4.4<br>(3.5+0.9)    | 33.0<br>(33.6:30.9)       | 5.8                              | 1.6                        | 7.4                  |
| 9/1                                                | 761            | 761           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

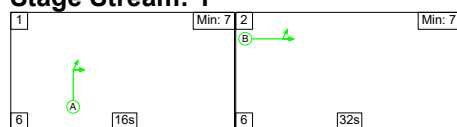
[illegible]

## Full Input Data And Results

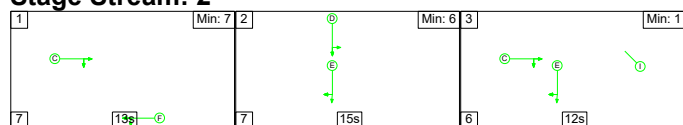
**Scenario 13: '2030 Do Minimum AM Dev Peak'** (FG13: '2030 Do Minimum NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

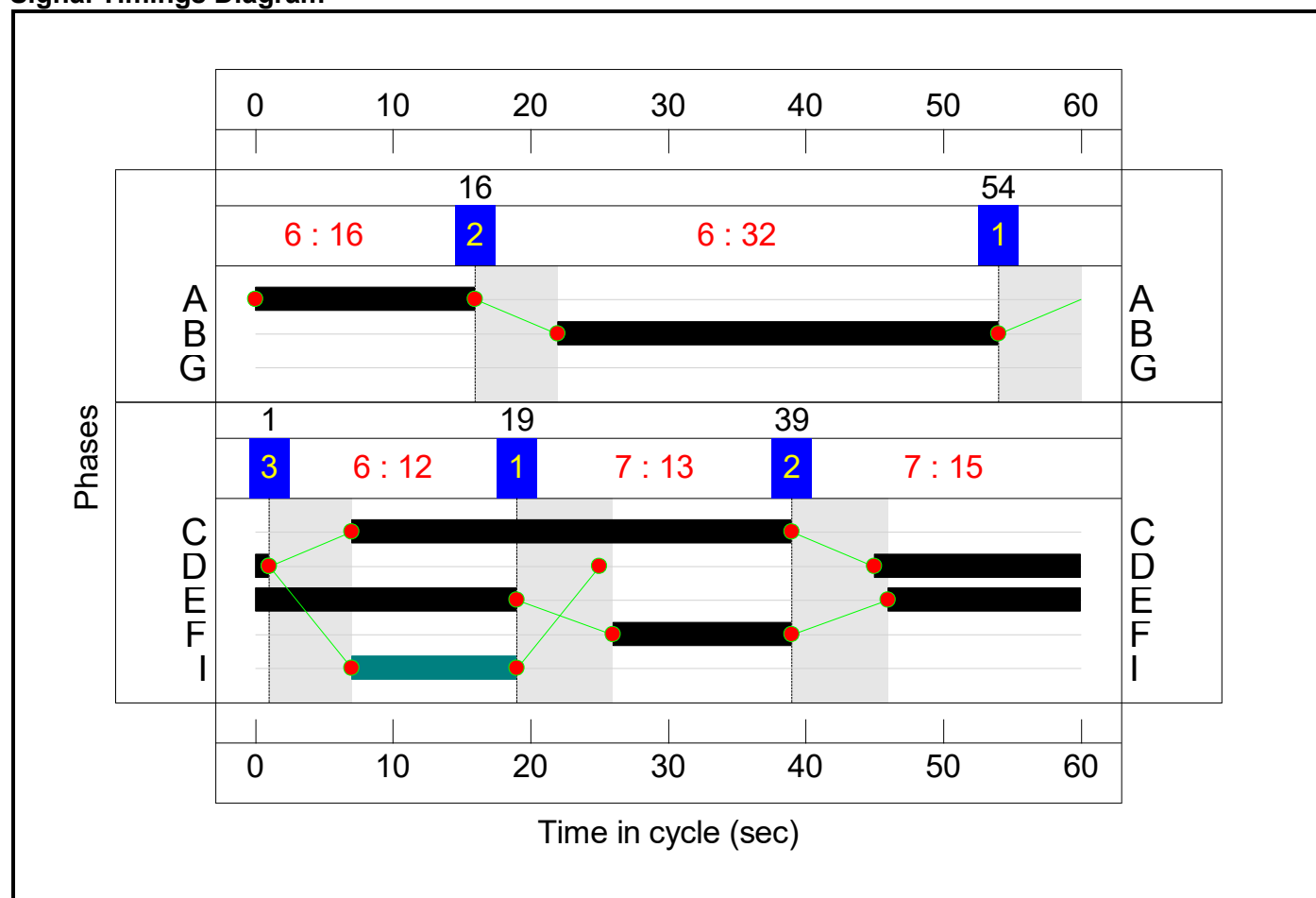
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 32 |
| Change Point | 54 | 16 |

#### Stage Stream: 2

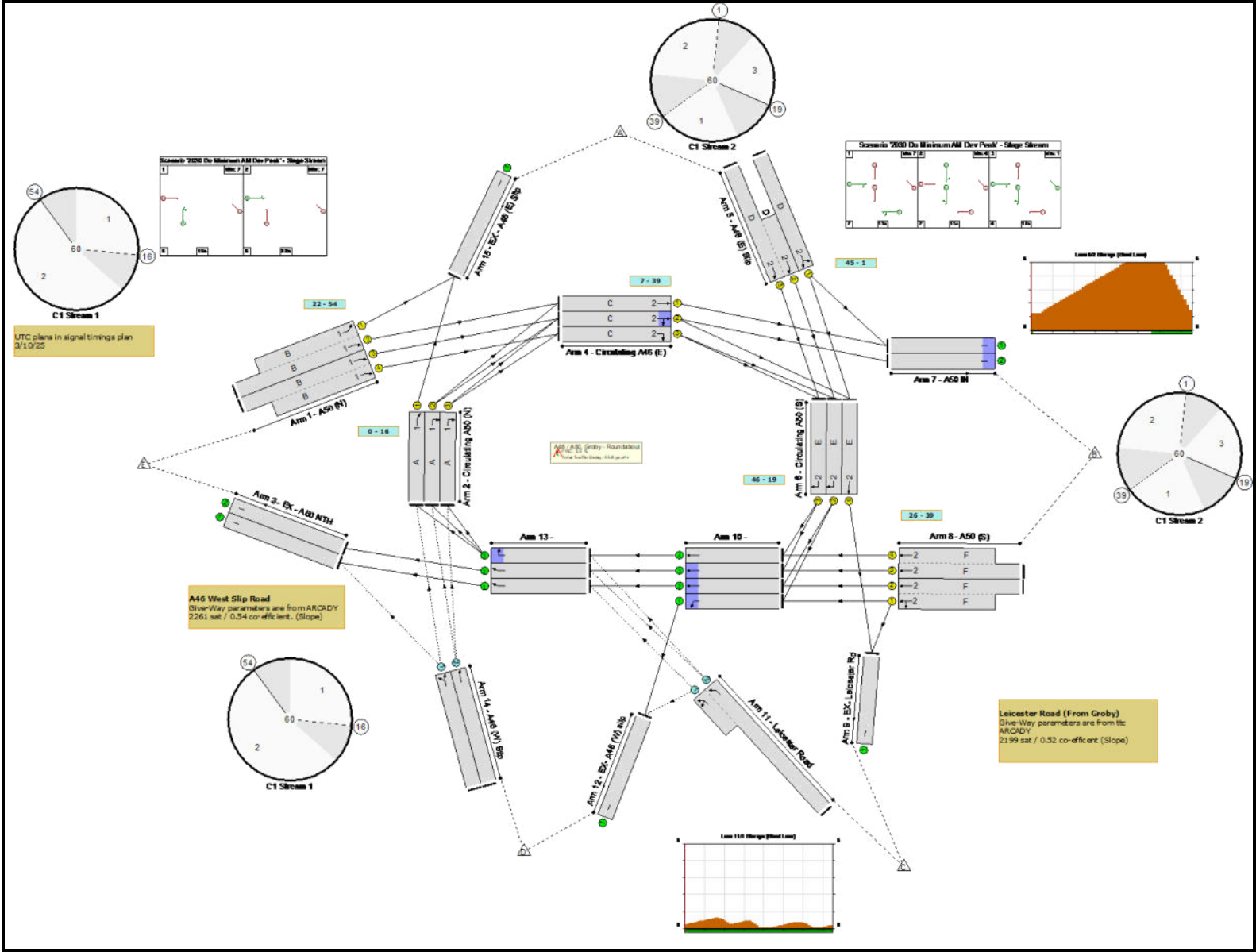
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 15 | 12 |
| Change Point | 19 | 39 | 1  |

### Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 87.4%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 87.4%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1440              | 1975:1978         | 646+1088       | 75.8 : 87.4% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1125              | 2115:1975         | 1163+618       | 65.6 : 58.6% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 444               | 1923              | 545            | 81.5%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 317               | 1905              | 540            | 58.7%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 217               | 1904              | 539            | 40.2%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 822               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 603               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 803               | 1975              | 1086           | 73.9%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 983               | 2099              | 1154           | 85.1%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 362               | 1859              | 1022           | 35.4%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 386               | 1707              | 484            | 79.8%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 761               | 1716:1729         | 418+490        | 82.6 : 84.9% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 429               | 1980              | 1122           | 38.2%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 776               | 2052              | 1163           | 66.7%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 33              | -               | 347               | 1915              | 1085           | 32.0%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 910  | 1900      | 1900    | 47.9%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 833  | 1900      | 1900    | 43.8%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 13 | - | 439  | 2085:1849 | 487+431 | 49.9 : 45.4% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 13 | - | 342  | 2080:1942 | 485+248 | 46.8 : 46.4% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 568  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 398  | 1800      | 1800    | 22.1%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 678  | 1800      | 1800    | 37.7%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 574  | 1800      | 1800    | 31.9%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 115  | 1800      | 1800    | 6.4%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 748  | 3000:3000 | 779+161 | 80.7 : 74.1% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 517  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 678  | 1800      | 1800    | 37.7%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 603  | 1800      | 1800    | 33.5%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 715  | 1800      | 1800    | 39.7%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 144  | 3000      | 257     | 56.0%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 263  | 3000      | 427     | 61.6%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1395 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1903</b>           | <b>0</b>                     | <b>0</b>                    | <b>33.3</b>           | <b>22.5</b>                  | <b>0.0</b>                         | <b>55.8</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1903</b>           | <b>0</b>                     | <b>0</b>                    | <b>33.3</b>           | <b>22.5</b>                  | <b>0.0</b>                         | <b>55.8</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1440           | 1440          | -                     | -                            | -                           | 4.2                   | 2.4                          | -                                  | 6.6<br>(1.9+4.7)    | 16.5<br>(14.1:17.7)       | 13.7                             | 2.4                        | 16.2                 |
| 1/3+1/4                                            | 1125           | 1125          | -                     | -                            | -                           | 2.8                   | 0.9                          | -                                  | 3.6<br>(2.6+1.0)    | 11.6<br>(12.2:10.2)       | 8.9                              | 0.9                        | 9.8                  |
| 2/1                                                | 444            | 444           | -                     | -                            | -                           | 2.5                   | 2.1                          | -                                  | 4.6                 | 37.4                      | 7.3                              | 2.1                        | 9.4                  |
| 2/2                                                | 317            | 317           | -                     | -                            | -                           | 1.9                   | 0.7                          | -                                  | 2.6                 | 29.4                      | 5.1                              | 0.7                        | 5.8                  |
| 2/3                                                | 217            | 217           | -                     | -                            | -                           | 1.3                   | 0.3                          | -                                  | 1.6                 | 26.4                      | 3.4                              | 0.3                        | 3.8                  |
| 3/1                                                | 822            | 822           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 603            | 603           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 803            | 803           | -                     | -                            | -                           | 2.0                   | 1.4                          | -                                  | 3.4                 | 15.3                      | 9.8                              | 1.4                        | 11.2                 |
| 4/2                                                | 983            | 983           | -                     | -                            | -                           | 4.4                   | 2.8                          | -                                  | 7.1                 | 26.2                      | 12.8                             | 2.8                        | 15.5                 |
| 4/3                                                | 362            | 362           | -                     | -                            | -                           | 1.0                   | 0.3                          | -                                  | 1.2                 | 12.2                      | 3.2                              | 0.3                        | 3.5                  |
| 5/1                                                | 386            | 386           | -                     | -                            | -                           | 2.1                   | 1.9                          | -                                  | 4.0                 | 37.7                      | 5.9                              | 1.9                        | 7.8                  |
| 5/3+5/2                                            | 761            | 761           | -                     | -                            | -                           | 4.2                   | 2.5                          | -                                  | 6.7<br>(3.0+3.7)    | 31.7<br>(31.2:32.2)       | 6.5                              | 2.5                        | 9.0                  |
| 6/1                                                | 429            | 429           | -                     | -                            | -                           | 0.6                   | 0.3                          | -                                  | 0.9                 | 7.7                       | 2.4                              | 0.3                        | 2.8                  |
| 6/2                                                | 776            | 776           | -                     | -                            | -                           | 0.5                   | 0.0                          | -                                  | 0.5                 | 2.5                       | 8.6                              | 0.0                        | 8.6                  |
| 6/3                                                | 347            | 347           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 2.5                       | 0.0                              | 0.2                        | 0.3                  |
| 7/1                                                | 910            | 910           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.5                 | 2.0                       | 5.0                              | 0.5                        | 5.5                  |
| 7/2                                                | 833            | 833           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 0.0                              | 0.4                        | 0.4                  |
| 8/2+8/1                                            | 439            | 439           | -                     | -                            | -                           | 2.4                   | 0.5                          | -                                  | 2.9<br>(1.6+1.3)    | 23.6<br>(23.7:23.5)       | 3.5                              | 0.5                        | 4.0                  |
| 8/3+8/4                                            | 342            | 342           | -                     | -                            | -                           | 1.8                   | 0.4                          | -                                  | 2.3<br>(1.5+0.7)    | 24.0<br>(24.4:23.3)       | 3.2                              | 0.4                        | 3.7                  |
| 9/1                                                | 568            | 568           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |



## Full Input Data And Results

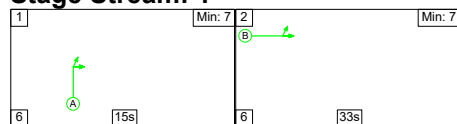
|                                                                                                                   |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
|-------------------------------------------------------------------------------------------------------------------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|-----|
| 10/1                                                                                                              | 398  | 398  | -    | - | - | 0.0 | 0.1 | - | 0.1              | 1.3                 | 0.0 | 0.1 | 0.1 |
| 10/2                                                                                                              | 678  | 678  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.8                 | 3.6 | 0.3 | 3.9 |
| 10/3                                                                                                              | 574  | 574  | -    | - | - | 0.0 | 0.2 | - | 0.2              | 1.5                 | 0.0 | 0.2 | 0.3 |
| 10/4                                                                                                              | 115  | 115  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1                                                                                                         | 748  | 748  | 1496 | 0 | 0 | 1.1 | 1.9 | - | 3.0<br>(2.4+0.6) | 14.3<br>(13.8:17.0) | 5.6 | 1.9 | 7.5 |
| 12/1                                                                                                              | 517  | 517  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| 13/1                                                                                                              | 678  | 678  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.6                 | 0.0 | 0.3 | 0.3 |
| 13/2                                                                                                              | 603  | 603  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.5                 | 0.0 | 0.3 | 0.3 |
| 13/3                                                                                                              | 715  | 715  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 0.0 | 0.3 | 0.3 |
| 14/1                                                                                                              | 144  | 144  | 144  | 0 | 0 | 0.2 | 0.6 | - | 0.8              | 19.8                | 0.9 | 0.6 | 1.5 |
| 14/2                                                                                                              | 263  | 263  | 263  | 0 | 0 | 0.3 | 0.8 | - | 1.1              | 15.0                | 1.5 | 0.8 | 2.3 |
| 15/1                                                                                                              | 1395 | 1395 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| C1 Stream: 1 PRC for Signalised Lanes (%): 3.0 Total Delay for Signalised Lanes (pcuHr): 19.01 Cycle Time (s): 60 |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| C1 Stream: 2 PRC for Signalised Lanes (%): 5.7 Total Delay for Signalised Lanes (pcuHr): 29.38 Cycle Time (s): 60 |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| PRC Over All Lanes (%): 3.0 Total Delay Over All Lanes(pcuHr): 55.77                                              |      |      |      |   |   |     |     |   |                  |                     |     |     |     |

## Full Input Data And Results

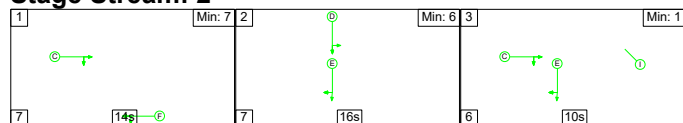
**Scenario 14: '2030 Do Minimum PM Dev Peak'** (FG14: '2030 Do Minimum NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

