

**Global Academy UTC  
The Old Vinyl Factory  
Hayes, UB3 1BW**

**Transport Assessment**

For  
Global Academy UTC Trust

Project No. 12024

May 2015

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## 1.0 INTRODUCTION

- 1.1. Campbell Reith Hill LLP (CampbellReith) has been instructed on behalf of the Global Academy UTC Trust to prepare a Transport Assessment in support of a planning application for the proposed Global Academy University Technical College (UTC) at The Old Vinyl Factory site, Hayes in the London Borough of Hillingdon.
- 1.2. The Global Academy UTC will specialise in broadcast and media courses and will have a maximum capacity of 800 students aged 14-19 years old along with around 60 full time equivalent staff.
- 1.3. The Old Vinyl Factory site received outline planning permission in 2012 for a mixed-use redevelopment comprising up to 510 residential units, around 50,000m<sup>2</sup> of B1 office floorspace, around 950m<sup>2</sup> of light industrial floorspace, up to 4,000m<sup>2</sup> of A class uses and up to 4,700m<sup>2</sup> of D1/D2 uses including a 3,366m<sup>2</sup> cinema.
- 1.4. The Global Academy UTC did not form part of the original masterplan proposal and would replace the Picturehouse building which was proposed to be occupied by the cinema. The transport impacts associated with the proposed change in future use for this site will be presented in this Transport Assessment which has been carried out with reference to "Guidance on Transport Assessment" published by the Department for Transport (DfT) and Communities and Local Government, Transport for London's Transport Assessment Best Practice Guidance, the National Planning Policy Framework and Manual for Streets.
- 1.5. The Transport Assessment is sub-divided into nine chapters; the chapters being:
  - ♦ Chapter 1: Introduction;
  - ♦ Chapter 2: Sets out the approach to the Transport Statement;
  - ♦ Chapter 3: Identifies the relevant planning policies;
  - ♦ Chapter 4: Provides a description of the location and current use of the site;
  - ♦ Chapter 5: Sets out the development proposals
  - ♦ Chapter 6: Describes trip generation and trip distribution;
  - ♦ Chapter 7: Presents the impact of the development on the transport network;
  - ♦ Chapter 8: Provides details on sustainability; and
  - ♦ Chapter 9: Conclusions.

## 2.0 APPROACH TO THE TRANSPORT ASSESSMENT

2.1. Transport assessments are required to consider the development in relation to all transport modes and its ability to reduce the reliance on the private car and offer a choice in transport. This Transport Assessment has been written with reference to Transport for London's Transport Assessment Best Practice Guidance, the recently superseded "Guidance on Transport Assessment" published by the Departments for Transport and Communities and Local Government, as well as the current Planning Practice Guidance web-based resource. In preparing the Transport Assessment the following considerations are considered relevant:

- ♦ Reducing the need to travel, especially by car;
- ♦ The accessibility of the location;
- ♦ Environmental impact of travel;
- ♦ Measures that may assist in influencing travel behaviour; and
- ♦ Managing access to the highway network

2.2. With these considerations in mind the Transport Assessment has considered each of the key modes of transport that will be used by people travelling to and from the development. The key elements of the approach to the assessment of each mode are briefly described below.

### **Walking and Cycling**

2.3. A qualitative assessment has been undertaken of the walking and cycling facilities available and the impact, if any, the development proposal will have on these facilities.

### **Public Transport**

2.4. The accessibility to and the availability of public transport to site users of the development has also been reviewed.

### **Vehicular Impact**

2.5. The number of vehicle trips generated by the development has been estimated using the TRICS database in order to assess whether there will be any significant impacts on the local road network.

### 3.0 RELEVANT PLANNING POLICIES

#### National Policy and Guidance

- 3.1. The 'National Planning Policy Framework' published in March 2012 by the Department for Communities and Local Government is the current planning guidance document for England. It aims to encourage a more sustainable approach to transport which reduces the negative environmental impacts associated with the private car. It aims to balance the transport system in favour of sustainable transport modes and give people a choice about how they travel.
- 3.2. With respect to development which is likely to generate significant amounts of movement, paragraph 32 states that plans and decisions should take account of whether:
- ♦ *'opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
  - ♦ *safe and suitable access to the site can be achieved for all people; and*
  - ♦ *improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where residual cumulative impacts of development are severe.'*

#### Planning for School Development Policy Statement

- 3.3. The policy statement issued in August 2011 by the Secretary of State for Communities and Local Government and the Secretary of State for Education sets out the Government's commitment to support the development of state-funded schools and their delivery through the planning system. The policy states:

