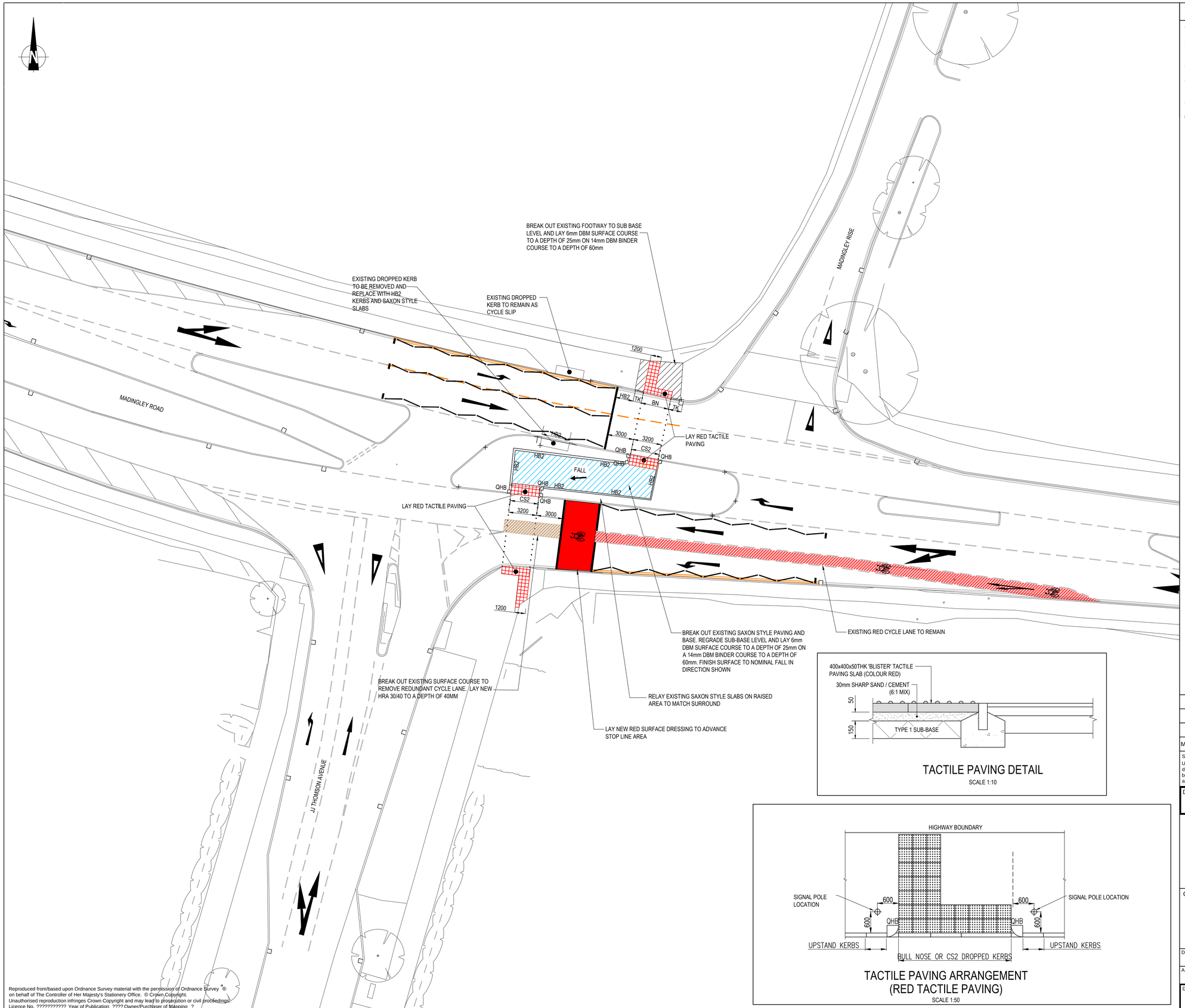
# Appendix 6.2 - Madingley Road / Madingley Rise / JJ Thomson Ave toucan crossing







TACTILE PAVING DETAIL

SCALE 1:10




TACTILE PAVING ARRANGEMENT
(RED TACTILE PAVING)

SCALE 1:50

## NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
3. ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
4. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.
6. ALLOW FOR BREAK OUT AND REINSTATEMENT OF CARRIAGEWAY IN FRONT OF NEW KERBING.

## KEY-

PROPOSED ROAD MARKINGS -

EXISTING ROAD MARKINGS TO BE REMOVED -

EXISTING ROAD MARKINGS TO REMAIN

RECONSTRUCTED ISLAND FOOTWAY - RE-GRADED TO PROVIDE LEVEL CONSISTENT WITH CARRIAGEWAY

TACTILE PAVING (RED)

NEW PROVISION KERB TYPES

HB2 - 125 x 255mm

CS2 - 150 X 225mm

QHB - QUADRANT 305 X 255mm

| Mark | Revision | Drawn | Date | Chkd |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake his own investigation where the presence of any existing sewers, services, plant or apparatus may affect his operations.

Drawing Issue Status

TECHNICAL APPROVAL

# WEST CAMBRIDGE

# MADINGLEY ROAD/JJ THOMSON AVENUE TOUCAN CROSSING

Client

UNIVERSITY OF CAMBRIDGE

| Date of 1st Issue | Drawn by |
|---|---|
| 11.11.14 | JG |
| A1 Scale | Checked by |
| 1:200 | GT |
| Drawing Number | Revision |
| 23035/5506/001 | - |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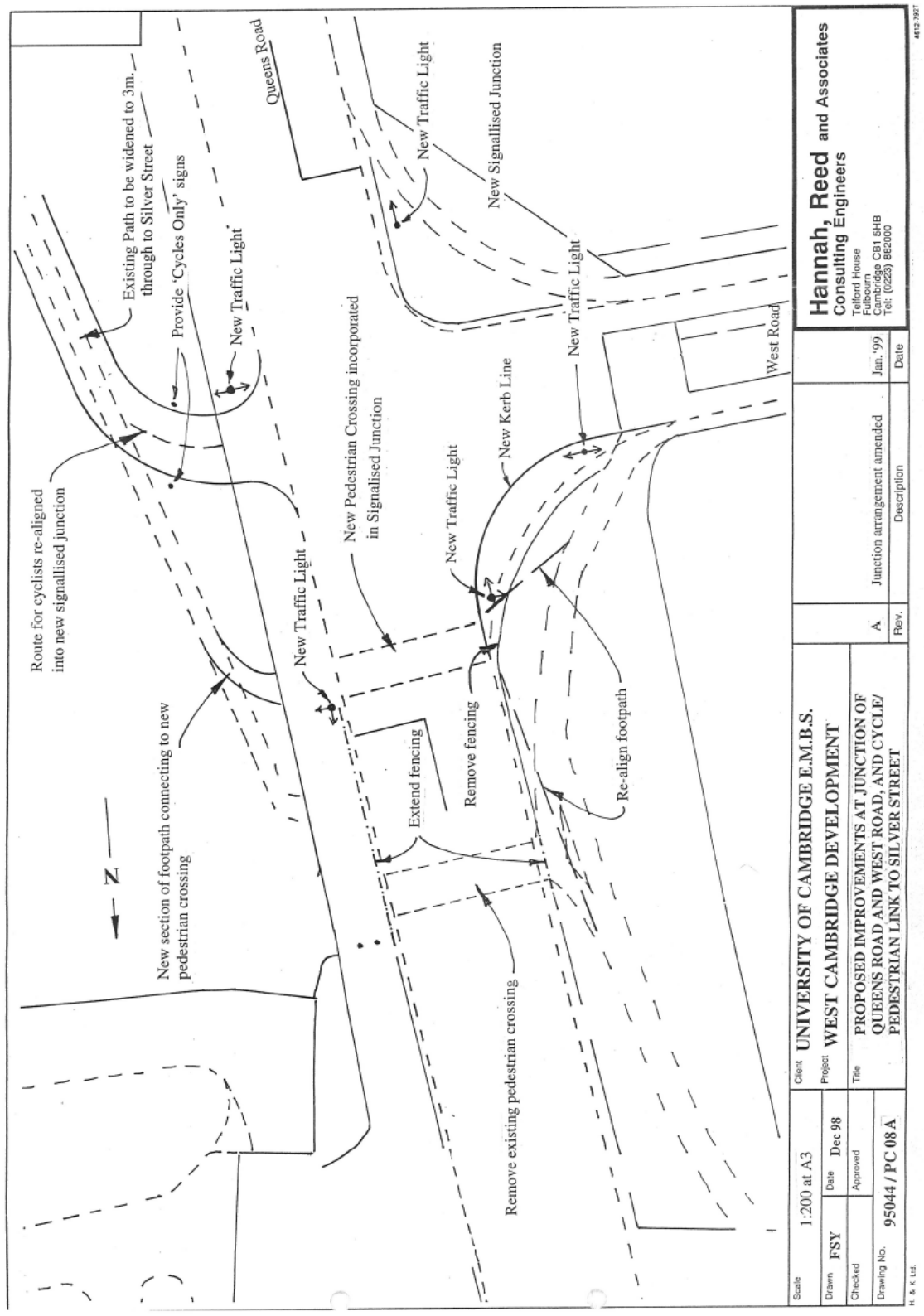
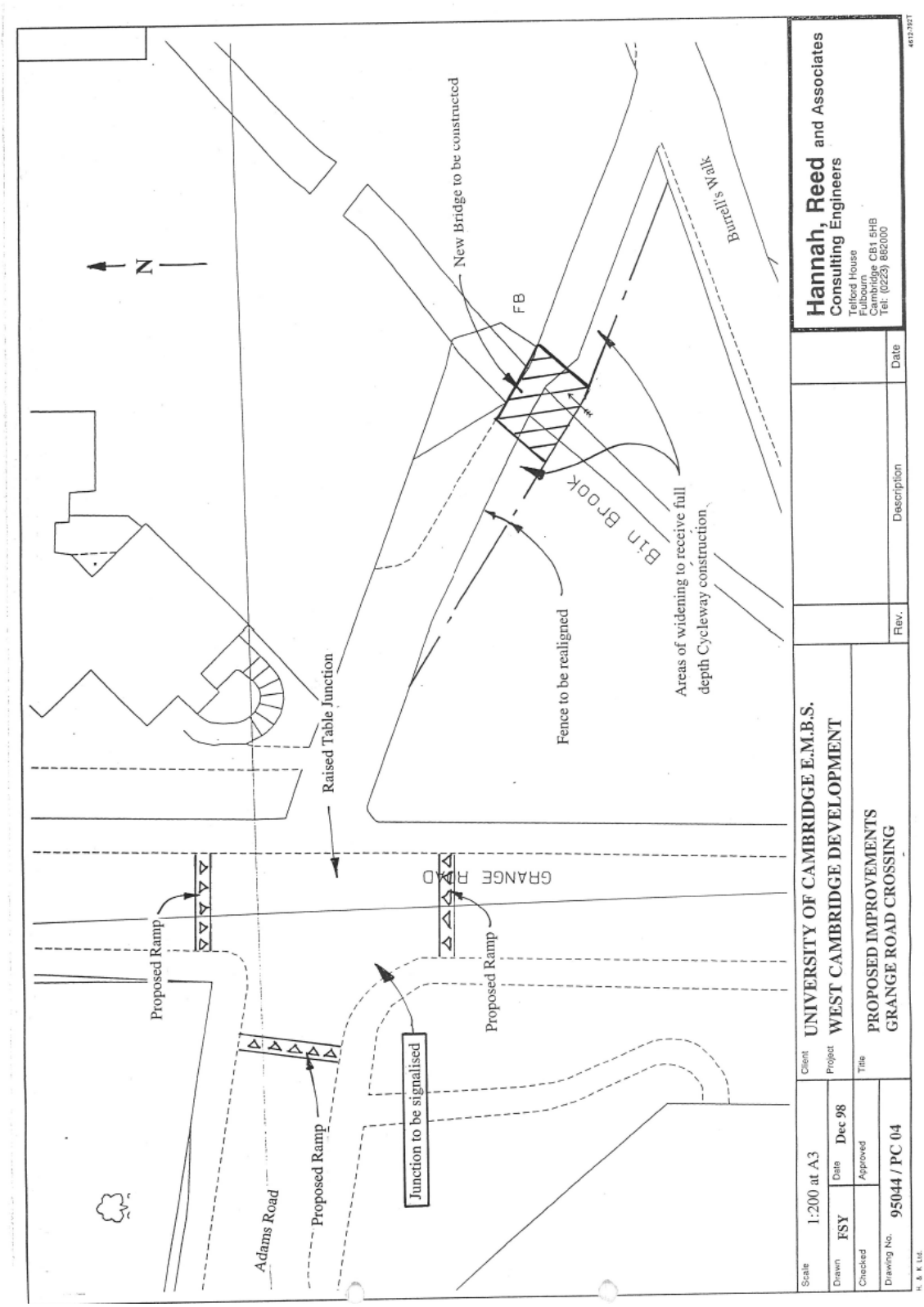
CAMBRIDGE
Tel: 01223 882000

# Appendix 6.3 – Queen's Road / West Road and Link across Queen's Green to Silver Street

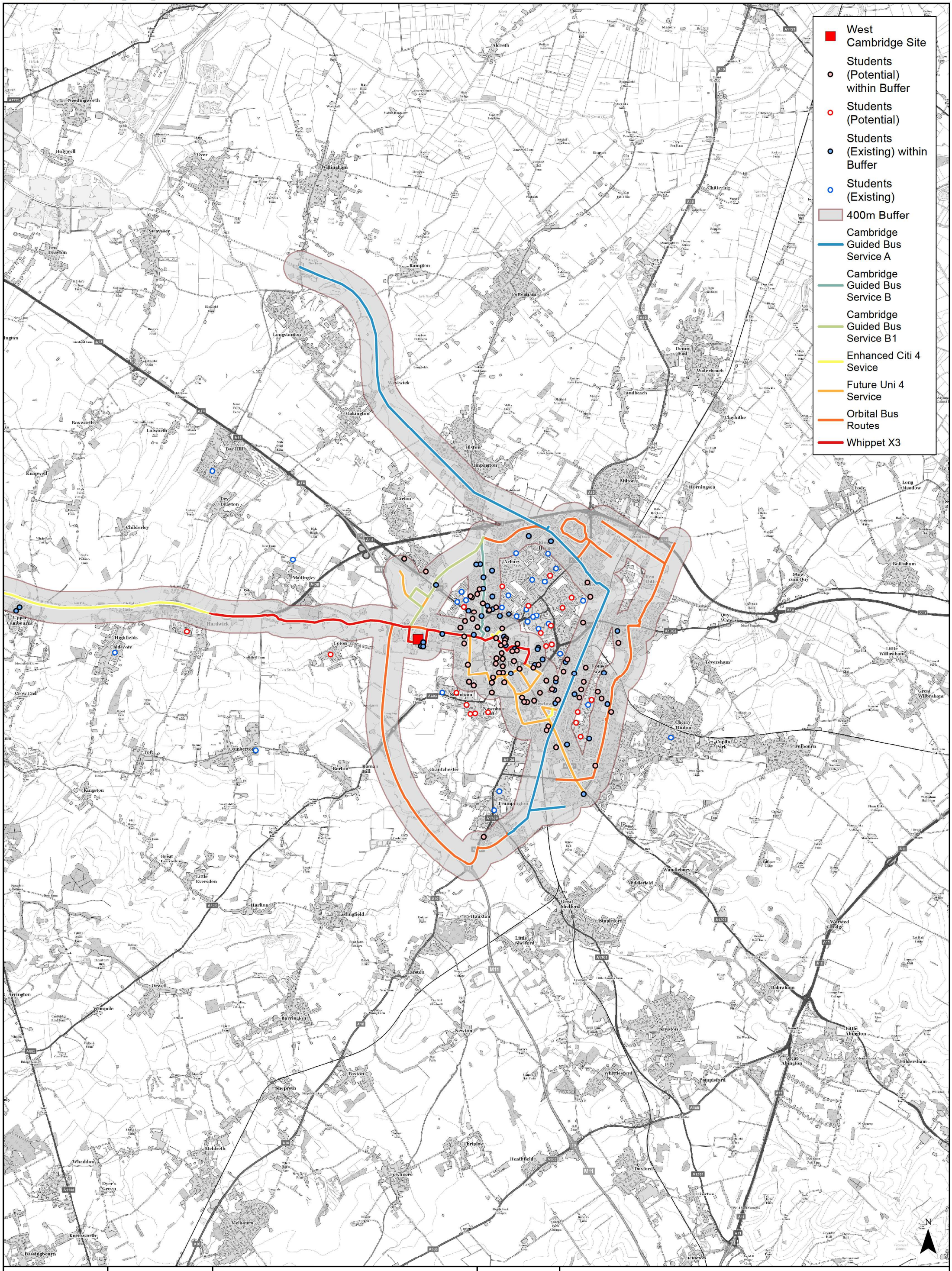


# Appendix 6.4 – Potential Improvements to Burrell's Walk



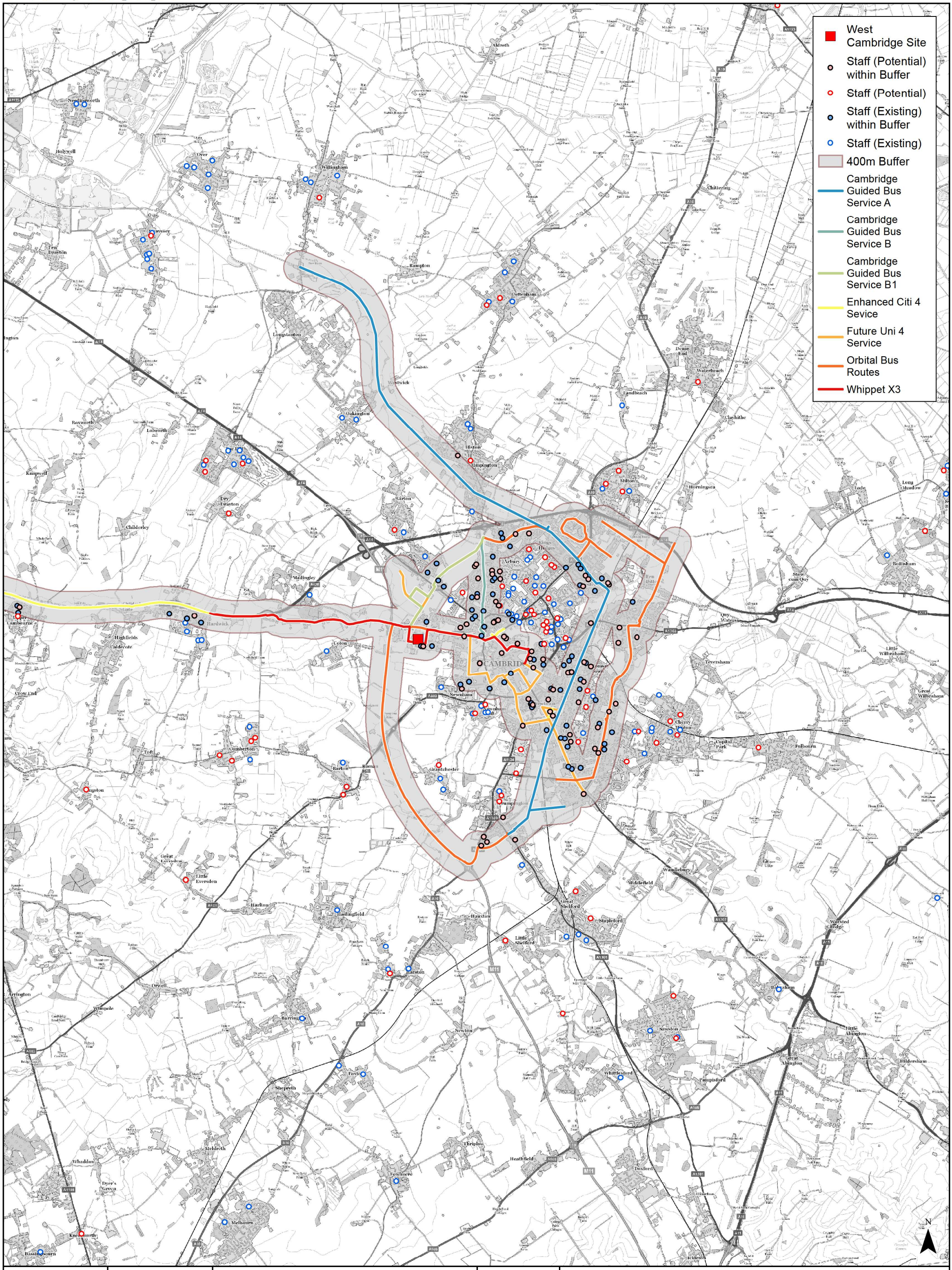
# Appendix 7.1 – Assessment of Potential Occupant Post Code data and Bus route services

Document Path: Z:\Projects\31500\Job_2\31500_StudentsBuffer.mxd




| | | | | |
|---|---|---|---|---|
| pba peterbrett | Client | 0 2.5 5 Km<br>Service Layer Credits:<br>Contains Ordnance Survey data © Crown copyright and database right 2016. | 1:80,000 @ A3<br>06/05/2016<br>Drawn: CM<br>Checked: JH | **West Cambridge Existing and PotentialTravel Flows**<br>Students Travelling to the West Cambridge Site<br>Figure 1 \| Rev A |

Document Path: Z:\Projects\31500\Job_2\31500_StaffBuffer.mxd




| | | | | |
|---|---|---|---|---|
| pba peterbrett | Client | 0 2.5 5 Km<br>Service Layer Credits:<br>Contains Ordnance Survey data © Crown copyright and database right 2016. | 1:80,000 @ A3<br>06/05/2016<br>Drawn: CM<br>Checked: JH | **West Cambridge Existing and PotentialTravel Flows**<br>Staff Travelling to the West Cambridge Site<br>Figure 1 \| Rev A |

# Appendix 11.1 - Assessment of Construction Movements

## Summary of Assessment

11.1 The construction activities that generate the highest volume of daily trips normally relate to:

i) removal of material off-site;

ii) the construction of a carriageway; or

iii) the casting of foundations for a major building.

11.2 As the majority of these could occur during the first phase, the peak construction movements generated during this phase have been considered.

11.3 It has been assumed that the following major elements of the development will be constructed in Year 1 of the first phase:

i) on-site earthworks and landscaping – including construction of balancing ponds, and excavation of building foundations;

ii) construction of the on-site drainage;

iii) construction of a secondary access road and at-grade car parking;

iv) an initial construction phase of a major building.

11.4 The traffic generation of the remainder of the development to be implemented in other phases would be less.

11.5 As further activities could not occur simultaneously (for example, the construction of the secondary site access carriageway may prevent other construction activities on site that day), this assessment considers a realistic peak construction movement.

11.6 The movements generated by these activities are considered individually.

## Earthworks

11.7 As there is no requirement for the construction of large noise bunds, nor is land available for landscaping, the material arising during excavation will need to be removed off-site. Until a contractor is appointed and the disposal site identified, it is uncertain unto where this material will be removed to.

11.8 This operation is likely to be programmed away from the winter months, to minimise the days lost to poor weather.

11.9 The daily movements are assumed to include:

i) fuel deliveries and maintenance - assumed to be 2 heavy vehicle trips per day;

ii) a total of ten heavy vehicles, serving two excavators, each making eight journeys per day – a total of 80 heavy movements per day;

iii) operatives' journeys to work trips - assumed to be 20 operatives, 10 car trips per day with 2 occupants per vehicle.

## On-site drainage

11.10 The majority of the on-site drainage construction works are assumed to be undertaken during the first year. As on-site storage of materials will be limited, most of the drainage construction works are unlikely to generate high volumes of light or heavy vehicle movements on the surrounding highway network.

11.11 The daily movements are assumed to include:

i) deliveries of aggregate, pipe materials and concrete supplies for drainage chambers – assumed to be 4 heavy vehicle trips per day;

ii) operatives' journeys to work trips - assumed to be 8 operatives, 4 car trips per day with 2 occupants per vehicle.

## Carriageway Construction

11.12 For the purposes of deriving a reasonable worst case assessment, it is assumed that there would be a total of 12 operatives on site, with one paving machine receiving deliveries every 10 minutes through the day for ten hours. The daily movements are assumed to include:

i) a total of 60 heavy vehicle trips delivering the bitumen;

ii) operatives' journeys to work trips - assumed to be 12 operatives, 6 car trips per day with 2 occupants per vehicle.

11.13 The number of days when the carriageway construction operation is on-going at full capacity and generating these higher levels of flow are anticipated to be limited due to the limited area of carriageway construction required. It is thought that these flows would be generated on carriageway construction work on around 10 days in total across the whole project.

## Initial construction works to a major building

11.14 The main construction of the buildings is assumed to start after the first year. However, it has been assumed that initial groundworks would start to one building in the first year.

11.15 For the purposes of deriving a reasonable worst case assessment, the works are assumed to consist of the casting of an average 750mm slab, across an area of 2,000m$^2$. This base is assumed to be cast in 5 days.

11.16 it is assumed that there would be a total of 20 operatives on site, receiving concrete deliveries every 10 minutes through the day for ten hours. The daily movements are assumed to include:

i) a total of 50 heavy vehicle trips delivering the concrete (6m$^3$ per wagon);

ii) operatives' journeys to work trips (assumed to be 20 operatives, 10 car trips per day with 2 occupants per vehicle).

## Total movements

11.17 As part of the Construction Access Strategy, a Construction Environment Management Plan (CEMP) will be prepared. The CEMP will set out the University's aim to reduce the transport impacts of the construction traffic servicing the Site, and the movements associated with construction waste. This CEMP will apply to all the individual construction sites within the Development, and will manage when activities generating significant levels of movement on the network may occur.

11.18 As such, the peak movements associated with each of the above activities will be managed: the University will manage when the carriageway and building construction peak delivery days may occur, only one of these may occur on one day.

11.19 As such, for the purposes of this assessment it is assumed that the CEMP would programme the works so that the initial construction works (the concrete casting) would not occur at the same time as the carriageway construction.

11.20 The assumed first phase peak Daily Construction traffic flows are summarised in Table 11.1:

Table 11.1 – Peak Daily Construction Movements

| Activity | Max Light Vehicle Movts / day | | | Max Heavy Vehicle Movts / day | | | Max Total Vehicle Movts / day | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Earthworks | 10 | 10 | 20 | 82 | 82 | 164 | 92 | 92 | 184 |
| On-Site Drainage | 4 | 4 | 8 | 4 | 4 | 8 | 8 | 8 | 16 |
| Carriageway construction | 6 | 6 | 12 | 60 | 60 | 120 | 66 | 66 | 132 |
| Building construction | 10 | 10 | 20 | 0 | 0 | 0 | 10 | 10 | 20 |
| **Total** | **30** | **30** | **60** | **146** | **146** | **292** | **176** | **176** | **352** |

11.21 These flows are used to assess the impact of the Development on the surrounding highway network.

# Appendix 12.1 - Technical Note 7 – Summary of Transport Modelling to support the West Cambridge Application

# TECHNICAL NOTE

**Job Name:** West Cambridge Development

**Job No:** 31500

**Note No:** Technical Note 7

**Date:** 12th April 2016

**Prepared By:** Darren Rawls

**Approved By:** John Hopkins / Greg Callaghan

**Subject:** **Summary of Transport Modelling to support the West Cambridge Application.**

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## 1. Introduction

1.1 This Technical Note 7 has been prepared by Peter Brett Associates LLP in support of the University of Cambridge's proposals for West Cambridge. It summarises the Transport modelling work undertaken by Peter Brett Associates to support the forthcoming application for West Cambridge, and is to be read in conjunction with the information provided on the supporting CD.

1.2 This Transport Model was originally developed in conjunction with the Highway Authorities – Cambridgeshire County Council and the Highways Agency (now operating as Highways England) - to assess development trips resulting from the adjacent North West Cambridge Development. It has since been expanded to include the West Cambridge site, as well as the additional modelling zones for other development sites in the wider Cambridge area.

1.3 The modelling process estimates trip numbers generated by the West Cambridge Development and other developments in the Cambridge area by combining a series of processes:

- the spreadsheet-based part of the modelling process produces trip matrices for different scenarios, transport modes and time periods;.
- these matrices can then be assigned to the appropriate transport and development network in OmniTrans (the transport modelling software).

This information then enables the assessment of link flows and junction movement flows for these scenarios.

1.4 This Technical Note provides further details of the following model components:

- the Network and Zoning System:
  - Transport Network;
  - Zoning System;
- Spreadsheet Model:
  - Control Sheet;
  - Development Land-Use Data;
  - Housing Trip Generation;
  - Trip Generation for Non-Residential Land-Uses;
  - Distribution of Development Employment Trips;

- Distribution of Academic Research Trips;
- Distribution of Trips Generated by Residents within Developments;
- Distribution of Trips Generated by Other Development Land-Uses;
- Trip Matrices By Mode;
- West Cambridge Student Trips; and
- All Purpose Trip Matrices and Parking Constraints;

- Post-Processing of Trip Matrices.

## 2. Network and Zoning System

Transport Network

2.1 A detailed road network was developed for the wider Cambridge area, including all of South Cambridgeshire and parts of Essex and Hertfordshire.

2.2 The existing road network was extracted from a national digital road network (Navteq data) which includes measured link speeds from GPS systems for individual links in the network, enabling network distances and travel times to be calculated. The network is shown in Appendix 1.

Zoning System

2.3 Development is loaded onto the network by a series of zones. These zones were devised in GIS, based on Census single and multiple output areas in and around Cambridge. Outside of Cambridge, these areas broaden to single and multiple wards, with larger zones representing local authorities on the periphery of the zoning system.

2.4 In addition to the Census-based zones around the periphery of the model, a series of smaller zones were introduced for development areas, with multiple zones used for North West Cambridge and West Cambridge so that relatively short trips can be modelled sufficiently - typically by foot or bicycle:

- 12 zones are used to represent West Cambridge (107 to 118);
- 95 zones are used to represent the wider range of land uses at North West Cambridge (numbered 12 to 106);
- a further 16 zones are used to represent other development sites in the wider Cambridge area - such as NIAB (Darwin Green), Northstowe and Landbeach, using one zone each. These are referenced 1 to 11 and 201 to 205.

The Zoning system is also shown in Appendix 1.

2.5 The GIS files that constitute the base road network and zoning system were imported into Omnitrans, with additional foot and cycle-ways added to the local West Cambridge and North West Cambridge areas to form the base year (2015) network variant.

2.6 The variant was duplicated and the networks amended as appropriate, to form variants for years 2021 and 2031, including the addition and revision of internal development links. Zone-to-zone distance matrices were generated for each OmniTrans variant for use in the distribution and mode share stages of the process, within the spreadsheet-based model.

## 3. Spreadsheet-Based Model

3.1 The elements that form the Spreadsheet Model are considered individually.

Control sheet

3.2 This sheet enables the user to set the required criteria for the model, so that the output trip matrices will reflect the choices made on this sheet.