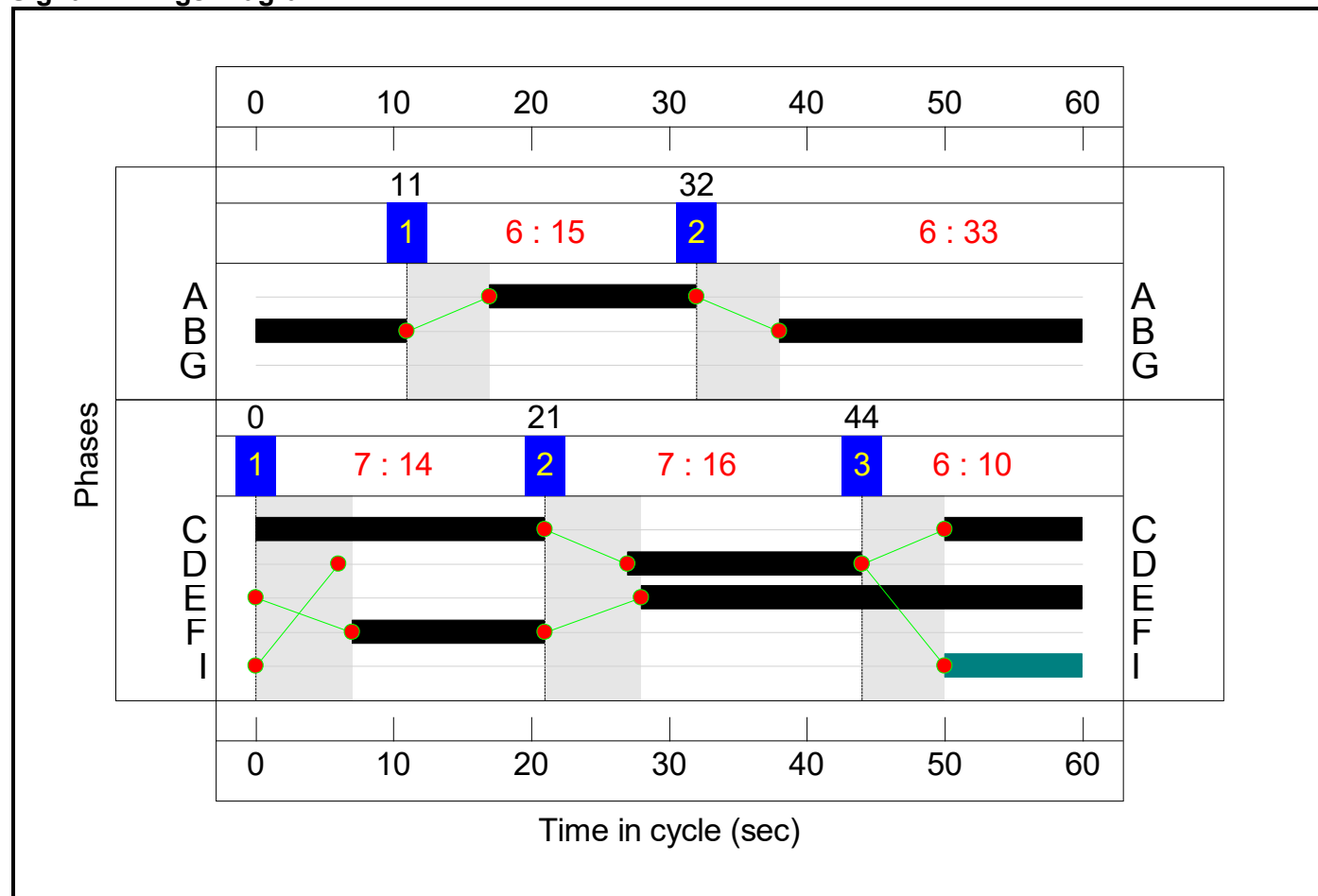
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 33 |
| Change Point | 11 | 32 |

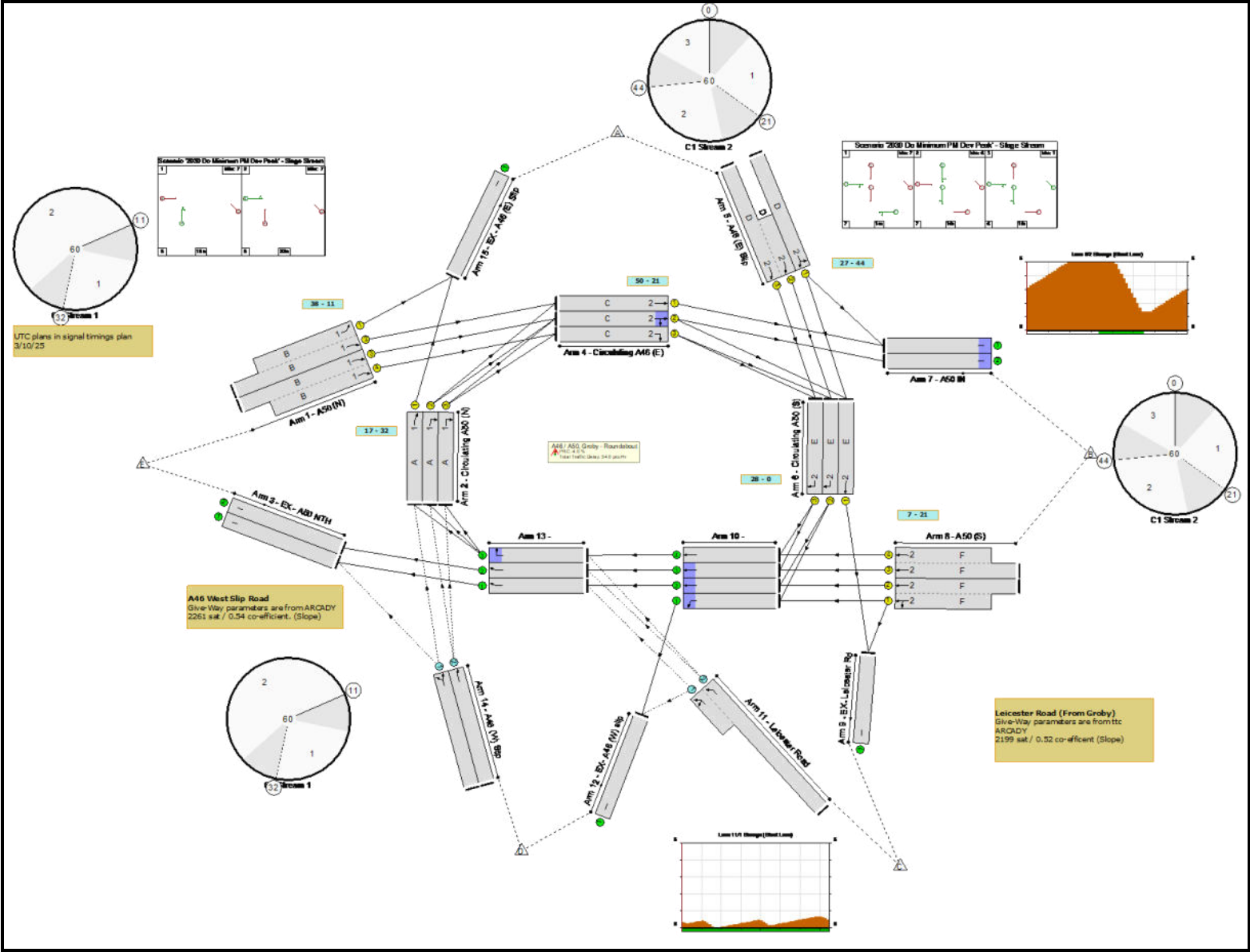
#### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 0  | 21 | 44 |

### Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 86.6%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 86.6%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1105              | 1975:1978         | 313+1121       | 77.1 : 77.1% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 992               | 2115:1975         | 1199+740       | 52.9 : 48.4% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 393               | 1923              | 513            | 76.6%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 255               | 1905              | 508            | 50.2%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 194               | 1904              | 508            | 38.2%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1075              | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 743               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 496               | 1975              | 1053           | 47.1%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 828               | 2088              | 1114           | 74.4%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 358               | 1859              | 991            | 36.1%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 396               | 1735              | 520            | 76.1%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 780               | 1716:1729         | 382+519        | 86.6 : 86.6% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 587               | 1980              | 1089           | 53.9%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 804               | 2052              | 1129           | 71.2%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 334               | 1915              | 1053           | 31.7%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 523  | 1900      | 1900    | 27.5%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 610  | 1900      | 1900    | 32.1%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 781  | 2085:1855 | 521+464 | 84.8 : 73.1% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 505  | 2080:1942 | 520+155 | 74.8 : 74.8% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 812  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 467  | 1800      | 1800    | 25.9%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 893  | 1800      | 1800    | 49.6%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 723  | 1800      | 1800    | 40.2%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 116  | 1800      | 1800    | 6.4%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 610  | 3000:3000 | 622+119 | 82.3 : 82.4% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 565  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 893  | 1800      | 1800    | 49.6%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 743  | 1800      | 1800    | 41.3%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 608  | 1800      | 1800    | 33.8%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 182  | 3000      | 223     | 81.6%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 234  | 3000      | 310     | 75.5%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1257 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1636</b>           | <b>0</b>                     | <b>0</b>                    | <b>30.1</b>           | <b>23.8</b>                  | <b>0.0</b>                         | <b>54.0</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1636</b>           | <b>0</b>                     | <b>0</b>                    | <b>30.1</b>           | <b>23.8</b>                  | <b>0.0</b>                         | <b>54.0</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1105           | 1105          | -                     | -                            | -                           | 2.8                   | 1.7                          | -                                  | 4.5<br>(0.8+3.7)    | 14.6<br>(11.9:15.4)       | 11.0                             | 1.7                        | 12.7                 |
| 1/3+1/4                                            | 992            | 992           | -                     | -                            | -                           | 2.1                   | 0.5                          | -                                  | 2.6<br>(1.8+0.9)    | 9.5 (9.9:8.8)             | 6.5                              | 0.5                        | 7.0                  |
| 2/1                                                | 393            | 393           | -                     | -                            | -                           | 1.5                   | 1.6                          | -                                  | 3.1                 | 28.3                      | 5.4                              | 1.6                        | 7.0                  |
| 2/2                                                | 255            | 255           | -                     | -                            | -                           | 1.1                   | 0.5                          | -                                  | 1.6                 | 22.4                      | 3.9                              | 0.5                        | 4.4                  |
| 2/3                                                | 194            | 194           | -                     | -                            | -                           | 1.0                   | 0.3                          | -                                  | 1.3                 | 23.7                      | 3.0                              | 0.3                        | 3.3                  |
| 3/1                                                | 1075           | 1075          | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 743            | 743           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 496            | 496           | -                     | -                            | -                           | 1.9                   | 0.4                          | -                                  | 2.4                 | 17.3                      | 6.9                              | 0.4                        | 7.3                  |
| 4/2                                                | 828            | 828           | -                     | -                            | -                           | 2.2                   | 1.4                          | -                                  | 3.6                 | 15.7                      | 11.7                             | 1.4                        | 13.1                 |
| 4/3                                                | 358            | 358           | -                     | -                            | -                           | 0.2                   | 0.3                          | -                                  | 0.4                 | 4.4                       | 2.7                              | 0.3                        | 3.0                  |
| 5/1                                                | 396            | 396           | -                     | -                            | -                           | 2.1                   | 1.6                          | -                                  | 3.6                 | 33.2                      | 5.9                              | 1.6                        | 7.5                  |
| 5/3+5/2                                            | 780            | 780           | -                     | -                            | -                           | 4.2                   | 3.1                          | -                                  | 7.2<br>(3.0+4.2)    | 33.3<br>(32.4:34.0)       | 7.0                              | 3.1                        | 10.1                 |
| 6/1                                                | 587            | 587           | -                     | -                            | -                           | 0.4                   | 0.6                          | -                                  | 0.9                 | 5.8                       | 1.1                              | 0.6                        | 1.7                  |
| 6/2                                                | 804            | 804           | -                     | -                            | -                           | 1.0                   | 0.0                          | -                                  | 1.0                 | 4.4                       | 8.6                              | 0.0                        | 8.6                  |
| 6/3                                                | 334            | 334           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 2.6                       | 0.0                              | 0.2                        | 0.3                  |
| 7/1                                                | 523            | 523           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 2.2                              | 0.2                        | 2.4                  |
| 7/2                                                | 610            | 610           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                            | 781            | 781           | -                     | -                            | -                           | 4.6                   | 1.9                          | -                                  | 6.5<br>(3.7+2.8)    | 29.7<br>(30.1:29.3)       | 7.0                              | 1.9                        | 8.9                  |
| 8/3+8/4                                            | 505            | 505           | -                     | -                            | -                           | 2.8                   | 1.5                          | -                                  | 4.3<br>(3.4+0.9)    | 30.5<br>(31.2:28.4)       | 5.9                              | 1.5                        | 7.4                  |
| 9/1                                                | 812            | 812           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

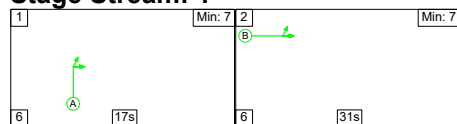
|                                                                                                                  |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
|------------------------------------------------------------------------------------------------------------------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|-----|
| 10/1                                                                                                             | 467  | 467  | -    | - | - | 0.0 | 0.2 | - | 0.2              | 1.4                 | 0.0 | 0.2 | 0.2 |
| 10/2                                                                                                             | 893  | 893  | -    | - | - | 0.1 | 0.5 | - | 0.6              | 2.3                 | 4.2 | 0.5 | 4.7 |
| 10/3                                                                                                             | 723  | 723  | -    | - | - | 0.0 | 0.3 | - | 0.4              | 1.8                 | 3.1 | 0.3 | 3.4 |
| 10/4                                                                                                             | 116  | 116  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1                                                                                                        | 610  | 610  | 1220 | 0 | 0 | 1.3 | 2.2 | - | 3.6<br>(2.9+0.7) | 21.2<br>(20.6;24.3) | 7.5 | 2.2 | 9.8 |
| 12/1                                                                                                             | 565  | 565  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| 13/1                                                                                                             | 893  | 893  | -    | - | - | 0.0 | 0.5 | - | 0.5              | 2.0                 | 0.0 | 0.5 | 0.5 |
| 13/2                                                                                                             | 743  | 743  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.7                 | 0.0 | 0.4 | 0.4 |
| 13/3                                                                                                             | 608  | 608  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.5                 | 0.0 | 0.3 | 0.3 |
| 14/1                                                                                                             | 182  | 182  | 182  | 0 | 0 | 0.5 | 2.0 | - | 2.5              | 49.7                | 2.7 | 2.0 | 4.7 |
| 14/2                                                                                                             | 234  | 234  | 234  | 0 | 0 | 0.4 | 1.5 | - | 1.9              | 29.2                | 3.2 | 1.5 | 4.7 |
| 15/1                                                                                                             | 1257 | 1257 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| C1 Stream: 1 PRC for Signalled Lanes (%): 16.8 Total Delay for Signalled Lanes (pcuHr): 13.08 Cycle Time (s): 60 |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| C1 Stream: 2 PRC for Signalled Lanes (%): 4.0 Total Delay for Signalled Lanes (pcuHr): 30.19 Cycle Time (s): 60  |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| PRC Over All Lanes (%): 4.0 Total Delay Over All Lanes(pcuHr): 53.95                                             |      |      |      |   |   |     |     |   |                  |                     |     |     |     |

## Full Input Data And Results

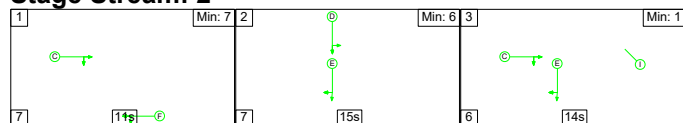
**Scenario 15: '2030 Do Minimum Sens AM Dev Peak'** (FG15: '2030 Do Minimum Sens NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

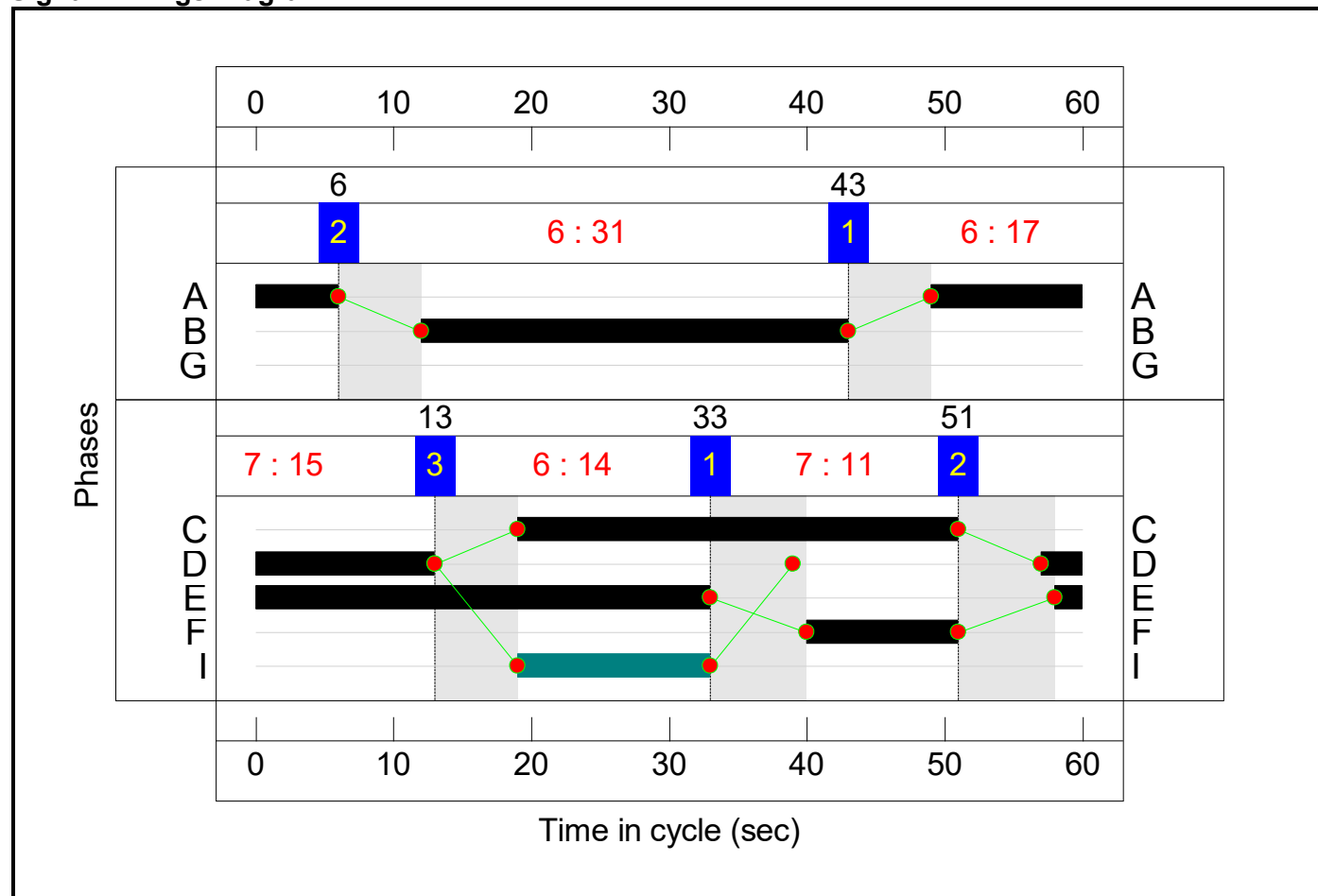
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 17 | 31 |
| Change Point | 43 | 6  |

#### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 11 | 15 | 14 |
| Change Point | 33 | 51 | 13 |

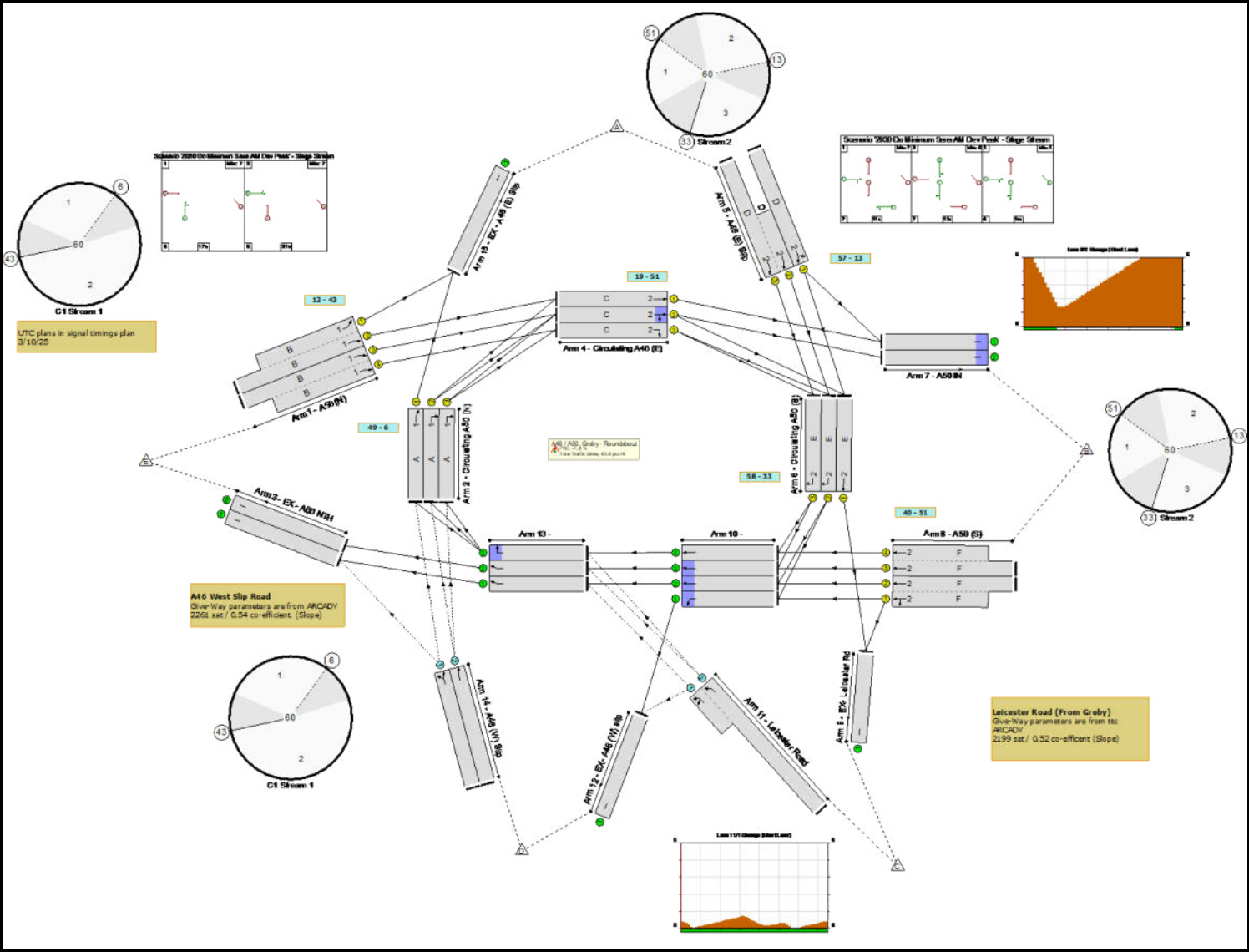
### Signal Timings Diagram





Full Input Data And Results

Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 91.5%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 91.5%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 31              | -               | 1228              | 1975:1978         | 337+1055       | 85.3 : 89.1% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 31              | -               | 1344              | 2115:1975         | 1128+494       | 85.6 : 76.6% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 17              | -               | 459               | 1923              | 577            | 79.6%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 17              | -               | 452               | 1905              | 572            | 79.1%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 17              | -               | 77                | 1904              | 571            | 13.5%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 843               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 619               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 740               | 1975              | 1086           | 68.1%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 1043              | 2100              | 1155           | 90.3%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 32              | -               | 378               | 1859              | 1022           | 37.0%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 377               | 1706              | 483            | 78.0%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 16              | -               | 785               | 1716:1729         | 369+490        | 91.5 : 91.5% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 35              | -               | 412               | 1980              | 1188           | 34.7%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 35              | -               | 811               | 2052              | 1231           | 65.9%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 35              | -               | 352               | 1915              | 1149           | 30.6%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 849  | 1900      | 1900    | 44.7%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 899  | 1900      | 1900    | 47.3%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 11 | - | 423  | 2085:1850 | 417+370 | 55.6 : 51.6% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 11 | - | 365  | 2080:1942 | 416+194 | 59.9 : 59.9% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 546  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 401  | 1800      | 1800    | 22.3%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 699  | 1800      | 1800    | 38.8%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 588  | 1800      | 1800    | 32.7%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 129  | 1800      | 1800    | 7.2%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 753  | 3000:3000 | 759+150 | 83.4 : 80.2% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 521  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 699  | 1800      | 1800    | 38.8%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 619  | 1800      | 1800    | 34.4%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 731  | 1800      | 1800    | 40.6%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 144  | 3000      | 243     | 59.4%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 257  | 3000      | 528     | 48.6%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1399 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1907</b>           | <b>0</b>                     | <b>0</b>                    | <b>30.9</b>           | <b>29.7</b>                  | <b>0.0</b>                         | <b>60.6</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1907</b>           | <b>0</b>                     | <b>0</b>                    | <b>30.9</b>           | <b>29.7</b>                  | <b>0.0</b>                         | <b>60.6</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1228           | 1228          | -                     | -                            | -                           | 3.9                   | 3.6                          | -                                  | 7.4<br>(1.5+6.0)    | 21.8<br>(18.2:22.9)       | 13.8                             | 3.6                        | 17.4                 |
| 1/3+1/4                                            | 1344           | 1344          | -                     | -                            | -                           | 4.1                   | 2.4                          | -                                  | 6.5<br>(4.9+1.5)    | 17.3<br>(18.4:14.5)       | 13.7                             | 2.4                        | 16.1                 |
| 2/1                                                | 459            | 459           | -                     | -                            | -                           | 1.9                   | 1.9                          | -                                  | 3.8                 | 29.6                      | 6.6                              | 1.9                        | 8.5                  |
| 2/2                                                | 452            | 452           | -                     | -                            | -                           | 2.5                   | 1.8                          | -                                  | 4.4                 | 34.8                      | 7.4                              | 1.8                        | 9.2                  |
| 2/3                                                | 77             | 77            | -                     | -                            | -                           | 0.4                   | 0.1                          | -                                  | 0.5                 | 21.4                      | 1.1                              | 0.1                        | 1.2                  |
| 3/1                                                | 843            | 843           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 619            | 619           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 740            | 740           | -                     | -                            | -                           | 3.1                   | 1.1                          | -                                  | 4.1                 | 20.1                      | 11.3                             | 1.1                        | 12.3                 |
| 4/2                                                | 1043           | 1043          | -                     | -                            | -                           | 1.0                   | 4.3                          | -                                  | 5.3                 | 18.2                      | 3.6                              | 4.3                        | 8.0                  |
| 4/3                                                | 378            | 378           | -                     | -                            | -                           | 0.2                   | 0.3                          | -                                  | 0.5                 | 4.4                       | 0.4                              | 0.3                        | 0.7                  |
| 5/1                                                | 377            | 377           | -                     | -                            | -                           | 2.1                   | 1.7                          | -                                  | 3.8                 | 36.2                      | 5.8                              | 1.7                        | 7.5                  |
| 5/3+5/2                                            | 785            | 785           | -                     | -                            | -                           | 4.4                   | 4.7                          | -                                  | 9.1<br>(3.8+5.3)    | 41.8<br>(40.9:42.5)       | 7.2                              | 4.7                        | 12.0                 |
| 6/1                                                | 412            | 412           | -                     | -                            | -                           | 0.2                   | 0.3                          | -                                  | 0.5                 | 4.0                       | 0.8                              | 0.3                        | 1.0                  |
| 6/2                                                | 811            | 811           | -                     | -                            | -                           | 0.9                   | 0.0                          | -                                  | 0.9                 | 4.0                       | 8.6                              | 0.0                        | 8.6                  |
| 6/3                                                | 352            | 352           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.3                 | 2.6                       | 0.1                              | 0.2                        | 0.3                  |
| 7/1                                                | 849            | 849           | -                     | -                            | -                           | 0.1                   | 0.4                          | -                                  | 0.5                 | 1.9                       | 6.6                              | 0.4                        | 7.0                  |
| 7/2                                                | 899            | 899           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.5                 | 1.9                       | 2.2                              | 0.4                        | 2.6                  |
| 8/2+8/1                                            | 423            | 423           | -                     | -                            | -                           | 2.5                   | 0.6                          | -                                  | 3.1<br>(1.7+1.4)    | 26.5<br>(26.5:26.4)       | 3.5                              | 0.6                        | 4.1                  |
| 8/3+8/4                                            | 365            | 365           | -                     | -                            | -                           | 2.2                   | 0.7                          | -                                  | 2.9<br>(2.0+0.9)    | 28.7<br>(29.1:27.7)       | 3.7                              | 0.7                        | 4.5                  |
| 9/1                                                | 546            | 546           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

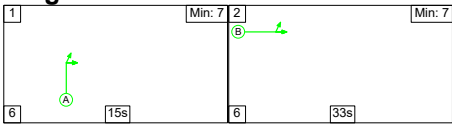
## Full Input Data And Results

|                                                                                                                  |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
|------------------------------------------------------------------------------------------------------------------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|-----|
| 10/1                                                                                                             | 401  | 401  | -    | - | - | 0.0 | 0.1 | - | 0.1              | 1.3                 | 0.0 | 0.1 | 0.1 |
| 10/2                                                                                                             | 699  | 699  | -    | - | - | 0.0 | 0.3 | - | 0.4              | 1.8                 | 4.2 | 0.3 | 4.5 |
| 10/3                                                                                                             | 588  | 588  | -    | - | - | 0.0 | 0.2 | - | 0.2              | 1.5                 | 0.1 | 0.2 | 0.3 |
| 10/4                                                                                                             | 129  | 129  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1                                                                                                        | 753  | 753  | 1506 | 0 | 0 | 1.1 | 2.3 | - | 3.4<br>(2.8+0.6) | 16.4<br>(15.9:18.8) | 5.6 | 2.3 | 8.0 |
| 12/1                                                                                                             | 521  | 521  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| 13/1                                                                                                             | 699  | 699  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.6                 | 0.0 | 0.3 | 0.3 |
| 13/2                                                                                                             | 619  | 619  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.5                 | 0.0 | 0.3 | 0.3 |
| 13/3                                                                                                             | 731  | 731  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 0.0 | 0.3 | 0.3 |
| 14/1                                                                                                             | 144  | 144  | 144  | 0 | 0 | 0.2 | 0.7 | - | 0.9              | 22.7                | 1.0 | 0.7 | 1.7 |
| 14/2                                                                                                             | 257  | 257  | 257  | 0 | 0 | 0.3 | 0.5 | - | 0.8              | 10.7                | 1.6 | 0.5 | 2.0 |
| 15/1                                                                                                             | 1399 | 1399 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| C1 Stream: 1 PRC for Signalled Lanes (%): 1.0 Total Delay for Signalled Lanes (pcuHr): 22.49 Cycle Time (s): 60  |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| C1 Stream: 2 PRC for Signalled Lanes (%): -1.6 Total Delay for Signalled Lanes (pcuHr): 30.42 Cycle Time (s): 60 |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| PRC Over All Lanes (%): -1.6 Total Delay Over All Lanes(pcuHr): 60.63                                            |      |      |      |   |   |     |     |   |                  |                     |     |     |     |

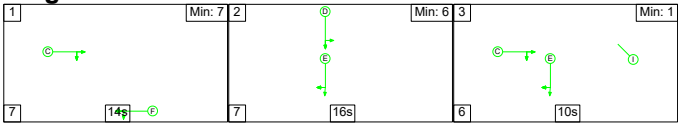
Full Input Data And Results  
**Scenario 16: '2030 Do Minimum Sens PM Dev Peak'** (FG16: '2030 Do Minimum Sens NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Stage Stream: 2**



**Stage Timings**

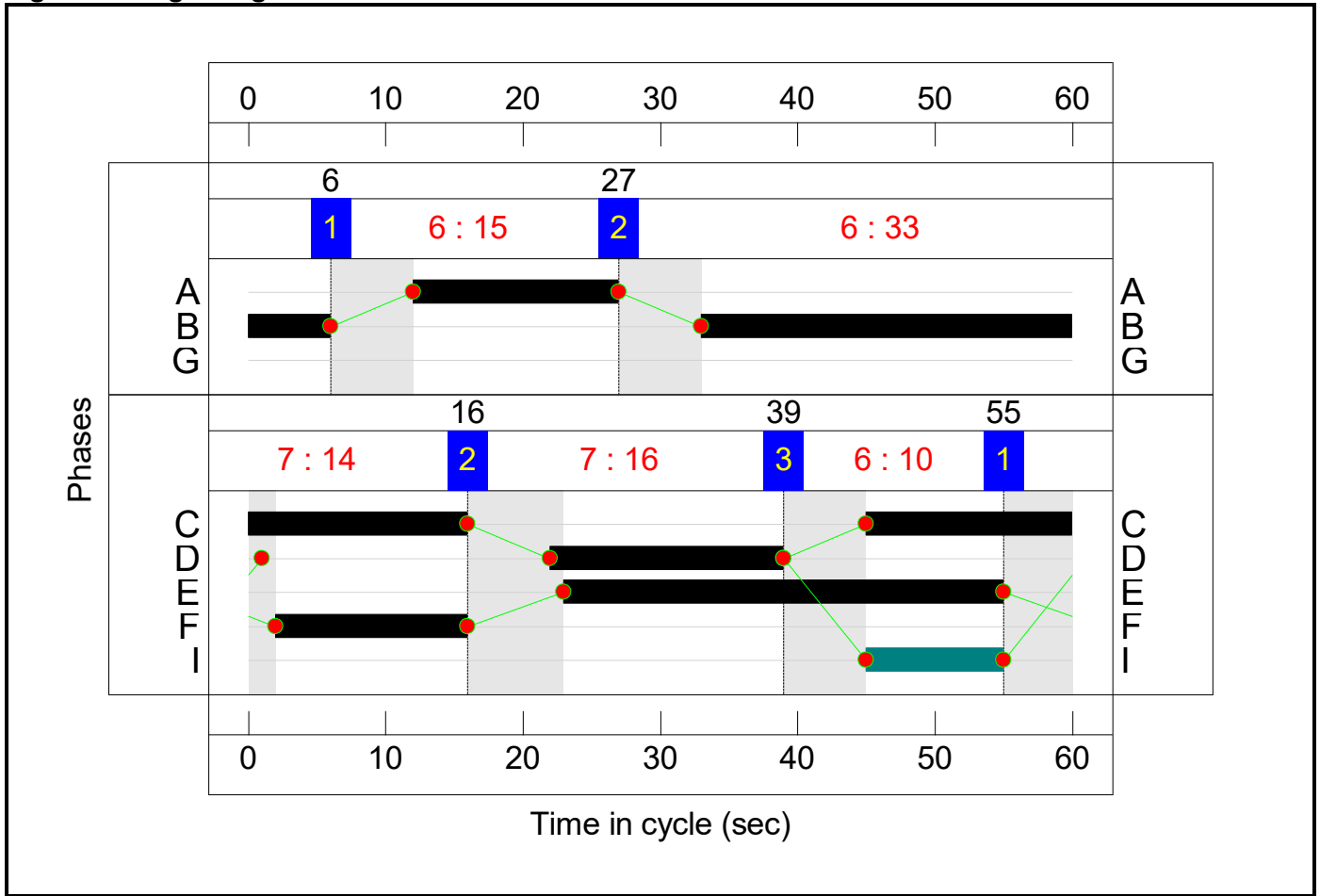
**Stage Stream: 1**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 15 | 33 |
| Change Point | 6  | 27 |