*'The Government believes that the planning system should operate in a positive manner when dealing with proposals for the creation, expansion and alteration of state-funded schools, and that the following principles should apply with immediate effect:*

- ♦ *There should be a presumption in favour of the development of state-funded schools, as expressed in the National Planning Policy Framework.*
- ♦ *Local authorities should give full and thorough consideration to the importance of enabling the development of state-funded schools in their planning decisions. The Secretary of State will attach significant weight to the need to establish and develop state-funded schools when determining applications and appeals that come before him for decision.*
- ♦ *Local authorities should make full use of their planning powers to support state-funded schools applications. This should include engaging in pre-application discussions with promoters to foster a collaborative approach to applications and, where necessary, the use of planning obligations to help to mitigate adverse impacts and help deliver development that has a positive impact on the community.*
- ♦ *Local authorities should only impose conditions that clearly and demonstrably meet the tests set out in Circular 11/95. Planning conditions should only be those absolutely necessary to making the development acceptable in planning terms.'*

### Local Policy and Guidance

3.4. The national policies noted above are reflected at local level in the following documents:

- ♦ The London Plan (FALP) - March 2015;
- ♦ Mayor's Transport Strategy (2009); and
- ♦ London Borough of Hillingdon Unitary Development Plan (2007) and emerging Local Plan

3.5. The London Plan (FALP) is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The sixth objective is that London should be 'a city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities with an efficient and effective transport system which actively encourages more walking and cycling, makes better use of the Thames, and supports delivery of all the objectives of this Plan'.

3.6. With respect to the provision of education facilities, The London Plan Policy 3.18 states that:

*'Development proposals which enhance education and skills provision will be supported, including new build, expansion of existing or change of use to educational purposes. Those which address the current and projected shortage of primary school places and the projected shortage of secondary school places will be particularly encouraged.'*

*'In particular, proposals for new schools, including free schools should be given positive consideration and should only be refused where there are demonstrable negative local impacts which substantially outweigh the desirability of establishing a new school and which cannot be addressed through the appropriate use of planning conditions or obligations.'*

3.7. The Mayor's Transport Strategy is a key part of a strategic policy framework to support and shape London's social and economic development. It sets out the Mayor's transport vision for London and details how the plan will be delivered between now and 2031 and has been developed jointly with The London Plan.

3.8. The Unitary Development Plan (UDP) sets out Hillingdon's long term strategic goals for land use, together with the planning policies and standards for making decisions on planning applications. Saved policies in Hillingdon's UDP (2007) will gradually be replaced by policies in Hillingdon's Local Plan documents. The Hillingdon Local Plan: Part 1 - Strategic Policies (2012) is the first of these documents and replaces some of the saved policies.

## 4.0 THE SITE AND EXISTING CONDITIONS

### Site Location

- 4.1. The Old Vinyl Factory development is located to the south and west of Hayes town centre. Outline planning permission was granted in April 2013 for a mixed use development of up to 112,953m<sup>2</sup> of new floorspace including up to 510 residential units, up to 7,886m<sup>2</sup> of new B1 floorspace, up to 4,000m<sup>2</sup> of A class uses and up to 4,700m<sup>2</sup> of D1 and D2 uses. This development area is bounded by Blyth Road to the north, Dawley Road properties to the west, the Gatefold Building site to the east and the railway to the south. The site proposed for the Global Academy UTC fronts onto Blyth Road. Figure 1 shows the site in relation to the surrounding area.

### Pedestrian and Cycle Facilities

- 4.2. The current network of footways in the locality provides a reasonable footway network to all local services, facilities and public transport nodes in and around the site. Hayes and Harlington train station is approximately a six minute walk with Hayes town centre approximately an eight minute walk from the site.
- 4.3. Uncontrolled crossing points are provided at the local junctions. There is a subway under Station Road to assist in journeys to and from the train station.
- 4.4. The areas that can be reached by walking and cycling 5, 10 and 15 minutes are shown in Figures 2 and 3 respectively. These areas include the residential areas of Hayes located to the north and south of the site.
- 4.5. There are cycle lanes on the southern section of Station Road in the vicinity of the train station. The Grand Union Canal towpath offers a pleasant east-west route. However, in general, cycle facilities are not extensive in the local area.

### Public Transport

- 4.6. The nearest bus stop to the development is located on Claredon Road approximately 400m from the site and is served by route 350. Additional bus services are available from bus stops at Hayes and Harlington Station approximately 600m from the site.
- 4.7. The timetables for local buses are appended to this report at Appendix 2 and the main routes summarised in Table 4.1.