3.3 The key choices for the West Cambridge Development Transport Assessment are the choice of the following:

- 2015 Base
- 2021 Do Minimum
- 2021 Do Something
- 2031 Do Minimum
- 2031 Do Something

3.4 The scenario and distance matrices from surrounding developments correspond to the choice of West Cambridge scenario.

3.5 There are six time period options available in the model, with output from the one-hour AM and PM peak options being assessed as part of this modelling work.

Development Land Use Data

3.6 The assembly and calculation of land use data for all the development zones in the model reflects the selections made in the Control sheet for:

- 'Housing';
- 'Other Uses'; and
- 'Wider Area Devts'.

These sheets are considered individually.

3.7 The Sheet '**Housing**' makes an estimated disaggregation of the number of housing units in each of the development zones into different housing types. This enables an estimate of the number of residents in each zone within each of three age bands, reflecting their different economic activity:

- 0 - 16 years (i.e., those in full-time education);
- 17 – 64 years (those more economically active); and
- 65 + years (those of a retirement age).

The housing type split for North West Cambridge was advised by the University.

3.8 The Sheet '**Other Uses**' assembles the non-housing data for each of the development zones In a similar manner to Sheet '**Housing**', according to user selections. The 'West Cambridge' section at the foot of this sheet shows the gross floor areas allocated to each modelling zone for each of the scenarios:

- academic research;
- commercial research; and
- nursery land uses,.

3.9 The disaggregation into zones for West Cambridge has been derived from data within the West Cambridge Capacity Schedule (Version 5), an external file that details development information for each plot on the site. A separate check has confirmed that the total gross floor areas for each land use across the whole site are correct for each scenario. To the right hand side of each of the blocks of data on this sheet are collated the data used for the particular model run, according to the selections made in the Control sheet.

3.10 The Sheet '**Wider Area Devts**' contains all of the incoming wider Cambridge area development information, including the assumed likelihood which is used in the corresponding user option. The sites have been assigned zones, then the forecast number of housing units and jobs are collated by zone at the foot of this sheet for the options selected by the user.

Housing Trip Generation

3.11 The Sheet '**Housing Trip Gen**' calculates the number of trips generated by the residential population of each development zone, for each of the three age groups, for the scenario and time period selected in the Control sheet. The population data is carried across from the Sheet '**Housing'**.

3.12 Reflecting standard practice, trip numbers are calculated for home-to-purpose and purpose-to-home, for each of the following six trip purposes:

- Work (and Employers' Business);
- Education;
- Shop – Food;
- Shop – Non-Food;
- Escort Education; and
- Other.

3.13 The residential trip numbers are calculated using trip rates derived from the National Travel Survey (NTS) data, presented in Sheet '**NTS Rates**' for:

- the required age groups;
- time periods; and
- trip purposes.

3.14 The all-modes person trip rates have been extracted from the NTS dataset using appropriate criteria; for surveyed households within an urban area (of 25K+ population), excluding London, using Monday to Friday trips, excluding August trips.

Trip Generation for Non-Residential Land Uses

3.15 The Sheet '**Other Trip Gen**' calculates the number of trips generated by each of the non-residential land uses in each development zone, for each scenario and time period selected in the Control sheet. The land use data is carried across from the Sheet '**Other Uses**'.

3.16 Trip numbers are calculated for all major land uses, including those existing and proposed for the West Cambridge site. The trip rates for each of the land uses are in Sheet '**Other Rates**' and have been assembled from various sources:

- Academic Research - derived from person trip survey data undertaken at the CAPE Building at West Cambridge;
- Commercial Research - trip rates from the Cambridge Science Park - from TRICS;
- Commercial - in the wider area development zones - TRICS trip rate for Office per employee;
- for all Other land uses – use has been made of the appropriate TRICS trip rates.

Distribution of Development Employment Trips

3.17 The total number of trips made by people commuting to / from employment in each development zone (excluding academic research) is estimated in Sheet '**Other Trip Gen**' and distributed in the Sheet '**Employment**'.

3.18 It is assumed that for each of the trips generated by the 'Other' land uses (calculated within Sheet '**Other Trip Gen**'), a proportion of these will be commuting trips made by employees at each of these development land uses.

3.19 Within Sheet '**Employment**' a matrix of trips for people arriving at employment in the development zones is calculated by distributing the generated arrivals (column totals) across all rows representing the residential origins of the trips.

3.20 While the destination zones (columns) are development zones only, the origin zones (rows) are the development and non-development zones, distributed using a matrix of weights calculated in Sheet '**Work Weights**'. This matrix of weights is calculated using a gravity modelling approach - using the number of residential units in each zone as the attraction quantity and a distance weight for each distance band, calculated using Census journey-to-work data, as the distance decay component.

3.21 Using a similar method, a matrix of trips for people departing from employment in development zones is calculated by distributing the generated departures (row totals) across all columns representing the residential destinations of the trips. In this case, the origin zones are development zones only, and the destination zones are development and non-development zones, but the same matrix of weights can be used (these weights are transposed within this matrix).

Distribution of Academic Research Trips

3.22 The numbers of academic research trips generated by each development zone (calculated in Sheet '**Other Trip Gen**') are distributed within Sheet '**Acad Res**' to form a matrix of trips arriving at academic research employment – and Similarly, a matrix of trips departing from academic research employment.

3.23 The distribution for these trips, located in Sheet '**Acad Res Weights**', is based on a survey of University of Cambridge staff working at the West Cambridge site in 2014. The distribution included development zones at the residential end by calculating the overall number of staff per residential unit, from the survey (separately for staff resident within Cambridge and staff resident outside Cambridge), and applying these rates to the residential units forecast for the development zones.

Distribution of Trips Generated by Residents within Developments

3.24 The trips generated by the residential content of each development zone (in Sheet '**Housing Trip Gen**') are distributed separately for each trip purpose to form separate home-to-purpose and purpose-to-home matrices. The resulting matrices are in Sheets:

- '**Resid Work**';
- '**Resid Educ**';
- '**Resid Shopping**'; and
- '**Resid Other**'.

3.25 These are calculated using a gravity modelling approach using matrices of weights within sheets:

- '**Work Weights**';
- '**Educ Weights**';
- '**Shop Weights**'; and
- '**Resid Other Weights**' respectively.

3.26 For each development zone, the residential work trips distributed in Sheet '**Resid Work**' have all the trips made by residents employed in the same development zone removed so as not to double-count these trips - these have already been accounted for and distributed in Sheet '**Employment'**. The remainder are distributed using employment places as the attraction quantity, distributed across the workplaces of non-development zones only.

3.27 The residential Education trips are processed separately for the 0-16 age group and the 17+ age group, with separate trip matrices being calculated for each group, using distinct trip weights:

- half of the education trips made by age 0-16 are distributed using primary school locations as the attraction quantity in the gravity model;
- the other half of the education trips made by age 0-16 are distributed using secondary school locations; and
- the education trips made by the 17+ age group are distributed using the locations of tertiary education providers as the attraction quantity.

3.28 The Shopping and Other trips made by the developments' residential population are distributed using a similar, gravity-modelling approach to the Work and Education trips. The residential Other trips use a combination of household units and workplaces as the attraction quantity.

3.29 Each of the weighting matrices use a matrix of distance bands for the distance element of the gravity model, which can be found in Sheet '**Distances**'. The distance bands are calculated using the distance matrices that have been generated in OmniTrans, for the network variant appropriate for the scenario selected in the Control sheet.

Distribution of Trips Generated by Other Development Land Uses

3.30 Retail trips generated by the retail facilities within development zones – especially for North West Cambridge - are distributed within Sheet '**Devt Retail**'. The work trips to and from these facilities are not included in the trip numbers - they are counted as part of the development employment trips. The distribution of trips made by people using the West Cambridge sports facilities is calculated within Sheet '**Hotel etc**', in addition to the NWC GP surgery's trip distribution.

Trip Matrices by Mode

3.31 The all-mode person trip matrices resulting from the trip distribution process (described above) are disaggregated into matrices by transport mode in the series of '**ByMode**' sheets.

3.32 In each sheet:

- the first stage is the calculation of pedestrian and cycle matrices. For each cell in each all-mode matrix, the proportion travelling on foot and by bicycle is determined using the distance band for the trips in conjunction with the appropriate table of walking and cycling proportions, by band, for each broad trip purpose, found in Sheet '**WalkCyc**'. In this sheet, the non-Cambridge-specific tables are derived from NTS data for each trip purpose, which are then adjusted using Cambridge-specific Census data. The proportion of academic research trips walking and cycling, by distance band, is derived from the 2014 University of Cambridge staff data;

- once these walking and cycling trips are removed, for each trip purpose the matrix of remaining trips is further split into rail, bus and other-mode (including car) trip matrices;

- the proportion travelling by rail and bus are determined using matrices of proportions by rail and by bus, in Sheet '**RailBus**'. For work-related trips the matrices are calculated using Census 2011 journey-to-work data by mode, and for other trip purposes the same work trip matrices of rail and bus shares are used, but adjusted for other purposes using factors calculated using NTS data;

- once the public transport trip matrices have been calculated, the remainder consists of car drivers, plus car passengers and any other modes. The proportion of this remainder that is car-driver is determined using the corresponding NTS split, as given in Sheet '**CarDrive**' for each trip purpose. This enables the calculation of a car-driver trip matrix for each trip purpose, which is equivalent to vehicle trips.

West Cambridge Student Trips

3.33 The number of students travelling to attend West Cambridge academic facilities is estimated in Sheet '**Students**' for each scenario and time period. The necessary data - such as the student population and the required cycling provision which is used to calculate matrices of student trips by bicycle (majority mode), on-foot and by bus - has been obtained from the West Cambridge Capacity Schedule. The distribution of the student trips is estimated using the location of each of the university colleges and an estimate of their overall student numbers.

All-Purpose Trip Matrices and Parking Constraints

3.34 The trip matrices by mode for each of the trip purposes are aggregated together in Sheet '**ByMode All**'. This contains a matrix of development trips for each main transport mode for all trip purposes combined, for the scenario and time period selected in the Control sheet.

3.35 Each matrix is used to produce a summary of the total trips arriving and departing from each main development area; calculated in Sheet '**Summary**'.

3.36 The Sheet '**Parking Constraints**' presents an estimate of the daily maximum parking accumulation across the West Cambridge site, based on the demand for parking output from the model. This calculation uses the net gain in vehicles during the 7-10 time period, plus an extrapolation to account for the post-10am accumulation, using the trip rates' day profiles.

3.37 For each scenario, when the desired maximum parking accumulation is compared with the forecast overall parking provision, then the 2021 and 2031 Do-Something scenarios show a demand for parking that exceeds the provision and parking constraints are required. For each of these scenarios there is a separate file of parking constrained matrices for the AM and PM peaks - file '**Parking Constrained Results – 2021/31 DS.xlsx**'.

3.38 Processing the academic research and the commercial (and other) parking separately, the factor by which the demand for parking exceeds the parking provision is used to reduce the car-driver matrices and the excess drivers in that time period are added to the matrices for the other modes (pro rata according to mode share).

Output

3.39 The Summary Results tables of all West Cambridge site arrivals and departures for all modes and scenarios, for AM and PM peaks, including constrained results (where required), is presented in the file '**Results from Model 300316.xlsx**'.

## 4. Post Processing of Trip Matrices

4.1 The vehicle (car driver) matrices of development trips, output from the spreadsheet model for each scenario, are imported into OmniTrans and assigned to the appropriate network.

4.2 OmniTrans is able to display the loads on links and vehicle numbers making junction movements, by way of bandwidth plots or cordon matrices for more complex junctions. An example is shown in Appendix 2.

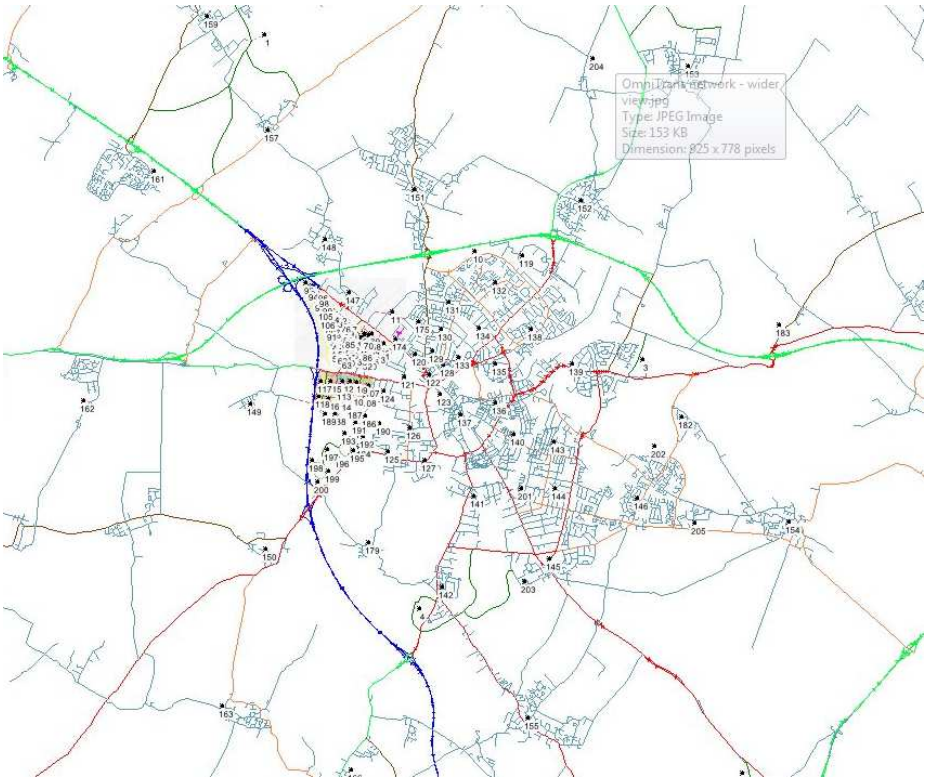
4.3 For any given set of links and junctions that require this information, vehicle numbers are transferred into a spreadsheet where the Year 2015 flows can be subtracted from each of the future year scenario's flows.

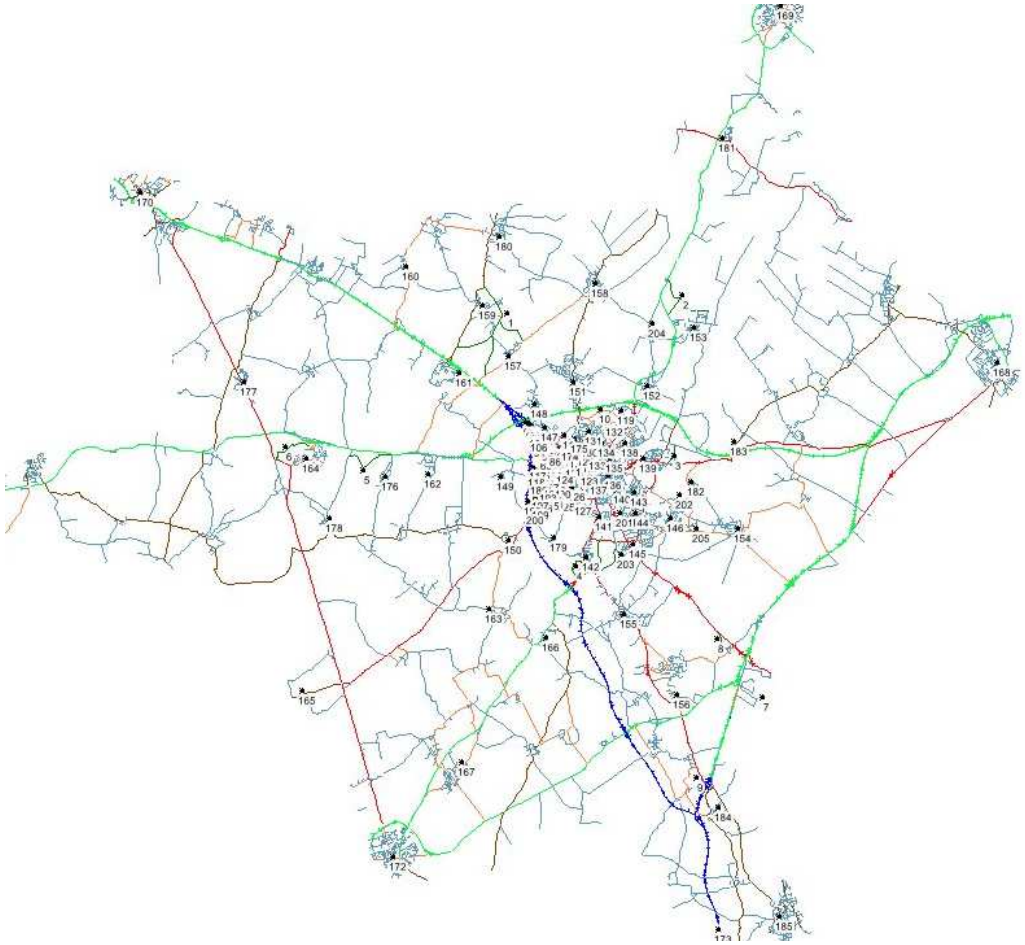
4.4 This net gain in vehicles for each future scenario above 2015 can be added to the 2015 Base (observed) flows to provide the total flows. These are then used in the detailed impact assessment – including link and junction modelling, and providing the flows to advise the Acoustics and Air Quality Assessments.

## Appendix 1 – OmniTRANS Network

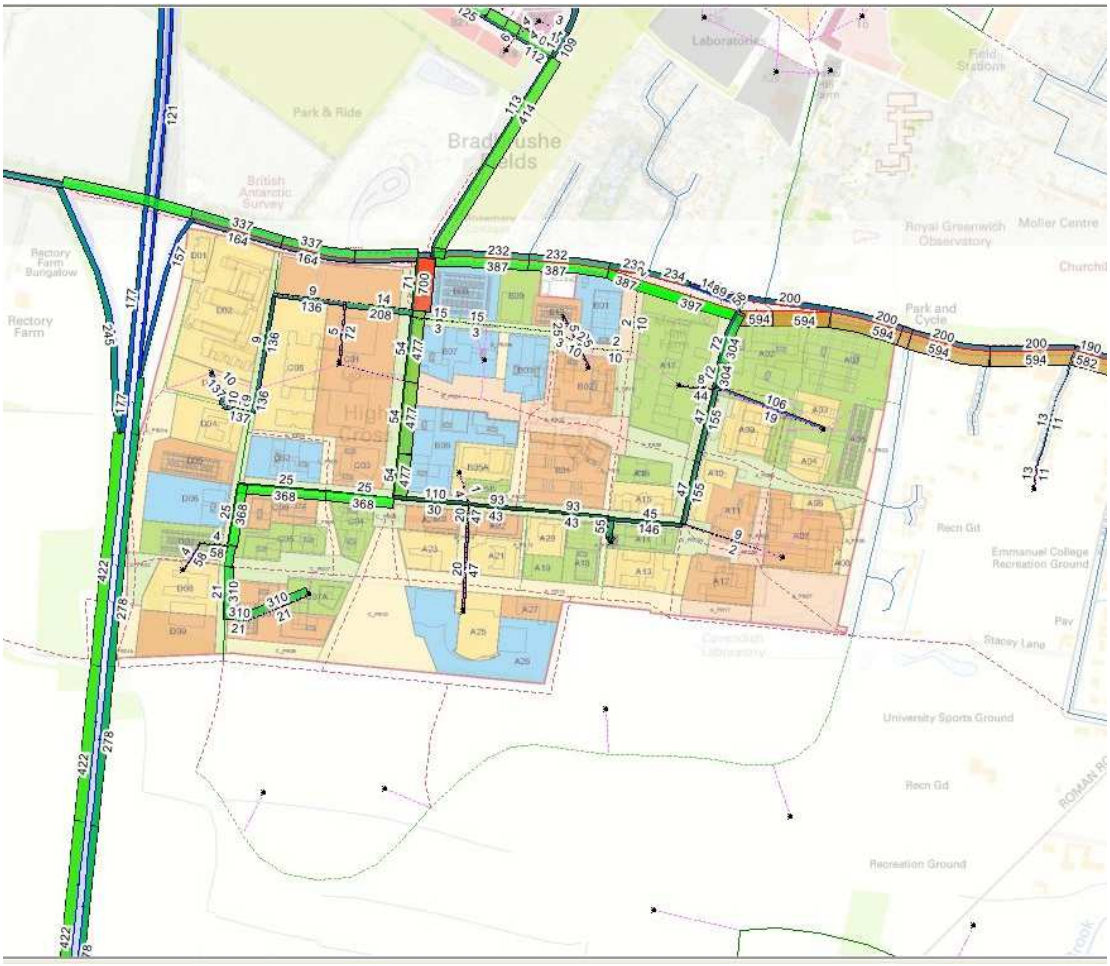
### Local Area

### Cambridge Area





**Appendix 2 – Example of OmniTRANS Output**



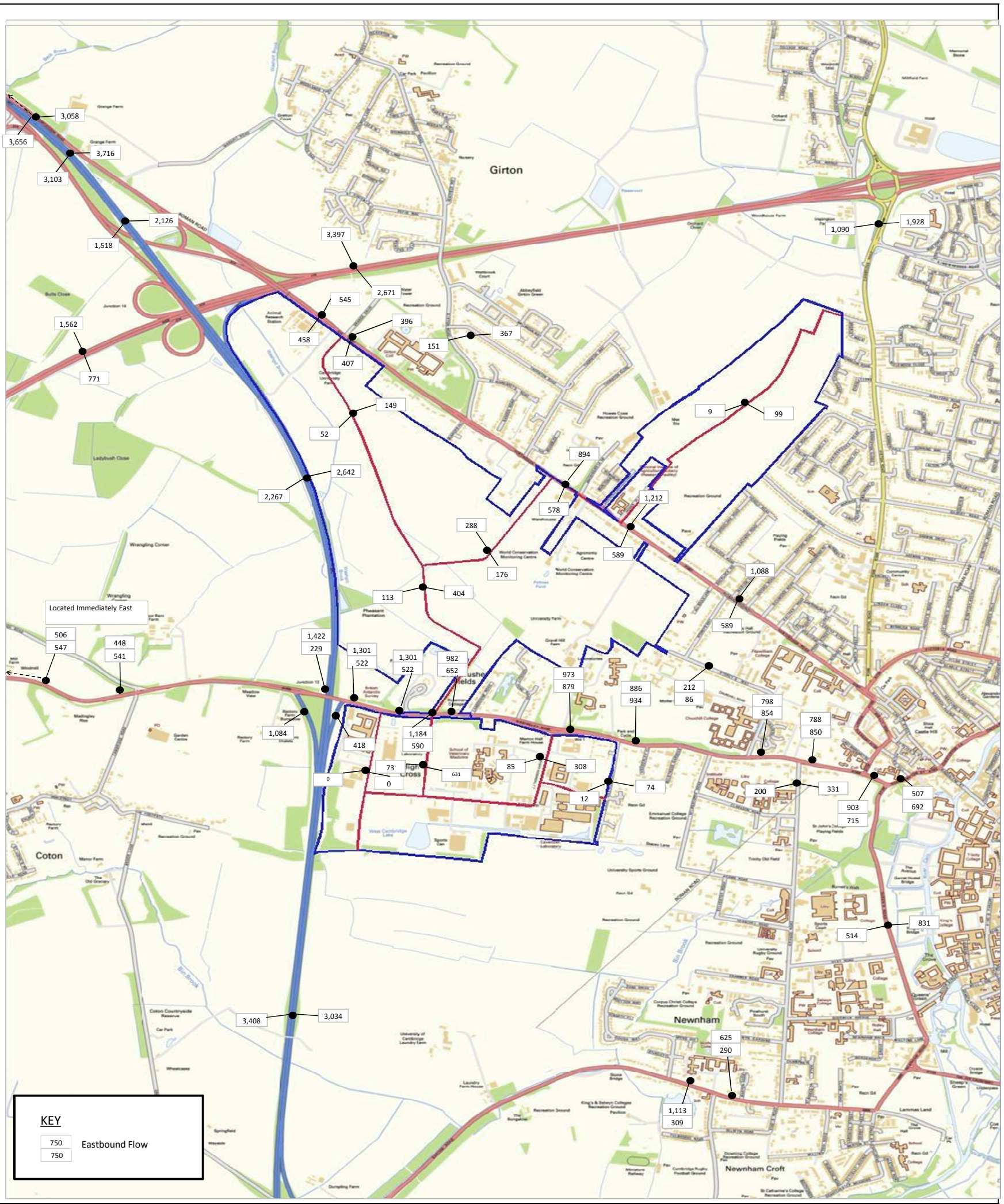
# Appendix 13.1 – Network flows – 2021 Do Minimum

| No. | Link | 2021 Do Minimum | |
|---|---|---|---|
| | | AM | PM |
| **1.0** | M11 - J12 - J13 - Nbd | 3,408 | 3,706 |
| **1.0** | M11 - J12 - J13 - Sbd | 3,034 | 3,408 |
| **1.1** | M11 J13 -J14 - Nbd | 2,267 | 2,884 |
| **1.1** | M11 J13 -J14 - Sbd | 2,642 | 2,440 |
| **1.2** | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Nbd | 1,518 | 2,117 |
| **1.2** | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Sbd | 2,126 | 1,578 |
| **1.3** | M11 J13 off-slip - Nbd | 1,084 | 876 |
| **1.3** | M11 J13 on-slip - Sbd | 418 | 994 |
| **2.0** | A14 West of J30 (Bar Hill) - Ebd | 3,656 | 3,329 |
| **2.0** | A14 West of J30 (Bar Hill) - Wbd | 3,058 | 4,204 |
| **2.1** | A14 North West of M11 J14 - Ebd | 3,716 | 3,406 |
| **2.1** | A14 North West M11 J14 - Wbd | 3,103 | 4,000 |
| **2.2** | A14 West of J32 Interchange - Ebd | 3,397 | 2,953 |
| **2.2** | A14 West of J32 Interchange - Wbd | 2,671 | 3,284 |
| **2.3** | A428 -West of M11 J14 - Ebd | 1,562 | 738 |
| **2.3** | A428 - West of M11 J14 - Wbd | 771 | 1,202 |
| **3.0** | A1303 East of Madingley Mulch R'bout Ebd | 506 | 595 |
| **3.0** | A1303 East of Madingley Mulch R'bout Wbd | 547 | 1,284 |
| **3.1** | Madingley Rd - East of Cambridge Rd Crossroads Wbd | 541 | 1,179 |
| **3.1** | Madingley Rd - East of Cambridge Rd Crossroads Ebd | 448 | 605 |
| **3.2** | Madingley Rd on Over Bridge M11 Ebd | 1,422 | 921 |
| **3.2** | Madingley Rd on Over Bridge M11 Wbd | 229 | 651 |
| **3.3** | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Ebd | 1,301 | 598 |
| **3.3** | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Wbd | 522 | 1,321 |
| **3.4** | Madingley Rd - West of P&R Access Wbd | 522 | 1,321 |

| No. | Link | 2021 Do Minimum | |
|---|---|---|---|
| | | AM | PM |
| **3.4** | Madingley Rd - West of P&R Access Ebd | 1,301 | 598 |
| **3.5** | Madingley Rd - East of P&R Access Wbd | 590 | 1,240 |
| **3.5** | Madingley Rd - East of P&R Access Ebd | 1,184 | 634 |
| **3.6** | Madingley Rd - East of Proposed High Cross Access Ebd | 982 | 567 |
| **3.6** | Madingley Rd - East of Proposed High Cross Access Wbd | 652 | 993 |
| **3.7** | Madingley Rd - East of JJ Thomson Ave Ebd | 973 | 865 |
| **3.7** | Madingley Rd - East of JJ Thomson Ave Wbd | 879 | 974 |
| **3.8** | Madingley Rd - East of Clerk Maxwell Rd Ebd | 886 | 914 |
| **3.8** | Madingley Rd - East of Clerk Maxwell Rd Wbd | 934 | 926 |
| **3.9** | Madingley Rd - East of Storey's Way Ebd | 798 | 801 |
| **3.9** | Madingley Rd - East of Storey's Way Wbd | 854 | 767 |
| **3.10** | Madingley Rd - East of Grange Road Ebd | 788 | 796 |
| **3.10** | Madingley Rd - East of Grange Road Wbd | 850 | 757 |
| **3.11** | Madingley Rd - West of Queen's Rd / Northampton St R'bout Ebd | 903 | 723 |
| **3.11** | Madingley Rd - West of Queen's Rd / Northampton St R'bout Wbd | 715 | 850 |
| **3.12** | Northampton St - West of Pound Hill Ebd | 507 | 789 |
| **3.12** | Northampton St - West of Pound Hill Wbd | 692 | 646 |
| **4.0** | Huntingdon Rd - West of Proposed NWC HRW Access NWbd | 458 | 899 |
| **4.0** | Huntingdon Rd - West of Proposed NWC HRW Access SEbd | 545 | 478 |
| **4.1** | Huntingdon Rd - South East of Grange Drive opposite Girton College NWbd | 407 | 710 |
| **4.1** | Huntingdon Rd - South East of Grange Drive opposite Girton College SEbd | 396 | 395 |
| **4.2** | Huntingdon Rd - East of NWC HRW Access NWbd | 578 | 1,159 |
| **4.2** | Huntingdon Rd - East of NWC HRW Access SEbd | 894 | 692 |
| **4.3** | Huntingdon Rd - East of NIAB Access NWbd | 589 | 1,236 |
| **4.3** | Huntingdon Rd - East of NIAB Access SEbd | 1,212 | 717 |
| **4.4** | Huntingdon Rd - East of Storey's Way NWbd | 589 | 1,131 |
| **4.4** | Huntingdon Rd - East of Storey's Way SEbd | 1,088 | 740 |
| **5.0** | Barton Rd - West of Grantchester Rd Ebd | 1,113 | 498 |