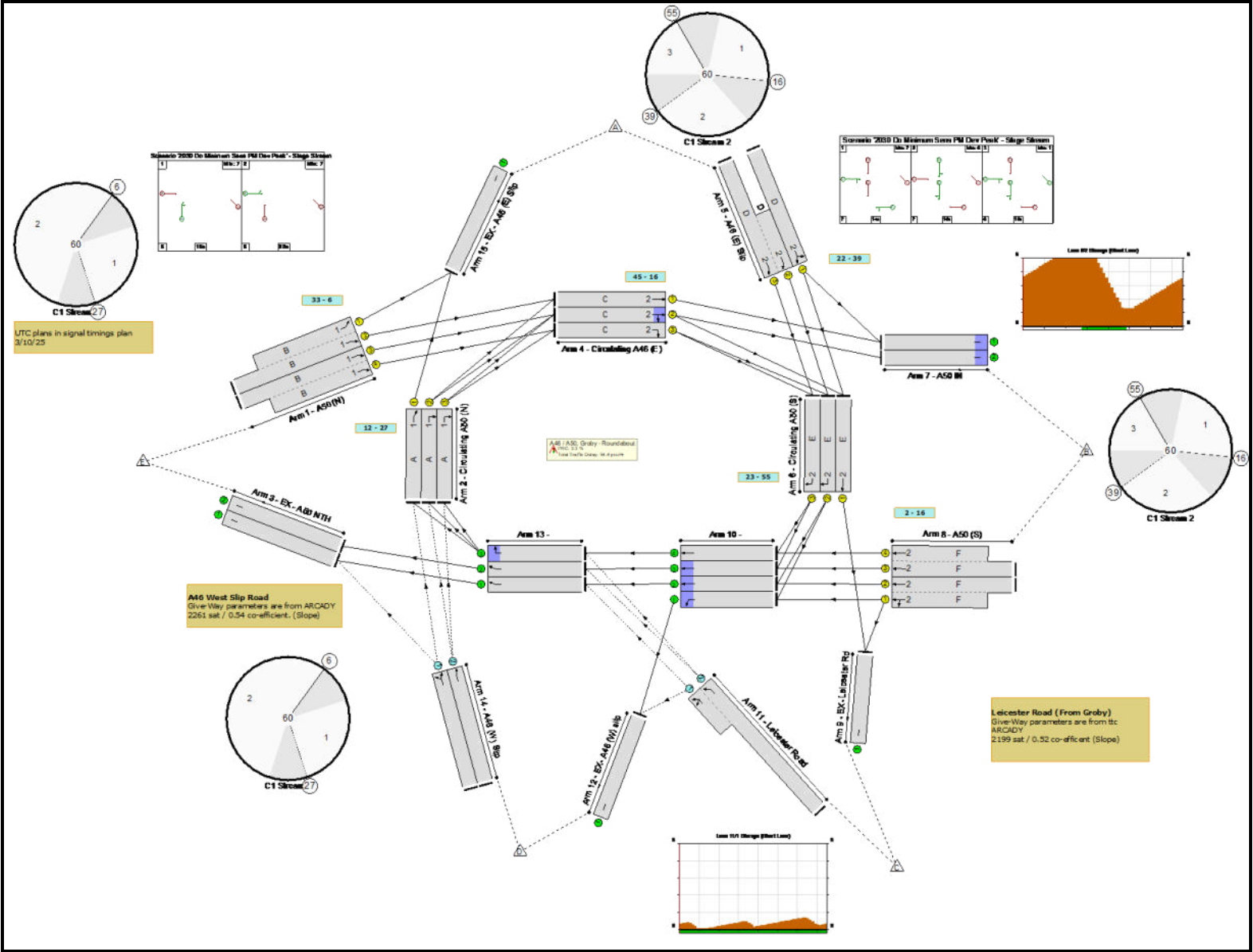
**Stage Stream: 2**

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 55 | 16 | 39 |

**Signal Timings Diagram**



Full Input Data And Results  
Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 87.1%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 87.1%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1076              | 1975:1978         | 270+1121       | 77.4 : 77.4% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 33              | -               | 1025              | 2115:1975         | 1199+712       | 55.8 : 50.0% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 391               | 1923              | 513            | 76.2%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 281               | 1905              | 508            | 55.3%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 15              | -               | 169               | 1904              | 508            | 33.3%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1079              | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 777               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 489               | 1975              | 1053           | 46.4%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 839               | 2088              | 1114           | 75.3%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 356               | 1859              | 991            | 35.9%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 395               | 1735              | 520            | 75.9%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 798               | 1716:1729         | 433+519        | 83.9 : 83.9% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 587               | 1980              | 1089           | 53.9%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 788               | 2052              | 1129           | 69.8%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 366               | 1915              | 1053           | 34.7%        |



# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 516  | 1900      | 1900    | 27.2%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 620  | 1900      | 1900    | 32.6%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 790  | 2085:1856 | 521+464 | 87.1 : 72.4% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 506  | 2080:1942 | 520+155 | 75.0 : 75.0% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 809  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 465  | 1800      | 1800    | 25.8%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 891  | 1800      | 1800    | 49.5%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 756  | 1800      | 1800    | 42.0%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 116  | 1800      | 1800    | 6.4%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 607  | 3000:3000 | 612+119 | 83.4 : 81.8% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 562  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 891  | 1800      | 1800    | 49.5%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 777  | 1800      | 1800    | 43.2%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 605  | 1800      | 1800    | 33.6%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 188  | 3000      | 221     | 85.2%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 236  | 3000      | 326     | 72.3%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1258 | 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: A50/A46 Rbt, Groby, Leicestershire | -              | -             | 1638                  | 0                            | 0                           | 30.3                  | 24.0                         | 0.0                                | 54.4                | -                         | -                                | -                          | -                    |
| A46 / A50, Groby - Roundabout               | -              | -             | 1638                  | 0                            | 0                           | 30.3                  | 24.0                         | 0.0                                | 54.4                | -                         | -                                | -                          | -                    |
| 1/2+1/1                                     | 1076           | 1076          | -                     | -                            | -                           | 2.8                   | 1.7                          | -                                  | 4.5<br>(0.7+3.8)    | 15.0<br>(12.0:15.7)       | 11.1                             | 1.7                        | 12.8                 |
| 1/3+1/4                                     | 1025           | 1025          | -                     | -                            | -                           | 2.2                   | 0.6                          | -                                  | 2.8<br>(1.9+0.9)    | 9.8 (10.3:8.9)            | 7.1                              | 0.6                        | 7.6                  |
| 2/1                                         | 391            | 391           | -                     | -                            | -                           | 1.4                   | 1.6                          | -                                  | 3.0                 | 27.6                      | 5.4                              | 1.6                        | 7.0                  |
| 2/2                                         | 281            | 281           | -                     | -                            | -                           | 1.2                   | 0.6                          | -                                  | 1.8                 | 23.5                      | 4.3                              | 0.6                        | 4.9                  |
| 2/3                                         | 169            | 169           | -                     | -                            | -                           | 0.9                   | 0.2                          | -                                  | 1.1                 | 23.5                      | 2.7                              | 0.2                        | 2.9                  |
| 3/1                                         | 1079           | 1079          | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                         | 777            | 777           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                         | 489            | 489           | -                     | -                            | -                           | 2.1                   | 0.4                          | -                                  | 2.5                 | 18.4                      | 7.0                              | 0.4                        | 7.4                  |
| 4/2                                         | 839            | 839           | -                     | -                            | -                           | 2.0                   | 1.5                          | -                                  | 3.5                 | 15.1                      | 11.7                             | 1.5                        | 13.3                 |
| 4/3                                         | 356            | 356           | -                     | -                            | -                           | 0.2                   | 0.3                          | -                                  | 0.4                 | 4.4                       | 2.7                              | 0.3                        | 3.0                  |
| 5/1                                         | 395            | 395           | -                     | -                            | -                           | 2.1                   | 1.5                          | -                                  | 3.6                 | 33.0                      | 5.9                              | 1.5                        | 7.5                  |
| 5/3+5/2                                     | 798            | 798           | -                     | -                            | -                           | 4.3                   | 2.5                          | -                                  | 6.8<br>(3.0+3.7)    | 30.5<br>(30.0:31.0)       | 6.8                              | 2.5                        | 9.3                  |
| 6/1                                         | 587            | 587           | -                     | -                            | -                           | 0.3                   | 0.6                          | -                                  | 0.9                 | 5.6                       | 1.0                              | 0.6                        | 1.6                  |
| 6/2                                         | 788            | 788           | -                     | -                            | -                           | 1.0                   | 0.0                          | -                                  | 1.0                 | 4.4                       | 8.6                              | 0.0                        | 8.6                  |
| 6/3                                         | 366            | 366           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.7                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                         | 516            | 516           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 2.2                              | 0.2                        | 2.4                  |
| 7/2                                         | 620            | 620           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                     | 790            | 790           | -                     | -                            | -                           | 4.6                   | 2.0                          | -                                  | 6.6<br>(3.9+2.8)    | 30.2<br>(30.6:29.6)       | 7.2                              | 2.0                        | 9.2                  |
| 8/3+8/4                                     | 506            | 506           | -                     | -                            | -                           | 2.8                   | 1.5                          | -                                  | 4.3<br>(3.4+0.9)    | 30.6<br>(31.3:28.5)       | 6.0                              | 1.5                        | 7.4                  |
| 9/1                                         | 809            | 809           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

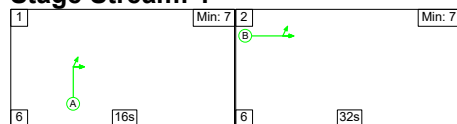
|                                                                                                                  |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
|------------------------------------------------------------------------------------------------------------------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|-----|
| 10/1                                                                                                             | 465  | 465  | -    | - | - | 0.0 | 0.2 | - | 0.2              | 1.4                 | 0.0 | 0.2 | 0.2 |
| 10/2                                                                                                             | 891  | 891  | -    | - | - | 0.1 | 0.5 | - | 0.6              | 2.3                 | 4.6 | 0.5 | 5.1 |
| 10/3                                                                                                             | 756  | 756  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.8                 | 3.1 | 0.4 | 3.5 |
| 10/4                                                                                                             | 116  | 116  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1                                                                                                        | 607  | 607  | 1214 | 0 | 0 | 1.4 | 2.4 | - | 3.8<br>(3.1+0.7) | 22.6<br>(22.0:25.3) | 7.5 | 2.4 | 9.9 |
| 12/1                                                                                                             | 562  | 562  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| 13/1                                                                                                             | 891  | 891  | -    | - | - | 0.0 | 0.5 | - | 0.5              | 2.0                 | 0.0 | 0.5 | 0.5 |
| 13/2                                                                                                             | 777  | 777  | -    | - | - | 0.0 | 0.4 | - | 0.4              | 1.8                 | 0.0 | 0.4 | 0.4 |
| 13/3                                                                                                             | 605  | 605  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.5                 | 0.0 | 0.3 | 0.3 |
| 14/1                                                                                                             | 188  | 188  | 188  | 0 | 0 | 0.5 | 2.5 | - | 3.0              | 58.1                | 2.9 | 2.5 | 5.4 |
| 14/2                                                                                                             | 236  | 236  | 236  | 0 | 0 | 0.4 | 1.3 | - | 1.7              | 25.5                | 3.1 | 1.3 | 4.4 |
| 15/1                                                                                                             | 1258 | 1258 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| C1 Stream: 1 PRC for Signalled Lanes (%): 16.4 Total Delay for Signalled Lanes (pcuHr): 13.20 Cycle Time (s): 60 |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| C1 Stream: 2 PRC for Signalled Lanes (%): 3.3 Total Delay for Signalled Lanes (pcuHr): 29.94 Cycle Time (s): 60  |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
| PRC Over All Lanes (%): 3.3 Total Delay Over All Lanes(pcuHr): 54.37                                             |      |      |      |   |   |     |     |   |                  |                     |     |     |     |

## Full Input Data And Results

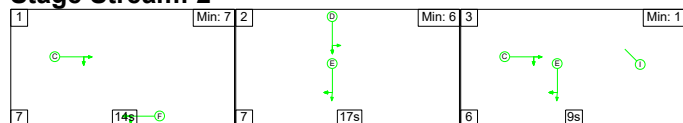
**Scenario 17: '2030 Do Something AM Dev Peak'** (FG17: '2030 Do Something NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

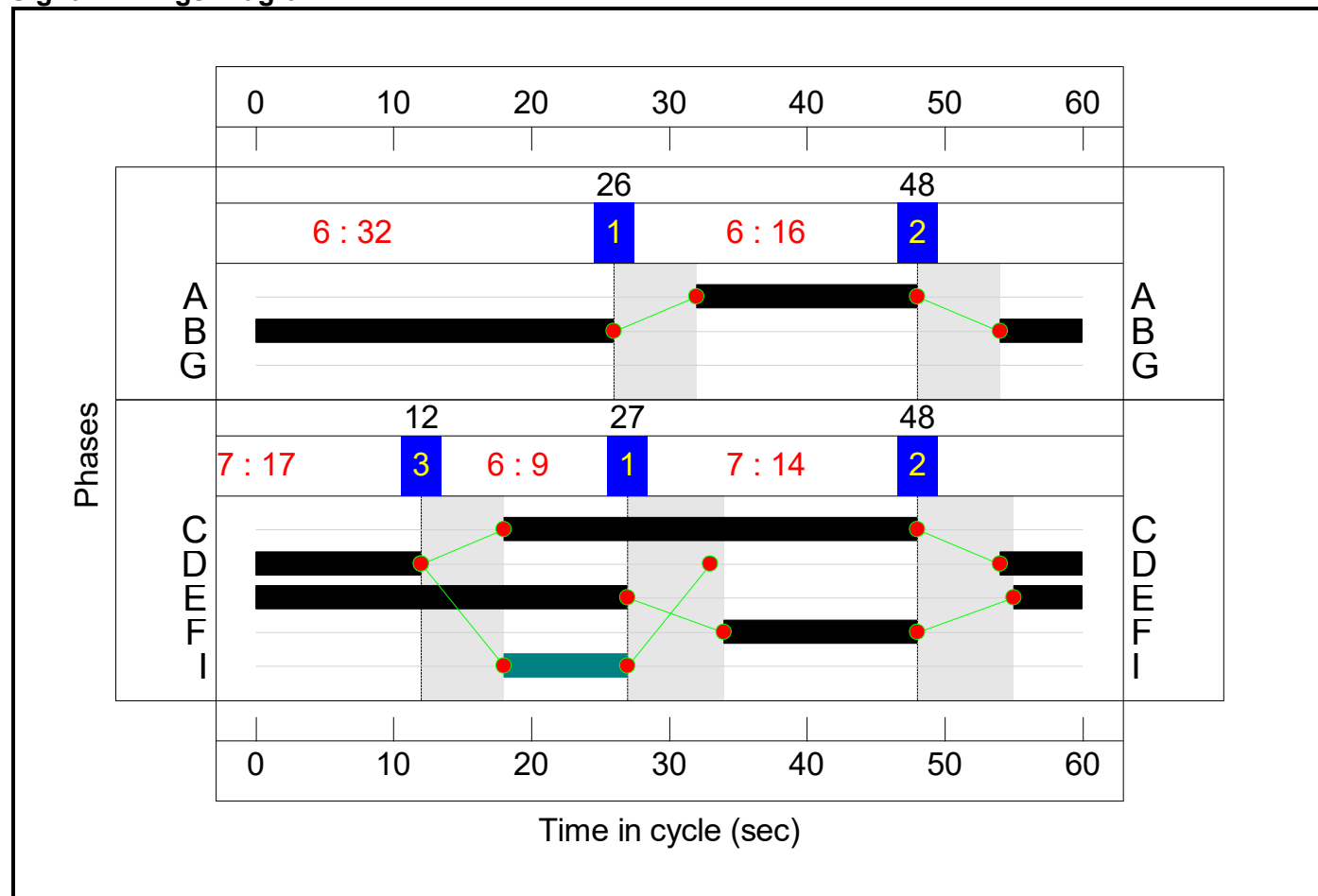
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 32 |
| Change Point | 26 | 48 |