Table 4.1: Local bus services

| Service Number | Route                                              | Service Interval |              |               |              |               |              |
|----------------|----------------------------------------------------|------------------|--------------|---------------|--------------|---------------|--------------|
|                |                                                    | Monday - Friday  |              | Saturday      |              | Sunday        |              |
|                |                                                    | Daytime          | Evening      | Daytime       | Evening      | Daytime       | Evening      |
| 350            | Hayes & Harlington - Heathrow Terminal 5           | 11-13 minutes    | 20 minutes   | 20 minutes    | 20 minutes   | 20 minutes    | 20 minutes   |
| 90             | Northolt Station - Feltham                         | 9-11 minutes     | 20 minutes   | 9-13 minutes  | 20 minutes   | 20 minutes    | 20 minutes   |
| 140            | Heathrow Central - Harrow - Long Elmes / High Road | 5-10 minutes     | 6-10 minutes | 6-10 minutes  | 6-10 minutes | 8-13 minutes  | 8-11 minutes |
| 195            | Charville - Hayes - Brentford                      | 10-13 minutes    | 20 minutes   | 12-13 minutes | 20 minutes   | 13-14 minutes | 20 minutes   |
| E6             | Greenford - Hayes Road Tesco                       | 8-12 minutes     | 15 minutes   | 8-10 minutes  | 15 minutes   | 15 minutes    | 15 minutes   |
| H98            | Hounslow Bus Station - Wood End Green Road         | 7-10 minutes     | 15 minutes   | 7-10 minutes  | 15 minutes   | 15 minutes    | 15 minutes   |
| U4             | Prologis Park - Uxbridge Belmont Road              | 6-10 minutes     | 20 minutes   | 7-10 minutes  | 20 minutes   | 15 minutes    | 20 minutes   |
| U5             | Hayes & Harlington - Uxbridge Belmont Road         | 10-12 minutes    | 20 minutes   | 10-12 minutes | 20 minutes   | 20 minutes    | 20 minutes   |
| 696            | Hayes - Bishop Ramsey School                       | 2 services       | -            | -             | -            | -             | -            |
| 698            | West Drayton - Ickenham                            | 4/5 services     | -            | -             | -            | -             | -            |

- 4.8. Hayes and Harlington train station is also approximately 700 metres from the site. There are frequent direct train services to key destinations including London Paddington, Ealing Broadway, West Ealing, Didcot Parkway and Heathrow Airport. New Crossrail services are due to begin in 2019. The western section of the Crossrail route runs from Paddington in west London to Heathrow Airport and Reading. Platform extensions will allow longer, higher capacity trains to operate. Crossrail will provide journeys into the West End, City and east London without the need to change trains. When full service commences in 2019, Crossrail will provide ten trains per hour on the Great Western main line at peak. This will include two trains per hour to Reading, another two trains per hour to Maidenhead, four trains per hour to Heathrow and two trains per hour to West Drayton.
- 4.9. The arrival of Crossrail promises a new, larger station built just north of the existing station site. The urban realm design proposals include a number of options which 'future proof' the area for the forthcoming large scale developments. The options create with improved pedestrian and cycle connectivity to the station in all directions through better pedestrian crossings and continuous cycle lanes. The scheme will also provide step-free accessibility between the station via a ramp from Station Road to Blyth Road.

### Local Road Network

- 4.10. The site has the benefit of being served by an established road network. The eastern section of Blyth Road, adjacent to the site, is a one-way street running westbound. Blyth Road becomes two-way west of its junction with Trevor Road. Blyth Road continues west to meet Dawley Road (A437) at a roundabout. The one-way section of Blyth Road can be accessed from the west via Trevor Road and Clayton Road and from the east via Station Road. There is on-street parking on both sides of the central part of the one-way section of Blyth Road with parking controlled by single yellow lines on other sections of this road.
- 4.11. Dawley Road runs north towards the A4020 and Uxbridge and runs south to meet North Hyde Road (A437) at a roundabout. North Hyde Road runs east, meeting Station Road at a signalised crossroads. From this junction, North Hyde Road continues east to the A312 which subsequently gives access to Junction 3 of the M4 motorway. Station Road (A437) continues south from the signalised junction, becoming High Street, and meets Bath Road (A4).

### Permitted Development

- 4.12. The site of the proposed UTC has outline planning permission for use as a cinema. The number of trips associated with the cinema use has been taken from the Alan Baxter Transport Assessment and is summarised in Table 4.2.