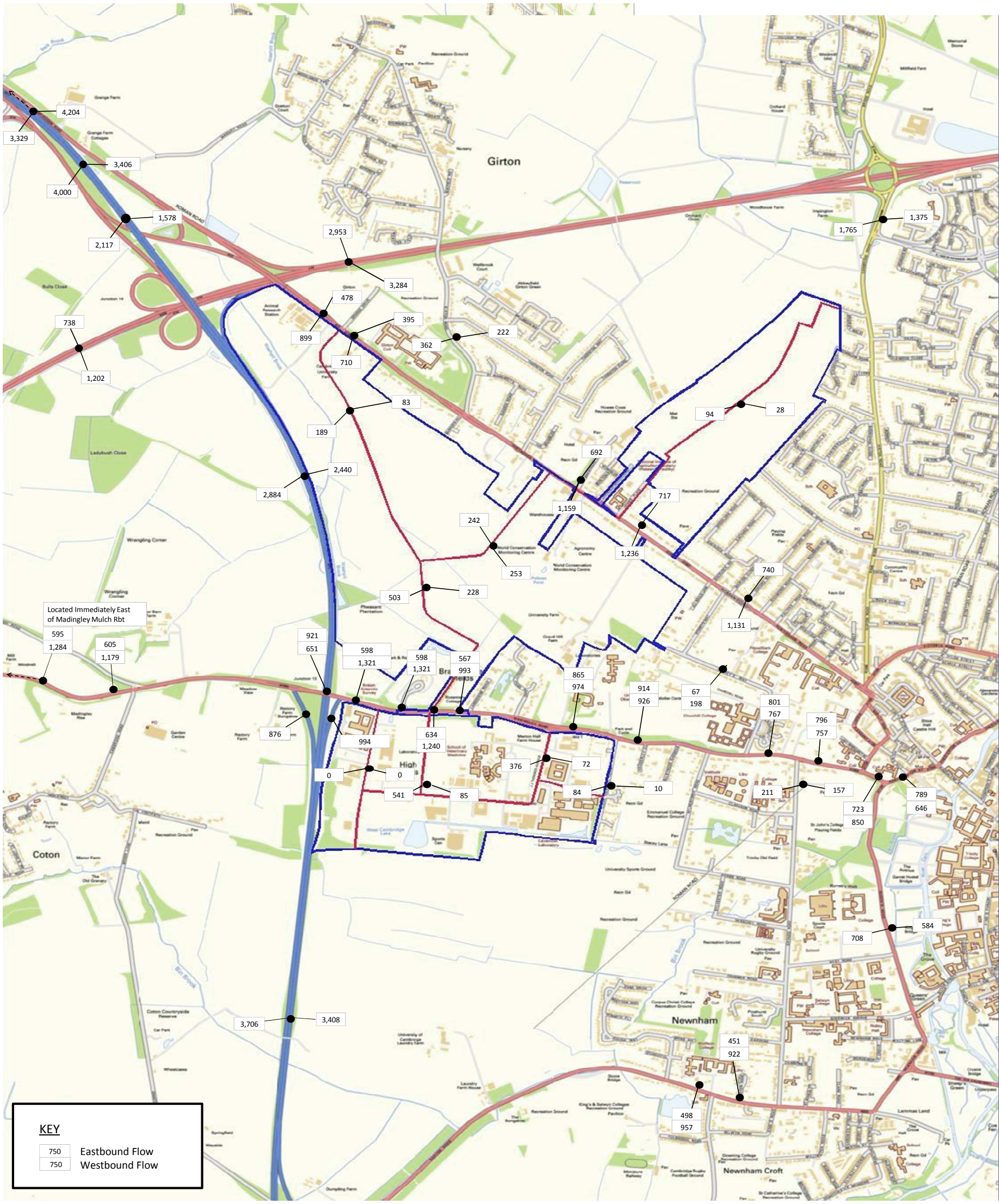
| No. | Link | 2021 Do Minimum | |
|---|---|---|---|
| | | AM | PM |
| **5.0** | Barton Rd - West of Grantchester Rd Wbd | 309 | 957 |
| **5.1** | Barton Rd - East of Grantchester Rd Ebd | 625 | 451 |
| **5.1** | Barton Rd - East of Grantchester Rd Wbd | 290 | 922 |
| **6.0** | Queen's Rd - North of West Rd Nbd | 514 | 708 |
| **6.0** | Queen's Rd - North of West Rd Sbd | 831 | 584 |
| **7.0** | Histon Road - South of A14 Nbd | 1,090 | 1,765 |
| **7.0** | Histon Road - South of A14 Sbd | 1,928 | 1,375 |
| **8.0** | Grange Rd - South of Madingley Rd Nbd | 200 | 211 |
| **8.0** | Grange Rd - South of Madingley Rd Sbd | 331 | 157 |
| **9.0** | Storey's Way - between Madingley Rd and Huntingdon Rd Ebd | 212 | 67 |
| **9.0** | Storey's Way - between Madingley Rd and Huntingdon Rd Wbd | 86 | 198 |
| **10.0** | Girton Rd - North of Huntingdon Rd Nbd | 151 | 362 |
| **10.0** | Girton Rd - North of Huntingdon Rd Sbd | 367 | 222 |
| **11.0** | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Nbd | 9 | 94 |
| **11.0** | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Sbd | 99 | 28 |
| **11.1** | Proposed Madingley Rd West Access to NWC Nbd | 113 | 503 |
| **11.1** | Proposed Madingley Rd West Access to NWC Sbd | 404 | 228 |
| **11.2** | Proposed Huntingdon Rd West Access to NWC Nbd | 52 | 189 |
| **11.2** | Proposed Huntingdon Rd West Access to NWC Sbd | 149 | 83 |
| **11.3** | Proposed Huntingdon Rd East Access to NWC Sbd | 176 | 253 |
| **11.3** | Proposed Huntingdon Rd East Access to NWC Nbd | 288 | 242 |
| **12.0** | Western Access to Madingley Rd Nbd | 0 | 0 |
| **12.0** | Western Access to Madingley Rd Sbd | 0 | 0 |
| **12.1** | High Cross Access to Madingley Rd Nbd | 73 | 541 |
| **12.1** | High Cross Access to Madingley Rd Sbd | 631 | 85 |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Nbd | 85 | 376 |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Sbd | 308 | 72 |
| **12.3** | Clerk Maxwell Rd Nbd | 12 | 84 |

| No. | Link | 2021 Do Minimum | |
|---|---|---|---|
| | | AM | PM |
| **12.3** | Clerk Maxwell Rd Sbd | 74 | 10 |




# 2021 TA DM Flows

**AM Peak**




# 2021 TA DM Flows

**PM Peak**

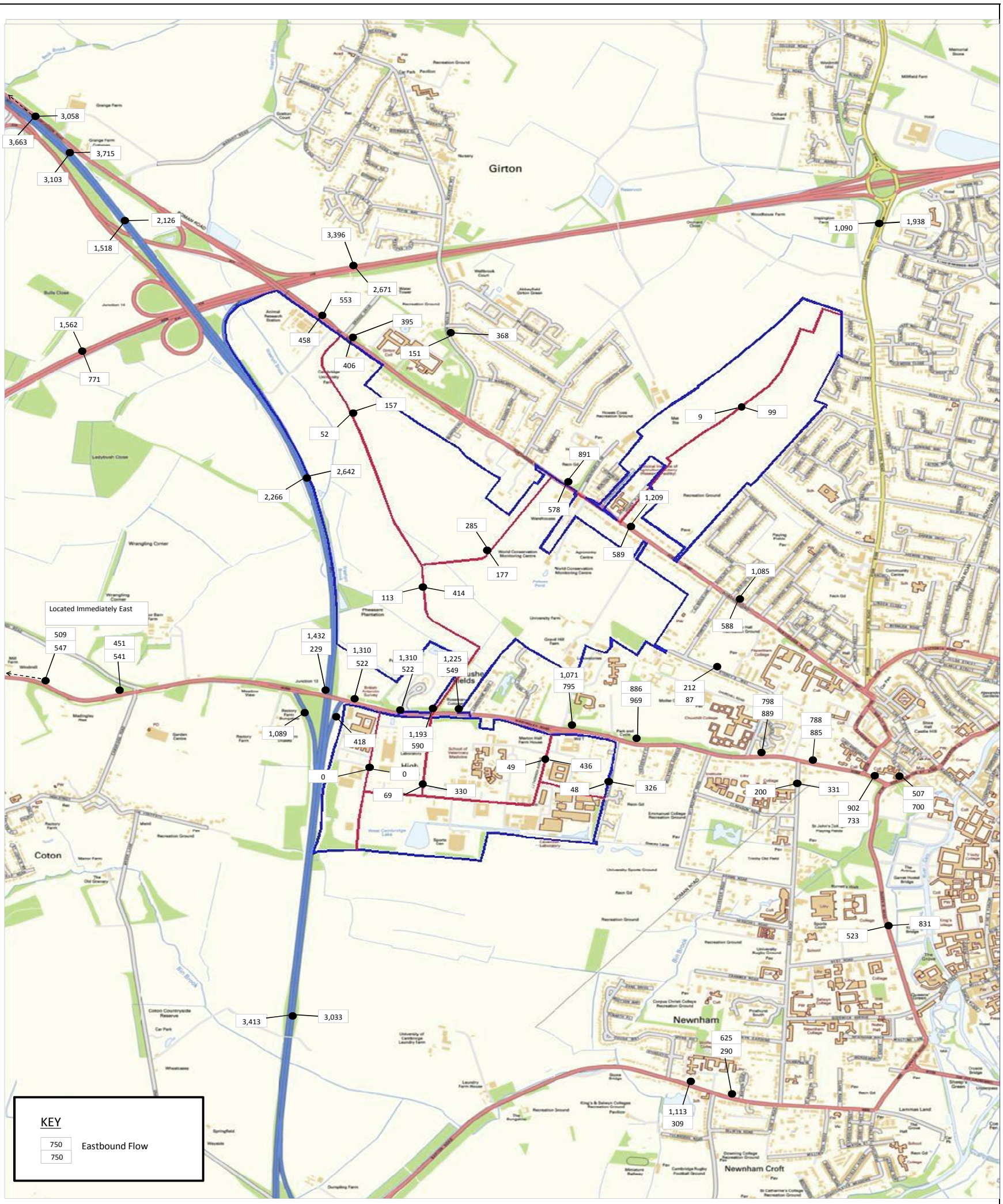
# Appendix 13.2 – Network Flows 2021 Do Something

| No. | Link | 2021 Do Something | |
|---|---|---|---|
| | | AM | PM |
| **1.0** | M11 - J12 - J13 - Nbd | 3,413 | 3,704 |
| **1.0** | M11 - J12 - J13 - Sbd | 3,033 | 3,412 |
| **1.1** | M11 J13 -J14 - Nbd | 2,266 | 2,883 |
| **1.1** | M11 J13 -J14 - Sbd | 2,642 | 2,439 |
| **1.2** | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Nbd | 1,518 | 2,117 |
| **1.2** | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Sbd | 2,126 | 1,578 |
| **1.3** | M11 J13 off-slip - Nbd | 1,089 | 975 |
| **1.3** | M11 J13 on-slip - Sbd | 418 | 998 |
| **2.0** | A14 West of J30 (Bar Hill) - Ebd | 3,663 | 3,328 |
| **2.0** | A14 West of J30 (Bar Hill) - Wbd | 3,058 | 4,208 |
| **2.1** | A14 North West of M11 J14 - Ebd | 3,715 | 3,406 |
| **2.1** | A14 North West M11 J14 - Wbd | 3,103 | 3,999 |
| **2.2** | A14 West of J32 Interchange - Ebd | 3,396 | 2,953 |
| **2.2** | A14 West of J32 Interchange - Wbd | 2,671 | 3,283 |
| **2.3** | A428 -West of M11 J14 - Ebd | 1,562 | 738 |
| **2.3** | A428 - West of M11 J14 - Wbd | 771 | 1,201 |
| **3.0** | A1303 East of Madingley Mulch R'bout Ebd | 509 | 594 |
| **3.0** | A1303 East of Madingley Mulch R'bout Wbd | 547 | 1,286 |
| **3.1** | Madingley Rd - East of Cambridge Rd Crossroads Wbd | 541 | 1,181 |
| **3.1** | Madingley Rd - East of Cambridge Rd Crossroads Ebd | 451 | 605 |
| **3.2** | Madingley Rd on Over Bridge M11 Ebd | 1,432 | 919 |
| **3.2** | Madingley Rd on Over Bridge M11 Wbd | 229 | 653 |
| **3.3** | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Ebd | 1,310 | 596 |
| **3.3** | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Wbd | 522 | 1,327 |
| **3.4** | Madingley Rd - West of P&R Access Wbd | 522 | 1,327 |

| No. | Link | 2021 Do Something | |
|---|---|---|---|
| | | AM | PM |
| 3.4 | Madingley Rd - West of P&R Access Ebd | 1,310 | 596 |
| 3.5 | Madingley Rd - East of P&R Access Wbd | 590 | 1,246 |
| 3.5 | Madingley Rd - East of P&R Access Ebd | 1,193 | 632 |
| 3.6 | Madingley Rd - East of Proposed High Cross Access Ebd | 1,225 / 167 | 649 / 197 |
| 3.6 | Madingley Rd - East of Proposed High Cross Access Wbd | 549 / 32 | 1,024 / 272 |
| 3.7 | Madingley Rd - East of JJ Thomson Ave Ebd | 1,071/ 175 | 785 / 389 |
| 3.7 | Madingley Rd - East of JJ Thomson Ave Wbd | 795 / 210 | 1,076 / 89 |
| 3.8 | Madingley Rd - East of Clerk Maxwell Rd Ebd | 886 | 932 |
| 3.8 | Madingley Rd - East of Clerk Maxwell Rd Wbd | 969 | 923 |
| 3.9 | Madingley Rd - East of Storey's Way Ebd | 798 | 819 |
| 3.9 | Madingley Rd - East of Storey's Way Wbd | 889 | 764 |
| 3.10 | Madingley Rd - East of Grange Road Ebd | 788 | 813 |
| 3.10 | Madingley Rd - East of Grange Road Wbd | 885 | 754 |
| 3.11 | Madingley Rd - West of Queen's Rd / Northampton St R'bout Ebd | 902 | 731 |
| 3.11 | Madingley Rd - West of Queen's Rd / Northampton St R'bout Wbd | 733 | 847 |
| 3.12 | Northampton St - West of Pound Hill Ebd | 507 | 792 |
| 3.12 | Northampton St - West of Pound Hill Wbd | 700 | 645 |
| 4.0 | Huntingdon Rd - West of Proposed NWC HRW Access NWbd | 458 | 904 |
| 4.0 | Huntingdon Rd - West of Proposed NWC HRW Access SEbd | 553 | 478 |
| 4.1 | Huntingdon Rd - South East of Grange Drive opposite Girton College NWbd | 406 | 710 |
| 4.1 | Huntingdon Rd - South East of Grange Drive opposite Girton College SEbd | 395 | 395 |
| 4.2 | Huntingdon Rd - East of NWC HRW Access NWbd | 578 | 1,157 |
| 4.2 | Huntingdon Rd - East of NWC HRW Access SEbd | 891 | 691 |
| 4.3 | Huntingdon Rd - East of NIAB Access NWbd | 589 | 1,233 |
| 4.3 | Huntingdon Rd - East of NIAB Access SEbd | 1,209 | 716 |
| 4.4 | Huntingdon Rd - East of Storey's Way NWbd | 588 | 1,129 |
| 4.4 | Huntingdon Rd - East of Storey's Way SEbd | 1,085 | 740 |
| 5.0 | Barton Rd - West of Grantchester Rd Ebd | 1,113 | 498 |

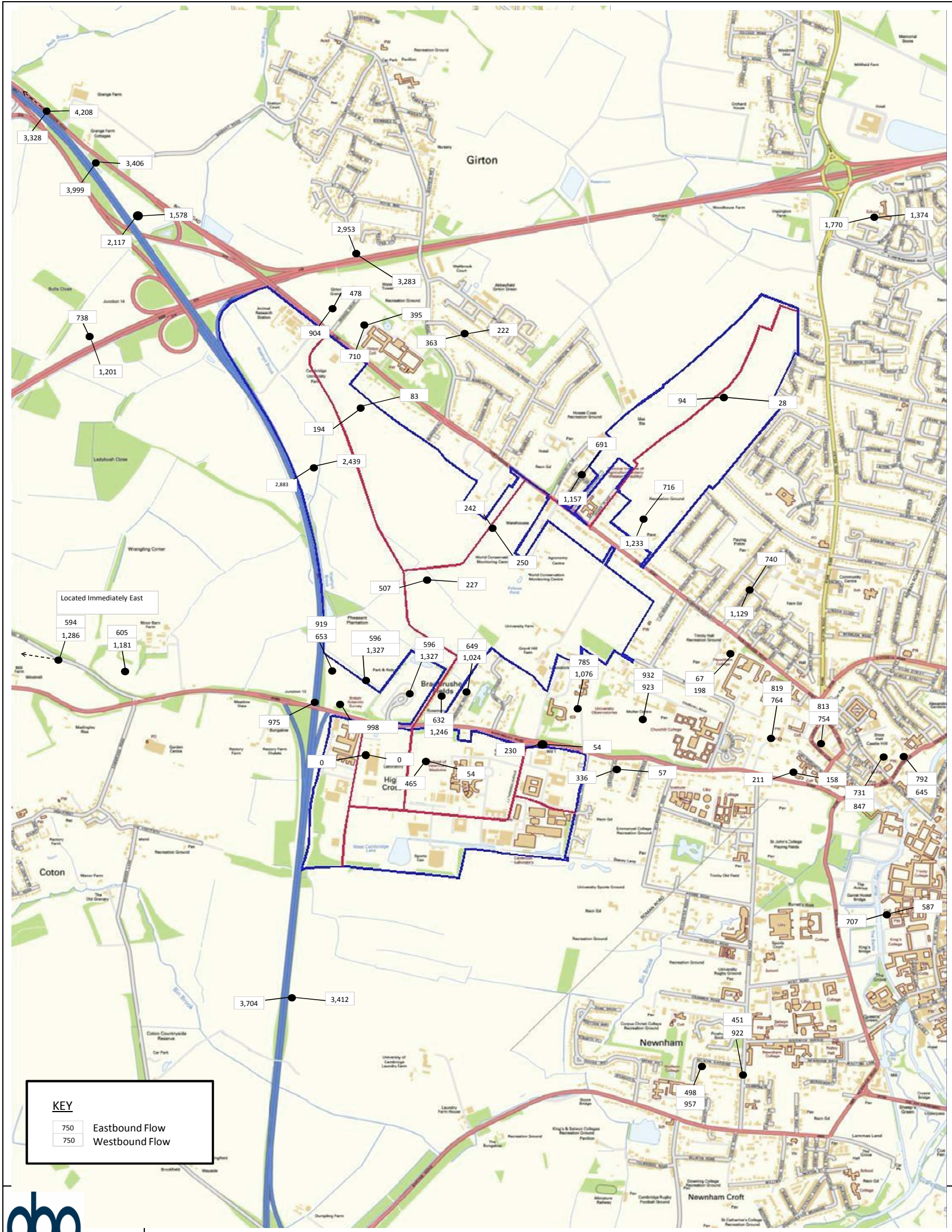
| No. | Link | 2021 Do Something | |
|---|---|---|---|
| | | AM | PM |
| **5.0** | Barton Rd - West of Grantchester Rd Wbd | 309 | 957 |
| **5.1** | Barton Rd - East of Grantchester Rd Ebd | 625 | 451 |
| **5.1** | Barton Rd - East of Grantchester Rd Wbd | 290 | 922 |
| **6.0** | Queen's Rd - North of West Rd Nbd | 523 | 707 |
| **6.0** | Queen's Rd - North of West Rd Sbd | 831 | 587 |
| **7.0** | Histon Road - South of A14 Nbd | 1,090 | 1,770 |
| **7.0** | Histon Road - South of A14 Sbd | 1,938 | 1,374 |
| **8.0** | Grange Rd - South of Madingley Rd Nbd | 200 | 211 |
| **8.0** | Grange Rd - South of Madingley Rd Sbd | 331 | 158 |
| **9.0** | Storey's Way - between Madingley Rd and Huntingdon Rd Ebd | 212 | 67 |
| **9.0** | Storey's Way - between Madingley Rd and Huntingdon Rd Wbd | 87 | 198 |
| **10.0** | Girton Rd - North of Huntingdon Rd Nbd | 151 | 363 |
| **10.0** | Girton Rd - North of Huntingdon Rd Sbd | 368 | 222 |
| **11.0** | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Nbd | 9 | 94 |
| **11.0** | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Sbd | 99 | 28 |
| **11.1** | Proposed Madingley Rd West Access to NWC Nbd | 113 | 507 |
| **11.1** | Proposed Madingley Rd West Access to NWC Sbd | 414 | 227 |
| **11.2** | Proposed Huntingdon Rd West Access to NWC Nbd | 52 | 194 |
| **11.2** | Proposed Huntingdon Rd West Access to NWC Sbd | 157 | 83 |
| **11.3** | Proposed Huntingdon Rd East Access to NWC Sbd | 177 | 250 |
| **11.3** | Proposed Huntingdon Rd East Access to NWC Nbd | 285 | 242 |
| **12.0** | Western Access to Madingley Rd Nbd | 0 | 0 |
| **12.0** | Western Access to Madingley Rd Sbd | 0 | 0 |
| **12.1** | High Cross Access to Madingley Rd Nbd | 69 / 74 | 465 / 536 |
| **12.1** | High Cross Access to Madingley Rd Sbd | 330 / 514 | 54 / 384 |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Nbd | 49 / 35 | 230 / 221 |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Sbd | 436 / 238 | 54 / 43 |
| **12.3** | Clerk Maxwell Rd Nbd | 48 / 36 | 336 / 252 |

| No. | Link | 2021 Do Something | |
|---|---|---|---|
| | | AM | PM |
| **12.3** | Clerk Maxwell Rd Sbd | 326 / 117 | 57 / 22 |




**2021 DS Flows**

**AM Peak**


Girton
Coton
Newnham
Newnham Croft
Located Immediately East
4,208
3,328
3,406
3,999
1,578
2,117
738
1,201
2,953
3,283
478
904
395
710
363
222
83
194
2,439
2,883
242
250
507
227
691
1,157
716
1,233
94
28
740
1,129
1,770
1,374
594
1,286
605
1,181
919
653
596
1,327
596
1,327
649
1,024
785
1,076
67
198
932
923
819
764
813
754
975
998
632
1,246
230
54
0
0
54
465
336
57
211
158
731
847
792
645
707
587
3,704
3,412
451
922
498
957
KEY
750 Eastbound Flow
750 Westbound Flow

**PM Peak**

# Appendix 14.1 - Summary and comparisons of 2015, 2021 Do Minimum and 2021 Do Something flows

Table 14.1: Comparison of the 2015 and 2021 Do Minimum flows

| No. | Link | 2015 Base | | 2021 TA Do Minimum | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| 1.0 | M11 - J12 - J13 - Nbd | 3,136 | 3,463 | 3,408 | 3,706 | 9% | 7% |
| 1.0 | M11 - J12 - J13 - Sbd | 2,834 | 3,049 | 3,034 | 3,408 | 7% | 12% |
| 1.1 | M11 J13 -J14 - Nbd | 2,127 | 2,805 | 2,267 | 2,884 | 7% | 3% |
| 1.1 | M11 J13 -J14 - Sbd | 2,564 | 2,289 | 2,642 | 2,440 | 3% | 7% |
| 1.2 | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Nbd | 1,408 | 2,051 | 1,518 | 2,117 | 8% | 3% |
| 1.2 | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Sbd | 2,062 | 1,467 | 2,126 | 1,578 | 3% | 8% |
| 1.3 | M11 J13 off-slip - Nbd | 951 | 713 | 1,084 | 876 | 14% | 23% |
| 1.3 | M11 J13 on-slip - Sbd | 298 | 786 | 418 | 994 | 40% | 26% |
| 2.0 | A14 West of J30 (Bar Hill) - Ebd | 3,564 | 3,230 | 3,656 | 3,329 | 3% | 3% |
| 2.0 | A14 West of J30 (Bar Hill) - Wbd | 2,979 | 4,082 | 3,058 | 4,204 | 3% | 3% |
| 2.1 | A14 North West of M11 J14 - Ebd | 3,611 | 3,230 | 3,716 | 3,406 | 3% | 5% |
| 2.1 | A14 North West M11 J14 - Wbd | 2,924 | 3,894 | 3,103 | 4,000 | 6% | 3% |
| 2.2 | A14 West of J32 Interchange - Ebd | 3,292 | 2,777 | 3,397 | 2,953 | 3% | 6% |
| 2.2 | A14 West of J32 Interchange - Wbd | 2,492 | 3,178 | 2,671 | 3,284 | 7% | 3% |
| 2.3 | A428 -West of M11 J14 - Ebd | 1,526 | 702 | 1,562 | 738 | 2% | 5% |
| 2.3 | A428 - West of M11 J14 - Wbd | 736 | 1,172 | 771 | 1,202 | 5% | 3% |
| 3.0 | A1303 East of Madingley Mulch R'bout Ebd | 420 | 525 | 506 | 595 | 20% | 13% |
| 3.0 | A1303 East of Madingley Mulch R'bout Wbd | 491 | 1,189 | 547 | 1,284 | 11% | 8% |
| 3.1 | Madingley Rd - East of Cambridge Rd Crossroads Wbd | 491 | 1,157 | 541 | 1,179 | 10% | 2% |
| 3.1 | Madingley Rd - East of Cambridge Rd Crossroads Ebd | 397 | 530 | 448 | 605 | 13% | 14% |
| 3.2 | Madingley Rd on Over Bridge M11 Ebd | 1,259 | 709 | 1,422 | 921 | 13% | 30% |
| 3.2 | Madingley Rd on Over Bridge M11 Wbd | 199 | 656 | 229 | 651 | 15% | -1% |
| 3.3 | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Ebd | 1,165 | 413 | 1,301 | 598 | 12% | 45% |

| No. | Link | 2015 Base | | 2021 TA Do Minimum | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| 3.3 | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Wbd | 399 | 1,145 | 522 | 1,321 | 31% | 15% |
| 3.4 | Madingley Rd - West of P&R Access Wbd | 399 | 1,145 | 522 | 1,321 | 31% | 15% |
| 3.4 | Madingley Rd - West of P&R Access Ebd | 1,165 | 413 | 1,301 | 598 | 12% | 45% |
| 3.5 | Madingley Rd - East of P&R Access Wbd | 467 | 1,064 | 590 | 1,240 | 26% | 17% |
| 3.5 | Madingley Rd - East of P&R Access Ebd | 1,048 | 449 | 1,184 | 634 | 13% | 41% |
| 3.6 | Madingley Rd - East of Proposed High Cross Access Ebd | 847 | 450 | 982 | 567 | 16% | 26% |
| 3.6 | Madingley Rd - East of Proposed High Cross Access Wbd | 513 | 831 | 652 | 993 | 27% | 19% |
| 3.7 | Madingley Rd - East of JJ Thomson Ave Ebd | 845 | 631 | 973 | 865 | 15% | 37% |
| 3.7 | Madingley Rd - East of JJ Thomson Ave Wbd | 681 | 804 | 879 | 974 | 29% | 21% |
| 3.8 | Madingley Rd - East of Clerk Maxwell Rd Ebd | 758 | 680 | 886 | 914 | 17% | 34% |
| 3.8 | Madingley Rd - East of Clerk Maxwell Rd Wbd | 736 | 756 | 934 | 926 | 27% | 22% |
| 3.9 | Madingley Rd - East of Storey's Way Ebd | 677 | 558 | 798 | 801 | 18% | 44% |
| 3.9 | Madingley Rd - East of Storey's Way Wbd | 621 | 591 | 854 | 767 | 38% | 30% |
| 3.10 | Madingley Rd - East of Grange Road Ebd | 677 | 558 | 788 | 796 | 16% | 43% |
| 3.10 | Madingley Rd - East of Grange Road Wbd | 621 | 591 | 850 | 757 | 37% | 28% |
| 3.11 | Madingley Rd - West of Queen's Rd / Northampton St R'bout Ebd | 798 | 565 | 903 | 723 | 13% | 28% |
| 3.11 | Madingley Rd - West of Queen's Rd / Northampton St R'bout Wbd | 581 | 698 | 715 | 850 | 23% | 22% |
| 3.12 | Northampton St - West of Pound Hill Ebd | 458 | 643 | 507 | 789 | 11% | 23% |
| 3.12 | Northampton St - West of Pound Hill Wbd | 551 | 567 | 692 | 646 | 26% | 14% |
| 4.0 | Huntingdon Rd - West of Proposed NWC HRW Access NWbd | 322 | 679 | 458 | 899 | 42% | 32% |
| 4.0 | Huntingdon Rd - West of Proposed NWC HRW Access SEbd | 395 | 327 | 545 | 478 | 38% | 46% |
| 4.1 | Huntingdon Rd - South East of Grange Drive opposite Girton College NWbd | 322 | 679 | 407 | 710 | 26% | 5% |
| 4.1 | Huntingdon Rd - South East of Grange Drive opposite Girton College SEbd | 395 | 327 | 396 | 395 | 0% | 21% |
| 4.2 | Huntingdon Rd - East of NWC HRW Access NWbd | 384 | 931 | 578 | 1,159 | 51% | 24% |
| 4.2 | Huntingdon Rd - East of NWC HRW Access SEbd | 660 | 446 | 894 | 692 | 35% | 55% |
| 4.3 | Huntingdon Rd - East of NIAB Access NWbd | 438 | 981 | 589 | 1,236 | 34% | 26% |

| No. | Link | 2015 Base | | 2021 TA Do Minimum | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| 4.3 | Huntingdon Rd - East of NIAB Access SEbd | 931 | 511 | 1,212 | 717 | 30% | 40% |
| 4.4 | Huntingdon Rd - East of Storey's Way NWbd | 457 | 877 | 589 | 1,131 | 29% | 29% |
| 4.4 | Huntingdon Rd - East of Storey's Way SEbd | 783 | 540 | 1,088 | 740 | 39% | 37% |
| 5.0 | Barton Rd - West of Grantchester Rd Ebd | 1,099 | 478 | 1,113 | 498 | 1% | 4% |
| 5.0 | Barton Rd - West of Grantchester Rd Wbd | 298 | 948 | 309 | 957 | 4% | 1% |
| 5.1 | Barton Rd - East of Grantchester Rd Ebd | 611 | 431 | 625 | 451 | 2% | 5% |
| 5.1 | Barton Rd - East of Grantchester Rd Wbd | 279 | 913 | 290 | 922 | 4% | 1% |
| 6.0 | Queen's Rd - North of West Rd Nbd | 458 | 645 | 514 | 708 | 12% | 10% |
| 6.0 | Queen's Rd - North of West Rd Sbd | 772 | 542 | 831 | 584 | 8% | 8% |
| 7.0 | Histon Road - South of A14 Nbd | 935 | 1,597 | 1,090 | 1,765 | 17% | 11% |
| 7.0 | Histon Road - South of A14 Sbd | 1,804 | 1,200 | 1,928 | 1,375 | 7% | 15% |
| 8.0 | Grange Rd - South of Madingley Rd Nbd | 193 | 198 | 200 | 211 | 4% | 7% |
| 8.0 | Grange Rd - South of Madingley Rd Sbd | 317 | 149 | 331 | 157 | 4% | 5% |
| 9.0 | Storey's Way - between Madingley Rd and Huntingdon Rd Ebd | 257 | 81 | 212 | 67 | -18% | -17% |
| 9.0 | Storey's Way - between Madingley Rd and Huntingdon Rd Wbd | 90 | 214 | 86 | 198 | -4% | -7% |
| 10.0 | Girton Rd - North of Huntingdon Rd Nbd | 135 | 330 | 151 | 362 | 12% | 10% |
| 10.0 | Girton Rd - North of Huntingdon Rd Sbd | 338 | 199 | 367 | 222 | 9% | 12% |
| 11.0 | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Nbd | 0 | 0 | 9 | 94 | n/a | n/a |
| 11.0 | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Sbd | 0 | 0 | 99 | 28 | n/a | n/a |
| 11.1 | Proposed Madingley Rd West Access to NWC Nbd | 0 | 0 | 113 | 503 | n/a | n/a |
| 11.1 | Proposed Madingley Rd West Access to NWC Sbd | 0 | 0 | 404 | 228 | n/a | n/a |
| 11.2 | Proposed Huntingdon Rd West Access to NWC Nbd | 0 | 0 | 52 | 189 | n/a | n/a |
| 11.2 | Proposed Huntingdon Rd West Access to NWC Sbd | 0 | 0 | 149 | 83 | n/a | n/a |
| 11.3 | Proposed Huntingdon Rd East Access to NWC Sbd | 0 | 0 | 176 | 253 | n/a | n/a |
| 11.3 | Proposed Huntingdon Rd East Access to NWC Nbd | 0 | 0 | 288 | 242 | n/a | n/a |
| 12.0 | Western Access to Madingley Rd Nbd | 0 | 0 | 0 | 0 | n/a | n/a |
| 12.0 | Western Access to Madingley Rd Sbd | 0 | 0 | 0 | 0 | n/a | n/a |

| No. | Link | 2015 Base | | 2021 TA Do Minimum | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| **12.1** | High Cross Access to Madingley Rd Nbd | 33 | 263 | 73 | 541 | 120% | 106% |
| **12.1** | High Cross Access to Madingley Rd Sbd | 282 | 28 | 631 | 85 | 124% | 201% |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Nbd | 81 | 271 | 85 | 376 | 5% | 39% |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Sbd | 244 | 65 | 308 | 72 | 26% | 11% |
| **12.3** | Clerk Maxwell Rd Nbd | 12 | 84 | 12 | 84 | 0% | 0% |
| **12.3** | Clerk Maxwell Rd Sbd | 74 | 10 | 74 | 10 | 0% | 0% |