#### Stage Stream: 2

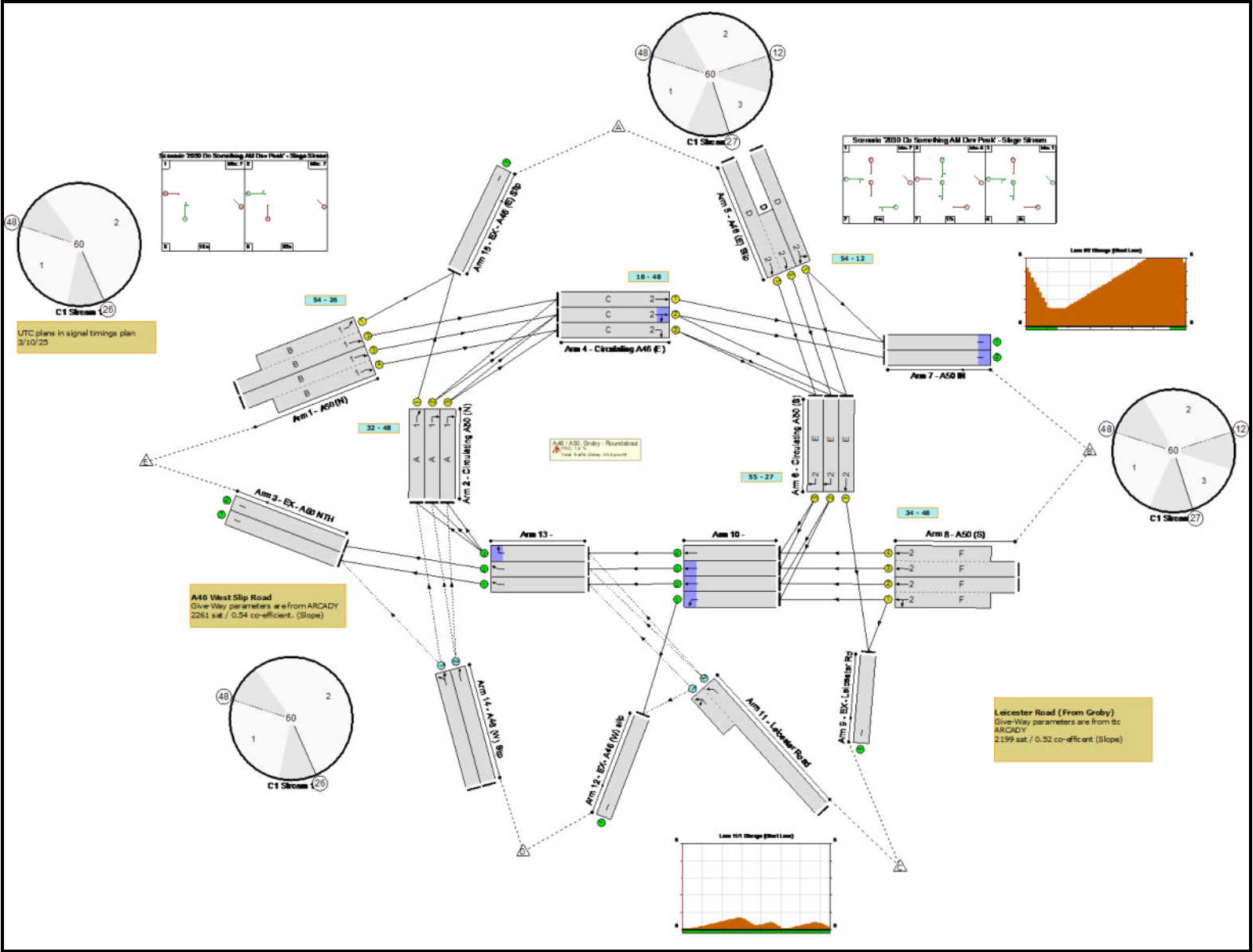
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 17 | 9  |
| Change Point | 27 | 48 | 12 |

### Signal Timings Diagram





Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 88.3%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 88.3%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1500              | 1975:1978         | 710+1088       | 76.0 : 88.3% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1089              | 2115:1975         | 1163+662       | 62.2 : 55.3% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 451               | 1923              | 545            | 82.8%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 316               | 1905              | 540            | 58.5%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 225               | 1904              | 539            | 41.7%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 791               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 634               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 30              | -               | 850               | 1975              | 1020           | 83.3%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 30              | -               | 953               | 2098              | 1084           | 87.9%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 30              | -               | 366               | 1859              | 960            | 38.1%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 18              | -               | 391               | 1707              | 541            | 72.3%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 18              | -               | 761               | 1716:1729         | 440+548        | 77.1 : 77.1% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 436               | 1980              | 1089           | 40.0%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 786               | 2052              | 1129           | 69.6%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 341               | 1915              | 1053           | 32.4%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 958  | 1900      | 1900    | 50.4%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 800  | 1900      | 1900    | 42.1%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 403  | 2085:1848 | 521+462 | 39.5 : 42.6% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 379  | 2080:1942 | 520+229 | 50.6 : 50.6% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 577  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 401  | 1800      | 1800    | 22.3%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 647  | 1800      | 1800    | 35.9%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 604  | 1800      | 1800    | 33.6%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 116  | 1800      | 1800    | 6.4%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 762  | 3000:3000 | 769+148 | 83.3 : 81.5% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 522  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 647  | 1800      | 1800    | 35.9%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 634  | 1800      | 1800    | 35.2%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 727  | 1800      | 1800    | 40.4%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 144  | 3000      | 238     | 60.5%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 265  | 3000      | 401     | 66.1%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1412 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1933</b>           | <b>0</b>                     | <b>0</b>                    | <b>32.2</b>           | <b>23.7</b>                  | <b>0.0</b>                         | <b>55.9</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1933</b>           | <b>0</b>                     | <b>0</b>                    | <b>32.2</b>           | <b>23.7</b>                  | <b>0.0</b>                         | <b>55.9</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1500           | 1500          | -                     | -                            | -                           | 4.4                   | 2.5                          | -                                  | 6.9<br>(2.1+4.7)    | 16.5<br>(14.3:17.8)       | 13.9                             | 2.5                        | 16.4                 |
| 1/3+1/4                                            | 1089           | 1089          | -                     | -                            | -                           | 2.6                   | 0.7                          | -                                  | 3.4<br>(2.3+1.0)    | 11.1<br>(11.7:9.9)        | 8.2                              | 0.7                        | 9.0                  |
| 2/1                                                | 451            | 451           | -                     | -                            | -                           | 3.0                   | 2.3                          | -                                  | 5.3                 | 42.4                      | 7.0                              | 2.3                        | 9.2                  |
| 2/2                                                | 316            | 316           | -                     | -                            | -                           | 1.4                   | 0.7                          | -                                  | 2.1                 | 23.6                      | 4.0                              | 0.7                        | 4.7                  |
| 2/3                                                | 225            | 225           | -                     | -                            | -                           | 0.9                   | 0.4                          | -                                  | 1.3                 | 20.0                      | 2.7                              | 0.4                        | 3.0                  |
| 3/1                                                | 791            | 791           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 634            | 634           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 850            | 850           | -                     | -                            | -                           | 2.7                   | 2.4                          | -                                  | 5.2                 | 21.9                      | 10.6                             | 2.4                        | 13.1                 |
| 4/2                                                | 953            | 953           | -                     | -                            | -                           | 3.0                   | 3.5                          | -                                  | 6.4                 | 24.2                      | 13.1                             | 3.5                        | 16.5                 |
| 4/3                                                | 366            | 366           | -                     | -                            | -                           | 0.9                   | 0.3                          | -                                  | 1.2                 | 11.4                      | 4.9                              | 0.3                        | 5.2                  |
| 5/1                                                | 391            | 391           | -                     | -                            | -                           | 2.0                   | 1.3                          | -                                  | 3.3                 | 30.0                      | 5.8                              | 1.3                        | 7.0                  |
| 5/3+5/2                                            | 761            | 761           | -                     | -                            | -                           | 3.8                   | 1.7                          | -                                  | 5.5<br>(2.4+3.1)    | 25.9<br>(25.3:26.4)       | 6.3                              | 1.7                        | 8.0                  |
| 6/1                                                | 436            | 436           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.8                 | 6.6                       | 2.3                              | 0.3                        | 2.7                  |
| 6/2                                                | 786            | 786           | -                     | -                            | -                           | 1.4                   | 0.0                          | -                                  | 1.4                 | 6.2                       | 8.7                              | 0.0                        | 8.7                  |
| 6/3                                                | 341            | 341           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 2.6                       | 0.0                              | 0.2                        | 0.3                  |
| 7/1                                                | 958            | 958           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.6                 | 2.1                       | 6.0                              | 0.5                        | 6.5                  |
| 7/2                                                | 800            | 800           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.6                       | 0.0                              | 0.4                        | 0.4                  |
| 8/2+8/1                                            | 403            | 403           | -                     | -                            | -                           | 2.1                   | 0.3                          | -                                  | 2.5<br>(1.2+1.2)    | 21.9<br>(21.8:22.0)       | 2.8                              | 0.3                        | 3.2                  |
| 8/3+8/4                                            | 379            | 379           | -                     | -                            | -                           | 2.0                   | 0.5                          | -                                  | 2.5<br>(1.8+0.7)    | 23.8<br>(24.2:22.8)       | 3.7                              | 0.5                        | 4.2                  |
| 9/1                                                | 577            | 577           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

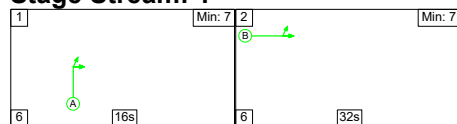
[illegible]

## Full Input Data And Results

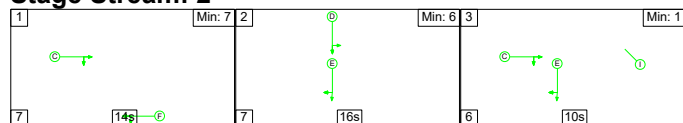
**Scenario 18: '2030 Do Something PM Dev Peak'** (FG18: '2030 Do Something NH PM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

### Stage Sequence Diagram

#### Stage Stream: 1



#### Stage Stream: 2



### Stage Timings

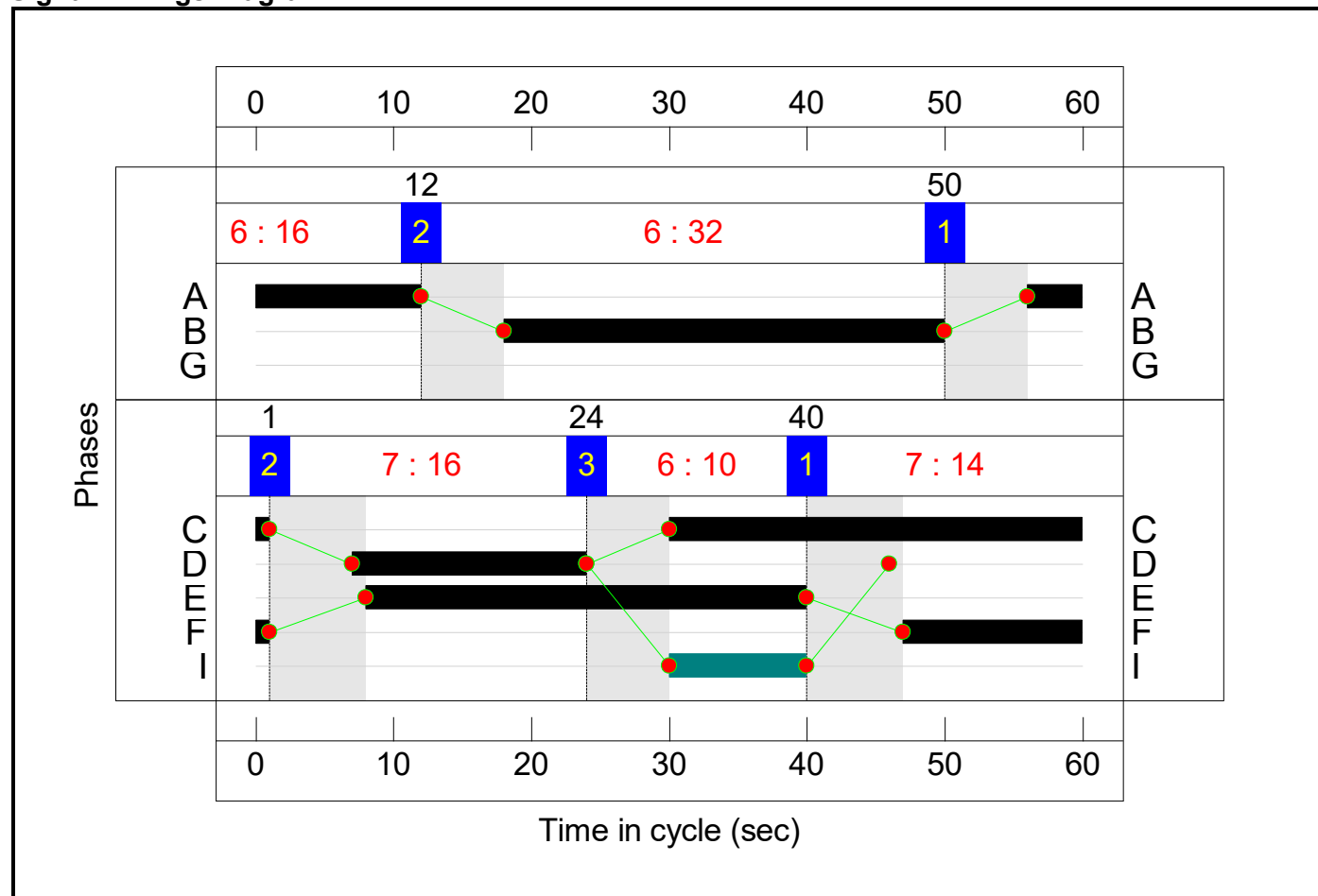
#### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 32 |
| Change Point | 50 | 12 |

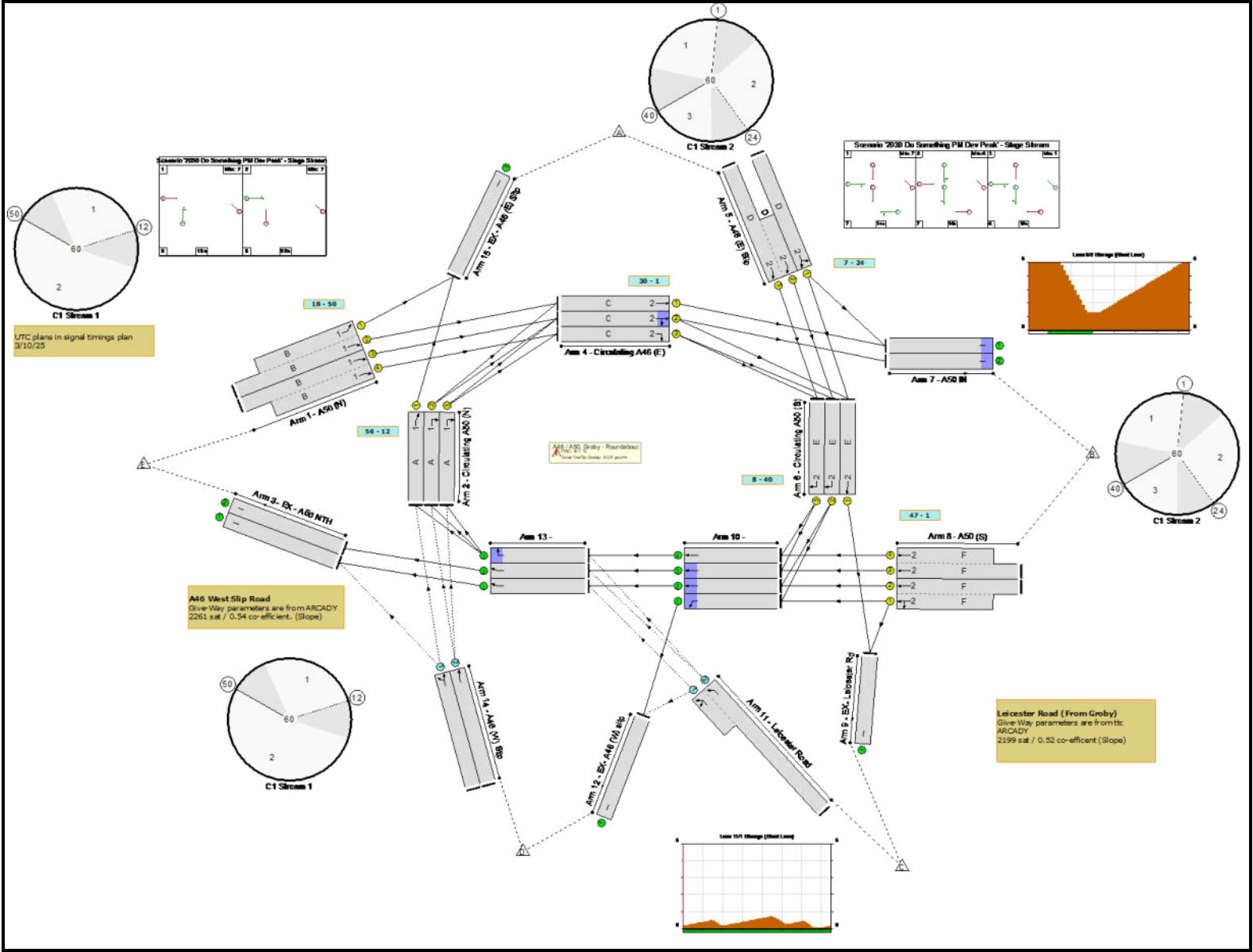
#### Stage Stream: 2

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 40 | 1  | 24 |

### Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 84.8%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 84.8%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1126              | 1975:1978         | 341+1088       | 76.6 : 79.5% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 973               | 2115:1975         | 1163+756       | 53.0 : 47.2% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 400               | 1923              | 545            | 73.4%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 273               | 1905              | 540            | 50.6%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 190               | 1904              | 539            | 35.2%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1049              | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 768               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 526               | 1975              | 1053           | 49.9%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 813               | 2086              | 1113           | 73.1%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 358               | 1859              | 991            | 36.1%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 408               | 1735              | 520            | 78.4%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 783               | 1716:1729         | 444+519        | 81.4 : 81.4% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 605               | 1980              | 1089           | 55.6%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 778               | 2052              | 1129           | 68.9%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 363               | 1915              | 1053           | 34.5%        |



# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 553  | 1900      | 1900    | 29.1%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 589  | 1900      | 1900    | 31.0%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 786  | 2085:1855 | 521+464 | 84.8 : 74.2% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 501  | 2080:1942 | 520+158 | 73.8 : 73.8% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 835  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 467  | 1800      | 1800    | 25.9%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 867  | 1800      | 1800    | 48.2%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 747  | 1800      | 1800    | 41.5%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 117  | 1800      | 1800    | 6.5%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 629  | 3000:3000 | 625+121 | 84.3 : 84.2% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 569  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 867  | 1800      | 1800    | 48.2%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 768  | 1800      | 1800    | 42.7%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 623  | 1800      | 1800    | 34.6%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 182  | 3000      | 223     | 81.5%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 240  | 3000      | 329     | 72.9%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1265 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1680</b>           | <b>0</b>                     | <b>0</b>                    | <b>30.7</b>           | <b>23.2</b>                  | <b>0.0</b>                         | <b>53.8</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1680</b>           | <b>0</b>                     | <b>0</b>                    | <b>30.7</b>           | <b>23.2</b>                  | <b>0.0</b>                         | <b>53.8</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1126           | 1126          | -                     | -                            | -                           | 3.1                   | 1.8                          | -                                  | 4.9<br>(0.9+4.0)    | 15.8<br>(12.9:16.7)       | 11.3                             | 1.8                        | 13.1                 |
| 1/3+1/4                                            | 973            | 973           | -                     | -                            | -                           | 2.2                   | 0.5                          | -                                  | 2.7<br>(1.8+0.9)    | 10.0<br>(10.5:9.3)        | 6.5                              | 0.5                        | 7.0                  |
| 2/1                                                | 400            | 400           | -                     | -                            | -                           | 1.4                   | 1.4                          | -                                  | 2.8                 | 24.9                      | 5.0                              | 1.4                        | 6.3                  |
| 2/2                                                | 273            | 273           | -                     | -                            | -                           | 1.1                   | 0.5                          | -                                  | 1.6                 | 21.6                      | 4.0                              | 0.5                        | 4.5                  |
| 2/3                                                | 190            | 190           | -                     | -                            | -                           | 0.9                   | 0.3                          | -                                  | 1.2                 | 22.4                      | 2.9                              | 0.3                        | 3.2                  |
| 3/1                                                | 1049           | 1049          | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 768            | 768           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 526            | 526           | -                     | -                            | -                           | 2.1                   | 0.5                          | -                                  | 2.6                 | 17.8                      | 7.4                              | 0.5                        | 7.9                  |
| 4/2                                                | 813            | 813           | -                     | -                            | -                           | 2.2                   | 1.3                          | -                                  | 3.5                 | 15.6                      | 11.4                             | 1.3                        | 12.7                 |
| 4/3                                                | 358            | 358           | -                     | -                            | -                           | 0.1                   | 0.3                          | -                                  | 0.4                 | 4.2                       | 2.7                              | 0.3                        | 3.0                  |
| 5/1                                                | 408            | 408           | -                     | -                            | -                           | 2.2                   | 1.8                          | -                                  | 3.9                 | 34.7                      | 6.1                              | 1.8                        | 7.9                  |
| 5/3+5/2                                            | 783            | 783           | -                     | -                            | -                           | 4.1                   | 2.1                          | -                                  | 6.3<br>(2.8+3.4)    | 28.9<br>(28.4:29.3)       | 6.4                              | 2.1                        | 8.6                  |
| 6/1                                                | 605            | 605           | -                     | -                            | -                           | 0.4                   | 0.6                          | -                                  | 1.0                 | 5.9                       | 1.1                              | 0.6                        | 1.7                  |
| 6/2                                                | 778            | 778           | -                     | -                            | -                           | 1.0                   | 0.0                          | -                                  | 1.0                 | 4.6                       | 8.6                              | 0.0                        | 8.6                  |
| 6/3                                                | 363            | 363           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.6                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                                | 553            | 553           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 2.7                              | 0.2                        | 2.9                  |
| 7/2                                                | 589            | 589           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                            | 786            | 786           | -                     | -                            | -                           | 4.6                   | 1.9                          | -                                  | 6.5<br>(3.7+2.8)    | 30.0<br>(30.3:29.6)       | 7.0                              | 1.9                        | 8.9                  |
| 8/3+8/4                                            | 501            | 501           | -                     | -                            | -                           | 2.8                   | 1.4                          | -                                  | 4.2<br>(3.3+0.9)    | 30.1<br>(30.7:28.0)       | 5.9                              | 1.4                        | 7.3                  |
| 9/1                                                | 835            | 835           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

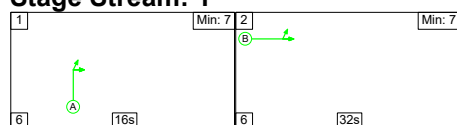
[illegible]

# Full Input Data And Results

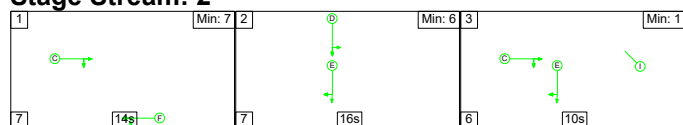
**Scenario 19: '2030 Do Something Sens AM Dev Peak'** (FG19: '2030 Do Something Sens NH AM Peak Dev Peak', Plan 1: 'Staging Plan No. 1')

## Stage Sequence Diagram

### Stage Stream: 1



### Stage Stream: 2



## Stage Timings

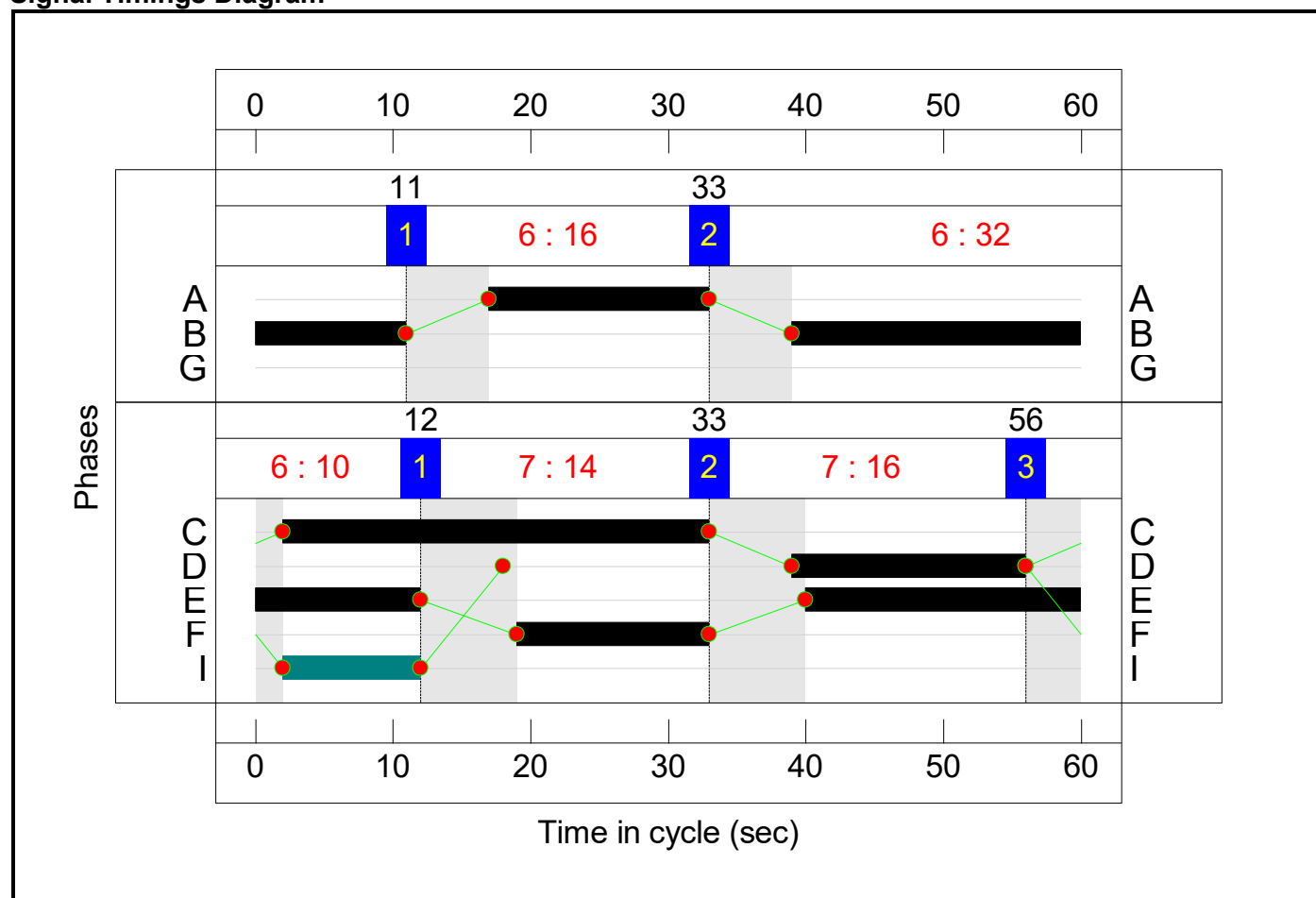
### Stage Stream: 1

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 32 |
| Change Point | 11 | 33 |

### Stage Stream: 2

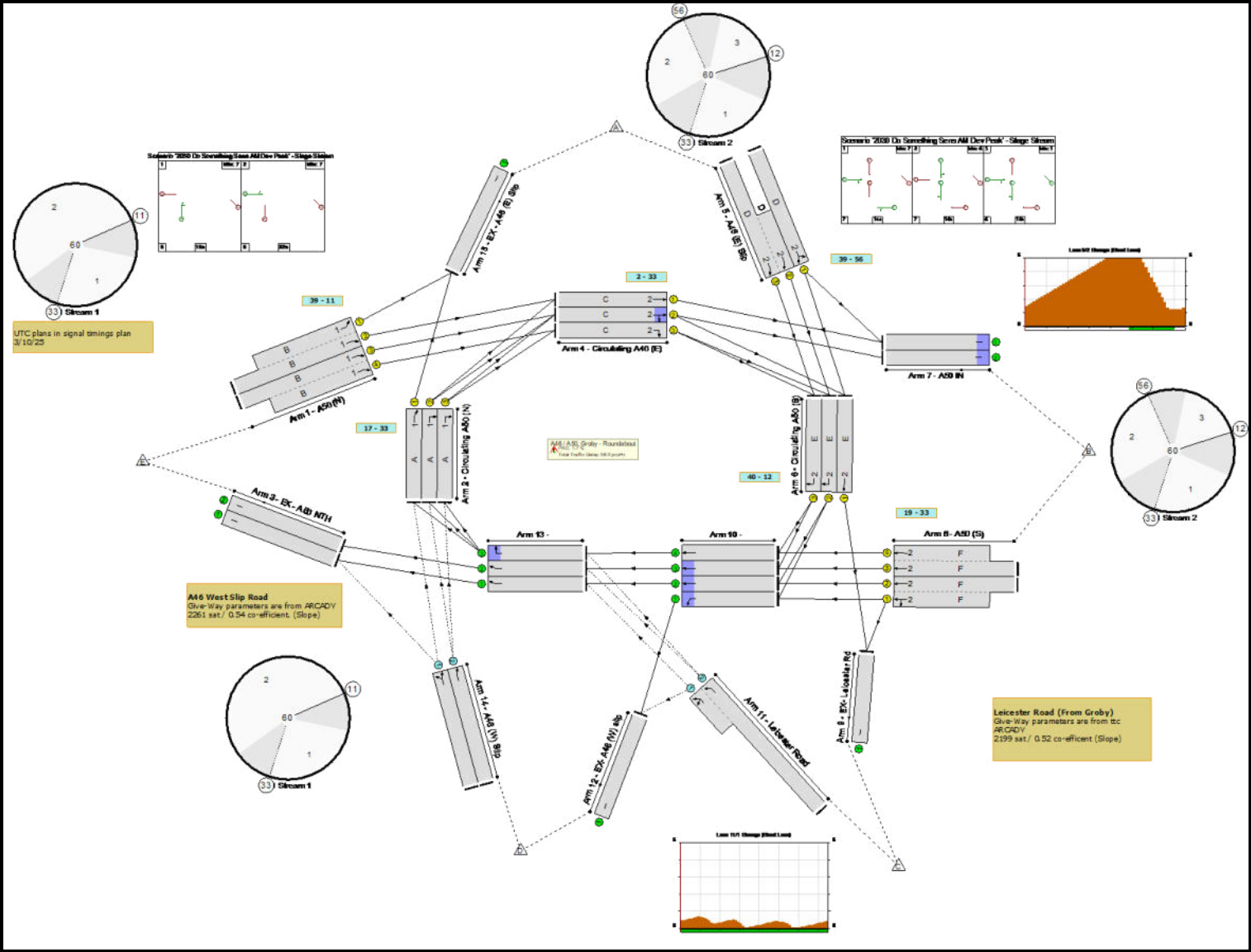
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 12 | 33 | 56 |

## Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



# Full Input Data And Results

## Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 88.5%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 88.5%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1466              | 1975:1978         | 626+1088       | 80.4 : 88.5% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1129              | 2115:1975         | 1163+558       | 65.6 : 65.6% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 451               | 1923              | 545            | 82.8%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 349               | 1905              | 540            | 64.7%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 186               | 1904              | 539            | 34.5%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 823               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 642               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 851               | 1975              | 1053           | 80.8%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 950               | 2099              | 1119           | 84.9%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 366               | 1859              | 991            | 36.9%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 382               | 1706              | 512            | 74.6%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 785               | 1716:1729         | 460+519        | 80.2 : 80.2% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 419               | 1980              | 1089           | 38.5%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 779               | 2052              | 1129           | 69.0%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 372               | 1915              | 1053           | 35.3%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 960  | 1900      | 1900    | 50.5%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 804  | 1900      | 1900    | 42.3%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 435  | 2085:1850 | 521+462 | 46.6 : 41.5% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 354  | 2080:1942 | 520+275 | 46.0 : 41.9% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 554  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 402  | 1800      | 1800    | 22.3%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 677  | 1800      | 1800    | 37.6%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 611  | 1800      | 1800    | 33.9%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 115  | 1800      | 1800    | 6.4%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 767  | 3000:3000 | 759+143 | 84.9 : 85.5% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 524  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 677  | 1800      | 1800    | 37.6%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 642  | 1800      | 1800    | 35.7%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 729  | 1800      | 1800    | 40.5%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 146  | 3000      | 241     | 60.6%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 257  | 3000      | 436     | 58.9%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1414 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1937</b>           | <b>0</b>                     | <b>0</b>                    | <b>32.1</b>           | <b>23.9</b>                  | <b>0.0</b>                         | <b>56.0</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1937</b>           | <b>0</b>                     | <b>0</b>                    | <b>32.1</b>           | <b>23.9</b>                  | <b>0.0</b>                         | <b>56.0</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1466           | 1466          | -                     | -                            | -                           | 4.3                   | 2.9                          | -                                  | 7.2<br>(2.1+5.1)    | 17.7<br>(15.3:18.9)       | 13.9                             | 2.9                        | 16.8                 |
| 1/3+1/4                                            | 1129           | 1129          | -                     | -                            | -                           | 2.8                   | 1.0                          | -                                  | 3.7<br>(2.7+1.1)    | 11.9<br>(12.5:10.5)       | 8.9                              | 1.0                        | 9.9                  |
| 2/1                                                | 451            | 451           | -                     | -                            | -                           | 3.1                   | 2.3                          | -                                  | 5.4                 | 42.7                      | 7.0                              | 2.3                        | 9.3                  |
| 2/2                                                | 349            | 349           | -                     | -                            | -                           | 1.6                   | 0.9                          | -                                  | 2.5                 | 25.7                      | 4.8                              | 0.9                        | 5.7                  |
| 2/3                                                | 186            | 186           | -                     | -                            | -                           | 0.7                   | 0.3                          | -                                  | 1.0                 | 19.3                      | 2.2                              | 0.3                        | 2.5                  |
| 3/1                                                | 823            | 823           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 642            | 642           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 851            | 851           | -                     | -                            | -                           | 2.7                   | 2.1                          | -                                  | 4.8                 | 20.2                      | 10.2                             | 2.1                        | 12.3                 |
| 4/2                                                | 950            | 950           | -                     | -                            | -                           | 2.7                   | 2.7                          | -                                  | 5.4                 | 20.5                      | 13.4                             | 2.7                        | 16.2                 |
| 4/3                                                | 366            | 366           | -                     | -                            | -                           | 0.8                   | 0.3                          | -                                  | 1.1                 | 10.4                      | 4.8                              | 0.3                        | 5.1                  |
| 5/1                                                | 382            | 382           | -                     | -                            | -                           | 2.0                   | 1.4                          | -                                  | 3.4                 | 32.5                      | 5.7                              | 1.4                        | 7.2                  |
| 5/3+5/2                                            | 785            | 785           | -                     | -                            | -                           | 4.2                   | 2.0                          | -                                  | 6.1<br>(2.9+3.3)    | 28.2<br>(27.8:28.5)       | 6.4                              | 2.0                        | 8.3                  |
| 6/1                                                | 419            | 419           | -                     | -                            | -                           | 0.4                   | 0.3                          | -                                  | 0.7                 | 6.3                       | 2.2                              | 0.3                        | 2.5                  |
| 6/2                                                | 779            | 779           | -                     | -                            | -                           | 1.0                   | 0.0                          | -                                  | 1.0                 | 4.8                       | 6.3                              | 0.0                        | 6.3                  |
| 6/3                                                | 372            | 372           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.7                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                                | 960            | 960           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.6                 | 2.1                       | 5.8                              | 0.5                        | 6.4                  |
| 7/2                                                | 804            | 804           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 0.1                              | 0.4                        | 0.4                  |
| 8/2+8/1                                            | 435            | 435           | -                     | -                            | -                           | 2.3                   | 0.4                          | -                                  | 2.7<br>(1.5+1.2)    | 22.3<br>(22.4:22.1)       | 3.4                              | 0.4                        | 3.8                  |
| 8/3+8/4                                            | 354            | 354           | -                     | -                            | -                           | 1.8                   | 0.4                          | -                                  | 2.2<br>(1.5+0.7)    | 22.8<br>(23.2:22.0)       | 3.3                              | 0.4                        | 3.7                  |
| 9/1                                                | 554            | 554           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |



## Full Input Data And Results

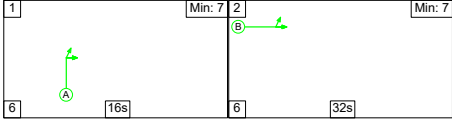
|           |      |      |      |   |   |     |     |   |                  |                     |     |     |     |
|-----------|------|------|------|---|---|-----|-----|---|------------------|---------------------|-----|-----|-----|
| 10/1      | 402  | 402  | -    | - | - | 0.0 | 0.1 | - | 0.1              | 1.3                 | 0.0 | 0.1 | 0.1 |
| 10/2      | 677  | 677  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 3.1 | 0.3 | 3.4 |
| 10/3      | 611  | 611  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.5                 | 0.0 | 0.3 | 0.3 |
| 10/4      | 115  | 115  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 1.1                 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1 | 767  | 767  | 1534 | 0 | 0 | 1.1 | 2.7 | - | 3.8<br>(3.1+0.7) | 18.1<br>(17.5:21.2) | 6.1 | 2.7 | 8.8 |
| 12/1      | 524  | 524  | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |
| 13/1      | 677  | 677  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.6                 | 0.0 | 0.3 | 0.3 |
| 13/2      | 642  | 642  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.6                 | 0.0 | 0.3 | 0.3 |
| 13/3      | 729  | 729  | -    | - | - | 0.0 | 0.3 | - | 0.3              | 1.7                 | 0.0 | 0.3 | 0.3 |
| 14/1      | 146  | 146  | 146  | 0 | 0 | 0.2 | 0.8 | - | 0.9              | 23.2                | 0.9 | 0.8 | 1.7 |
| 14/2      | 257  | 257  | 257  | 0 | 0 | 0.3 | 0.7 | - | 1.0              | 14.1                | 1.5 | 0.7 | 2.2 |
| 15/1      | 1414 | 1414 | -    | - | - | 0.0 | 0.0 | - | 0.0              | 0.0                 | 0.0 | 0.0 | 0.0 |

|    |           |                              |     |                                          |       |                 |    |
|----|-----------|------------------------------|-----|------------------------------------------|-------|-----------------|----|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | 1.7 | Total Delay for Signalled Lanes (pcuHr): | 19.77 | Cycle Time (s): | 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | 6.1 | Total Delay for Signalled Lanes (pcuHr): | 27.81 | Cycle Time (s): | 60 |
|    |           | PRC Over All Lanes (%):      | 1.7 | Total Delay Over All Lanes(pcuHr):       | 55.97 |                 |    |

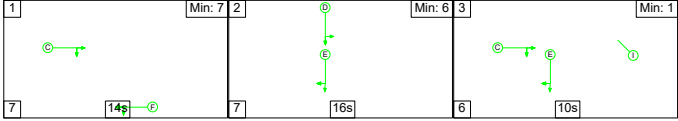
Full Input Data And Results  
**Scenario 20: '2030 Do Something Sens PM Dev Peak'** (FG20: '2030 Do Something Sens NH PM Peak Dev Peak',  
Plan 1: 'Staging Plan No. 1')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Stage Stream: 2**



**Stage Timings**

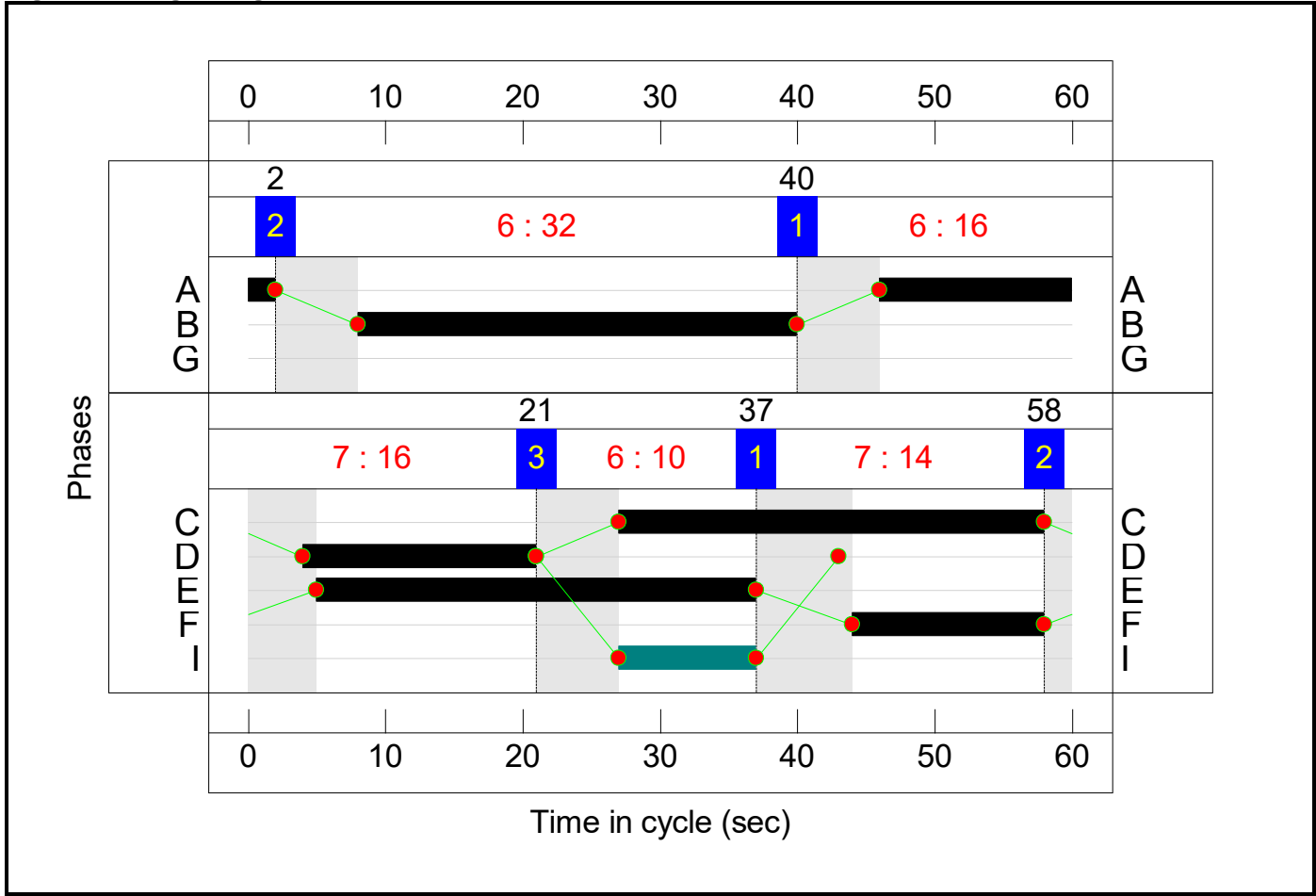
**Stage Stream: 1**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 32 |
| Change Point | 40 | 2  |

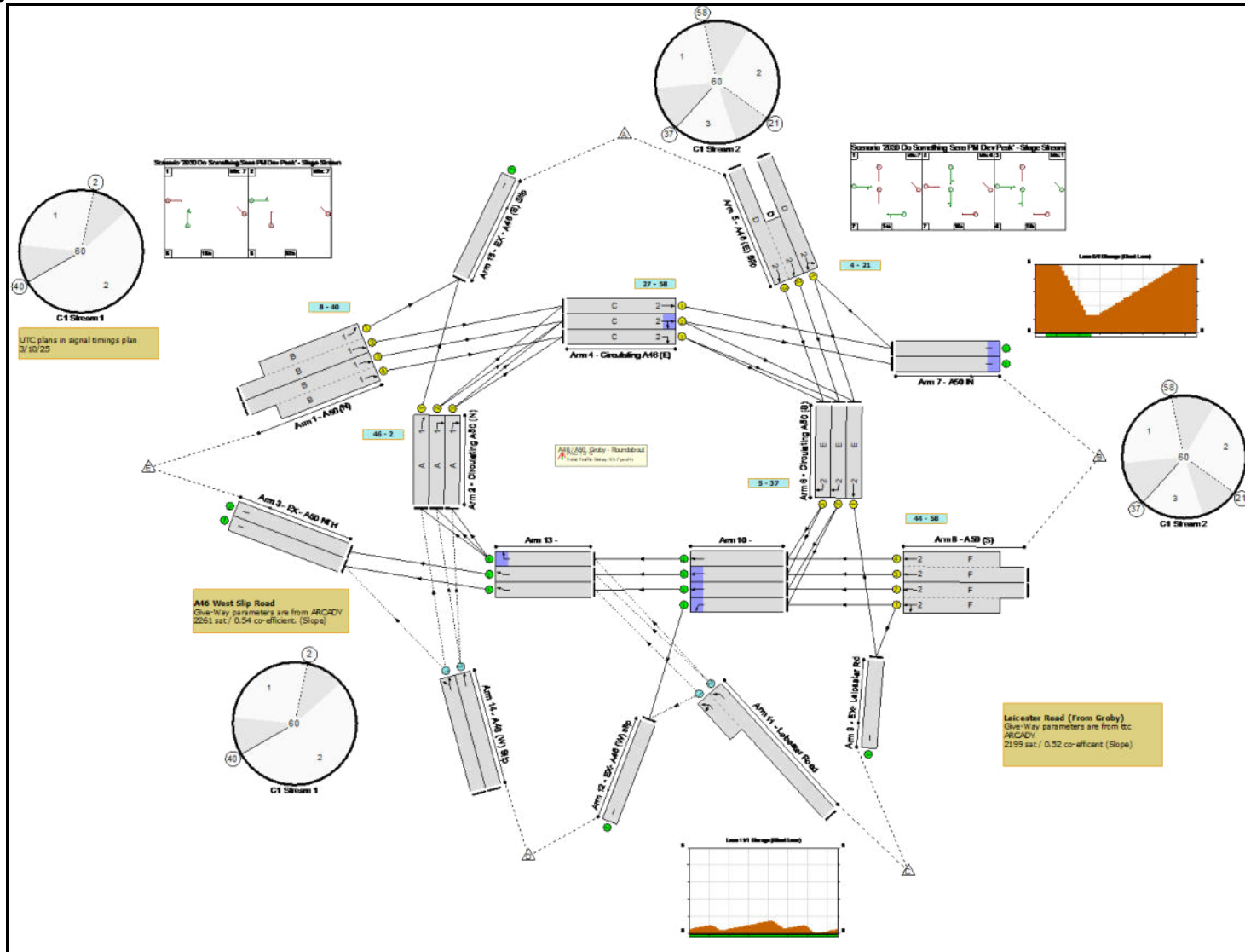
**Stage Stream: 2**

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 37 | 58 | 21 |

**Signal Timings Diagram**



## Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 89.1%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 89.1%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1121              | 1975:1978         | 332+1088       | 77.1 : 79.5% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 980               | 2115:1975         | 1163+751       | 53.6 : 47.5% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 398               | 1923              | 545            | 73.0%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 270               | 1905              | 540            | 50.0%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 191               | 1904              | 539            | 35.4%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1074              | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 783               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 518               | 1975              | 1053           | 49.2%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 822               | 2086              | 1113           | 73.9%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 357               | 1859              | 991            | 36.0%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 407               | 1735              | 520            | 78.2%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 802               | 1716:1729         | 448+519        | 82.8 : 83.1% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 606               | 1980              | 1089           | 55.6%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 785               | 2052              | 1129           | 69.6%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 374               | 1915              | 1053           | 35.5%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 545  | 1900      | 1900    | 28.7%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 596  | 1900      | 1900    | 31.4%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 793  | 2085:1855 | 521+464 | 86.7 : 73.5% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 505  | 2080:1942 | 520+157 | 74.6 : 74.6% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 833  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 466  | 1800      | 1800    | 25.9%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 885  | 1800      | 1800    | 49.2%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 762  | 1800      | 1800    | 42.3%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 117  | 1800      | 1800    | 6.5%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 621  | 3000:3000 | 609+112 | 85.6 : 89.1% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 566  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 885  | 1800      | 1800    | 49.2%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 783  | 1800      | 1800    | 43.5%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 617  | 1800      | 1800    | 34.3%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 189  | 3000      | 221     | 85.6%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 242  | 3000      | 326     | 74.2%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1263 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1673</b>           | <b>0</b>                     | <b>0</b>                    | <b>31.0</b>           | <b>24.6</b>                  | <b>0.0</b>                         | <b>55.7</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1673</b>           | <b>0</b>                     | <b>0</b>                    | <b>31.0</b>           | <b>24.6</b>                  | <b>0.0</b>                         | <b>55.7</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1121           | 1121          | -                     | -                            | -                           | 3.1                   | 1.9                          | -                                  | 4.9<br>(0.9+4.0)    | 15.9<br>(12.9:16.7)       | 11.3                             | 1.9                        | 13.1                 |
| 1/3+1/4                                            | 980            | 980           | -                     | -                            | -                           | 2.2                   | 0.5                          | -                                  | 2.8<br>(1.8+0.9)    | 10.1<br>(10.5:9.3)        | 6.6                              | 0.5                        | 7.1                  |
| 2/1                                                | 398            | 398           | -                     | -                            | -                           | 2.0                   | 1.3                          | -                                  | 3.4                 | 30.6                      | 5.4                              | 1.3                        | 6.7                  |
| 2/2                                                | 270            | 270           | -                     | -                            | -                           | 0.9                   | 0.5                          | -                                  | 1.4                 | 18.3                      | 3.3                              | 0.5                        | 3.8                  |
| 2/3                                                | 191            | 191           | -                     | -                            | -                           | 0.6                   | 0.3                          | -                                  | 0.9                 | 16.8                      | 2.4                              | 0.3                        | 2.7                  |
| 3/1                                                | 1074           | 1074          | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 783            | 783           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 518            | 518           | -                     | -                            | -                           | 1.8                   | 0.5                          | -                                  | 2.3                 | 15.9                      | 6.1                              | 0.5                        | 6.6                  |
| 4/2                                                | 822            | 822           | -                     | -                            | -                           | 2.1                   | 1.4                          | -                                  | 3.5                 | 15.4                      | 10.8                             | 1.4                        | 12.2                 |
| 4/3                                                | 357            | 357           | -                     | -                            | -                           | 0.5                   | 0.3                          | -                                  | 0.7                 | 7.5                       | 4.1                              | 0.3                        | 4.4                  |
| 5/1                                                | 407            | 407           | -                     | -                            | -                           | 2.2                   | 1.7                          | -                                  | 3.9                 | 34.6                      | 6.1                              | 1.7                        | 7.8                  |
| 5/3+5/2                                            | 802            | 802           | -                     | -                            | -                           | 4.3                   | 2.4                          | -                                  | 6.6<br>(3.0+3.6)    | 29.8<br>(29.4:30.2)       | 6.6                              | 2.4                        | 8.9                  |
| 6/1                                                | 606            | 606           | -                     | -                            | -                           | 0.4                   | 0.6                          | -                                  | 1.1                 | 6.4                       | 3.9                              | 0.6                        | 4.5                  |
| 6/2                                                | 785            | 785           | -                     | -                            | -                           | 0.9                   | 0.0                          | -                                  | 0.9                 | 3.9                       | 5.2                              | 0.0                        | 5.2                  |
| 6/3                                                | 374            | 374           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 2.7                       | 0.0                              | 0.3                        | 0.3                  |
| 7/1                                                | 545            | 545           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 1.2                              | 0.2                        | 1.4                  |
| 7/2                                                | 596            | 596           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |
| 8/2+8/1                                            | 793            | 793           | -                     | -                            | -                           | 4.7                   | 2.0                          | -                                  | 6.7<br>(3.9+2.8)    | 30.4<br>(30.7:29.9)       | 7.2                              | 2.0                        | 9.2                  |
| 8/3+8/4                                            | 505            | 505           | -                     | -                            | -                           | 2.8                   | 1.4                          | -                                  | 4.3<br>(3.3+0.9)    | 30.4<br>(31.1:28.3)       | 5.9                              | 1.4                        | 7.4                  |
| 9/1                                                | 833            | 833           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