Table 4.2: Predicted trips by mode of travel associated with cinema use

|                       | AM Peak Hour       |                     |               | PM Peak Hour       |                     |               |
|-----------------------|--------------------|---------------------|---------------|--------------------|---------------------|---------------|
|                       | Predicted Trips In | Predicted Trips Out | Two-way Trips | Predicted Trips In | Predicted Trips Out | Two-way Trips |
| Car Driver / Drop-off | 0                  | 0                   | 0             | 88                 | 79                  | 167           |
| Car Passenger         | 0                  | 0                   | 0             | 122                | 101                 | 223           |
| Motorcycle / scooter  | 0                  | 0                   | 0             | 0                  | 0                   | 0             |
| Walking               | 0                  | 0                   | 0             | 11                 | 12                  | 23            |
| Cycling               | 0                  | 0                   | 0             | 0                  | 0                   | 0             |
| Public Transport      | 0                  | 0                   | 0             | 34                 | 36                  | 70            |
| <i>Total</i>          | <i>0</i>           | <i>0</i>            | <i>0</i>      | <i>255</i>         | <i>228</i>          | <i>483</i>    |

### Committed Developments

- 4.13. The Old Vinyl Factory Transport Assessment considered the traffic generation of the following committed developments in its study in addition to background traffic growth from other developments:
- ♦ Gatefold Building, Blyth Road;
  - ♦ High Point Village;
  - ♦ Maccess site;
  - ♦ 20 Blyth Road development;
  - ♦ Southall Gasworks; and
  - ♦ Asda, Station Road

### **Accident Analysis**

- 4.14. A detailed assessment of the accident history was undertaken as part of the Transport Assessment for The Old Vinyl Factory. This found accident clusters at North Hyde Road / Station Road junction and Station Road / Clayton Road junction which both included accidents involving pedestrians.
- 4.15. The pedestrian accidents at the North Hyde Road / Station Road signalised junction were associated with pedestrians 'not using the crossing facilities correctly' or 'being careless' and/or 'not looking'. Modifications are proposed at this junction which may help to alleviate some of the accident issues.
- 4.16. The Station Road / Clayton Road junction saw accidents involving pedestrians 'not using crossing facilities' or 'failing to look properly'. It is understood that works to the public realm in this area will be forthcoming as part of the wider masterplan and Crossrail proposals. This work will include new crossing facilities.
- 4.17. It is considered that the works proposed will improve safety for pedestrians and users of public transport travelling between the site and the local bus stops and train station.

### **Masterplan Strategy**

- 4.18. The walking strategy for The Old Vinyl Factory site aims to 'create a safe, convenient and permeable network of pedestrian routes and shared surface roads linking key public spaces within the development and ensuring connectivity to surrounding neighbourhoods and Hayes town centre'. The primary walking route through the site has been named 'The Groove' and links the various development areas on the Old Vinyl Factory site with a direct connection to the eastern section of Blyth Road leading to Hayes and Harlington station and the surrounding local area. The Groove runs to the south of the proposed development site for the Global Academy and provides an alternative pedestrian route to Blyth Road. The Blyth Road frontage is also proposed to be improved providing an enhanced route for pedestrians. The Groove and Blyth Road proposals will provide attractive routes for students and staff walking between the bus stops, train station and local facilities in the town centre. The Old Vinyl Factory masterplan also proposes a new site access point on Dawley Road and improved pedestrian links along Trevor Road towards the Grand Union Canal.
- 4.19. The cycling strategy for The Old Vinyl Factory site aims to create a permeable network of shared surface streets and an environment in which cycling is encouraged on all streets in the development. The main cycle route within the site is The Groove. This is proposed to link with a new contraflow cycle lane along part of the one-way section of Blyth Road. Advisory cycle lanes are also proposed along Trevor Road, the western section of Blyth Road and Dawley Road.

## 5.0 DEVELOPMENT PROPOSALS

- 5.1. The Global Academy UTC will specialise in broadcast and media courses and will have a maximum capacity of 800 students aged 14-19 years old along with around 60 full time equivalent staff. It will offer a broad range of courses but have a special focus on the technical skills, trades and technologies that support the two specialisms of Creative, Technical and Digital Media & Entrepreneurship. These technical skills will help students develop the practical knowledge demanded by the industry, while the focus on entrepreneurship will drive a distinctive ethos. Students will integrate their academic study with practical learning, studying core GCSEs or A Levels alongside vocational and technical qualifications.
- 5.2. The number of students and staff at the Global Academy UTC will increase year on year until it reaches its maximum capacity in the 2019/2020 academic year. Table 5.1 shows the increase in student numbers from the Global Academy UTC's opening to full capacity.