Table 14.2: Comparison of the 2021 TA Do Minimum and 2021 Do Something flows

| No. | Link | 2021 TA Do Minimum | | 2021 Do Something | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| **1.0** | M11 - J12 - J13 - Nbd | 3,408 | 3,706 | 3,413 | 3,704 | 0% | 0% |
| **1.0** | M11 - J12 - J13 - Sbd | 3,034 | 3,408 | 3,033 | 3,412 | 0% | 0% |
| **1.1** | M11 J13 -J14 - Nbd | 2,267 | 2,884 | 2,266 | 2,883 | 0% | 0% |
| **1.1** | M11 J13 -J14 - Sbd | 2,642 | 2,440 | 2,642 | 2,439 | 0% | 0% |
| **1.2** | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Nbd | 1,518 | 2,117 | 1,518 | 2,117 | 0% | 0% |
| **1.2** | M11 between A14 Ebd on-slip / Huntingdon Rd on slip - Sbd | 2,126 | 1,578 | 2,126 | 1,578 | 0% | 0% |
| **1.3** | M11 J13 off-slip - Nbd | 1,084 | 876 | 1,089 | 975 | 0% | 11% |
| **1.3** | M11 J13 on-slip - Sbd | 418 | 994 | 418 | 998 | 0% | 0% |
| **2.0** | A14 West of J30 (Bar Hill) - Ebd | 3,656 | 3,329 | 3,663 | 3,328 | 0% | 0% |
| **2.0** | A14 West of J30 (Bar Hill) - Wbd | 3,058 | 4,204 | 3,058 | 4,208 | 0% | 0% |
| **2.1** | A14 North West of M11 J14 - Ebd | 3,716 | 3,406 | 3,715 | 3,406 | 0% | 0% |
| **2.1** | A14 North West M11 J14 - Wbd | 3,103 | 4,000 | 3,103 | 3,999 | 0% | 0% |
| **2.2** | A14 West of J32 Interchange - Ebd | 3,397 | 2,953 | 3,396 | 2,953 | 0% | 0% |
| **2.2** | A14 West of J32 Interchange - Wbd | 2,671 | 3,284 | 2,671 | 3,283 | 0% | 0% |
| **2.3** | A428 -West of M11 J14 - Ebd | 1,562 | 738 | 1,562 | 738 | 0% | 0% |
| **2.3** | A428 - West of M11 J14 - Wbd | 771 | 1,202 | 771 | 1,201 | 0% | 0% |
| **3.0** | A1303 East of Madingley Mulch R'bout Ebd | 506 | 595 | 509 | 594 | 1% | 0% |
| **3.0** | A1303 East of Madingley Mulch R'bout Wbd | 547 | 1,284 | 547 | 1,286 | 0% | 0% |
| **3.1** | Madingley Rd - East of Cambridge Rd Crossroads Wbd | 541 | 1,179 | 541 | 1,181 | 0% | 0% |
| **3.1** | Madingley Rd - East of Cambridge Rd Crossroads Ebd | 448 | 605 | 451 | 605 | 1% | 0% |
| **3.2** | Madingley Rd on Over Bridge M11 Ebd | 1,422 | 921 | 1,432 | 919 | 1% | 0% |
| **3.2** | Madingley Rd on Over Bridge M11 Wbd | 229 | 651 | 229 | 653 | 0% | 0% |
| **3.3** | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Ebd | 1,301 | 598 | 1,310 | 596 | 1% | 0% |
| **3.3** | Madingley Rd between M11 Sbd On Slip - Proposed Madingley Rd West Access Wbd | 522 | 1,321 | 522 | 1,327 | 0% | 0% |
| **3.4** | Madingley Rd - West of P&R Access Wbd | 522 | 1,321 | 522 | 1,327 | 0% | 0% |

| No. | Link | 2021 TA Do Minimum | | 2021 Do Something | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| 3.4 | Madingley Rd - West of P&R Access Ebd | 1,301 | 598 | 1,310 | 596 | 1% | 0% |
| 3.5 | Madingley Rd - East of P&R Access Wbd | 590 | 1,240 | 590 | 1,246 | 0% | 0% |
| 3.5 | Madingley Rd - East of P&R Access Ebd | 1,184 | 634 | 1,193 | 632 | 1% | 0% |
| 3.6 | Madingley Rd - East of Proposed High Cross Access Ebd | 982 | 567 | 997 | 585 | 2% | 3% |
| 3.6 | Madingley Rd - East of Proposed High Cross Access Wbd | 652 | 993 | 681 | 1,019 | 4% | 3% |
| 3.7 | Madingley Rd - East of JJ Thomson Ave Ebd | 973 | 865 | 973 | 883 | 0% | 2% |
| 3.7 | Madingley Rd - East of JJ Thomson Ave Wbd | 879 | 974 | 914 | 971 | 4% | 0% |
| 3.8 | Madingley Rd - East of Clerk Maxwell Rd Ebd | 886 | 914 | 886 | 932 | 0% | 2% |
| 3.8 | Madingley Rd - East of Clerk Maxwell Rd Wbd | 934 | 926 | 969 | 923 | 4% | 0% |
| 3.9 | Madingley Rd - East of Storey's Way Ebd | 798 | 801 | 798 | 819 | 0% | 2% |
| 3.9 | Madingley Rd - East of Storey's Way Wbd | 854 | 767 | 889 | 764 | 4% | 0% |
| 3.10 | Madingley Rd - East of Grange Road Ebd | 788 | 796 | 788 | 813 | 0% | 2% |
| 3.10 | Madingley Rd - East of Grange Road Wbd | 850 | 757 | 885 | 754 | 4% | 0% |
| 3.11 | Madingley Rd - West of Queen's Rd / Northampton St R'bout Ebd | 903 | 723 | 902 | 731 | 0% | 1% |
| 3.11 | Madingley Rd - West of Queen's Rd / Northampton St R'bout Wbd | 715 | 850 | 733 | 847 | 3% | 0% |
| 3.12 | Northampton St - West of Pound Hill Ebd | 507 | 789 | 507 | 792 | 0% | 0% |
| 3.12 | Northampton St - West of Pound Hill Wbd | 692 | 646 | 700 | 645 | 1% | 0% |
| 4.0 | Huntingdon Rd - West of Proposed NWC HRW Access NWbd | 458 | 899 | 458 | 904 | 0% | 1% |
| 4.0 | Huntingdon Rd - West of Proposed NWC HRW Access SEbd | 545 | 478 | 553 | 478 | 1% | 0% |
| 4.1 | Huntingdon Rd - South East of Grange Drive opposite Girton College NWbd | 407 | 710 | 406 | 710 | 0% | 0% |
| 4.1 | Huntingdon Rd - South East of Grange Drive opposite Girton College SEbd | 396 | 395 | 395 | 395 | 0% | 0% |
| 4.2 | Huntingdon Rd - East of NWC HRW Access NWbd | 578 | 1,159 | 578 | 1,157 | 0% | 0% |
| 4.2 | Huntingdon Rd - East of NWC HRW Access SEbd | 894 | 692 | 891 | 691 | 0% | 0% |
| 4.3 | Huntingdon Rd - East of NIAB Access NWbd | 589 | 1,236 | 589 | 1,233 | 0% | 0% |
| 4.3 | Huntingdon Rd - East of NIAB Access SEbd | 1,212 | 717 | 1,209 | 716 | 0% | 0% |
| 4.4 | Huntingdon Rd - East of Storey's Way NWbd | 589 | 1,131 | 588 | 1,129 | 0% | 0% |

| No. | Link | 2021 TA Do Minimum | | 2021 Do Something | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| 4.4 | Huntingdon Rd - East of Storey's Way SEbd | 1,088 | 740 | 1,085 | 740 | 0% | 0% |
| 5.0 | Barton Rd - West of Grantchester Rd Ebd | 1,113 | 498 | 1,113 | 498 | 0% | 0% |
| 5.0 | Barton Rd - West of Grantchester Rd Wbd | 309 | 957 | 309 | 957 | 0% | 0% |
| 5.1 | Barton Rd - East of Grantchester Rd Ebd | 625 | 451 | 625 | 451 | 0% | 0% |
| 5.1 | Barton Rd - East of Grantchester Rd Wbd | 290 | 922 | 290 | 922 | 0% | 0% |
| 6.0 | Queen's Rd - North of West Rd Nbd | 514 | 708 | 523 | 707 | 2% | 0% |
| 6.0 | Queen's Rd - North of West Rd Sbd | 831 | 584 | 831 | 587 | 0% | 1% |
| 7.0 | Histon Road - South of A14 Nbd | 1,090 | 1,765 | 1,090 | 1,770 | 0% | 0% |
| 7.0 | Histon Road - South of A14 Sbd | 1,928 | 1,375 | 1,938 | 1,374 | 1% | 0% |
| 8.0 | Grange Rd - South of Madingley Rd Nbd | 200 | 211 | 200 | 211 | 0% | 0% |
| 8.0 | Grange Rd - South of Madingley Rd Sbd | 331 | 157 | 331 | 158 | 0% | 1% |
| 9.0 | Storey's Way - between Madingley Rd and Huntingdon Rd Ebd | 212 | 67 | 212 | 67 | 0% | 0% |
| 9.0 | Storey's Way - between Madingley Rd and Huntingdon Rd Wbd | 86 | 198 | 87 | 198 | 1% | 0% |
| 10.0 | Girton Rd - North of Huntingdon Rd Nbd | 151 | 362 | 151 | 363 | 0% | 0% |
| 10.0 | Girton Rd - North of Huntingdon Rd Sbd | 367 | 222 | 368 | 222 | 0% | 0% |
| 11.0 | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Nbd | 9 | 94 | 9 | 94 | 0% | 0% |
| 11.0 | Proposed NIAB Access - between Huntingdon Rd and Histon Rd Sbd | 99 | 28 | 99 | 28 | 0% | 0% |
| 11.1 | Proposed Madingley Rd West Access to NWC Nbd | 113 | 503 | 113 | 507 | 0% | 1% |
| 11.1 | Proposed Madingley Rd West Access to NWC Sbd | 404 | 228 | 414 | 227 | 2% | 0% |
| 11.2 | Proposed Huntingdon Rd West Access to NWC Nbd | 52 | 189 | 52 | 194 | 0% | 3% |
| 11.2 | Proposed Huntingdon Rd West Access to NWC Sbd | 149 | 83 | 157 | 83 | 5% | 0% |
| 11.3 | Proposed Huntingdon Rd East Access to NWC Sbd | 176 | 253 | 177 | 250 | 1% | -1% |
| 11.3 | Proposed Huntingdon Rd East Access to NWC Nbd | 288 | 242 | 285 | 242 | -1% | 0% |
| 12.0 | Western Access to Madingley Rd Nbd | 0 | 0 | 0 | 0 | 0 | 0 |
| 12.0 | Western Access to Madingley Rd Sbd | 0 | 0 | 0 | 0 | 0 | 0 |
| 12.1 | High Cross Access to Madingley Rd Nbd | 73 | 541 | 72 | 542 | -1% | 0% |
| 12.1 | High Cross Access to Madingley Rd Sbd | 631 | 85 | 663 | 81 | 5% | -5% |

| No. | Link | 2021 TA Do Minimum | | 2021 Do Something | | Percentage difference | |
|---|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | AM | PM |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Nbd | 85 | 376 | 87 | 405 | 2% | 8% |
| **12.2** | JJ Thomson Ave Access to Madingley Rd Sbd | 308 | 72 | 331 | 73 | 7% | 1% |
| **12.3** | Clerk Maxwell Rd Nbd | 12 | 84 | 12 | 84 | 0% | 0% |
| **12.3** | Clerk Maxwell Rd Sbd | 74 | 10 | 74 | 10 | 0% | 0% |

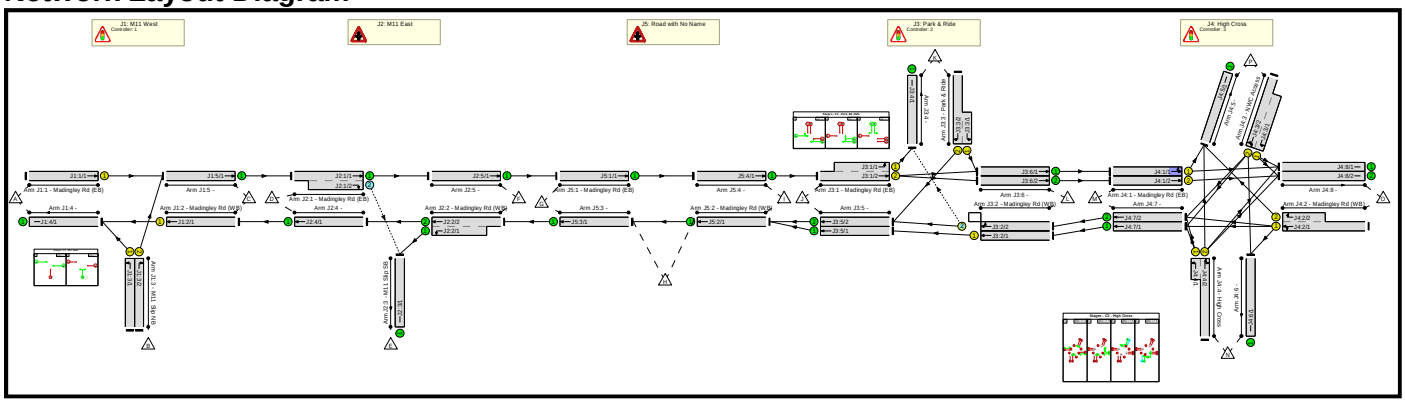
# Appendix 14.2 - Madingley Road Corridor Junction Capacity Assessment

# Full Input Data And Results

## User and Project Details

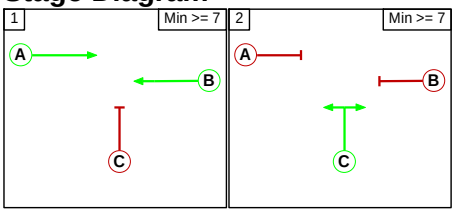
| | |
|---|---|
| **Project:** | |
| **Title:** | |
| **Location:** | |
| **File name:** | 160429 WC with CSRM 2021 DS.lsg3x |
| **Author:** | |
| **Company:** | |
| **Address:** | |
| **Notes:** | |

## Network Layout Diagram



Full Input Data And Results

## Stage Diagram




## Phase Delays

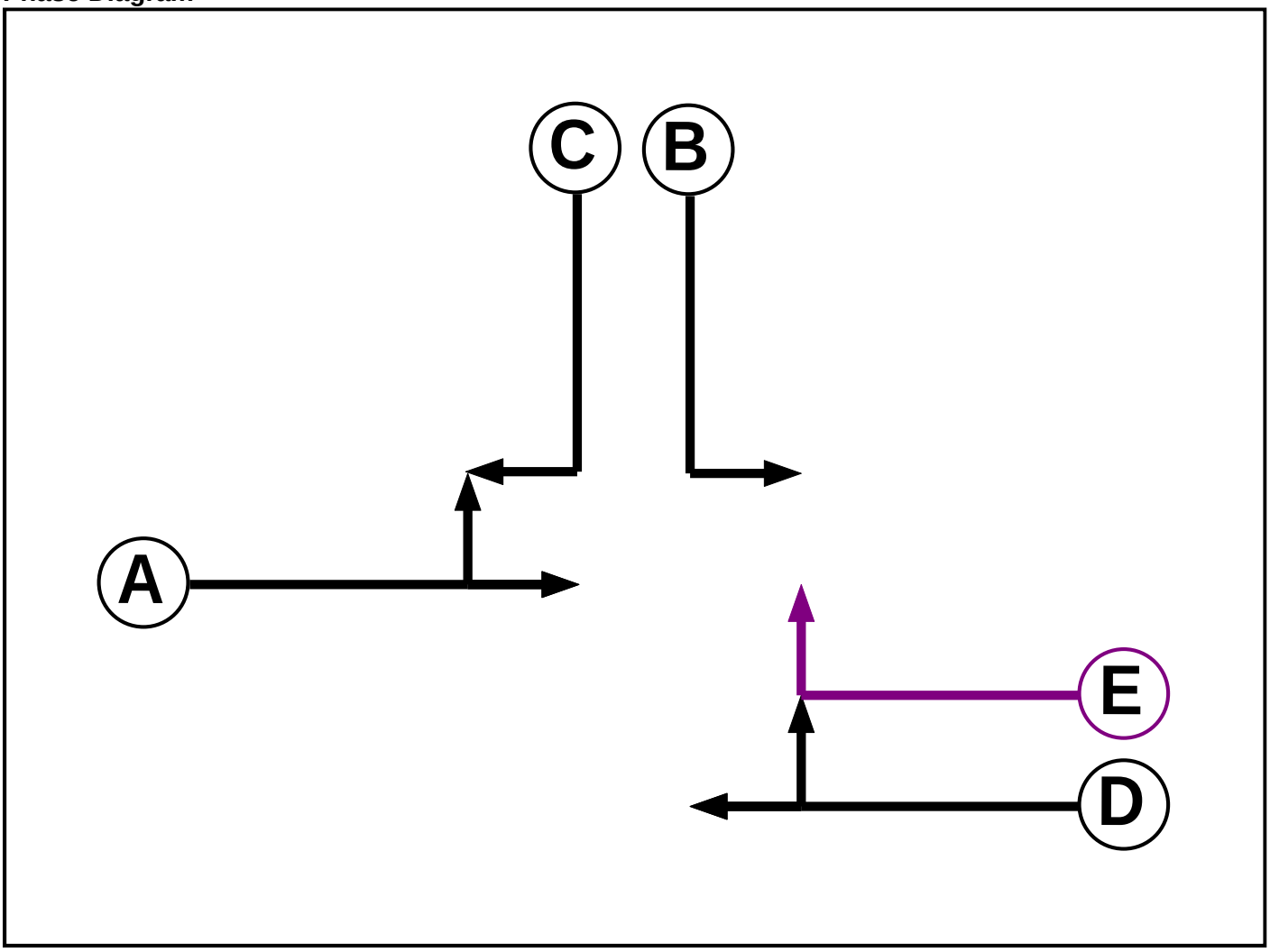
| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|---|---|---|---|---|---|
| There are no Phase Delays defined | | | | | |

## Prohibited Stage Change

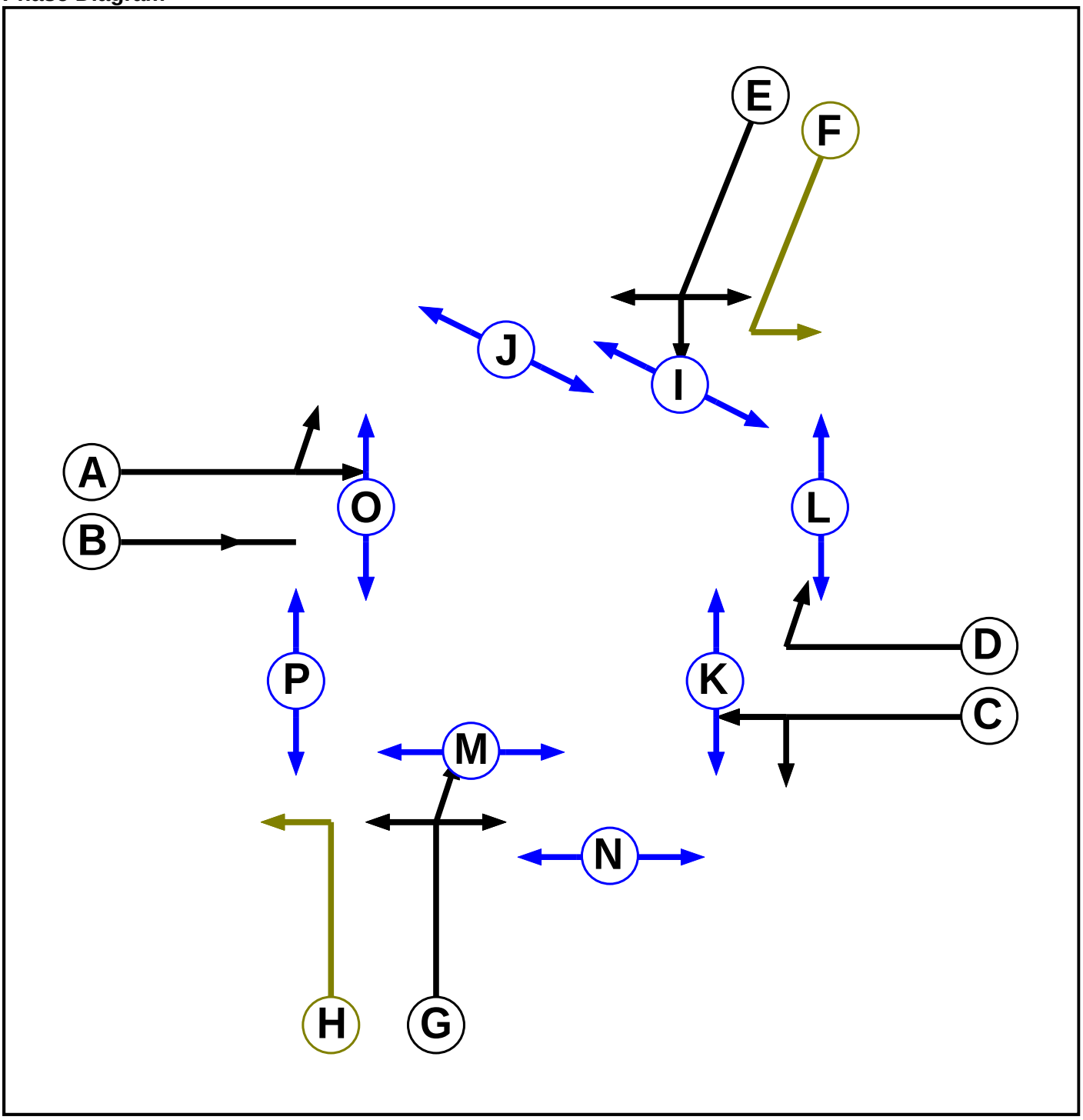
| | To Stage | | |
|---|---|---|---|
| From Stage | | 1 | 2 |
| | 1 | | 5 |
| | 2 | 5 | |

### C2 - Park && Ride

## Phase Diagram



**C3 - High Cross**
**Phase Diagram**



Full Input Data And Results

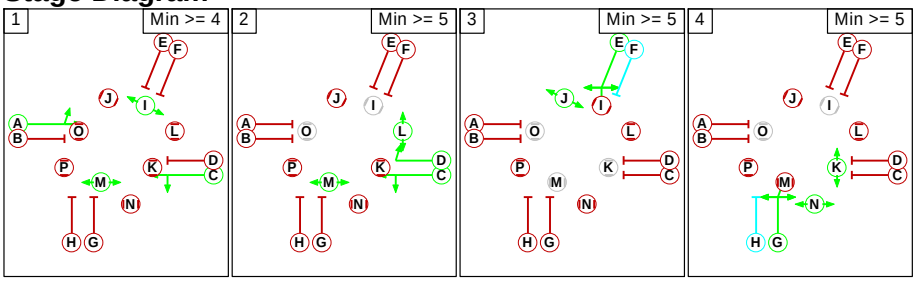
## Phase Intergreens Matrix

| Terminating Phase \ Starting Phase | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | | - | - | 5 | 8 | 8 | 5 | - | - | 10 | - | 12 | - | - | 6 | - |
| B | - | | 7 | - | 5 | - | 5 | 5 | - | - | - | - | - | 9 | 5 | - |
| C | - | 5 | | - | 5 | - | 8 | 8 | - | - | 6 | - | - | 9 | - | 12 |
| D | 5 | - | - | | 5 | - | 5 | - | - | 11 | 6 | - | - | - | - | - |
| E | 5 | 5 | 7 | 6 | | - | 7 | 7 | 6 | - | - | 9 | - | 12 | - | 13 |
| F | 5 | - | - | - | - | | 5 | - | 6 | - | - | 9 | - | - | - | - |
| G | 5 | 5 | 5 | 5 | 8 | 8 | | - | - | 11 | - | 12 | 6 | - | - | 8 |
| H | - | - | 5 | - | 5 | - | - | | - | - | - | - | 6 | - | - | 8 |
| I | - | - | - | - | 10 | 10 | - | - | | - | - | - | - | - | - | - |
| J | 7 | - | - | 7 | - | - | 7 | - | - | | - | - | - | - | - | - |
| K | - | - | 8 | 8 | - | - | - | - | - | - | | - | - | - | - | - |
| L | 9 | - | - | - | 9 | 9 | 9 | - | - | - | - | | - | - | - | - |
| M | - | - | - | - | - | - | 10 | 10 | - | - | - | - | | - | - | - |
| N | - | 7 | 7 | - | 7 | - | - | - | - | - | - | - | - | | - | - |
| O | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | | - |
| P | - | - | 8 | - | 8 | - | 8 | 8 | - | - | - | - | - | - | - | |

## Phases in Stage

| Stage No. | Phases in Stage |
|---|---|
| 1 | A C I M |
| 2 | C D L M |
| 3 | E J |
| 4 | G K N |

## Stage Diagram




## Phase Delays

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|---|---|---|---|---|---|
| 2 | 3 | C | Losing | 4 | 4 |

Full Input Data And Results

## Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|
| A | Traffic | | 7 | 7 |
| B | Traffic | | 7 | 7 |
| C | Traffic | | 7 | 4 |
| D | Traffic | | 7 | 7 |
| E | Pedestrian | | 6 | 6 |
| F | Pedestrian | | 6 | 6 |

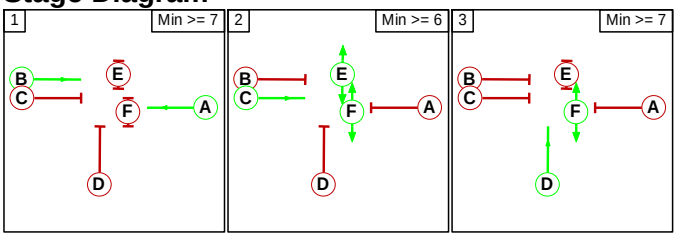
## Phase Intergreens Matrix

| | | Starting Phase | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| Terminating Phase | A | | - | 6 | 8 | - | 5 |
| | B | - | | - | 5 | 7 | - |
| | C | 5 | - | | 5 | - | - |
| | D | 5 | 6 | 5 | | 8 | - |
| | E | - | 8 | - | 8 | | - |
| | F | 8 | - | - | - | - | |

## Phases in Stage

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

## Stage Diagram




## Phase Delays

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|---|---|---|---|---|---|
| 2 | 1 | C | Losing | 3 | 3 |
| 2 | 3 | C | Losing | 3 | 3 |
| 3 | 1 | D | Losing | 2 | 2 |

Full Input Data And Results

## Give-Way Lane Input Data

| Junction: J1: M11 West |
|---|
| There are no Opposed Lanes in this Junction |

| Junction: J2: M11 East | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane | Movement | Max Flow when Giving Way (PCU/Hr) | Min Flow when Giving Way (PCU/Hr) | Opposing Lane | Opp. Lane Coeff. | Opp. Mvmnts. | Right Turn Storage (PCU) | Non-Blocking Storage (PCU) | RTF | Right Turn Move up (s) | Max Turns in Intergreen (PCU) |
| J2:1/2 (Madingley Rd (EB)) | J2:3/1 (Right) | 850 | 0 | J2:2/2 | 0.35 | All | - | - | - | - | - |
| | | | | J2:2/1 | 0.35 | All | | | | | |

| Junction: J3: Park && Ride | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane | Movement | Max Flow when Giving Way (PCU/Hr) | Min Flow when Giving Way (PCU/Hr) | Opposing Lane | Opp. Lane Coeff. | Opp. Mvmnts. | Right Turn Storage (PCU) | Non-Blocking Storage (PCU) | RTF | Right Turn Move up (s) | Max Turns in Intergreen (PCU) |
| J3:2/2 (Madingley Rd (WB)) | J3:4/1 (Right) | 1440 | 0 | J3:1/1 | 1.09 | All | 2.00 | 2.00 | 0.50 | 2 | 2.00 |
| | | | | J3:1/2 | 1.09 | All | | | | | |

| Junction: J4: High Cross |
|---|
| There are no Opposed Lanes in this Junction |

| Junction: J5: Road with No Name |
|---|
| There are no Opposed Lanes in this Junction |

Full Input Data And Results

**Junction: J3: Park && Ride**

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J3:1/1 (Madingley Rd (EB)) | U | A | 2 | 3 | 20.9 | Geom | - | 3.00 | 0.00 | Y | Arm J3:4 Left | 15.00 |
| J3:1/2 (Madingley Rd (EB)) | U | A | 2 | 3 | 17.4 | Geom | - | 3.00 | 0.00 | Y | Arm J3:6 Ahead | Inf |
| J3:2/1 (Madingley Rd (WB)) | U | D E | 2 | 3 | 13.9 | Geom | - | 3.50 | 0.00 | N | Arm J3:5 Ahead | Inf |
| J3:2/2 (Madingley Rd (WB)) | O | D E | 2 | 3 | 13.9 | Geom | - | 3.50 | 0.00 | Y | Arm J3:4 Right<br>Arm J3:5 Ahead | 25.00<br>Inf |
| J3:3/1 (Park & Ride) | U | B | 2 | 3 | 5.2 | Geom | - | 3.00 | 0.00 | Y | Arm J3:6 Left | 15.00 |
| J3:3/2 (Park & Ride) | U | C | 2 | 3 | 17.4 | Geom | - | 3.00 | 0.00 | Y | Arm J3:5 Right | 20.00 |
| J3:4/1 | U | | 2 | 3 | 17.4 | Inf | - | - | - | - | - | - |
| J3:5/1 | U | | 2 | 3 | 0.2 | Inf | - | - | - | - | - | - |
| J3:5/2 | U | | 2 | 3 | 0.2 | Inf | - | - | - | - | - | - |
| J3:6/1 | U | | 2 | 3 | 0.2 | Inf | - | - | - | - | - | - |
| J3:6/2 | U | | 2 | 3 | 0.2 | Inf | - | - | - | - | - | - |