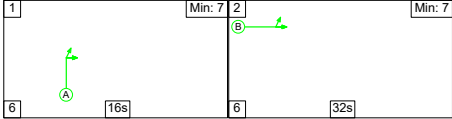
## Full Input Data And Results

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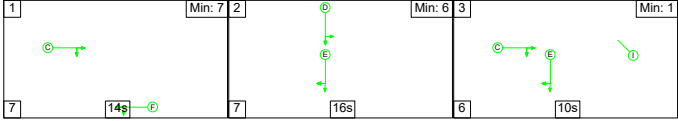
Full Input Data And Results  
**Scenario 21: '2030 Do Something Sens AM Dev Peak Reassignment Check'** (FG21: '2030 Do Something Sens NH AM Peak Dev Peak + Re-assignment Check', Plan 1: 'Staging Plan No. 1')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Stage Stream: 2**



**Stage Timings**

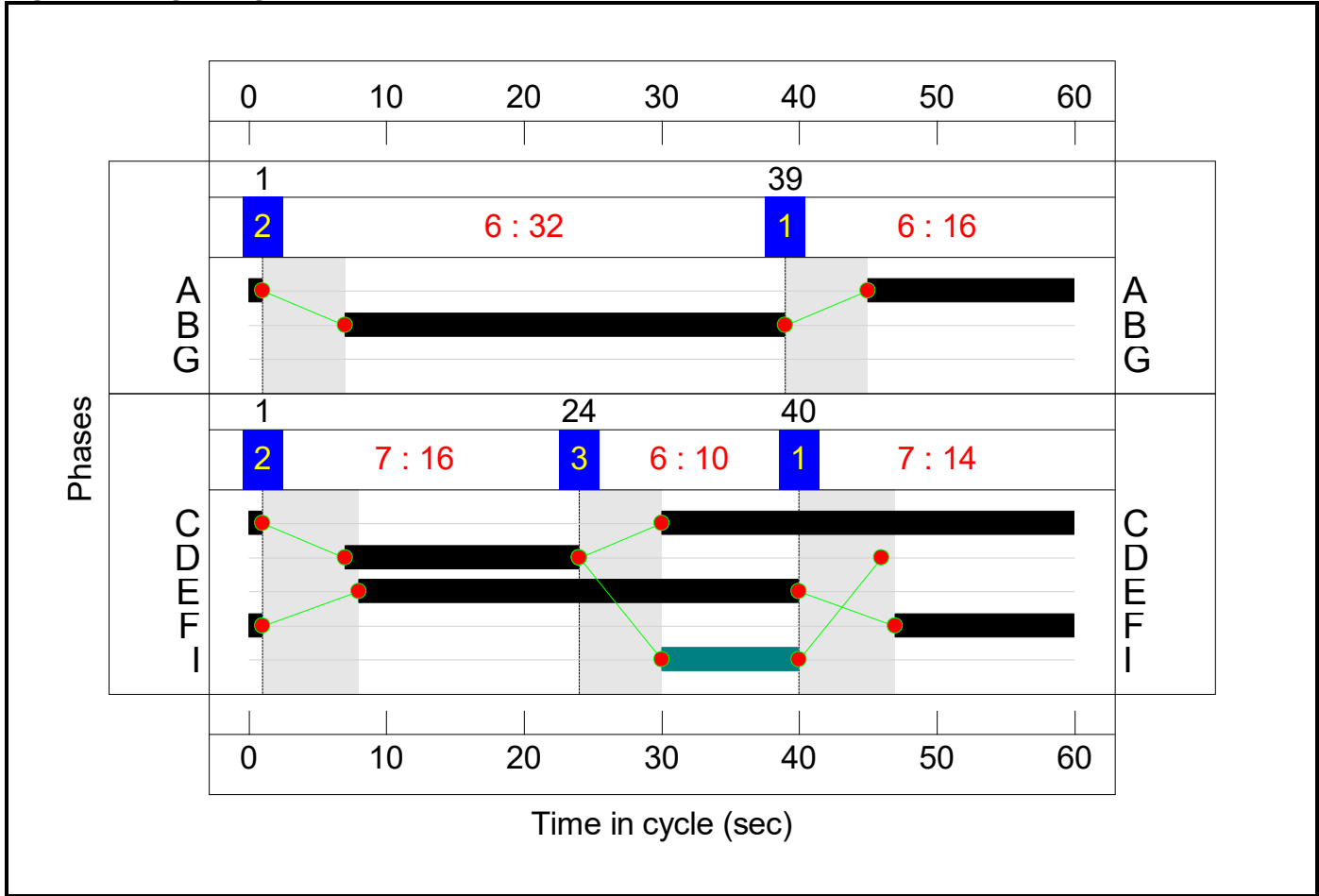
**Stage Stream: 1**

| Stage        | 1  | 2  |
|--------------|----|----|
| Duration     | 16 | 32 |
| Change Point | 39 | 1  |

**Stage Stream: 2**

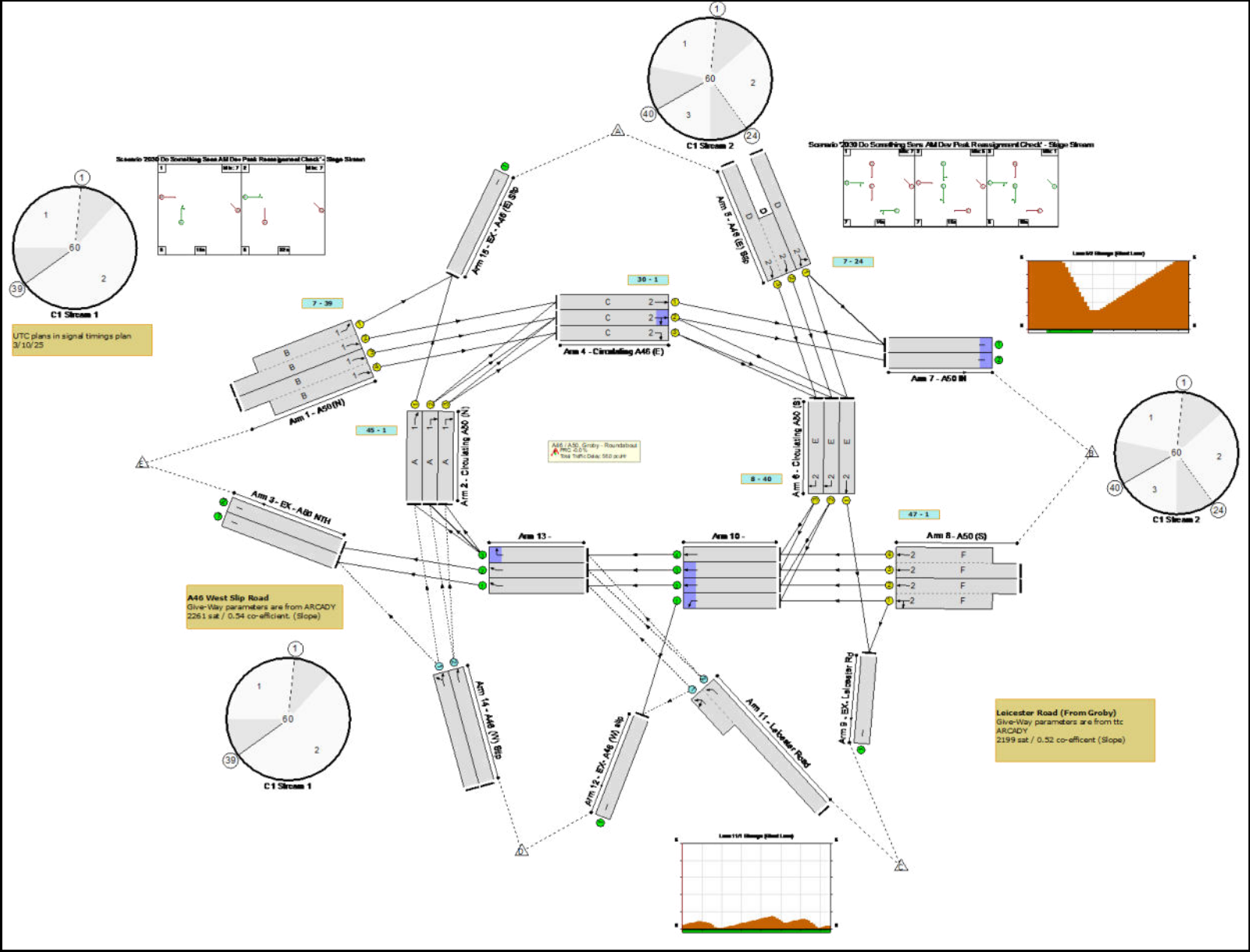
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 14 | 16 | 10 |
| Change Point | 40 | 1  | 24 |

**Signal Timings Diagram**





Full Input Data And Results  
Network Layout Diagram



## Full Input Data And Results

### Network Results

| Item                                               | Lane Description                | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|----------------------------------------------------|---------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 90.0%        |
| <b>A46 / A50, Groby - Roundabout</b>               | -                               | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 90.0%        |
| 1/2+1/1                                            | A50 (N) Ahead Ahead2            | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1503              | 1975:1978         | 723+1088       | 76.0 : 87.6% |
| 1/3+1/4                                            | A50 (N) Ahead                   | U         | 1                 | N/A                        | B          |             | 1          | 32              | -               | 1068              | 2115:1975         | 1163+675       | 60.6 : 53.8% |
| 2/1                                                | Circulating A50 (N) Ahead       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 463               | 1923              | 545            | 85.0%        |
| 2/2                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 293               | 1905              | 540            | 54.3%        |
| 2/3                                                | Circulating A50 (N) Right       | U         | 1                 | N/A                        | A          |             | 1          | 16              | -               | 251               | 1904              | 539            | 46.5%        |
| 3/1                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 872               | Inf               | Inf            | 0.0%         |
| 3/2                                                | EX - A50 NTH                    | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 593               | Inf               | Inf            | 0.0%         |
| 4/1                                                | Circulating A46 (E) Ahead       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 832               | 1975              | 1053           | 79.0%        |
| 4/2                                                | Circulating A46 (E) Right Ahead | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 967               | 2099              | 1119           | 86.4%        |
| 4/3                                                | Circulating A46 (E) Right       | U         | 2                 | N/A                        | C          |             | 1          | 31              | -               | 363               | 1859              | 991            | 36.6%        |
| 5/1                                                | A46 (E) Slip Ahead Left         | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 382               | 1706              | 512            | 74.6%        |
| 5/3+5/2                                            | A46 (E) Slip Ahead              | U         | 2                 | N/A                        | D          |             | 1          | 17              | -               | 785               | 1716:1729         | 386+519        | 86.8 : 86.8% |
| 6/1                                                | Circulating A50 (S) Ahead       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 419               | 1980              | 1089           | 38.5%        |
| 6/2                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 812               | 2052              | 1129           | 71.9%        |
| 6/3                                                | Circulating A50 (S) Right       | U         | 2                 | N/A                        | E          |             | 1          | 32              | -               | 336               | 1915              | 1053           | 31.9%        |

# Full Input Data And Results

|           |                           |   |     |     |   |  |   |    |   |      |           |         |              |
|-----------|---------------------------|---|-----|-----|---|--|---|----|---|------|-----------|---------|--------------|
| 7/1       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 941  | 1900      | 1900    | 49.5%        |
| 7/2       | A50 IN                    | U | N/A | N/A | - |  | - | -  | - | 821  | 1900      | 1900    | 43.2%        |
| 8/2+8/1   | A50 (S) Left Ahead        | U | 2   | N/A | F |  | 1 | 14 | - | 448  | 2085:1850 | 521+462 | 49.1 : 41.5% |
| 8/3+8/4   | A50 (S) Ahead             | U | 2   | N/A | F |  | 1 | 14 | - | 341  | 2080:1942 | 520+265 | 43.5 : 43.5% |
| 9/1       | EX- Leicester Rd          | U | N/A | N/A | - |  | - | -  | - | 554  | Inf       | Inf     | 0.0%         |
| 10/1      | Left                      | U | N/A | N/A | - |  | - | -  | - | 399  | 1800      | 1800    | 22.2%        |
| 10/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 726  | 1800      | 1800    | 40.3%        |
| 10/3      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 562  | 1800      | 1800    | 31.2%        |
| 10/4      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 115  | 1800      | 1800    | 6.4%         |
| 11/2+11/1 | Leicester Road Left Left2 | O | N/A | N/A | - |  | - | -  | - | 792  | 3000:3000 | 755+140 | 88.2 : 90.0% |
| 12/1      | EX- A46 (W) slip          | U | N/A | N/A | - |  | - | -  | - | 525  | Inf       | Inf     | 0.0%         |
| 13/1      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 726  | 1800      | 1800    | 40.3%        |
| 13/2      | Ahead                     | U | N/A | N/A | - |  | - | -  | - | 593  | 1800      | 1800    | 32.9%        |
| 13/3      | Right                     | U | N/A | N/A | - |  | - | -  | - | 750  | 1800      | 1800    | 41.7%        |
| 14/1      | A46 (W) Slip Ahead Left   | O | N/A | N/A | - |  | - | -  | - | 146  | 3000      | 232     | 62.9%        |
| 14/2      | A46 (W) Slip Ahead        | O | N/A | N/A | - |  | - | -  | - | 257  | 3000      | 375     | 68.5%        |
| 15/1      | EX - A46 (E) Slip         | U | N/A | N/A | - |  | - | -  | - | 1416 | 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) |
|----------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A50/A46 Rbt, Groby, Leicestershire</b> | -              | -             | <b>1987</b>           | <b>0</b>                     | <b>0</b>                    | <b>32.1</b>           | <b>25.9</b>                  | <b>0.0</b>                         | <b>58.0</b>         | -                         | -                                | -                          | -                    |
| <b>A46 / A50, Groby - Roundabout</b>               | -              | -             | <b>1987</b>           | <b>0</b>                     | <b>0</b>                    | <b>32.1</b>           | <b>25.9</b>                  | <b>0.0</b>                         | <b>58.0</b>         | -                         | -                                | -                          | -                    |
| 1/2+1/1                                            | 1503           | 1503          | -                     | -                            | -                           | 4.4                   | 2.4                          | -                                  | 6.8<br>(2.2+4.6)    | 16.3<br>(14.2:17.5)       | 13.8                             | 2.4                        | 16.2                 |
| 1/3+1/4                                            | 1068           | 1068          | -                     | -                            | -                           | 2.5                   | 0.7                          | -                                  | 3.2<br>(2.2+1.0)    | 10.9<br>(11.5:9.8)        | 7.8                              | 0.7                        | 8.5                  |
| 2/1                                                | 463            | 463           | -                     | -                            | -                           | 3.2                   | 2.7                          | -                                  | 5.9                 | 45.8                      | 7.2                              | 2.7                        | 9.8                  |
| 2/2                                                | 293            | 293           | -                     | -                            | -                           | 1.3                   | 0.6                          | -                                  | 1.9                 | 23.4                      | 3.8                              | 0.6                        | 4.3                  |
| 2/3                                                | 251            | 251           | -                     | -                            | -                           | 1.0                   | 0.4                          | -                                  | 1.5                 | 21.1                      | 3.0                              | 0.4                        | 3.4                  |
| 3/1                                                | 872            | 872           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 3/2                                                | 593            | 593           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/1                                                | 832            | 832           | -                     | -                            | -                           | 2.4                   | 1.8                          | -                                  | 4.2                 | 18.4                      | 10.2                             | 1.8                        | 12.1                 |
| 4/2                                                | 967            | 967           | -                     | -                            | -                           | 2.8                   | 3.0                          | -                                  | 5.9                 | 21.8                      | 12.9                             | 3.0                        | 16.0                 |
| 4/3                                                | 363            | 363           | -                     | -                            | -                           | 0.8                   | 0.3                          | -                                  | 1.1                 | 10.4                      | 4.7                              | 0.3                        | 5.0                  |
| 5/1                                                | 382            | 382           | -                     | -                            | -                           | 2.0                   | 1.4                          | -                                  | 3.4                 | 32.5                      | 5.7                              | 1.4                        | 7.2                  |
| 5/3+5/2                                            | 785            | 785           | -                     | -                            | -                           | 4.2                   | 3.1                          | -                                  | 7.3<br>(3.0+4.3)    | 33.5<br>(32.5:34.2)       | 7.0                              | 3.1                        | 10.1                 |
| 6/1                                                | 419            | 419           | -                     | -                            | -                           | 0.4                   | 0.3                          | -                                  | 0.7                 | 6.3                       | 1.9                              | 0.3                        | 2.2                  |
| 6/2                                                | 812            | 812           | -                     | -                            | -                           | 1.0                   | 0.0                          | -                                  | 1.0                 | 4.5                       | 6.3                              | 0.0                        | 6.3                  |
| 6/3                                                | 336            | 336           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 2.5                       | 0.0                              | 0.2                        | 0.2                  |
| 7/1                                                | 941            | 941           | -                     | -                            | -                           | 0.0                   | 0.5                          | -                                  | 0.5                 | 2.0                       | 5.9                              | 0.5                        | 6.3                  |
| 7/2                                                | 821            | 821           | -                     | -                            | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.7                       | 0.0                              | 0.4                        | 0.4                  |
| 8/2+8/1                                            | 448            | 448           | -                     | -                            | -                           | 2.4                   | 0.4                          | -                                  | 2.8<br>(1.6+1.2)    | 22.4<br>(22.6:22.2)       | 3.6                              | 0.4                        | 4.0                  |
| 8/3+8/4                                            | 341            | 341           | -                     | -                            | -                           | 1.8                   | 0.4                          | -                                  | 2.1<br>(1.4+0.7)    | 22.7<br>(23.0:22.0)       | 3.1                              | 0.4                        | 3.5                  |
| 9/1                                                | 554            | 554           | -                     | -                            | -                           | 0.0                   | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |

## Full Input Data And Results

[illegible]