Table 5.1: Student numbers

|          | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|----------|---------|---------|---------|---------|
| Students | 200     | 500     | 700     | 800     |

- 5.3. A typical UTC day will be from 09:00 to 17:00 on Mondays to Thursdays and from 09:00 to 14:00 on Fridays. There will also be some activities occurring before 09:00 and after 17:00. There is the potential for some extended community use of the facilities, such as the theatre and sports hall, at evenings and weekends.
- 5.4. It is proposed that the travel policy will not allow older students to bring their car to the UTC and there will be no student parking provision in order to encourage students to travel by sustainable modes.
- 5.5. Staff parking is proposed to be provided within The Old Vinyl Factory site in the Assembly Building at a level consistent with the proportion of trips to work by car recorded in the 2011 Census. In the short-term, temporary spaces will be available on the Assembly Building site. During construction of the Assembly Building the spaces will be relocated to the Vinyl Square area (west of the UTC site). Once the Assembly Building is constructed the permanent spaces will be relocated again to the permanent location in the Assembly Building. Access to the parking area will be via Powerhouse Lane, as per the approved masterplan. Further details regarding access by car are provided in Section 7.

## 6.0 TRIP GENERATION AND TRIP DISTRIBUTION

### Trip Generation

- 6.1. The anticipated trip generation to the Global Academy UTC has been estimated by considering data from a number of sources including the Mott MacDonald Transport Review Report, TRICS trip rate database, 2011 Census and Transport Assessment for an existing UTC facility. There are positive and negative aspects to each source of data. These factors have been considered and taken account of in order to arrive at what is considered to be a realistic, robust trip generation. The trip generation exercise is detailed in Technical Note 1 and forms Appendix 3 to this report.
- 6.2. The mode split proposed for the Global Academy UTC is presented in Table 6.1.

Table 6.1: Proposed Global Academy UTC mode split

|                  | AM Peak - Students |           | PM Peak - Students |           | AM Peak - Staff |           | PM Peak - Staff |           |
|------------------|--------------------|-----------|--------------------|-----------|-----------------|-----------|-----------------|-----------|
|                  | Trips In           | Trips Out | Trips In           | Trips Out | Trips In        | Trips Out | Trips In        | Trips Out |
| Car Driver       | -                  | -         | -                  | -         | 66%             | -         | -               | 66%       |
| Passenger        | 19%                | -         | -                  | 14%       | 3%              | -         | -               | 3%        |
| Walking          | 10%                | -         | -                  | 12%       | 6%              | -         | -               | 6%        |
| Cycling          | 10%                | -         | -                  | 10%       | 2%              | -         | -               | 2%        |
| Public Transport | 61%                | -         | -                  | 64%       | 22%             | -         | -               | 22%       |

- 6.3. The trips by public transport will see the journey between the bus stop / station and the college made on foot. Therefore the number of walking trips in the immediate vicinity of the UTC will be 557 arrivals in the AM peak and 594 departures in the PM peak.
- 6.4. The relative change in trips during the weekday peak hours by each mode of travel associated with the change of proposed use is shown in Table 6.2.

Table 6.2: Relative change in trips by mode of travel

|                  | AM Peak Hour       |                     |               | PM Peak Hour       |                     |               |
|------------------|--------------------|---------------------|---------------|--------------------|---------------------|---------------|
|                  | Predicted Trips In | Predicted Trips Out | Two-way Trips | Predicted Trips In | Predicted Trips Out | Two-way Trips |
| Vehicles         | +100               | +72                 | +172          | -35                | +14                 | -21           |
| Walking          | +79                | -                   | +79           | -11                | +83                 | +72           |
| Cycling          | +77                | -                   | +77           | -                  | +77                 | +77           |
| Public Transport | +473               | -                   | +473          | -34                | +463                | +429          |

- 6.5. As the location of future students and staff are not known it is proposed to adopt the development trip distribution proportions considered as part of the outline application for The Old Vinyl Factory assessment. The number of vehicle trips predicted to be generated by the UTC in the peak hours is summarised on Figures T1 and T2. The vehicle trips associated with the cinema use in the PM peak hour is shown on Figure T3 with the difference in vehicle trips in the PM peak hour shown on Figure T4.