Full Input Data And Results

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: 'AM CSRM 2021 DS' | 08:00 | 09:00 | 01:00 | |
| 2: 'PM CSRM 2021 DS' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: 'AM CSRM 2021 DS'** (FG1: 'AM CSRM 2021 DS', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Tot. |
| Origin | A | 0 | 0 | 649 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 649 |
| | B | 306 | 0 | 783 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1089 |
| | C | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 229 |
| | D | 0 | 0 | 0 | 0 | 130 | 1310 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1440 |
| | E | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | F | 0 | 0 | 0 | 274 | 288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 562 |
| | G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 |
| | H | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | I | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 |
| | J | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 1175 | 0 | 0 | 0 | 0 | 1315 |
| | K | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 5 | 0 | 0 | 0 | 0 | 23 |
| | L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 565 | 12 | 0 | 0 | 0 | 0 | 0 | 577 |
| | M | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1135 | 45 | 1180 |
| | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 14 | 25 | 75 |
| | O | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 423 | 69 | 0 | 42 | 534 |
| | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 155 | 142 | 0 | 414 |
| | Tot. | 535 | 0 | 1432 | 274 | 418 | 1310 | 123 | 0 | 145 | 583 | 152 | 1180 | 576 | 224 | 1291 | 112 | 8355 |

| | |
|---|---|
| J4:4/1 (short) | 36 |
| J4:4/2 (with short) | 75(In) 39(Out) |
| J4:5/1 | 112 |
| J4:6/1 | 224 |
| J4:7/1 | 288 |
| J4:7/2 | 288 |
| J4:8/1 | 595 |
| J4:8/2 | 696 |
| **Junction: J5: Road with No Name** | |
| J5:1/1 | 145 |
| J5:2/1 | 123 |
| J5:3/1 | 123 |
| J5:4/1 | 145 |

## Lane Saturation Flows

**Junction: J1: M11 West**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J1:1/1 (Madingley Rd (EB)) | 3.00 | 0.00 | N | Arm J1:5 Ahead | Inf | 100.0 % | 2055 | 2055 |
| J1:2/1 (Madingley Rd (WB)) | 3.00 | 0.00 | Y | Arm J1:4 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:3/1 (M11 Slip NB) | 3.00 | 0.00 | Y | Arm J1:4 Left | 20.00 | 100.0 % | 1781 | 1781 |
| J1:3/2 (M11 Slip NB) | 3.00 | 0.00 | Y | Arm J1:5 Right | 15.00 | 100.0 % | 1741 | 1741 |
| J1:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Junction: J2: M11 East**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (Madingley Rd (EB) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J2:1/2 (Madingley Rd (EB) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/1 (Madingley Rd (WB) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1800 | 1800 |
| J2:2/2 (Madingley Rd (WB) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1800 | 1800 |
| J2:3/1 (M11 Slip SB Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1800 | 1800 |
| J2:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

**Junction: J4: High Cross**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J4:1/1 (Madingley Rd (EB)) | 3.50 | 0.00 | Y | Arm J4:5 Left | 30.00 | 8.0 % | 1957 | 1957 |
| | | | | Arm J4:8 Ahead | Inf | 92.0 % | | |
| J4:1/2 (Madingley Rd (EB)) | 3.50 | 0.00 | N | Arm J4:8 Ahead | Inf | 100.0 % | 2105 | 2105 |
| J4:2/1 (Madingley Rd (WB)) | 3.50 | 0.00 | Y | Arm J4:6 Left | 20.00 | 14.0 % | 1945 | 1945 |
| | | | | Arm J4:7 Ahead | Inf | 86.0 % | | |
| J4:2/2 (Madingley Rd (WB)) | 3.50 | 0.00 | Y | Arm J4:5 Right | 20.00 | 100.0 % | 1828 | 1828 |
| J4:3/1 (NWC Access) | 3.25 | 0.00 | Y | Arm J4:8 Left | 10.00 | 100.0 % | 1687 | 1687 |
| J4:3/2 (NWC Access) | 3.25 | 0.00 | Y | Arm J4:6 Ahead | Inf | 57.0 % | 1913 | 1913 |
| | | | | Arm J4:7 Right | 45.00 | 43.0 % | | |
| J4:4/1 (High Cross) | 4.00 | 0.00 | N | Arm J4:7 Left | 25.00 | 100.0 % | 2033 | 2033 |
| J4:4/2 (High Cross) | 4.00 | 0.00 | N | Arm J4:5 Ahead | Inf | 64.1 % | 2099 | 2099 |
| | | | | Arm J4:8 Right | 20.00 | 35.9 % | | |
| J4:5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J4:6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J4:7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J4:7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J4:8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J4:8/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Junction: J5: Road with No Name**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J5:1/1 (Madingley Rd (EB) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J5:2/1 (Madingley Rd (WB)) | 3.25 | 0.00 | Y | Arm J5:3 Ahead | Inf | 100.0 % | 1940 | 1940 |
| J5:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J5:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

## Traffic Lane Flows

| Lane | Scenario 2: PM CSRM 2021 DS |
|---|---|
| **Junction: J1: M11 West** | |
| J1:1/1 | 597 |
| J1:2/1 | 653 |
| J1:3/1 | 554 |
| J1:3/2 | 321 |
| J1:4/1 | 1207 |
| J1:5/1 | 918 |
| **Junction: J2: M11 East** | |
| J2:1/1 (with short) | 921(In) 596(Out) |
| J2:1/2 (short) | 325 |
| J2:2/1 (short) | 672 |
| J2:2/2 (with short) | 1327(In) 655(Out) |
| J2:3/1 | 997 |
| J2:4/1 | 655 |
| J2:5/1 | 596 |
| **Junction: J3: Park && Ride** | |
| J3:1/1 (short) | 16 |
| J3:1/2 (with short) | 625(In) 609(Out) |
| J3:2/1 | 924 |
| J3:2/2 | 277 |
| J3:3/1 (short) | 17 |
| J3:3/2 (with short) | 282(In) 265(Out) |
| J3:4/1 | 21 |
| J3:5/1 | 924 |
| J3:5/2 | 537 |
| J3:6/1 | 322 |
| J3:6/2 | 304 |
| **Junction: J4: High Cross** | |
| J4:1/1 | 244 |
| J4:1/2 | 382 |
| J4:2/1 (with short) | 1012(In) 815(Out) |
| J4:2/2 (short) | 197 |
| J4:3/1 (short) | 68 |
| J4:3/2 (with short) | 227(In) 159(Out) |

Full Input Data And Results

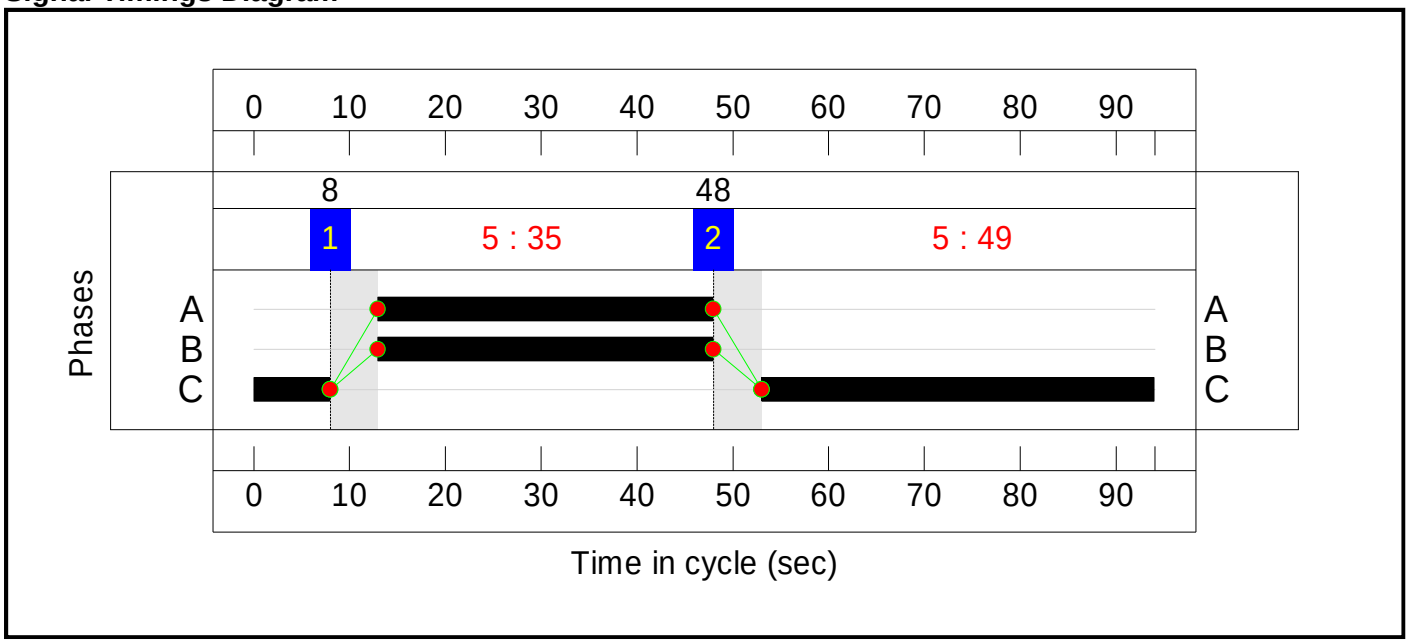
| Junction: J3: Park && Ride | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J3:1/1 (Madingley Rd (EB)) | 3.00 | 0.00 | Y | Arm J3:4 Left | 15.00 | 100.0 % | 1741 | 1741 |
| J3:1/2 (Madingley Rd (EB)) | 3.00 | 0.00 | Y | Arm J3:6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J3:2/1 (Madingley Rd (WB)) | 3.50 | 0.00 | N | Arm J3:5 Ahead | Inf | 100.0 % | 2105 | 2105 |
| J3:2/2 (Madingley Rd (WB)) | 3.50 | 0.00 | Y | Arm J3:4 Right | 25.00 | 1.8 % | 1963 | 1963 |
| | | | | Arm J3:5 Ahead | Inf | 98.2 % | | |
| J3:3/1 (Park & Ride) | 3.00 | 0.00 | Y | Arm J3:6 Left | 15.00 | 100.0 % | 1741 | 1741 |
| J3:3/2 (Park & Ride) | 3.00 | 0.00 | Y | Arm J3:5 Right | 20.00 | 100.0 % | 1781 | 1781 |
| J3:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J3:5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J3:5/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J3:6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J3:6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

## Stage Timings

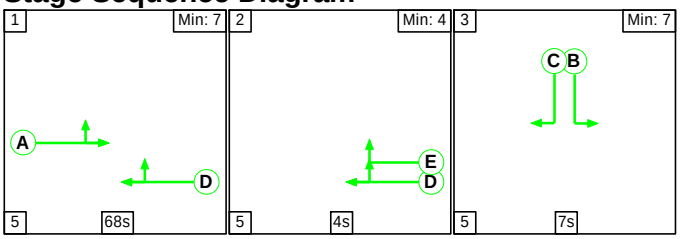
| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 49 |
| Change Point | 8 | 48 |

## Signal Timings Diagram




### C2 - Park && Ride

## Stage Sequence Diagram

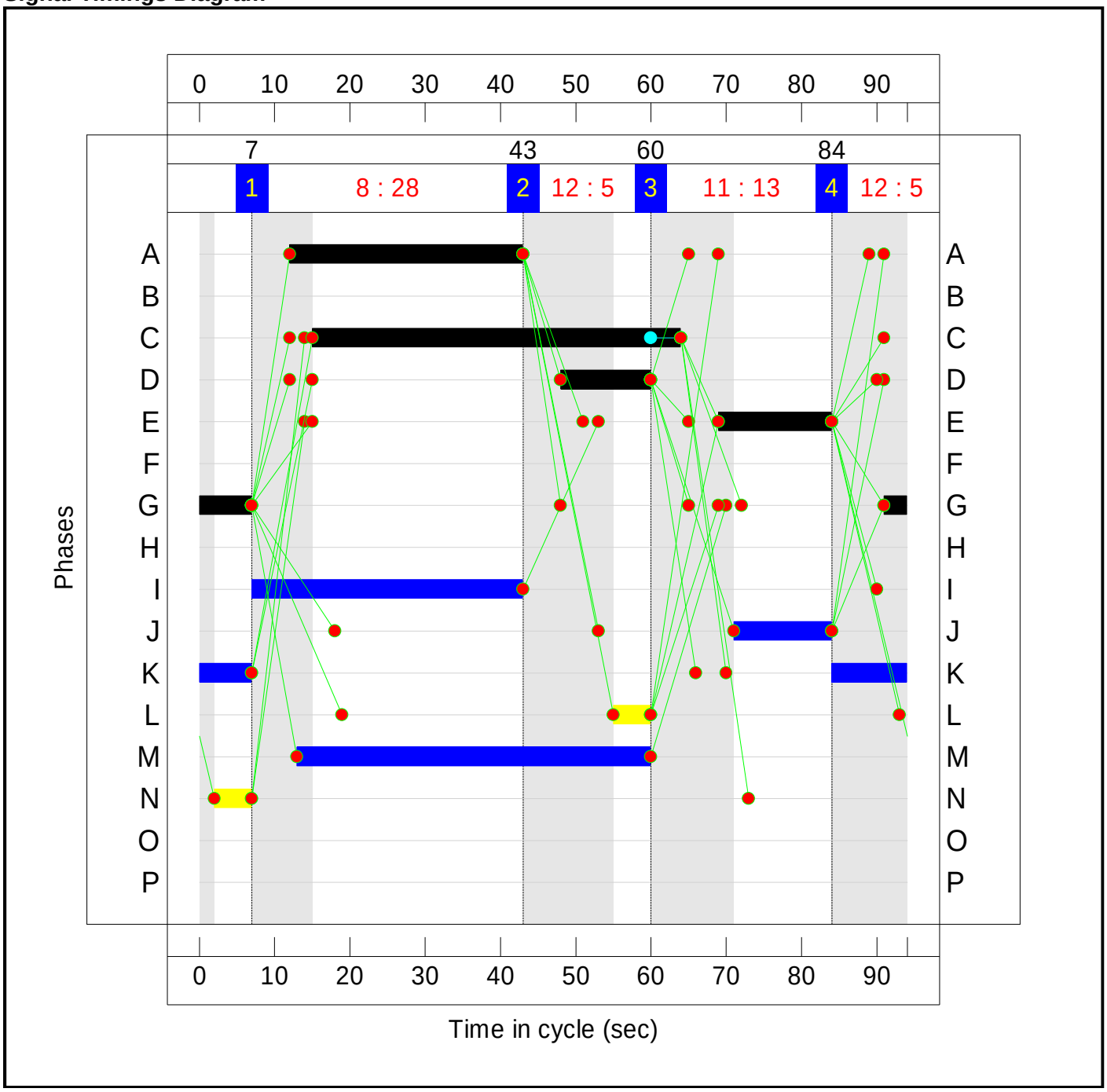



## Stage Timings

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 68 | 4 | 7 |
| Change Point | 71 | 50 | 59 |

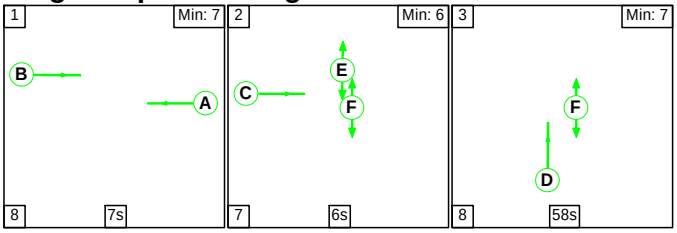
Full Input Data And Results

## Signal Timings Diagram



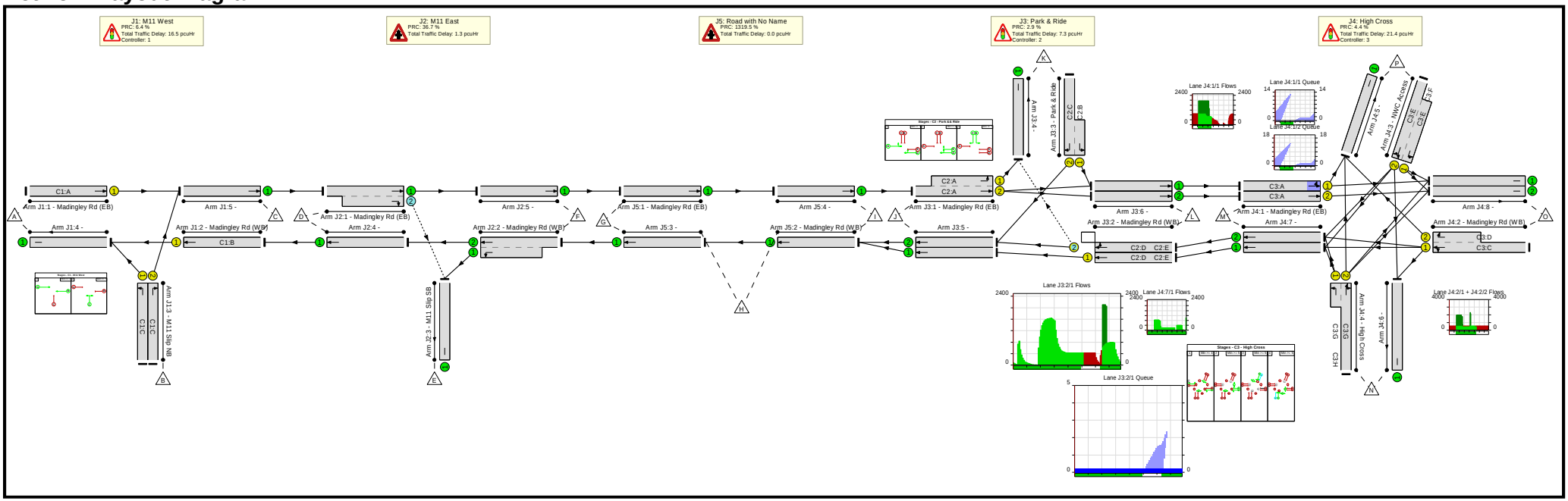

**C4 - JJ Thompson**

## Stage Sequence Diagram



Full Input Data And Results

## Network Layout Diagram



Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/1 | Ahead | U | N/A | N/A | - | | - | - | - | 565 | Inf | Inf | 0.0% |
| 5/2 | Ahead | U | N/A | N/A | - | | - | - | - | 18 | Inf | Inf | 0.0% |
| 6/1 | Ahead | U | N/A | N/A | - | | - | - | - | 593 | Inf | Inf | 0.0% |
| 6/2 | Ahead | U | N/A | N/A | - | | - | - | - | 587 | Inf | Inf | 0.0% |
| **J4: High Cross** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **86.2%** |
| 1/1 | Madingley Rd (EB) Left Ahead | U | N/A | N/A | C3:A | | 1 | 31 | - | 562 | 1957 | 666 | 84.4% |
| 1/2 | Madingley Rd (EB) Ahead | U | N/A | N/A | C3:A | | 1 | 31 | - | 618 | 2105 | 717 | 86.2% |
| 2/1+2/2 | Madingley Rd (WB) Right Left Ahead | U | N/A | N/A | C3:C C3:D | | 1 | 49:12 | - | 534 | 1945:1828 | 970+83 | 50.7 : 50.7% |
| 3/2+3/1 | NWC Access Ahead Right Left | U | N/A | N/A | C3:E | C3:F | 1 | 15 | 0 | 414 | 1913:1687 | 326+170 | 83.5 : 83.5% |
| 4/2+4/1 | High Cross Ahead Left Right | U | N/A | N/A | C3:G | C3:H | 1 | 10 | 0 | 75 | 2099:2033 | 199+183 | 19.6 : 19.6% |
| 5/1 | | U | N/A | N/A | - | | - | - | - | 112 | Inf | Inf | 0.0% |
| 6/1 | | U | N/A | N/A | - | | - | - | - | 224 | Inf | Inf | 0.0% |
| 7/1 | Ahead | U | N/A | N/A | - | | - | - | - | 288 | Inf | Inf | 0.0% |
| 7/2 | Ahead | U | N/A | N/A | - | | - | - | - | 288 | Inf | Inf | 0.0% |
| 8/1 | | U | N/A | N/A | - | | - | - | - | 595 | Inf | Inf | 0.0% |
| 8/2 | | U | N/A | N/A | - | | - | - | - | 696 | Inf | Inf | 0.0% |
| **J5: Road with No Name** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **6.3%** |
| 1/1 | Madingley Rd (EB) Ahead | U | N/A | N/A | - | | - | - | - | 145 | Inf | Inf | 0.0% |
| 2/1 | Madingley Rd (WB) Ahead | U | N/A | N/A | - | | - | - | - | 123 | 1940 | 1940 | 6.3% |
| 3/1 | Ahead | U | N/A | N/A | - | | - | - | - | 123 | Inf | Inf | 0.0% |
| 4/1 | Ahead | U | N/A | N/A | - | | - | - | - | 145 | Inf | Inf | 0.0% |

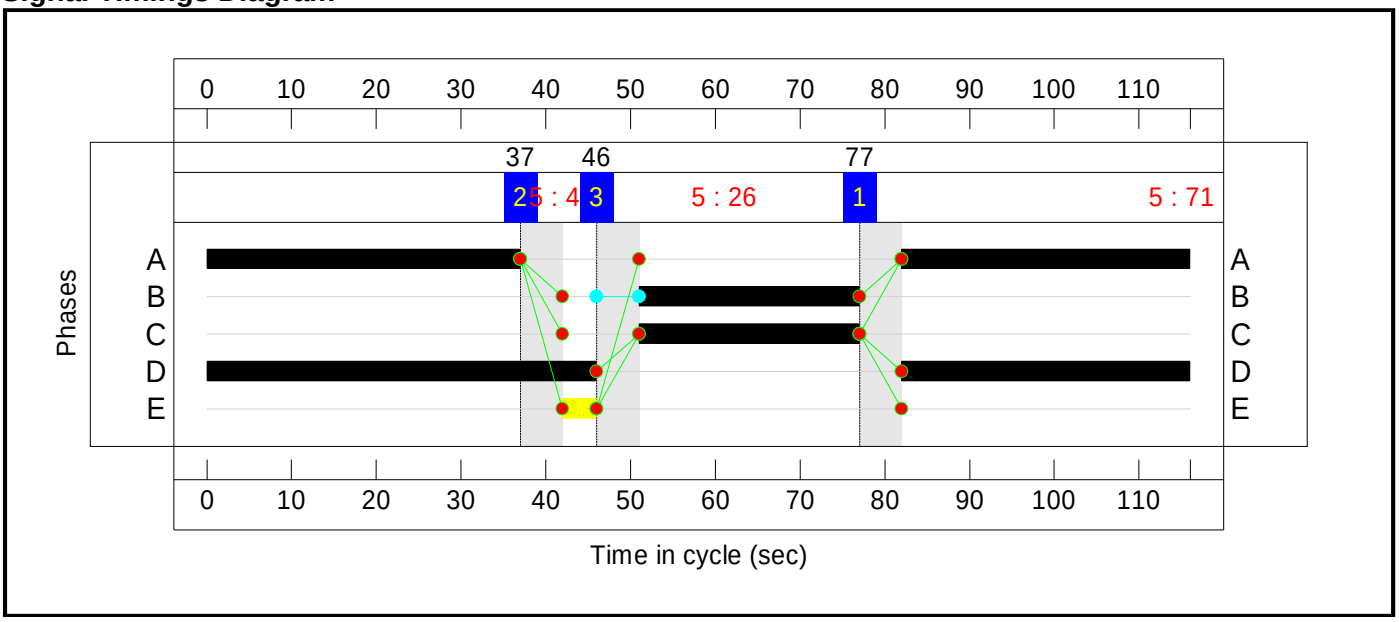
Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 562 | 562 | - | - | - | 2.6 | 2.6 | - | 5.2 | 33.4 | 13.0 | 2.6 | 15.6 |
| 1/2 | 618 | 618 | - | - | - | 2.9 | 3.0 | - | 5.9 | 34.2 | 14.7 | 3.0 | 17.7 |
| 2/1+2/2 | 534 | 534 | - | - | - | 2.3 | 0.5 | - | 2.8 | 19.0 | 8.2 | 0.5 | 8.7 |
| 3/2+3/1 | 414 | 414 | - | - | - | 4.2 | 2.4 | - | 6.6 | 57.7 | 6.8 | 2.4 | 9.2 |
| 4/2+4/1 | 75 | 75 | - | - | - | 0.8 | 0.1 | - | 0.9 | 43.2 | 0.9 | 0.1 | 1.0 |
| 5/1 | 112 | 112 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 224 | 224 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 288 | 288 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 288 | 288 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 595 | 595 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 696 | 696 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J5: Road with No Name** | **-** | **-** | **0** | **0** | **0** | **0.0** | **0.0** | **0.0** | **0.0** | **-** | **-** | **-** | **-** |
| 1/1 | 145 | 145 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/1 | 123 | 123 | - | - | - | 0.0 | 0.0 | - | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 123 | 123 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/1 | 145 | 145 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | |
|---|---|---|---|---|---|
| C1 - M11 West | PRC for Signalled Lanes (%): | 6.4 | Total Delay for Signalled Lanes (pcuHr): | 16.52 | Cycle Time (s): 94 |
| C2 - Park && Ride | PRC for Signalled Lanes (%): | 2.9 | Total Delay for Signalled Lanes (pcuHr): | 7.32 | Cycle Time (s): 94 |
| C3 - High Cross | PRC for Signalled Lanes (%): | 4.4 | Total Delay for Signalled Lanes (pcuHr): | 21.44 | Cycle Time (s): 94 |
| C4 - JJ Thompson | PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): 94 |
| | PRC Over All Lanes (%): | 2.9 | Total Delay Over All Lanes(pcuHr): | 46.66 | |

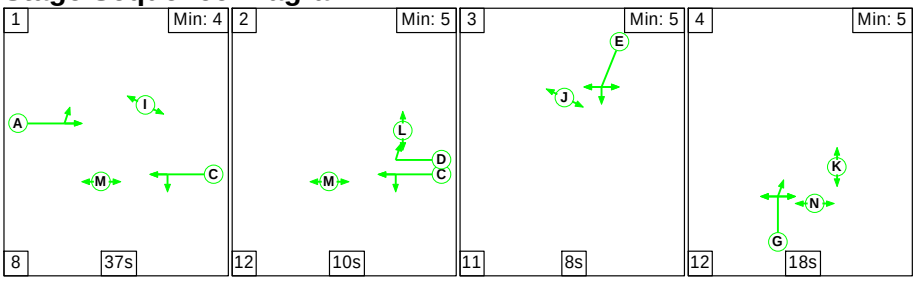
Full Input Data And Results

## Signal Timings Diagram




### C3 - High Cross

## Stage Sequence Diagram

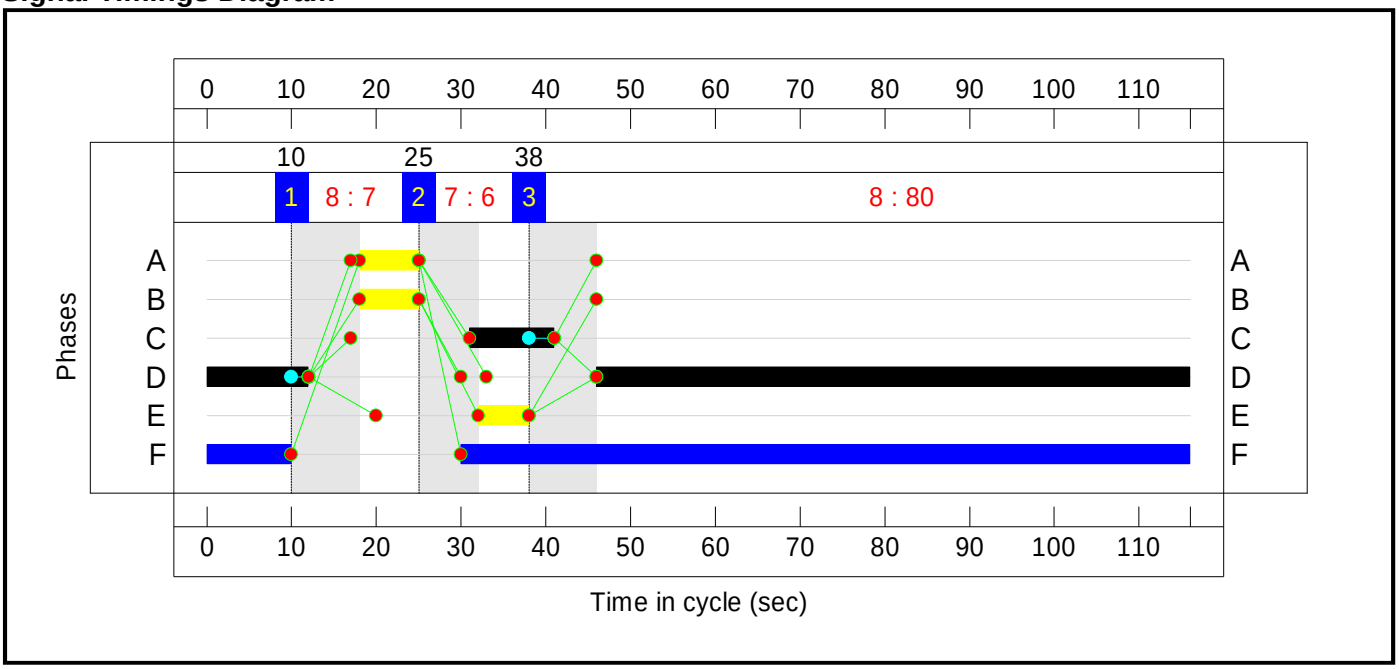



## Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Duration | 37 | 10 | 8 | 18 |
| Change Point | 97 | 26 | 48 | 67 |

Full Input Data And Results

## Signal Timings Diagram



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **90.3%** |
| **J1: M11 West** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **75.2%** |
| 1/1 | Madingley Rd (EB) Ahead | U | N/A | N/A | C1:A | | 1 | 59 | - | 597 | 2055 | 1063 | 56.2% |
| 2/1 | Madingley Rd (WB) Ahead | U | N/A | N/A | C1:B | | 1 | 59 | - | 653 | 1915 | 991 | 65.9% |
| 3/1 | M11 Slip NB Left | U | N/A | N/A | C1:C | | 1 | 47 | - | 554 | 1781 | 737 | 75.2% |
| 3/2 | M11 Slip NB Right | U | N/A | N/A | C1:C | | 1 | 47 | - | 321 | 1741 | 720 | 44.6% |
| 4/1 | | U | N/A | N/A | - | | - | - | - | 1207 | Inf | Inf | 0.0% |
| 5/1 | Ahead | U | N/A | N/A | - | | - | - | - | 918 | Inf | Inf | 0.0% |
| **J2: M11 East** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **84.3%** |
| 1/1+1/2 | Madingley Rd (EB) Right Ahead | U+O | N/A | N/A | - | | - | - | - | 921 | 2000: Inf | 707+386 | 84.3 : 84.3% |
| 2/2+2/1 | Madingley Rd (WB) Left Ahead | U | N/A | N/A | - | | - | - | - | 1327 | 1800:1800 | 888+912 | 73.7 : 73.7% |
| 3/1 | M11 Slip SB | U | N/A | N/A | - | | - | - | - | 997 | 1800 | 1800 | 55.4% |
| 4/1 | Ahead | U | N/A | N/A | - | | - | - | - | 655 | Inf | Inf | 0.0% |
| 5/1 | Ahead | U | N/A | N/A | - | | - | - | - | 596 | Inf | Inf | 0.0% |
| **J3: Park && Ride** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **65.7%** |
| 1/2+1/1 | Madingley Rd (EB) Left Ahead | U | N/A | N/A | C2:A | | 1 | 71 | - | 625 | 1915:1741 | 1180+31 | 51.6 : 51.6% |
| 2/1 | Madingley Rd (WB) Ahead | U | N/A | N/A | C2:D | C2:E | 1 | 80 | 4 | 924 | 2105 | 1470 | 62.9% |
| 2/2 | Madingley Rd (WB) Right Ahead | O | N/A | N/A | C2:D | C2:E | 1 | 80 | 4 | 277 | 1963 | 1371 | 20.2% |
| 3/2+3/1 | Park & Ride Right Left | U | N/A | N/A | C2:C C2:B | | 1 | 26 | - | 282 | 1781:1741 | 404+26 | 65.7 : 65.7% |
| 4/1 | | U | N/A | N/A | - | | - | - | - | 21 | 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** | **-** | **-** | **330** | **0** | **0** | **39.7** | **22.7** | **0.0** | **62.4** | **-** | **-** | **-** | **-** |
| **J1: M11 West** | **-** | **-** | **0** | **0** | **0** | **13.5** | **3.5** | **0.0** | **17.0** | **-** | **-** | **-** | **-** |
| 1/1 | 597 | 597 | - | - | - | 3.2 | 0.6 | - | 3.8 | 22.9 | 12.9 | 0.6 | 13.6 |
| 2/1 | 653 | 653 | - | - | - | 3.7 | 1.0 | - | 4.7 | 25.8 | 15.2 | 1.0 | 16.2 |
| 3/1 | 554 | 554 | - | - | - | 4.5 | 1.5 | - | 5.9 | 38.6 | 15.1 | 1.5 | 16.6 |
| 3/2 | 321 | 321 | - | - | - | 2.2 | 0.4 | - | 2.6 | 28.9 | 7.4 | 0.4 | 7.8 |
| 4/1 | 1207 | 1207 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 918 | 918 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: M11 East** | **-** | **-** | **325** | **0** | **0** | **0.6** | **4.6** | **0.0** | **5.3** | **-** | **-** | **-** | **-** |
| 1/1+1/2 | 921 | 921 | 325 | 0 | 0 | 0.6 | 2.6 | - | 3.2 | 12.7 | 6.7 | 2.6 | 9.3 |
| 2/2+2/1 | 1327 | 1327 | - | - | - | 0.0 | 1.4 | - | 1.4 | 3.8 | 0.0 | 1.4 | 1.4 |
| 3/1 | 997 | 997 | - | - | - | 0.0 | 0.6 | - | 0.6 | 2.2 | 0.0 | 0.6 | 0.6 |
| 4/1 | 655 | 655 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 596 | 596 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J3: Park && Ride** | **-** | **-** | **5** | **0** | **0** | **7.1** | **2.4** | **0.0** | **9.6** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 625 | 625 | - | - | - | 1.8 | 0.5 | - | 2.3 | 13.5 | 7.8 | 0.5 | 8.4 |
| 2/1 | 924 | 924 | - | - | - | 1.6 | 0.8 | - | 2.4 | 9.4 | 12.0 | 0.8 | 12.8 |
| 2/2 | 277 | 277 | 5 | 0 | 0 | 0.6 | 0.1 | 0.0 | 0.7 | 9.6 | 3.8 | 0.1 | 4.0 |
| 3/2+3/1 | 282 | 282 | - | - | - | 3.1 | 0.9 | - | 4.1 | 52.0 | 7.8 | 0.9 | 8.8 |
| 4/1 | 21 | 21 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 537 | 537 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 322 | 322 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 304 | 304 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J4: High Cross** | **-** | **-** | **0** | **0** | **0** | **18.4** | **12.1** | **0.0** | **30.5** | **-** | **-** | **-** | **-** |

# Appendix 14.3 - Site Access Junction Capacity Assessments

# Junctions 9

## PICADY 9 - Priority Intersection Module



**Filename:** JJ Thomson Ave - Madingley Rd PT 1 2021 DS.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\JJ Thomson Ave - Madingley Rd\160422
**Report generation date:** 22/04/2016 15:32:07



## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 DS | | | | | | | |
| Stream B-C | 0.0 | 7.25 | 0.03 | A | 0.3 | 14.03 | 0.21 | B |
| Stream B-A | 0.2 | 9.31 | 0.13 | A | 4.6 | 60.40 | 0.85 | F |
| Stream C-A | | | | | | | | |
| Stream C-B | 0.1 | 7.92 | 0.06 | A | 0.0 | 0.00 | 0.00 | A |
| Stream A-B | | | | | | | | |
| Stream A-C | | | | | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 22/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | 31500 |
| Enumerator | PBA"pcullen |
| Description | |

## Units

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

# Junctions 9

## PICADY 9 - Priority Intersection Module



**Filename:** JJ Thomson Ave - Madingley Rd PT 1 2021 DS - Closure High Cross Right Turn.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\JJ Thomson Ave - Madingley Rd\160422
**Report generation date:** 04/05/2016 09:59:55



## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 DS | | | | | | | |
| Stream B-C | 0.0 | 7.32 | 0.03 | A | 0.3 | 14.33 | 0.21 | B |
| Stream B-A | 0.2 | 12.18 | 0.16 | B | 5.9 | 76.50 | 0.89 | F |
| Stream C-A | | | | | | | | |
| Stream C-B | 1.6 | 19.75 | 0.62 | C | 0.1 | 9.98 | 0.12 | A |
| Stream A-B | | | | | | | | |
| Stream A-C | | | | | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 22/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | 31500 |
| Enumerator | PBA"pcullen |
| Description | |

## Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|---|---|---|---|---|---|---|
| 5.75 | | | | 0.85 | 36.00 | 20.00 |

## Demand Set Summary

| Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|
| 2021 DS | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| 2021 DS | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

# 2021 DS, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 5.45 | A |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | untitled | Madingley Rd (E) | Major |
| B | untitled | JJ Thomson Ave | Minor |
| C | untitled | Madingley Rd (W) | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width for right turn (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 8.00 | ✓ | 6.00 | ✓ | 3.20 | 95.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Lane Width (Left) (m) | Lane Width (Right) (m) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|---|
| B | Two lanes | 3.70 | 2.95 | 122 | 59 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 617.205 | 0.091 | 0.229 | 0.144 | 0.327 |
| 1 | B-C | 707.409 | 0.099 | 0.250 | - | - |
| 1 | C-B | 697.433 | 0.247 | 0.247 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

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

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

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2021 DS | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 788.00 | 100.000 |
| B | | ONE HOUR | ✓ | 67.00 | 100.000 |
| C | | ONE HOUR | ✓ | 274.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 235.000 | 553.000 |
| | B | 53.000 | 0.000 | 14.000 |
| | C | 0.000 | 274.000 | 0.000 |

### Proportions

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.30 | 0.70 |
| | B | 0.79 | 0.00 | 0.21 |
| | C | 0.00 | 1.00 | 0.00 |

# Vehicle Mix

### Heavy Vehicle proportion

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

### Average PCU Per Veh

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| B-C | 0.03 | 7.32 | 0.0 | A | 12.85 | 19.27 |
| B-A | 0.16 | 12.18 | 0.2 | B | 48.63 | 72.95 |
| C-A | | | | | 0.00 | 0.00 |
| C-B | 0.62 | 19.75 | 1.6 | C | 251.43 | 377.14 |
| A-B | | | | | 215.64 | 323.46 |
| A-C | | | | | 507.44 | 761.16 |

## Main Results for each time segment

### Main results: (07:45-08:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 10.54 | 10.54 | 2.63 | 0.00 | 572.39 | 0.018 | 10.47 | 0.0 | 0.0 | 6.406 | A |
| B-A | 39.90 | 39.90 | 9.98 | 0.00 | 438.53 | 0.091 | 39.51 | 0.0 | 0.1 | 9.011 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 206.28 | 206.28 | 51.57 | 0.00 | 551.07 | 0.374 | 203.93 | 0.0 | 0.6 | 10.303 | B |
| A-B | 176.92 | 176.92 | 44.23 | 0.00 | | | 176.92 | | | | |
| A-C | 416.33 | 416.33 | 104.08 | 0.00 | | | 416.33 | | | | |

### Main results: (08:00-08:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 12.59 | 12.59 | 3.15 | 0.00 | 545.34 | 0.023 | 12.57 | 0.0 | 0.0 | 6.756 | A |
| B-A | 47.65 | 47.65 | 11.91 | 0.00 | 403.09 | 0.118 | 47.51 | 0.1 | 0.1 | 10.124 | B |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 246.32 | 246.32 | 61.58 | 0.00 | 522.66 | 0.471 | 245.19 | 0.6 | 0.9 | 12.919 | B |
| A-B | 211.26 | 211.26 | 52.82 | 0.00 | | | 211.26 | | | | |
| A-C | 497.14 | 497.14 | 124.28 | 0.00 | | | 497.14 | | | | |

## Main results: (08:15-08:30)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 15.41 | 15.41 | 3.85 | 0.00 | 507.46 | 0.030 | 15.38 | 0.0 | 0.0 | 7.315 | A |
| B-A | 58.35 | 58.35 | 14.59 | 0.00 | 354.77 | 0.164 | 58.11 | 0.1 | 0.2 | 12.125 | B |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 301.68 | 301.68 | 75.42 | 0.00 | 483.39 | 0.624 | 298.86 | 0.9 | 1.6 | 19.211 | C |
| A-B | 258.74 | 258.74 | 64.68 | 0.00 | | | 258.74 | | | | |
| A-C | 608.86 | 608.86 | 152.22 | 0.00 | | | 608.86 | | | | |

## Main results: (08:30-08:45)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 15.41 | 15.41 | 3.85 | 0.00 | 507.32 | 0.030 | 15.41 | 0.0 | 0.0 | 7.317 | A |
| B-A | 58.35 | 58.35 | 14.59 | 0.00 | 353.85 | 0.165 | 58.35 | 0.2 | 0.2 | 12.182 | B |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 301.68 | 301.68 | 75.42 | 0.00 | 483.39 | 0.624 | 301.52 | 1.6 | 1.6 | 19.745 | C |
| A-B | 258.74 | 258.74 | 64.68 | 0.00 | | | 258.74 | | | | |
| A-C | 608.86 | 608.86 | 152.22 | 0.00 | | | 608.86 | | | | |

## Main results: (08:45-09:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 12.59 | 12.59 | 3.15 | 0.00 | 545.15 | 0.023 | 12.62 | 0.0 | 0.0 | 6.762 | A |
| B-A | 47.65 | 47.65 | 11.91 | 0.00 | 401.74 | 0.119 | 47.88 | 0.2 | 0.1 | 10.181 | B |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 246.32 | 246.32 | 61.58 | 0.00 | 522.66 | 0.471 | 249.12 | 1.6 | 0.9 | 13.292 | B |
| A-B | 211.26 | 211.26 | 52.82 | 0.00 | | | 211.26 | | | | |
| A-C | 497.14 | 497.14 | 124.28 | 0.00 | | | 497.14 | | | | |

## Main results: (09:00-09:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 10.54 | 10.54 | 2.63 | 0.00 | 572.17 | 0.018 | 10.56 | 0.0 | 0.0 | 6.409 | A |
| B-A | 39.90 | 39.90 | 9.98 | 0.00 | 437.34 | 0.091 | 40.04 | 0.1 | 0.1 | 9.064 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 206.28 | 206.28 | 51.57 | 0.00 | 551.07 | 0.374 | 207.50 | 0.9 | 0.6 | 10.514 | B |
| A-B | 176.92 | 176.92 | 44.23 | 0.00 | | | 176.92 | | | | |
| A-C | 416.33 | 416.33 | 104.08 | 0.00 | | | 416.33 | | | | |

# 2021 DS, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 15.30 | C |

## Junction Network Options

*[same as above]*

# Arms

## Arms

*[same as above]*

## Major Arm Geometry

*[same as above]*

## Minor Arm Geometry

*[same as above]*

## Slope / Intercept / Capacity

*[same as above]*

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2021 DS | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 1065.00 | 100.000 |
| B | | ONE HOUR | ✓ | 332.00 | 100.000 |
| C | | ONE HOUR | ✓ | 43.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 18.000 | 1047.000 |
| | B | 271.000 | 0.000 | 61.000 |
| | C | 0.000 | 43.000 | 0.000 |

### Proportions

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.02 | 0.98 |
| | B | 0.82 | 0.00 | 0.18 |
| | C | 0.00 | 1.00 | 0.00 |

# Vehicle Mix

### Heavy Vehicle proportion

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

### Average PCU Per Veh

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| B-C | 0.21 | 14.33 | 0.3 | B | 55.97 | 83.96 |
| B-A | 0.89 | 76.50 | 5.9 | F | 248.67 | 373.01 |
| C-A | | | | | 0.00 | 0.00 |
| C-B | 0.12 | 9.98 | 0.1 | A | 39.46 | 59.19 |
| A-B | | | | | 16.52 | 24.78 |
| A-C | | | | | 960.75 | 1441.12 |

# Main Results for each time segment

## Main results: (16:45-17:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 45.92 | 45.92 | 11.48 | 0.00 | 447.77 | 0.103 | 45.47 | 0.0 | 0.1 | 8.939 | A |
| B-A | 204.02 | 204.02 | 51.01 | 0.00 | 425.07 | 0.480 | 200.45 | 0.0 | 0.9 | 15.792 | C |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 32.37 | 32.37 | 8.09 | 0.00 | 499.62 | 0.065 | 32.10 | 0.0 | 0.1 | 7.697 | A |
| A-B | 13.55 | 13.55 | 3.39 | 0.00 | | | 13.55 | | | | |
| A-C | 788.24 | 788.24 | 197.06 | 0.00 | | | 788.24 | | | | |

## Main results: (17:00-17:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 54.84 | 54.84 | 13.71 | 0.00 | 395.31 | 0.139 | 54.65 | 0.1 | 0.2 | 10.562 | B |
| B-A | 243.62 | 243.62 | 60.91 | 0.00 | 387.69 | 0.628 | 240.86 | 0.9 | 1.6 | 24.055 | C |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 38.66 | 38.66 | 9.66 | 0.00 | 461.23 | 0.084 | 38.57 | 0.1 | 0.1 | 8.515 | A |
| A-B | 16.18 | 16.18 | 4.05 | 0.00 | | | 16.18 | | | | |
| A-C | 941.23 | 941.23 | 235.31 | 0.00 | | | 941.23 | | | | |

## Main results: (17:15-17:30)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 67.16 | 67.16 | 16.79 | 0.00 | 322.47 | 0.208 | 66.77 | 0.2 | 0.3 | 14.035 | B |
| B-A | 298.38 | 298.38 | 74.59 | 0.00 | 336.10 | 0.888 | 284.84 | 1.6 | 5.0 | 58.941 | F |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 47.34 | 47.34 | 11.84 | 0.00 | 408.14 | 0.116 | 47.19 | 0.1 | 0.1 | 9.969 | A |
| A-B | 19.82 | 19.82 | 4.95 | 0.00 | | | 19.82 | | | | |
| A-C | 1152.77 | 1152.77 | 288.19 | 0.00 | | | 1152.77 | | | | |

## Main results: (17:30-17:45)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 67.16 | 67.16 | 16.79 | 0.00 | 318.26 | 0.211 | 67.14 | 0.3 | 0.3 | 14.333 | B |
| B-A | 298.38 | 298.38 | 74.59 | 0.00 | 336.05 | 0.888 | 294.82 | 5.0 | 5.9 | 76.499 | F |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 47.34 | 47.34 | 11.84 | 0.00 | 408.14 | 0.116 | 47.34 | 0.1 | 0.1 | 9.977 | A |
| A-B | 19.82 | 19.82 | 4.95 | 0.00 | | | 19.82 | | | | |
| A-C | 1152.77 | 1152.77 | 288.19 | 0.00 | | | 1152.77 | | | | |

## Main results: (17:45-18:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 54.84 | 54.84 | 13.71 | 0.00 | 389.27 | 0.141 | 55.23 | 0.3 | 0.2 | 10.791 | B |
| B-A | 243.62 | 243.62 | 60.91 | 0.00 | 387.61 | 0.629 | 259.78 | 5.9 | 1.8 | 31.063 | D |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 38.66 | 38.66 | 9.66 | 0.00 | 461.23 | 0.084 | 38.81 | 0.1 | 0.1 | 8.525 | A |
| A-B | 16.18 | 16.18 | 4.05 | 0.00 | | | 16.18 | | | | |
| A-C | 941.23 | 941.23 | 235.31 | 0.00 | | | 941.23 | | | | |

## Main results: (18:00-18:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 45.92 | 45.92 | 11.48 | 0.00 | 445.57 | 0.103 | 46.12 | 0.2 | 0.1 | 9.018 | A |
| B-A | 204.02 | 204.02 | 51.01 | 0.00 | 424.95 | 0.480 | 207.48 | 1.8 | 1.0 | 16.803 | C |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 32.37 | 32.37 | 8.09 | 0.00 | 499.62 | 0.065 | 32.46 | 0.1 | 0.1 | 7.708 | A |
| A-B | 13.55 | 13.55 | 3.39 | 0.00 | | | 13.55 | | | | |
| A-C | 788.24 | 788.24 | 197.06 | 0.00 | | | 788.24 | | | | |

# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []


For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk



**Filename:** JJ Thomson Ave - Madingley Rd Pt 2.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\JJ Thomson Ave - Madingley Rd\162204
**Report generation date:** 22/04/2016 14:50:48



## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 | | | | | | | |
| Stream B-AC | 0.2 | 9.56 | 0.13 | A | 1.3 | 16.02 | 0.57 | C |
| Stream C-A | | | | | | | | |
| Stream C-B | 0.0 | 0.00 | 0.00 | A | 0.0 | 0.00 | 0.00 | A |
| Stream A-B | | | | | | | | |
| Stream A-C | | | | | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 22/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | PBA"pcullen |
| Description | |

## Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|---|---|---|---|---|---|---|
| 5.75 | | ✓ | | 0.85 | 36.00 | 20.00 |

## Demand Set Summary

| Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|
| 2021 | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| 2021 | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

# 2021, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | One-way from C to A | 0.48 | A |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | untitled | Madingley Rd (E) | Major |
| B | untitled | JJ Thomson Ave | Minor |
| C | untitled | Madingley Rd (W) | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Has right turn bay | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|
| C | 4.00 | | | 0.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Lane width (m) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|
| B | One lane | 5.00 | 105 | 0 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 613.240 | 0.102 | 0.258 | 0.162 | 0.368 |
| 1 | B-C | 748.870 | 0.105 | 0.265 | - | - |
| 1 | C-B | 573.963 | 0.203 | 0.203 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

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

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

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2021 | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 0.00 | 100.000 |
| B | | ONE HOUR | ✓ | 53.00 | 100.000 |
| C | | ONE HOUR | ✓ | 999.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 0.000 | 0.000 |
| | B | 53.000 | 0.000 | 0.000 |
| | C | 999.000 | 0.000 | 0.000 |

### Proportions

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.33 | 0.33 | 0.33 |
| | B | 1.00 | 0.00 | 0.00 |
| | C | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

### Heavy Vehicle proportion

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

### Average PCU Per Veh

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 0.13 | 9.56 | 0.2 | A | 48.63 | 72.95 | 10.59 | 8.71 | 0.12 | 10.59 | 8.71 |
| C-A | | | | | 916.70 | 1375.05 | | | | | |
| C-B | 0.00 | 0.00 | 0.0 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| A-B | | | | | 0.00 | 0.00 | | | | | |
| A-C | | | | | 0.00 | 0.00 | | | | | |

## Main Results for each time segment

### Main results: (07:45-08:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 39.90 | 39.90 | 9.98 | 0.00 | 491.28 | 0.081 | 39.55 | 0.0 | 0.1 | 7.964 | A |
| C-A | 752.10 | 752.10 | 188.02 | 0.00 | | | 752.10 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

### Main results: (08:00-08:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 47.65 | 47.65 | 11.91 | 0.00 | 467.61 | 0.102 | 47.55 | 0.1 | 0.1 | 8.568 | A |
| C-A | 898.08 | 898.08 | 224.52 | 0.00 | | | 898.08 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

### Main results: (08:15-08:30)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 58.35 | 58.35 | 14.59 | 0.00 | 434.88 | 0.134 | 58.19 | 0.1 | 0.2 | 9.553 | A |
| C-A | 1099.92 | 1099.92 | 274.98 | 0.00 | | | 1099.92 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

### Main results: (08:30-08:45)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 58.35 | 58.35 | 14.59 | 0.00 | 434.88 | 0.134 | 58.35 | 0.2 | 0.2 | 9.560 | A |
| C-A | 1099.92 | 1099.92 | 274.98 | 0.00 | | | 1099.92 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

### Main results: (08:45-09:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 47.65 | 47.65 | 11.91 | 0.00 | 467.61 | 0.102 | 47.80 | 0.2 | 0.1 | 8.578 | A |
| C-A | 898.08 | 898.08 | 224.52 | 0.00 | | | 898.08 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

### Main results: (09:00-09:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 39.90 | 39.90 | 9.98 | 0.00 | 491.28 | 0.081 | 40.00 | 0.1 | 0.1 | 7.980 | A |
| C-A | 752.10 | 752.10 | 188.02 | 0.00 | | | 752.10 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 1.27 | 0.08 | 7.964 | A | A |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (08:00-08:15)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 1.65 | 0.11 | 8.568 | A | A |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (08:15-08:30)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 2.23 | 0.15 | 9.553 | A | A |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (08:30-08:45)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 2.31 | 0.15 | 9.560 | A | A |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (08:45-09:00)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 1.77 | 0.12 | 8.578 | A | A |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (09:00-09:15)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 1.37 | 0.09 | 7.980 | A | A |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

# 2021, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | One-way from C to A | 5.58 | A |

## Junction Network Options

*[same as above]*

# Arms

## Arms

*[same as above]*

## Major Arm Geometry

*[same as above]*

## Minor Arm Geometry

*[same as above]*

## Slope / Intercept / Capacity

*[same as above]*

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2021 | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 0.00 | 100.000 |
| B | | ONE HOUR | ✓ | 271.00 | 100.000 |
| C | | ONE HOUR | ✓ | 507.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 0.000 | 0.000 |
| | B | 271.000 | 0.000 | 0.000 |
| | C | 507.000 | 0.000 | 0.000 |

### Proportions

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.33 | 0.33 | 0.33 |
| | B | 1.00 | 0.00 | 0.00 |
| | C | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

### Heavy Vehicle proportion

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

### Average PCU Per Veh

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 0.57 | 16.02 | 1.3 | C | 248.67 | 373.01 | 79.86 | 12.85 | 0.89 | 79.88 | 12.85 |
| C-A | | | | | 465.23 | 697.85 | | | | | |
| C-B | 0.00 | 0.00 | 0.0 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| A-B | | | | | 0.00 | 0.00 | | | | | |
| A-C | | | | | 0.00 | 0.00 | | | | | |

# Main Results for each time segment

## Main results: (16:45-17:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 204.02 | 204.02 | 51.01 | 0.00 | 551.35 | 0.370 | 201.72 | 0.0 | 0.6 | 10.233 | B |
| C-A | 381.70 | 381.70 | 95.42 | 0.00 | | | 381.70 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

## Main results: (17:00-17:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 243.62 | 243.62 | 60.91 | 0.00 | 539.33 | 0.452 | 242.71 | 0.6 | 0.8 | 12.097 | B |
| C-A | 455.78 | 455.78 | 113.95 | 0.00 | | | 455.78 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

## Main results: (17:15-17:30)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 298.38 | 298.38 | 74.59 | 0.00 | 522.72 | 0.571 | 296.48 | 0.8 | 1.3 | 15.773 | C |
| C-A | 558.22 | 558.22 | 139.55 | 0.00 | | | 558.22 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

## Main results: (17:30-17:45)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 298.38 | 298.38 | 74.59 | 0.00 | 522.72 | 0.571 | 298.28 | 1.3 | 1.3 | 16.021 | C |
| C-A | 558.22 | 558.22 | 139.55 | 0.00 | | | 558.22 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

## Main results: (17:45-18:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 243.62 | 243.62 | 60.91 | 0.00 | 539.33 | 0.452 | 245.47 | 1.3 | 0.8 | 12.325 | B |
| C-A | 455.78 | 455.78 | 113.95 | 0.00 | | | 455.78 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

### Main results: (18:00-18:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 204.02 | 204.02 | 51.01 | 0.00 | 551.35 | 0.370 | 205.01 | 0.8 | 0.6 | 10.425 | B |
| C-A | 381.70 | 381.70 | 95.42 | 0.00 | | | 381.70 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 573.96 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| A-C | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 8.19 | 0.55 | 10.233 | B | B |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

### Queueing Delay results: (17:00-17:15)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 11.58 | 0.77 | 12.097 | B | B |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

### Queueing Delay results: (17:15-17:30)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 18.03 | 1.20 | 15.773 | C | B |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

### Queueing Delay results: (17:30-17:45)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 19.42 | 1.29 | 16.021 | C | B |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (17:45-18:00)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 13.31 | 0.89 | 12.325 | B | B |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Queueing Delay results: (18:00-18:15)

| Stream | Queueing total delay (PCU-min) | Queueing rate of delay (PCU-min/min) | Average delay per arriving vehicle (s) | Unsignalised level of service | Signalised level of service |
|---|---|---|---|---|---|
| B-AC | 9.32 | 0.62 | 10.425 | B | B |
| C-A | | | | | |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | | | | | |
| A-C | | | | | |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|---|---|---|---|---|---|---|
| 5.75 | | | | 0.85 | 36.00 | 20.00 |

## Demand Set Summary

| Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|
| 2021 DS | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| 2021 DS | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

# 2021 DS, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 0.91 | A |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | untitled | Madingley Rd (E) | Major |
| B | untitled | JJ Thomson Ave | Minor |
| C | untitled | Madingley Rd (W) | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width for right turn (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 8.00 | ✓ | 6.00 | ✓ | 3.20 | 95.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Lane Width (Left) (m) | Lane Width (Right) (m) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|---|
| B | Two lanes | 3.70 | 2.95 | 122 | 59 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 617.205 | 0.091 | 0.229 | 0.144 | 0.327 |
| 1 | B-C | 707.409 | 0.099 | 0.250 | - | - |
| 1 | C-B | 697.433 | 0.247 | 0.247 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

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

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

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2021 DS | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 788.00 | 100.000 |
| B | | ONE HOUR | ✓ | 67.00 | 100.000 |
| C | | ONE HOUR | ✓ | 26.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 235.000 | 553.000 |
| | B | 53.000 | 0.000 | 14.000 |
| | C | 0.000 | 26.000 | 0.000 |

### Proportions

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.30 | 0.70 |
| | B | 0.79 | 0.00 | 0.21 |
| | C | 0.00 | 1.00 | 0.00 |

# Vehicle Mix

### Heavy Vehicle proportion

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

### Average PCU Per Veh

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| B-C | 0.03 | 7.25 | 0.0 | A | 12.85 | 19.27 |
| B-A | 0.13 | 9.31 | 0.2 | A | 48.63 | 72.95 |
| C-A | | | | | 0.00 | 0.00 |
| C-B | 0.06 | 7.92 | 0.1 | A | 23.86 | 35.79 |
| A-B | | | | | 215.64 | 323.46 |
| A-C | | | | | 507.44 | 761.16 |

## Main Results for each time segment

### Main results: (07:45-08:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 10.54 | 10.54 | 2.63 | 0.00 | 574.02 | 0.018 | 10.47 | 0.0 | 0.0 | 6.388 | A |
| B-A | 39.90 | 39.90 | 9.98 | 0.00 | 499.55 | 0.080 | 39.56 | 0.0 | 0.1 | 7.821 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 19.57 | 19.57 | 4.89 | 0.00 | 551.07 | 0.036 | 19.43 | 0.0 | 0.0 | 6.769 | A |
| A-B | 176.92 | 176.92 | 44.23 | 0.00 | | | 176.92 | | | | |
| A-C | 416.33 | 416.33 | 104.08 | 0.00 | | | 416.33 | | | | |

### Main results: (08:00-08:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 12.59 | 12.59 | 3.15 | 0.00 | 547.94 | 0.023 | 12.57 | 0.0 | 0.0 | 6.723 | A |
| B-A | 47.65 | 47.65 | 11.91 | 0.00 | 476.67 | 0.100 | 47.55 | 0.1 | 0.1 | 8.387 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 23.37 | 23.37 | 5.84 | 0.00 | 522.66 | 0.045 | 23.33 | 0.0 | 0.0 | 7.209 | A |
| A-B | 211.26 | 211.26 | 52.82 | 0.00 | | | 211.26 | | | | |
| A-C | 497.14 | 497.14 | 124.28 | 0.00 | | | 497.14 | | | | |

## Main results: (08:15-08:30)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 15.41 | 15.41 | 3.85 | 0.00 | 511.95 | 0.030 | 15.38 | 0.0 | 0.0 | 7.249 | A |
| B-A | 58.35 | 58.35 | 14.59 | 0.00 | 445.08 | 0.131 | 58.20 | 0.1 | 0.1 | 9.301 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 28.63 | 28.63 | 7.16 | 0.00 | 483.39 | 0.059 | 28.56 | 0.0 | 0.1 | 7.914 | A |
| A-B | 258.74 | 258.74 | 64.68 | 0.00 | | | 258.74 | | | | |
| A-C | 608.86 | 608.86 | 152.22 | 0.00 | | | 608.86 | | | | |

## Main results: (08:30-08:45)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 15.41 | 15.41 | 3.85 | 0.00 | 511.90 | 0.030 | 15.41 | 0.0 | 0.0 | 7.250 | A |
| B-A | 58.35 | 58.35 | 14.59 | 0.00 | 445.06 | 0.131 | 58.35 | 0.1 | 0.2 | 9.308 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 28.63 | 28.63 | 7.16 | 0.00 | 483.39 | 0.059 | 28.63 | 0.1 | 0.1 | 7.915 | A |
| A-B | 258.74 | 258.74 | 64.68 | 0.00 | | | 258.74 | | | | |
| A-C | 608.86 | 608.86 | 152.22 | 0.00 | | | 608.86 | | | | |