### **Sensitivity Test**

- 6.6. At the request of London Borough of Hillingdon Highways department, CampbellReith have considered the impact of a higher proportion of trips to the UTC by car. LBH Highways provided survey information for two local schools. The proportion of trips by car was calculated to be 40% for the students in Year 10 and older. LBH Highways have stated that these schools are in areas of poor public transport accessibility. Therefore the vehicular modal split for the UTC site is likely to be less than these sample sites. No information was available for the occupancy rate of vehicles and therefore this sensitivity test uses the rate presented in Technical Note 1 obtained from the TRICS database.
- 6.7. CampbellReith were also asked to review the Census information for method of travel to work as LBH Highways considered the 66% proportion of trips by car to be too low. A check was undertaken which looked at the method of travel to work from the three local areas (msoa Hillingdon 026, 027 and 030). This showed the proportion of travel to work by car to be 50.6%. It is considered that whilst the 66% value provides both a reasonable and robust assessment of the proposed staff trips a sensitivity test using 85% mode share by car will be adopted in conjunction with the higher student mode share. The uplifted traffic generation is shown on Figures T5 and T6 for the AM and PM peak hours respectively with the difference in PM traffic flows shown on Figure T7.

### **Comparison of Daily Trip Generation**

- 6.8. The TRICS data presents a total trip rate based on all two-way vehicle movements over the duration of the traffic surveys. For secondary schools the data is available from 07:00 to 19:00 and for cinemas the data is available from 10:00 to 03:00. This is assumed to cover the time period when trips occur to the land uses and can be used when calculating the total daily movements associated with a particular land use.
- 6.9. The cinema two-way vehicle trip rate is 59.691 per 100m<sup>2</sup> which, for a development of 3,366m<sup>2</sup> generates in the region of 2009 vehicle trips per day.
- 6.10. The school surveys produce a total two-way vehicle trip rate of 0.311 per pupil. Based on this; a school of 800 pupils would generate in the region of 249 vehicle trips per day. However, the UTC traffic generation has assumed a greater proportion of trips by car than for the sites in the TRICS database. Therefore, the proportions of the daily vehicle movements that occur between 08:00-09:00 and 15:00-17:00 have been calculated using the data for sites in the TRICS database and this proportion applied to the vehicle trip generation predicted for the UTC.
- 6.11. Interrogation of the TRICS database shows the proportion of vehicle trips arriving and departing in the peak hours described above is 50.2% of the daily trips. The UTC is predicted to generate 516 two-way trips in the peak periods (adopting the higher traffic generation estimate). Therefore the daily vehicle traffic generation of the UTC is predicted to be around 1028 vehicle trips per day. The Global Academy UTC will therefore generate approximately 51% of the daily vehicle trips expected from the previous cinema proposals.

## 7.0 IMPACT OF THE DEVELOPMENT ON THE TRANSPORT NETWORK

- 7.1. In order to assess the impact of the additional trips on the local highway network, capacity analysis has been undertaken for the key junctions, comparing the junctions as modelled in the S278 Junction Assessment and Implementation Programme / Variation Report for the Old Vinyl Factory for a future year assessment with committed developments and proposed highway improvements. The junction assessments are presented for both the initial trip generation figures and higher sensitivity test generation figures.

### Highway Network

#### Dawley Road / Blyth Road roundabout

- 7.2. The analysis of the Dawley Road / Blyth Road roundabout have taken account of the proposed improvements on the northern Dawley Road and Blyth Road arms of this junction.
- 7.3. Table 7.1 shows that the inclusion of the UTC additional trips sees a marginal increase in RFC and queue lengths at this junction with the highest RFC occurring on Dawley Road (S). The increase in queue length is around 4 vehicles with the sensitivity traffic generation. In the PM peak, the UTC proposals see no significant change in RFC. The queue length on Dawley Road (N) increases by around 3 vehicles with the sensitivity traffic generation.

Table 7.1: Dawley Road / Blyth Road roundabout comparison

|                 | AM Peak<br>Without UTC |              | AM Peak<br>With UTC |              | AM Peak<br>With UTC Sensitivity |              |
|-----------------|------------------------|--------------|---------------------|--------------|---------------------------------|--------------|
|                 | RFC                    | Queue Length | RFC                 | Queue Length | RFC                             | Queue Length |
| Dawley Road (N) | 0.74                   | 2.8          | 0.76                | 3.1          | 0.77                            | 3.3          |
| Blyth Road      | 0.78                   | 3.4          | 0.83                | 4.5          | 0.89                            | 7.3          |
| Dawley Road (S) | 0.85                   | 5.3          | 0.88                | 6.6          | 0.91                            | 8.6          |
| Kestrel Way     | 0.27                   | 0.4          | 0.31                | 0.4          | 0.39                            | 0.6          |
| Betam Road      | 0.33                   | 0.5          | 0.37                | 0.6          | 0.41                            | 0.7          |