## Main results: (08:45-09:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 12.59 | 12.59 | 3.15 | 0.00 | 547.87 | 0.023 | 12.61 | 0.0 | 0.0 | 6.725 | A |
| B-A | 47.65 | 47.65 | 11.91 | 0.00 | 476.63 | 0.100 | 47.80 | 0.2 | 0.1 | 8.397 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 23.37 | 23.37 | 5.84 | 0.00 | 522.66 | 0.045 | 23.44 | 0.1 | 0.0 | 7.211 | A |
| A-B | 211.26 | 211.26 | 52.82 | 0.00 | | | 211.26 | | | | |
| A-C | 497.14 | 497.14 | 124.28 | 0.00 | | | 497.14 | | | | |

## Main results: (09:00-09:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 10.54 | 10.54 | 2.63 | 0.00 | 573.88 | 0.018 | 10.56 | 0.0 | 0.0 | 6.390 | A |
| B-A | 39.90 | 39.90 | 9.98 | 0.00 | 499.49 | 0.080 | 40.00 | 0.1 | 0.1 | 7.837 | A |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 19.57 | 19.57 | 4.89 | 0.00 | 551.07 | 0.036 | 19.61 | 0.0 | 0.0 | 6.773 | A |
| A-B | 176.92 | 176.92 | 44.23 | 0.00 | | | 176.92 | | | | |
| A-C | 416.33 | 416.33 | 104.08 | 0.00 | | | 416.33 | | | | |

# 2021 DS, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 12.33 | B |

## Junction Network Options

*[same as above]*

# Arms

## Arms

*[same as above]*

## Major Arm Geometry

*[same as above]*

## Minor Arm Geometry

*[same as above]*

## Slope / Intercept / Capacity

*[same as above]*

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2021 DS | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 1065.00 | 100.000 |
| B | | ONE HOUR | ✓ | 332.00 | 100.000 |
| C | | ONE HOUR | ✓ | 3.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 18.000 | 1047.000 |
| | B | 271.000 | 0.000 | 61.000 |
| | C | 0.000 | 3.000 | 0.000 |

### Proportions

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.02 | 0.98 |
| | B | 0.82 | 0.00 | 0.18 |
| | C | 0.00 | 1.00 | 0.00 |

# Vehicle Mix

### Heavy Vehicle proportion

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

### Average PCU Per Veh

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| B-C | 0.21 | 14.03 | 0.3 | B | 55.97 | 83.96 |
| B-A | 0.85 | 60.40 | 4.6 | F | 248.67 | 373.01 |
| C-A | | | | | 0.00 | 0.00 |
| C-B | 0.00 | 0.00 | 0.0 | A | 0.00 | 0.00 |
| A-B | | | | | 16.52 | 24.78 |
| A-C | | | | | 960.75 | 1441.12 |

# Main Results for each time segment

## Main results: (16:45-17:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 45.92 | 45.92 | 11.48 | 0.00 | 449.25 | 0.102 | 45.47 | 0.0 | 0.1 | 8.906 | A |
| B-A | 204.02 | 204.02 | 51.01 | 0.00 | 435.65 | 0.468 | 200.61 | 0.0 | 0.9 | 15.110 | C |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 499.62 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 13.55 | 13.55 | 3.39 | 0.00 | | | 13.55 | | | | |
| A-C | 788.24 | 788.24 | 197.06 | 0.00 | | | 788.24 | | | | |

## Main results: (17:00-17:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 54.84 | 54.84 | 13.71 | 0.00 | 397.74 | 0.138 | 54.66 | 0.1 | 0.2 | 10.487 | B |
| B-A | 243.62 | 243.62 | 60.91 | 0.00 | 400.41 | 0.608 | 241.17 | 0.9 | 1.5 | 22.255 | C |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 461.23 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 16.18 | 16.18 | 4.05 | 0.00 | | | 16.18 | | | | |
| A-C | 941.23 | 941.23 | 235.31 | 0.00 | | | 941.23 | | | | |

## Main results: (17:15-17:30)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 67.16 | 67.16 | 16.79 | 0.00 | 326.80 | 0.206 | 66.78 | 0.2 | 0.3 | 13.824 | B |
| B-A | 298.38 | 298.38 | 74.59 | 0.00 | 351.69 | 0.848 | 287.78 | 1.5 | 4.1 | 49.705 | E |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 408.14 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 19.82 | 19.82 | 4.95 | 0.00 | | | 19.82 | | | | |
| A-C | 1152.77 | 1152.77 | 288.19 | 0.00 | | | 1152.77 | | | | |

## Main results: (17:30-17:45)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 67.16 | 67.16 | 16.79 | 0.00 | 323.66 | 0.208 | 67.14 | 0.3 | 0.3 | 14.031 | B |
| B-A | 298.38 | 298.38 | 74.59 | 0.00 | 351.69 | 0.848 | 296.26 | 4.1 | 4.6 | 60.400 | F |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 408.14 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 19.82 | 19.82 | 4.95 | 0.00 | | | 19.82 | | | | |
| A-C | 1152.77 | 1152.77 | 288.19 | 0.00 | | | 1152.77 | | | | |

## Main results: (17:45-18:00)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 54.84 | 54.84 | 13.71 | 0.00 | 393.29 | 0.139 | 55.22 | 0.3 | 0.2 | 10.659 | B |
| B-A | 243.62 | 243.62 | 60.91 | 0.00 | 400.41 | 0.608 | 255.59 | 4.6 | 1.7 | 26.607 | D |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 461.23 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 16.18 | 16.18 | 4.05 | 0.00 | | | 16.18 | | | | |
| A-C | 941.23 | 941.23 | 235.31 | 0.00 | | | 941.23 | | | | |

## Main results: (18:00-18:15)

| Stream | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 45.92 | 45.92 | 11.48 | 0.00 | 447.32 | 0.103 | 46.12 | 0.2 | 0.1 | 8.978 | A |
| B-A | 204.02 | 204.02 | 51.01 | 0.00 | 435.65 | 0.468 | 207.00 | 1.7 | 0.9 | 15.939 | C |
| C-A | 0.00 | 0.00 | 0.00 | 0.00 | | | 0.00 | | | | |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 499.62 | 0.000 | 0.00 | 0.0 | 0.0 | 0.000 | A |
| A-B | 13.55 | 13.55 | 3.39 | 0.00 | | | 13.55 | | | | |
| A-C | 788.24 | 788.24 | 197.06 | 0.00 | | | 788.24 | | | | |

# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []


For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk



**Filename:** 2021 DS AM.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\Madingley Rd - Clerk Maxwell Rd\160421
**Report generation date:** 21/04/2016 08:54:36



## Summary of junction performance

| | AM | | | |
|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 DS | | | |
| Stream B-C | 0.1 | 10.12 | 0.07 | B |
| Stream B-A | 0.3 | 38.77 | 0.21 | E |
| Stream C-A | | | | |
| Stream C-B | 0.6 | 13.46 | 0.39 | B |
| Stream A-B | | | | |
| Stream A-C | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 18/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | PBA"pcullen |
| Description | |

## Units

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

## Analysis Options

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

## Analysis Set Details

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

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| **D1** | 2021 DS | AM | ONE HOUR | 07:45 | 09:15 | 15 |

# 2021 DS, AM

## Data Errors and Warnings

*No errors or warnings*

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 1.62 | A |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | Madingley Rd (E) | | Major |
| B | untitled | | Minor |
| C | untitled | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Has right turn bay | Width for right turn (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|
| C | 8.00 | | ✓ | 2.80 | 152.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate flare length | Flare length (PCU) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | 5.00 | 5.00 | 4.00 | 4.00 | 4.00 | | 1.00 | 41 | 32 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 475.971 | 0.079 | 0.200 | 0.126 | 0.286 |
| 1 | B-C | 618.557 | 0.087 | 0.219 | - | - |
| 1 | C-B | 705.216 | 0.249 | 0.249 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

*Streams may be combined, in which case capacity will be adjusted.*
*Values are shown for the first time segment only; they may differ for subsequent time segments.*

# Traffic Demand

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|
| A | | ✓ | 961.00 | 100.000 |
| B | | ✓ | 48.00 | 100.000 |
| C | | ✓ | 1012.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 167.000 | 794.000 |
| | B | 23.000 | 0.000 | 25.000 |
| | C | 854.000 | 158.000 | 0.000 |

# Vehicle Mix

### Heavy Vehicle proportion

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

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.07 | 10.12 | 0.1 | B |
| B-A | 0.21 | 38.77 | 0.3 | E |
| C-A | | | | |
| C-B | 0.39 | 13.46 | 0.6 | B |
| A-B | | | | |
| A-C | | | | |

## Main Results for each time segment

### Main results: (07:45-08:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 18.82 | 467.78 | 0.040 | 18.66 | 0.0 | 8.013 | A |
| B-A | 17.32 | 231.49 | 0.075 | 17.00 | 0.1 | 16.760 | C |
| C-A | 642.94 | | | 642.94 | | | |
| C-B | 118.95 | 524.73 | 0.227 | 117.79 | 0.3 | 8.822 | A |
| A-B | 125.73 | | | 125.73 | | | |
| A-C | 597.76 | | | 597.76 | | | |

### Main results: (08:00-08:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 22.47 | 435.53 | 0.052 | 22.43 | 0.1 | 8.713 | A |
| B-A | 20.68 | 183.88 | 0.112 | 20.50 | 0.1 | 22.010 | C |
| C-A | 767.73 | | | 767.73 | | | |
| C-B | 142.04 | 489.70 | 0.290 | 141.59 | 0.4 | 10.328 | B |
| A-B | 150.13 | | | 150.13 | | | |
| A-C | 713.79 | | | 713.79 | | | |

### Main results: (08:15-08:30)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 27.53 | 384.75 | 0.072 | 27.44 | 0.1 | 10.073 | B |
| B-A | 25.32 | 118.07 | 0.214 | 24.78 | 0.3 | 38.368 | E |
| C-A | 940.27 | | | 940.27 | | | |
| C-B | 173.96 | 441.26 | 0.394 | 173.03 | 0.6 | 13.368 | B |
| A-B | 183.87 | | | 183.87 | | | |
| A-C | 874.21 | | | 874.21 | | | |

## Main results: (08:30-08:45)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 27.53 | 383.17 | 0.072 | 27.52 | 0.1 | 10.121 | B |
| B-A | 25.32 | 118.08 | 0.214 | 25.30 | 0.3 | 38.771 | E |
| C-A | 940.27 | | | 940.27 | | | |
| C-B | 173.96 | 441.26 | 0.394 | 173.93 | 0.6 | 13.461 | B |
| A-B | 183.87 | | | 183.87 | | | |
| A-C | 874.21 | | | 874.21 | | | |

## Main results: (08:45-09:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 22.47 | 433.41 | 0.052 | 22.56 | 0.1 | 8.765 | A |
| B-A | 20.68 | 184.17 | 0.112 | 21.22 | 0.1 | 22.161 | C |
| C-A | 767.73 | | | 767.73 | | | |
| C-B | 142.04 | 489.70 | 0.290 | 142.95 | 0.4 | 10.408 | B |
| A-B | 150.13 | | | 150.13 | | | |
| A-C | 713.79 | | | 713.79 | | | |

## Main results: (09:00-09:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 18.82 | 466.41 | 0.040 | 18.87 | 0.0 | 8.044 | A |
| B-A | 17.32 | 231.57 | 0.075 | 17.51 | 0.1 | 16.832 | C |
| C-A | 642.94 | | | 642.94 | | | |
| C-B | 118.95 | 524.73 | 0.227 | 119.42 | 0.3 | 8.893 | A |
| A-B | 125.73 | | | 125.73 | | | |
| A-C | 597.76 | | | 597.76 | | | |

# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []


For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk



**Filename:** 2021 DS PM.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\Madingley Rd - Clerk Maxwell Rd\160421
**Report generation date:** 21/04/2016 08:55:53



## Summary of junction performance

| | PM | | | |
|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 DS | | | |
| Stream B-C | 19.4 | 343.35 | 1.18 | F |
| Stream B-A | 14.3 | 364.23 | 1.16 | F |
| Stream C-A | | | | |
| Stream C-B | 0.1 | 8.43 | 0.06 | A |
| Stream A-B | | | | |
| Stream A-C | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 18/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | PBA"pcullen |
| Description | |

## Units

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

## Analysis Options

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

## Analysis Set Details

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

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| **D1** | 2021 DS | PM | ONE HOUR | 16:45 | 18:15 | 15 |

# 2021 DS, PM

## Data Errors and Warnings

*No errors or warnings*

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 54.43 | F |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | Madingley Rd (E) | | Major |
| B | untitled | | Minor |
| C | untitled | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Has right turn bay | Width for right turn (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|
| C | 8.00 | | ✓ | 2.80 | 152.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate flare length | Flare length (PCU) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | 5.00 | 5.00 | 4.00 | 4.00 | 4.00 | | 1.00 | 41 | 32 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 460.121 | 0.077 | 0.193 | 0.122 | 0.276 |
| 1 | B-C | 638.708 | 0.089 | 0.226 | - | - |
| 1 | C-B | 705.216 | 0.249 | 0.249 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

*Streams may be combined, in which case capacity will be adjusted.*
*Values are shown for the first time segment only; they may differ for subsequent time segments.*

# Traffic Demand

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|
| A | | ✓ | 912.00 | 100.000 |
| B | | ✓ | 312.00 | 100.000 |
| C | | ✓ | 798.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 32.000 | 880.000 |
| | B | 130.000 | 0.000 | 182.000 |
| | C | 773.000 | 25.000 | 0.000 |

# Vehicle Mix

### Heavy Vehicle proportion

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

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 1.18 | 343.35 | 19.4 | F |
| B-A | 1.16 | 364.23 | 14.3 | F |
| C-A | | | | |
| C-B | 0.06 | 8.43 | 0.1 | A |
| A-B | | | | |
| A-C | | | | |

## Main Results for each time segment

### Main results: (16:45-17:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 137.02 | 414.24 | 0.331 | 135.08 | 0.5 | 12.810 | B |
| B-A | 97.87 | 244.42 | 0.400 | 95.31 | 0.6 | 23.774 | C |
| C-A | 581.95 | | | 581.95 | | | |
| C-B | 18.82 | 533.93 | 0.035 | 18.68 | 0.0 | 6.985 | A |
| A-B | 24.09 | | | 24.09 | | | |
| A-C | 662.51 | | | 662.51 | | | |

### Main results: (17:00-17:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 163.61 | 325.25 | 0.503 | 161.68 | 1.0 | 21.754 | C |
| B-A | 116.87 | 193.23 | 0.605 | 113.94 | 1.4 | 43.857 | E |
| C-A | 694.91 | | | 694.91 | | | |
| C-B | 22.47 | 500.69 | 0.045 | 22.43 | 0.0 | 7.527 | A |
| A-B | 28.77 | | | 28.77 | | | |
| A-C | 791.10 | | | 791.10 | | | |

### Main results: (17:15-17:30)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 200.39 | 171.03 | 1.172 | 159.44 | 11.2 | 173.409 | F |
| B-A | 143.13 | 124.44 | 1.150 | 114.44 | 8.5 | 201.305 | F |
| C-A | 851.09 | | | 851.09 | | | |
| C-B | 27.53 | 454.72 | 0.061 | 27.46 | 0.1 | 8.425 | A |
| A-B | 35.23 | | | 35.23 | | | |
| A-C | 968.90 | | | 968.90 | | | |

## Main results: (17:30-17:45)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 200.39 | 170.33 | 1.176 | 167.68 | 19.4 | 343.347 | F |
| B-A | 143.13 | 123.17 | 1.162 | 120.16 | 14.3 | 364.227 | F |
| C-A | 851.09 | | | 851.09 | | | |
| C-B | 27.53 | 454.72 | 0.061 | 27.52 | 0.1 | 8.426 | A |
| A-B | 35.23 | | | 35.23 | | | |
| A-C | 968.90 | | | 968.90 | | | |

## Main results: (17:45-18:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 163.61 | 217.39 | 0.753 | 206.72 | 8.6 | 247.581 | F |
| B-A | 116.87 | 156.88 | 0.745 | 146.62 | 6.8 | 266.119 | F |
| C-A | 694.91 | | | 694.91 | | | |
| C-B | 22.47 | 500.69 | 0.045 | 22.54 | 0.0 | 7.532 | A |
| A-B | 28.77 | | | 28.77 | | | |
| A-C | 791.10 | | | 791.10 | | | |

## Main results: (18:00-18:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 137.02 | 373.77 | 0.367 | 169.04 | 0.6 | 20.356 | C |
| B-A | 97.87 | 233.96 | 0.418 | 122.22 | 0.8 | 38.566 | E |
| C-A | 581.95 | | | 581.95 | | | |
| C-B | 18.82 | 533.93 | 0.035 | 18.86 | 0.0 | 6.991 | A |
| A-B | 24.09 | | | 24.09 | | | |
| A-C | 662.51 | | | 662.51 | | | |

# Junctions 9

## PICADY 9 - Priority Intersection Module



**Filename:** 2021 DS PM - Minus Observed Flows.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\Madingley Rd - Clerk Maxwell Rd\160421
**Report generation date:** 21/04/2016 08:57:45

---



## Summary of junction performance

| | PM | | | |
|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 DS | | | |
| Stream B-C | 7.5 | 190.67 | 0.98 | F |
| Stream B-A | 7.2 | 199.38 | 0.98 | F |
| Stream C-A | | | | |
| Stream C-B | 0.1 | 8.43 | 0.06 | A |
| Stream A-B | | | | |
| Stream A-C | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 18/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | PBA"pcullen |
| Description | |

## Units

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

## Analysis Options

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

## Analysis Set Details

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

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| **D1** | 2021 DS | PM | ONE HOUR | 16:45 | 18:15 | 15 |

# 2021 DS, PM

## Data Errors and Warnings

*No errors or warnings*

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 25.14 | D |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | Madingley Rd (E) | | Major |
| B | untitled | | Minor |
| C | untitled | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Has right turn bay | Width for right turn (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|
| C | 8.00 | | ✓ | 2.80 | 152.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate flare length | Flare length (PCU) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | 5.00 | 5.00 | 4.00 | 4.00 | 4.00 | | 1.00 | 41 | 32 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 477.229 | 0.079 | 0.201 | 0.126 | 0.287 |
| 1 | B-C | 616.958 | 0.086 | 0.218 | - | - |
| 1 | C-B | 705.216 | 0.249 | 0.249 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

*Streams may be combined, in which case capacity will be adjusted.*
*Values are shown for the first time segment only; they may differ for subsequent time segments.*

# Traffic Demand

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|
| A | | ✓ | 912.00 | 100.000 |
| B | | ✓ | 252.00 | 100.000 |
| C | | ✓ | 798.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 32.000 | 880.000 |
| | B | 122.000 | 0.000 | 130.000 |
| | C | 773.000 | 25.000 | 0.000 |

# Vehicle Mix

### Heavy Vehicle proportion

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

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.98 | 190.67 | 7.5 | F |
| B-A | 0.98 | 199.38 | 7.2 | F |
| C-A | | | | |
| C-B | 0.06 | 8.43 | 0.1 | A |
| A-B | | | | |
| A-C | | | | |

## Main Results for each time segment

### Main results: (16:45-17:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 97.87 | 411.93 | 0.238 | 96.64 | 0.3 | 11.375 | B |
| B-A | 91.85 | 259.02 | 0.355 | 89.73 | 0.5 | 21.018 | C |
| C-A | 581.95 | | | 581.95 | | | |
| C-B | 18.82 | 533.93 | 0.035 | 18.68 | 0.0 | 6.985 | A |
| A-B | 24.09 | | | 24.09 | | | |
| A-C | 662.51 | | | 662.51 | | | |

### Main results: (17:00-17:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 116.87 | 339.70 | 0.344 | 116.05 | 0.5 | 16.037 | C |
| B-A | 109.68 | 212.49 | 0.516 | 107.82 | 1.0 | 33.793 | D |
| C-A | 694.91 | | | 694.91 | | | |
| C-B | 22.47 | 500.69 | 0.045 | 22.43 | 0.0 | 7.527 | A |
| A-B | 28.77 | | | 28.77 | | | |
| A-C | 791.10 | | | 791.10 | | | |

### Main results: (17:15-17:30)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 143.13 | 145.69 | 0.982 | 124.07 | 5.3 | 121.216 | F |
| B-A | 134.32 | 138.47 | 0.970 | 118.26 | 5.0 | 129.198 | F |
| C-A | 851.09 | | | 851.09 | | | |
| C-B | 27.53 | 454.72 | 0.061 | 27.46 | 0.1 | 8.425 | A |
| A-B | 35.23 | | | 35.23 | | | |
| A-C | 968.90 | | | 968.90 | | | |

## Main results: (17:30-17:45)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 143.13 | 145.32 | 0.985 | 134.28 | 7.5 | 190.674 | F |
| B-A | 134.32 | 136.58 | 0.983 | 125.72 | 7.2 | 199.380 | F |
| C-A | 851.09 | | | 851.09 | | | |
| C-B | 27.53 | 454.72 | 0.061 | 27.52 | 0.1 | 8.426 | A |
| A-B | 35.23 | | | 35.23 | | | |
| A-C | 968.90 | | | 968.90 | | | |

## Main results: (17:45-18:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 116.87 | 287.41 | 0.407 | 143.96 | 0.7 | 29.618 | D |
| B-A | 109.68 | 201.80 | 0.543 | 133.04 | 1.3 | 64.547 | F |
| C-A | 694.91 | | | 694.91 | | | |
| C-B | 22.47 | 500.69 | 0.045 | 22.54 | 0.0 | 7.532 | A |
| A-B | 28.77 | | | 28.77 | | | |
| A-C | 791.10 | | | 791.10 | | | |

## Main results: (18:00-18:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 97.87 | 405.48 | 0.241 | 99.44 | 0.3 | 11.823 | B |
| B-A | 91.85 | 259.30 | 0.354 | 94.87 | 0.6 | 22.265 | C |
| C-A | 581.95 | | | 581.95 | | | |
| C-B | 18.82 | 533.93 | 0.035 | 18.86 | 0.0 | 6.991 | A |
| A-B | 24.09 | | | 24.09 | | | |
| A-C | 662.51 | | | 662.51 | | | |

# Junctions 9

## PICADY 9 - Priority Intersection Module



**Filename:** 2021 DS.j9
**Path:** J:\31500 West Cambridge\Junctions 9\PICADY\Mad Rise - Mad Rd
**Report generation date:** 21/04/2016 14:51:58



## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2021 Mad Rd - Mad Rise - 2016 | | | | | | | |
| Stream B-C | 0.0 | 9.07 | 0.02 | A | 0.0 | 8.14 | 0.04 | A |
| Stream B-A | 0.0 | 17.70 | 0.02 | C | 0.1 | 13.63 | 0.09 | B |
| Stream C-A | | | | | | | | |
| Stream C-B | 0.1 | 8.06 | 0.06 | A | 0.0 | 5.68 | 0.01 | A |
| Stream A-B | | | | | | | | |
| Stream A-C | | | | | | | | |

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

## File summary

### File Description

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site number | |
| Date | 21/04/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | 31500 |
| Enumerator | PBA"pcullen |
| Description | 2021 DS Mad Rise - Mad Road |

## Units

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

## Analysis Options

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

## Demand Set Summary

| Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|
| 2016 | AM | ONE HOUR | 07:45 | 09:15 | 15 |
| 2016 | PM | ONE HOUR | 16:45 | 18:15 | 15 |

# 2021 Mad Rd - Mad Rise - 2016, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| ID | Name | Network flow scaling factor (%) |
|---|---|---|
| A1 | 2021 Mad Rd - Mad Rise | 100.000 |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| 1 | untitled | T-Junction | Two-way | 0.22 | A |

## Junction Network Options

| Driving side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | untitled | | Major |
| B | untitled | | Minor |
| C | untitled | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width for right turn (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 8.37 | ✓ | 5.00 | ✓ | 4.70 | 85.0 | | - |

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

## Minor Arm Geometry

| Arm | Minor arm type | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate flare length | Flare length (PCU) | Visibility to left (m) | Visibility to right (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | 5.00 | 5.00 | 4.25 | 3.50 | 3.25 | ✓ | 1.00 | 31 | 37 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 486.997 | 0.072 | 0.181 | 0.114 | 0.258 |
| 1 | B-C | 668.504 | 0.092 | 0.232 | - | - |
| 1 | C-B | 792.748 | 0.275 | 0.275 | - | - |

*The slopes and intercepts shown above do NOT include any corrections or adjustments.*

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

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

# Traffic Demand

## Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| D1 | 2016 | AM | ONE HOUR | 07:45 | 09:15 | 15 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|
| A | | ✓ | 1046.00 | 100.000 |
| B | | ✓ | 12.00 | 100.000 |
| C | | ✓ | 579.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 47.000 | 999.000 |
| | B | 4.000 | 0.000 | 8.000 |
| | C | 553.000 | 26.000 | 0.000 |

# Vehicle Mix

### Heavy Vehicle proportion

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

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.02 | 9.07 | 0.0 | A |
| B-A | 0.02 | 17.70 | 0.0 | C |
| C-A | | | | |
| C-B | 0.06 | 8.06 | 0.1 | A |
| A-B | | | | |
| A-C | | | | |

## Main Results for each time segment

### Main results: (07:45-08:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 6.02 | 489.29 | 0.012 | 5.97 | 0.0 | 7.448 | A |
| B-A | 3.01 | 295.98 | 0.010 | 2.97 | 0.0 | 12.284 | B |
| C-A | 416.33 | | | 416.33 | | | |
| C-B | 19.57 | 575.81 | 0.034 | 19.43 | 0.0 | 6.468 | A |
| A-B | 35.38 | | | 35.38 | | | |
| A-C | 752.10 | | | 752.10 | | | |

### Main results: (08:00-08:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 7.19 | 454.17 | 0.016 | 7.18 | 0.0 | 8.053 | A |
| B-A | 3.60 | 259.02 | 0.014 | 3.58 | 0.0 | 14.093 | B |
| C-A | 497.14 | | | 497.14 | | | |
| C-B | 23.37 | 533.70 | 0.044 | 23.33 | 0.0 | 7.053 | A |
| A-B | 42.25 | | | 42.25 | | | |
| A-C | 898.08 | | | 898.08 | | | |

## Main results: (08:15-08:30)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 8.81 | 405.80 | 0.022 | 8.78 | 0.0 | 9.067 | A |
| B-A | 4.40 | 207.74 | 0.021 | 4.37 | 0.0 | 17.699 | C |
| C-A | 608.86 | | | 608.86 | | | |
| C-B | 28.63 | 475.48 | 0.060 | 28.55 | 0.1 | 8.054 | A |
| A-B | 51.75 | | | 51.75 | | | |
| A-C | 1099.92 | | | 1099.92 | | | |

## Main results: (08:30-08:45)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 8.81 | 405.62 | 0.022 | 8.81 | 0.0 | 9.071 | A |
| B-A | 4.40 | 207.82 | 0.021 | 4.40 | 0.0 | 17.697 | C |
| C-A | 608.86 | | | 608.86 | | | |
| C-B | 28.63 | 475.48 | 0.060 | 28.63 | 0.1 | 8.055 | A |
| A-B | 51.75 | | | 51.75 | | | |
| A-C | 1099.92 | | | 1099.92 | | | |

## Main results: (08:45-09:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 7.19 | 453.81 | 0.016 | 7.22 | 0.0 | 8.061 | A |
| B-A | 3.60 | 259.22 | 0.014 | 3.62 | 0.0 | 14.088 | B |
| C-A | 497.14 | | | 497.14 | | | |
| C-B | 23.37 | 533.70 | 0.044 | 23.44 | 0.0 | 7.055 | A |
| A-B | 42.25 | | | 42.25 | | | |
| A-C | 898.08 | | | 898.08 | | | |

## Main results: (09:00-09:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 6.02 | 488.84 | 0.012 | 6.04 | 0.0 | 7.458 | A |
| B-A | 3.01 | 296.24 | 0.010 | 3.03 | 0.0 | 12.277 | B |
| C-A | 416.33 | | | 416.33 | | | |
| C-B | 19.57 | 575.81 | 0.034 | 19.62 | 0.0 | 6.472 | A |
| A-B | 35.38 | | | 35.38 | | | |
| A-C | 752.10 | | | 752.10 | | | |

# 2021 Mad Rd - Mad Rise - 2016, PM

### Data Errors and Warnings

*No errors or warnings*

### Analysis Set Details

| ID | Name | Network flow scaling factor (%) |
|---|---|---|
| **A1** | 2021 Mad Rd - Mad Rise | 100.000 |

## Junction Network

### Junctions

| Junction | Name | Junction Type | Major road direction | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|
| **1** | untitled | T-Junction | Two-way | 0.30 | A |

### Junction Network Options

*[same as above]*

## Arms

### Arms

*[same as above]*

### Major Arm Geometry

*[same as above]*

### Minor Arm Geometry

*[same as above]*

### Slope / Intercept / Capacity

*[same as above]*

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Model start time (HH:mm) | Model finish time (HH:mm) | Time segment length (min) |
|---|---|---|---|---|---|---|
| **D2** | 2016 | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|
| A | | ✓ | 510.00 | 100.000 |
| B | | ✓ | 41.00 | 100.000 |
| C | | ✓ | 1051.00 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 3.000 | 507.000 |
| | B | 24.000 | 0.000 | 17.000 |
| | C | 1047.000 | 4.000 | 0.000 |

# Vehicle Mix

### Heavy Vehicle proportion

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

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.04 | 8.14 | 0.0 | A |
| B-A | 0.09 | 13.63 | 0.1 | B |
| C-A | | | | |
| C-B | 0.01 | 5.68 | 0.0 | A |
| A-B | | | | |
| A-C | | | | |

# Main Results for each time segment

## Main results: (16:45-17:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 12.80 | 502.68 | 0.025 | 12.69 | 0.0 | 7.344 | A |
| B-A | 18.07 | 374.96 | 0.048 | 17.87 | 0.1 | 10.076 | B |
| C-A | 788.24 | | | 788.24 | | | |
| C-B | 3.01 | 686.98 | 0.004 | 2.99 | 0.0 | 5.262 | A |
| A-B | 2.26 | | | 2.26 | | | |
| A-C | 381.70 | | | 381.70 | | | |

## Main results: (17:00-17:15)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 15.28 | 485.52 | 0.031 | 15.26 | 0.0 | 7.654 | A |
| B-A | 21.58 | 339.54 | 0.064 | 21.51 | 0.1 | 11.317 | B |
| C-A | 941.23 | | | 941.23 | | | |
| C-B | 3.60 | 666.44 | 0.005 | 3.59 | 0.0 | 5.430 | A |
| A-B | 2.70 | | | 2.70 | | | |
| A-C | 455.78 | | | 455.78 | | | |

## Main results: (17:15-17:30)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 18.72 | 461.39 | 0.041 | 18.68 | 0.0 | 8.132 | A |
| B-A | 26.42 | 290.44 | 0.091 | 26.30 | 0.1 | 13.624 | B |
| C-A | 1152.77 | | | 1152.77 | | | |
| C-B | 4.40 | 638.06 | 0.007 | 4.40 | 0.0 | 5.680 | A |
| A-B | 3.30 | | | 3.30 | | | |
| A-C | 558.22 | | | 558.22 | | | |

## Main results: (17:30-17:45)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 18.72 | 461.18 | 0.041 | 18.72 | 0.0 | 8.136 | A |
| B-A | 26.42 | 290.53 | 0.091 | 26.42 | 0.1 | 13.630 | B |
| C-A | 1152.77 | | | 1152.77 | | | |
| C-B | 4.40 | 638.06 | 0.007 | 4.40 | 0.0 | 5.680 | A |
| A-B | 3.30 | | | 3.30 | | | |
| A-C | 558.22 | | | 558.22 | | | |

## Main results: (17:45-18:00)

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| B-C | 15.28 | 485.14 | 0.032 | 15.32 | 0.0 | 7.662 | A |
| B-A | 21.58 | 339.73 | 0.064 | 21.70 | 0.1 | 11.323 | B |
| C-A | 941.23 | | | 941.23 | | | |
| C-B | 3.60 | 666.44 | 0.005 | 3.60 | 0.0 | 5.430 | A |
| A-B | 2.70 | | | 2.70 | | | |
| A-C | 455.78 | | | 455.78 | | | |

## Main results: (18:00-18:15)

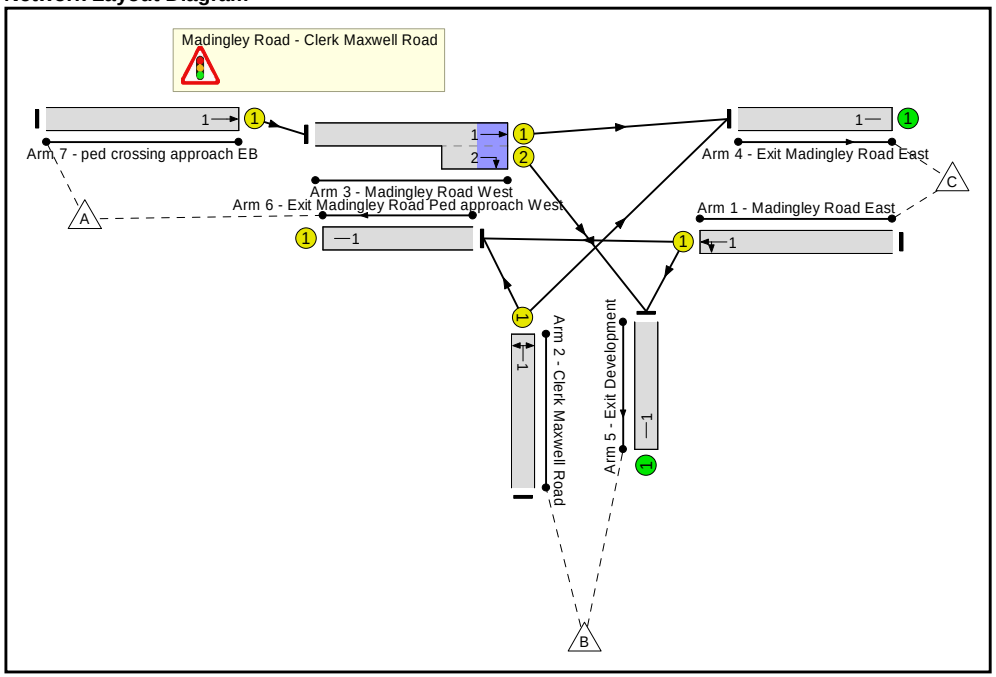
| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|
| **B-C** | 12.80 | 502.26 | 0.025 | 12.82 | 0.0 | 7.354 | A |
| **B-A** | 18.07 | 375.18 | 0.048 | 18.14 | 0.1 | 10.084 | B |
| **C-A** | 788.24 | | | 788.24 | | | |
| **C-B** | 3.01 | 686.98 | 0.004 | 3.02 | 0.0 | 5.262 | A |
| **A-B** | 2.26 | | | 2.26 | | | |
| **A-C** | 381.70 | | | 381.70 | | | |

# Full Input Data And Results

## User and Project Details

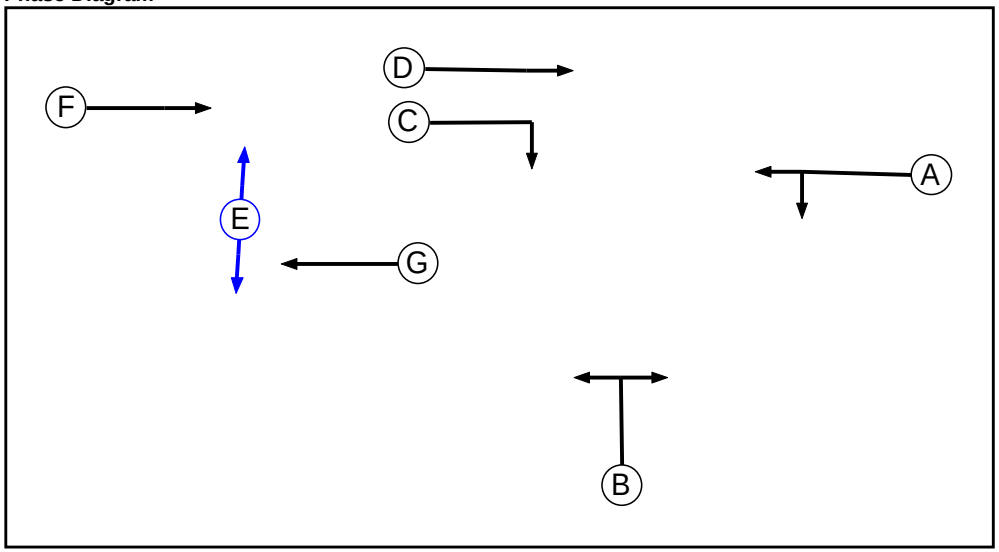
| | |
|---|---|
| **Project:** | |
| **Title:** | **Clerk Maxwell Road / Madingley Road** |
| **Location:** | |
| **File name:** | CM road.lsg3x |
| **Author:** | Scott Cooper |
| **Company:** | Peter Brett Associates |
| **Address:** | Birmingham |
| **Notes:** | |

## Network Layout Diagram




Full Input Data And Results

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 1 | | 7 | 7 |
| D | Traffic | 1 | | 7 | 7 |
| E | Pedestrian | 2 | | 5 | 5 |
| F | Traffic | 2 | | 7 | 7 |
| G | Traffic | 2 | | 7 | 7 |

## Phase Intergreens Matrix

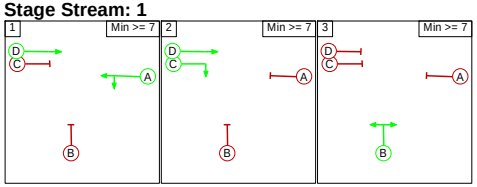
| Terminating Phase \ Starting Phase | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| A | | 6 | 5 | - | - | - | - |
| B | 5 | | 5 | 5 | - | - | - |
| C | 5 | 5 | | - | - | - | - |
| D | - | 5 | - | | - | - | - |
| E | - | - | - | - | | 11 | 11 |
| F | - | - | - | - | 5 | | - |
| G | - | - | - | - | 5 | - | |

## Phases in Stage

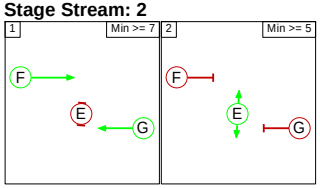
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A D |
| 1 | 2 | C D |
| 1 | 3 | B |
| 2 | 1 | F G |
| 2 | 2 | E |

## 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 |
|---|---|---|---|---|---|
| There are no Phase Delays defined | | | | | |

Full Input Data And Results

## Prohibited Stage Change

### Stage Stream: 1

| From Stage \ To Stage | 1 | 2 | 3 |
|---|---|---|---|
| 1 | | 5 | 6 |
| 2 | 5 | | 5 |
| 3 | 5 | 5 | |

### Stage Stream: 2

| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 5 |
| 2 | 11 | |

**Give-Way Lane Input Data**

| Junction: Madingley Road - Clerk Maxwell Road |
|---|
| There are no Opposed Lanes in this Junction |

Full Input Data And Results

## Lane Input Data

**Junction: Madingley Road - Clerk Maxwell Road**

| Lane | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns | Turning Radius (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 (Madingley Road East) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 5 Left<br>Arm 6 Ahead | 17.00<br>Inf |
| 2/1 (Clerk Maxwell Road) | U | B | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 4 Right<br>Arm 6 Left | 9.00<br>11.00 |
| 3/1 (Madingley Road West) | U | D | 2 | 3 | 8.0 | Geom | - | 3.00 | 0.00 | Y | Arm 4 Ahead | Inf |
| 3/2 (Madingley Road West) | U | C | 2 | 3 | 4.3 | Geom | - | 3.00 | 0.00 | Y | Arm 5 Right | 10.00 |
| 4/1 (Exit Madingley Road East) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/1 (Exit Development) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (Exit Madingley Road Ped approach West) | U | G | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | | |
| 7/1 (ped crossing approach EB) | U | F | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 3 Ahead | Inf |

## Traffic Flow Groups

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

**Scenario 1: 'DS AM'** (FG1: 'DS AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | |
|---|---|---|---|---|---|
| | | A | B | C | Tot. |
| Origin | A | 0 | 167 | 794 | 961 |
| | B | 23 | 0 | 25 | 48 |
| | C | 854 | 158 | 0 | 1012 |
| | Tot. | 877 | 325 | 819 | 2021 |

### Traffic Lane Flows

| Lane | Scenario 1: DS AM |
|---|---|
| **Junction: Madingley Road - Clerk Maxwell Road** | |
| 1/1 | 1012 |
| 2/1 | 48 |
| 3/1 (with short) | 961(In) 794(Out) |
| 3/2 (short) | 167 |
| 4/1 | 819 |
| 5/1 | 325 |
| 6/1 | 877 |
| 7/1 | 961 |

### Lane Saturation Flows

**Junction: Madingley Road - Clerk Maxwell Road**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| 1/1 (Madingley Road East) | 3.00 | 0.00 | Y | Arm 5 Left | 17.00 | 15.6 % | 1889 | 1889 |
| | | | | Arm 6 Ahead | Inf | 84.4 % | | |
| 2/1 (Clerk Maxwell Road) | 3.00 | 0.00 | Y | Arm 4 Right | 9.00 | 52.1 % | 1662 | 1662 |
| | | | | Arm 6 Left | 11.00 | 47.9 % | | |
| 3/1 (Madingley Road West) | 3.00 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 3/2 (Madingley Road West) | 3.00 | 0.00 | Y | Arm 5 Right | 10.00 | 100.0 % | 1665 | 1665 |
| 4/1 (Exit Madingley Road East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Exit Development Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Exit Madingley Road Ped approach West) | 3.00 | 0.00 | Y | | | | 1915 | 1915 |
| 7/1 (ped crossing approach EB) | 3.00 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1915 | 1915 |

Full Input Data And Results

### Traffic Lane Flows

| Lane | Scenario 2: DS PM |
|---|---|
| **Junction: Madingley Road - Clerk Maxwell Road** | |
| 1/1 | 798 |
| 2/1 | 312 |
| 3/1 (with short) | 912(In) 880(Out) |
| 3/2 (short) | 32 |
| 4/1 | 1062 |
| 5/1 | 57 |
| 6/1 | 903 |
| 7/1 | 912 |

### Lane Saturation Flows

**Junction: Madingley Road - Clerk Maxwell Road**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| 1/1 (Madingley Road East) | 3.00 | 0.00 | Y | Arm 5 Left | 17.00 | 3.1 % | 1910 | 1910 |
| | | | | Arm 6 Ahead | Inf | 96.9 % | | |
| 2/1 (Clerk Maxwell Road) | 3.00 | 0.00 | Y | Arm 4 Right | 9.00 | 58.3 % | 1659 | 1659 |
| | | | | Arm 6 Left | 11.00 | 41.7 % | | |
| 3/1 (Madingley Road West) | 3.00 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 3/2 (Madingley Road West) | 3.00 | 0.00 | Y | Arm 5 Right | 10.00 | 100.0 % | 1665 | 1665 |
| 4/1 (Exit Madingley Road East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Exit Development Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Exit Madingley Road Ped approach West) | 3.00 | 0.00 | Y | | | | 1915 | 1915 |
| 7/1 (ped crossing approach EB) | 3.00 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1915 | 1915 |

**Scenario 2: 'DS PM'** (FG2: 'DS PM', Plan 1: 'Network Control Plan 1')

### Traffic Flows, Desired

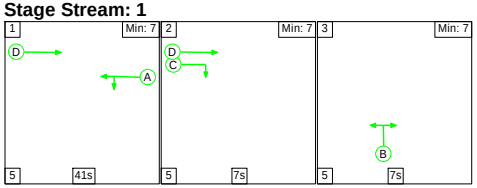
**Desired Flow :**

| | | Destination | | | |
|---|---|---|---|---|---|
| | | A | B | C | Tot. |
| Origin | A | 0 | 32 | 880 | 912 |
| | B | 130 | 0 | 182 | 312 |
| | C | 773 | 25 | 0 | 798 |
| | Tot. | 903 | 57 | 1062 | 2022 |

**Scenario 1: 'DS AM'** (FG1: 'DS AM', Plan 1: 'Network Control Plan 1')

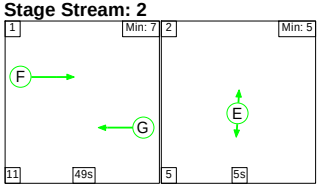
### Stage Sequence Diagram

**Stage Stream: 1**



Full Input Data And Results

**Stage Stream: 2**




## Stage Timings

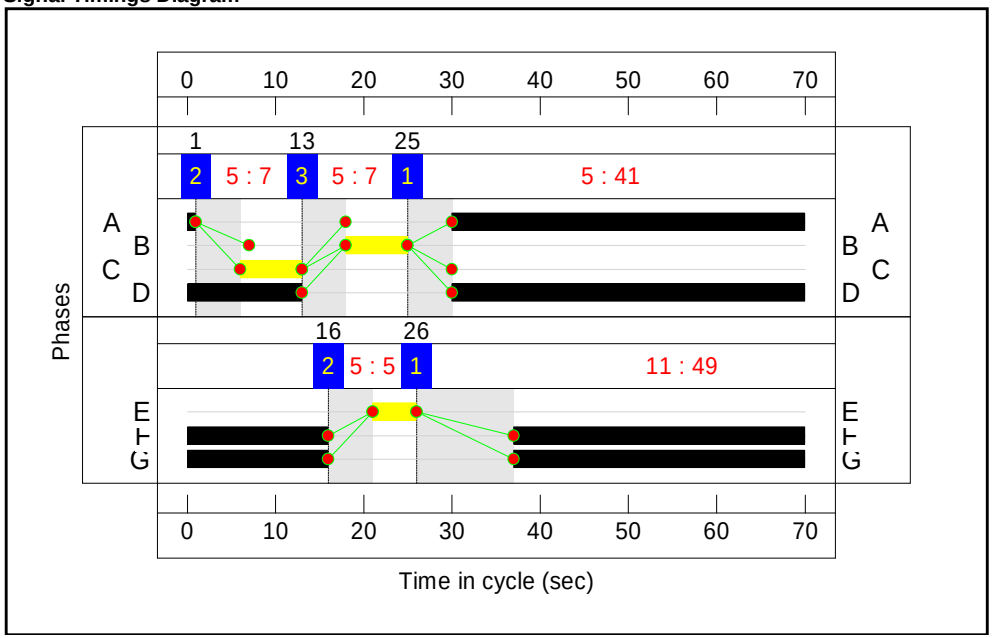
**Stage Stream: 1**

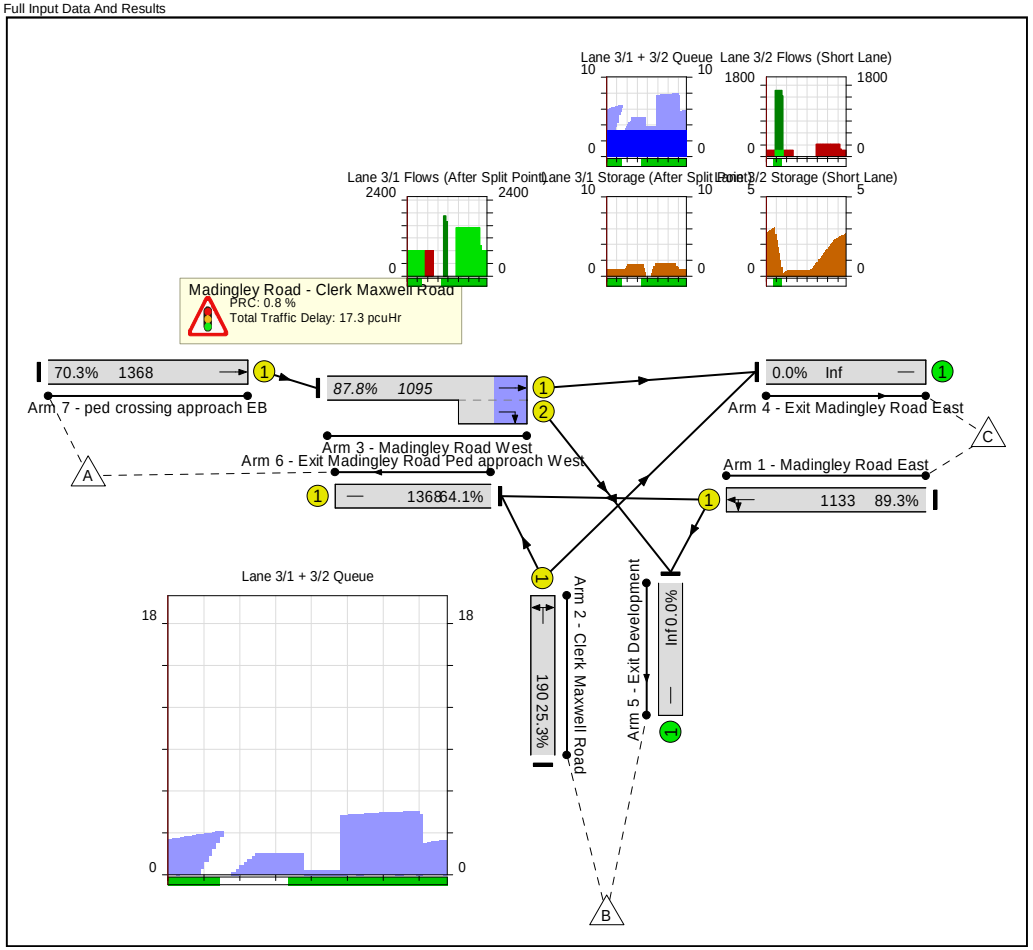
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 41 | 7 | 7 |
| Change Point | 25 | 1 | 13 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 49 | 5 |
| Change Point | 26 | 16 |

## Signal Timings Diagram






Full Input Data And Results

**Network Results**

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Clerk Maxwell Road / Madingley Road** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **89.3%** |
| **Madingley Road - Clerk Maxwell Road** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **89.3%** |
| 1/1 | Madingley Road East Left Ahead | U | 1 | N/A | A | | 1 | 41 | - | 1012 | 1889 | 1133 | 89.3% |
| 2/1 | Clerk Maxwell Road Right Left | U | 1 | N/A | B | | 1 | 7 | - | 48 | 1662 | 190 | 25.3% |
| 3/1+3/2 | Madingley Road West Ahead Right | U | 1 | N/A | D C | | 1 | 53:7 | - | 961 | 1915:1665 | 1095 | 87.8% |
| 4/1 | Exit Madingley Road East | U | N/A | N/A | - | | - | - | - | 819 | Inf | Inf | 0.0% |
| 5/1 | Exit Development | U | N/A | N/A | - | | - | - | - | 325 | Inf | Inf | 0.0% |
| 6/1 | Exit Madingley Road Ped approach West | U | 2 | N/A | G | | 1 | 49 | - | 877 | 1915 | 1368 | 64.1% |
| 7/1 | ped crossing approach EB Ahead | U | 2 | N/A | F | | 1 | 49 | - | 961 | 1915 | 1368 | 70.3% |

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: Clerk Maxwell Road / Madingley Road** | **-** | **-** | **0** | **0** | **0** | **7.7** | **9.6** | **0.0** | **17.3** | **-** | **-** | **-** | **-** |
| **Madingley Road - Clerk Maxwell Road** | **-** | **-** | **0** | **0** | **0** | **7.7** | **9.6** | **0.0** | **17.3** | **-** | **-** | **-** | **-** |
| 1/1 | 1012 | 1012 | - | - | - | 3.4 | 3.9 | - | 7.3 | 26.0 | 16.9 | 3.9 | 20.8 |
| 2/1 | 48 | 48 | - | - | - | 0.4 | 0.2 | - | 0.5 | 41.0 | 0.8 | 0.2 | 1.0 |
| 3/1+3/2 | 961 | 961 | - | - | - | 1.5 | 3.4 | - | 4.9 | 18.4 | 4.6 | 3.4 | 8.0 |
| 4/1 | 819 | 819 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 325 | 325 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 877 | 877 | - | - | - | 0.9 | 0.9 | - | 1.8 | 7.4 | 4.1 | 0.9 | 5.0 |
| 7/1 | 961 | 961 | - | - | - | 1.5 | 1.2 | - | 2.7 | 10.1 | 10.7 | 1.2 | 11.9 |

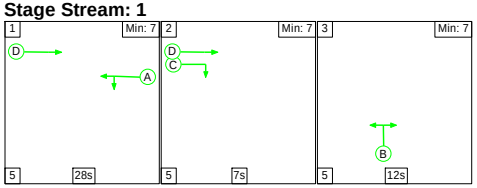
C1 Stream: 1 PRC for Signalled Lanes (%): 0.8 Total Delay for Signalled Lanes (pcuHr): 12.76 Cycle Time (s): 70
C1 Stream: 2 PRC for Signalled Lanes (%): 28.1 Total Delay for Signalled Lanes (pcuHr): 4.50 Cycle Time (s): 70
PRC Over All Lanes (%): 0.8 Total Delay Over All Lanes(pcuHr): 17.26

Full Input Data And Results

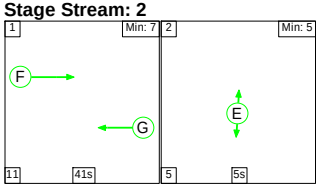
**Scenario 2: 'DS PM'** (FG2: 'DS PM', Plan 1: 'Network Control Plan 1')

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

### Stage Stream: 1

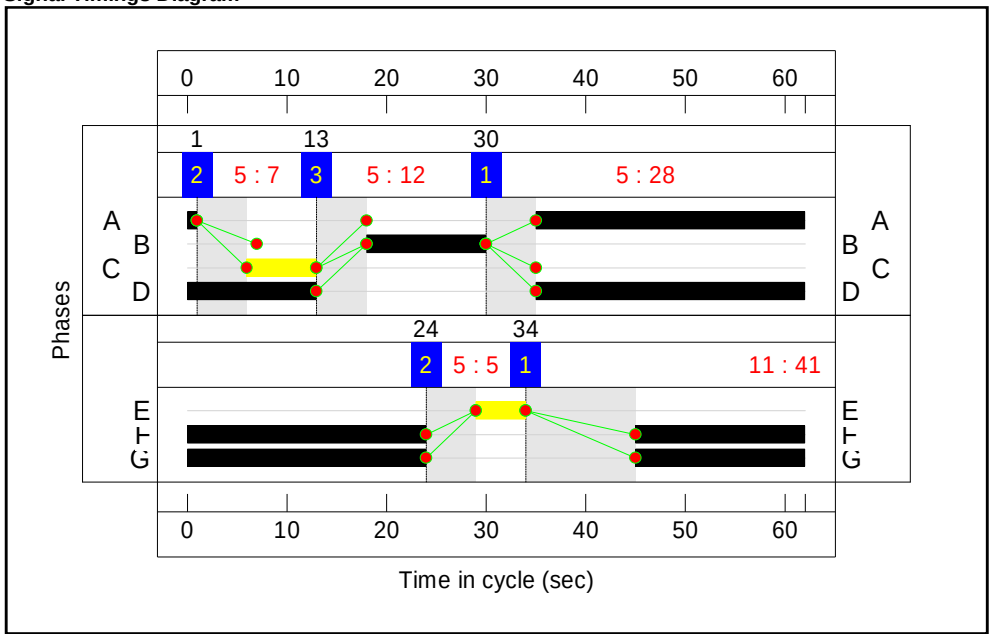
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| **Duration** | 28 | 7 | 12 |
| **Change Point** | 30 | 1 | 13 |

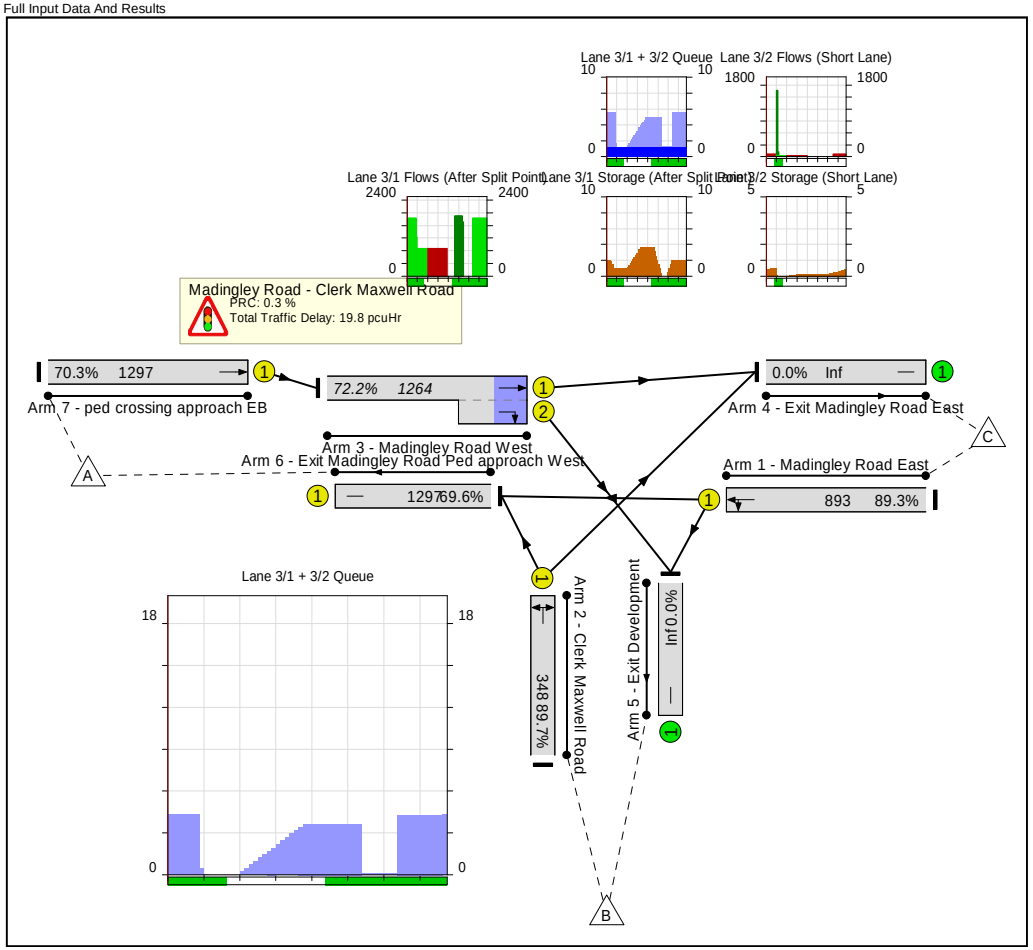
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| **Duration** | 41 | 5 |
| **Change Point** | 34 | 24 |

Full Input Data And Results

**Signal Timings Diagram**






Full Input Data And Results

**Network Results**

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Clerk Maxwell Road / Madingley Road** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **89.7%** |
| **Madingley Road - Clerk Maxwell Road** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **89.7%** |
| 1/1 | Madingley Road East Left Ahead | U | 1 | N/A | A | | 1 | 28 | - | 798 | 1910 | 893 | 89.3% |
| 2/1 | Clerk Maxwell Road Right Left | U | 1 | N/A | B | | 1 | 12 | - | 312 | 1659 | 348 | 89.7% |
| 3/1+3/2 | Madingley Road West Ahead Right | U | 1 | N/A | D C | | 1 | 40:7 | - | 912 | 1915:1665 | 1264 | 72.2% |
| 4/1 | Exit Madingley Road East | U | N/A | N/A | - | | - | - | - | 1062 | Inf | Inf | 0.0% |
| 5/1 | Exit Development | U | N/A | N/A | - | | - | - | - | 57 | Inf | Inf | 0.0% |
| 6/1 | Exit Madingley Road Ped approach West | U | 2 | N/A | G | | 1 | 41 | - | 903 | 1915 | 1297 | 69.6% |
| 7/1 | ped crossing approach EB Ahead | U | 2 | N/A | F | | 1 | 41 | - | 912 | 1915 | 1297 | 70.3% |

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: Clerk Maxwell Road / Madingley Road** | **-** | **-** | **0** | **0** | **0** | **8.7** | **11.1** | **0.0** | **19.8** | **-** | **-** | **-** | **-** |
| **Madingley Road - Clerk Maxwell Road** | **-** | **-** | **0** | **0** | **0** | **8.7** | **11.1** | **0.0** | **19.8** | **-** | **-** | **-** | **-** |
| 1/1 | 798 | 798 | - | - | - | 3.3 | 3.9 | - | 7.2 | 32.5 | 12.4 | 3.9 | 16.3 |
| 2/1 | 312 | 312 | - | - | - | 2.1 | 3.6 | - | 5.7 | 65.6 | 5.2 | 3.6 | 8.8 |
| 3/1+3/2 | 912 | 912 | - | - | - | 1.2 | 1.3 | - | 2.5 | 9.7 | 4.4 | 1.3 | 5.6 |
| 4/1 | 1062 | 1062 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 57 | 57 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 903 | 903 | - | - | - | 0.5 | 1.1 | - | 1.7 | 6.7 | 3.0 | 1.1 | 4.1 |
| 7/1 | 912 | 912 | - | - | - | 1.6 | 1.2 | - | 2.7 | 10.8 | 9.6 | 1.2 | 10.8 |

C1 Stream: 1 PRC for Signalled Lanes (%): 0.3 Total Delay for Signalled Lanes (pcuHr): 15.36 Cycle Time (s): 62
C1 Stream: 2 PRC for Signalled Lanes (%): 28.0 Total Delay for Signalled Lanes (pcuHr): 4.41 Cycle Time (s): 62
PRC Over All Lanes (%): 0.3 Total Delay Over All Lanes(pcuHr): 19.77

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AECOM