|                 | PM Peak<br>Without UTC |              | PM Peak<br>With UTC |              | PM Peak<br>With UTC Sensitivity |              |
|-----------------|------------------------|--------------|---------------------|--------------|---------------------------------|--------------|
|                 | RFC                    | Queue Length | RFC                 | Queue Length | RFC                             | Queue Length |
| Dawley Road (N) | 0.96                   | 15.9         | 0.97                | 17.8         | 0.98                            | 19.3         |
| Blyth Road      | 0.64                   | 1.7          | 0.69                | 2.2          | 0.72                            | 2.5          |
| Dawley Road (S) | 0.78                   | 3.5          | 0.80                | 3.9          | 0.81                            | 4.2          |
| Kestrel Way     | 0.13                   | 0.2          | 0.14                | 0.2          | 0.15                            | 0.2          |
| Betam Road      | 0.11                   | 0.1          | 0.12                | 0.1          | 0.12                            | 0.1          |

- 7.4. The junction has been modelled with a synthesised peak and default HV proportions and is therefore considered to present a robust assessment of the peak periods.

North Hyde Road / Station Road traffic signals

- 7.5. Major improvements proposed to the North Hyde Road / Station Road junction were set out in The Old Vinyl Factory and Asda Transport Assessments. The North Hyde Road arms are proposed to be adjusted to increase the queuing length and to allow two lanes downstream of the junction. Some minor improvements are also proposed to allow two lanes southbound downstream of the junction. It is noted that the Asda Transport Assessment found the junction to operate over-capacity with the inclusion of other committed developments.
- 7.6. The staging of the junction assessed is as follows:
- ♦ Stage 1 - Station Road – Northbound and southbound traffic, right turners give-way
  - ♦ Stage 2 - North Hyde Road – Eastbound and westbound traffic, right turners give-way
  - ♦ Stage 3 - North Hyde Road – Westbound traffic flow only, right turners free flow
  - ♦ Stage 4 - Pedestrians – all movements subject to demand
- 7.7. The stage sequences in LINSIG have been modelled by running four consecutive cycles of operation. For the peak hours Stage 3 runs every other cycle and Stage 4 runs three out of every four cycles.
- 7.8. Table 7.2 presents a comparison of the operation of the junction with the cinema and UTC uses.

*Table 7.2: North Hyde Road / Station Road traffic signals comparison*

|                                 | AM Peak<br>Without UTC |               | AM Peak<br>With UTC |               | AM Peak<br>With UTC Sensitivity |               |
|---------------------------------|------------------------|---------------|---------------------|---------------|---------------------------------|---------------|
|                                 | Deg.<br>Sat.           | Mean<br>Max Q | Deg.<br>Sat.        | Mean<br>Max Q | Deg.<br>Sat.                    | Mean<br>Max Q |
| Station Road (N)<br>left/ahead  | 97.0%                  | 24            | 96.9%               | 25            | 101.4%                          | 34            |
| Station Road (N)<br>ahead/right | 91.7%                  | 11            | 92.5%               | 12            | 97.6%                           | 15            |
| North Hyde Road<br>(W)          | 64.8%                  | 9             | 69.9%               | 12            | 72.7%                           | 15            |
| Station Road (S)                | 99.8%                  | 23            | 99.9%               | 26            | 104.1%                          | 32            |
| North Hyde Road<br>(E)          | 106.2%                 | 85            | 107.5%              | 110           | 108.6%                          | 104           |

|                                 | PM Peak<br>Without UTC |               | PM Peak<br>With UTC |               | PM Peak<br>With UTC Sensitivity |               |
|---------------------------------|------------------------|---------------|---------------------|---------------|---------------------------------|---------------|
|                                 | Deg.<br>Sat.           | Mean<br>Max Q | Deg.<br>Sat.        | Mean<br>Max Q | Deg.<br>Sat.                    | Mean<br>Max Q |
| Station Road (N)<br>left/ahead  | 71.9%                  | 16            | 71.4%               | 15            | 70.2%                           | 14            |
| Station Road (N)<br>ahead/right | 68.4%                  | 14            | 68.3%               | 14            | 71.5%                           | 14            |
| North Hyde Road<br>(W)          | 115.9%                 | 98            | 116.8%              | 100           | 109.8%                          | 74            |
| Station Road (S)                | 107.5%                 | 55            | 106.4%              | 46            | 105.4%                          | 42            |
| North Hyde Road<br>(E)          | 96.8%                  | 29            | 94.2%               | 26            | 95.1%                           | 27            |

- 7.9. The small proportional increase in traffic on the junction associated with the UTC in the AM peak sees an increase in queue lengths due to the junction operating above capacity in all scenarios. The junction sees its highest degree of saturation in the AM peak on North Hyde Road (E) and in the PM peak on North Hyde Road (W). It is considered that the overall impact of the UTC development does not justify any additional improvement to this junction.

Trevor Road / Printing House Lane / Clayton Road junction

- 7.10. The junction of Trevor Road / Printing House Lane / Clayton Road is proposed to be signalised as part of the junction improvement works associated with The Old Vinyl Factory masterplan. This junction has been included in the assessment at the request of London Borough of Hillingdon Highways at the meeting held on 26<sup>th</sup> March 2015. The junction has been assessed with Clayton Road and the pedestrian stage both operating every other cycle of the traffic signals. The comparison of the junction's operation using the traffic flows assessed as part of the S278 Implementation Programme for The Old Vinyl Factory and the UTC traffic generation is shown in Table 7.3.

Table 7.3: Trevor Road / Printing House Road / Clayton Road junction comparison

|                     | AM Peak<br>Without UTC |               | AM Peak<br>With UTC |               | AM Peak<br>With UTC Sensitivity |               |
|---------------------|------------------------|---------------|---------------------|---------------|---------------------------------|---------------|
|                     | Deg.<br>Sat.           | Mean<br>Max Q | Deg.<br>Sat.        | Mean<br>Max Q | Deg.<br>Sat.                    | Mean<br>Max Q |
| Printing House Lane | 56.5%                  | 10            | 59.1%               | 10            | 60.9%                           | 11            |
| Clayton Road        | 14.9%                  | 1             | 14.9%               | 1             | 14.9%                           | 1             |
| Trevor Road         | 66.3%                  | 14            | 84.2%               | 20            | 99.6%                           | 37            |

|                     | PM Peak<br>Without UTC |               | PM Peak<br>With UTC |               | PM Peak<br>With UTC Sensitivity |               |
|---------------------|------------------------|---------------|---------------------|---------------|---------------------------------|---------------|
|                     | Deg.<br>Sat.           | Mean<br>Max Q | Deg.<br>Sat.        | Mean<br>Max Q | Deg.<br>Sat.                    | Mean<br>Max Q |
| Printing House Lane | 35.3%                  | 4             | 36.1%               | 5             | 38.3%                           | 5             |
| Clayton Road        | 67.3%                  | 4             | 67.3%               | 4             | 67.3%                           | 4             |
| Trevor Road         | 69.7%                  | 16            | 72.7%               | 18            | 77.4%                           | 21            |

- 7.11. The UTC proposals will see an increase in queue lengths on Trevor Road in the AM peak associated with the drop-off vehicle movements. The traffic queues clear after each cycle of the traffic signals. In the PM peak the queues on Trevor Road see a slight increase compared with the operation associated with the cinema use.

Trevor Road / Blyth Road junction

- 7.12. The one-way section of Blyth Road meets Trevor Road at a non-standard priority junction. Trevor Road (northern arm) and Blyth Road (two-way western arm) form the major road with Blyth Road (east) forming the minor arm of the junction. Blyth Road (east) is currently a single lane but is proposed to be widened to two lanes as part of The Old Vinyl Factory masterplan proposals. This junction has been modelled in its proposed form using the traffic flows from the S278 Implementation Programme. The change in traffic flows associated with the UTC proposals has then been assessed. The results of the junction assessment are summarised in Table 7.4.

Table 7.4: Trevor Road / Blyth Road junction comparison

|            | AM Peak<br>Without UTC |                 | AM Peak<br>With UTC |                 | AM Peak<br>With UTC Sensitivity |                 |
|------------|------------------------|-----------------|---------------------|-----------------|---------------------------------|-----------------|
|            | RFC                    | Queue<br>Length | RFC                 | Queue<br>Length | RFC                             | Queue<br>Length |
| Blyth Road | 0.54                   | 1.2             | 0.62                | 1.6             | 0.69                            | 2.1             |

|            | PM Peak<br>Without UTC |                 | PM Peak<br>With UTC |                 | PM Peak<br>With UTC Sensitivity |                 |
|------------|------------------------|-----------------|---------------------|-----------------|---------------------------------|-----------------|
|            | RFC                    | Queue<br>Length | RFC                 | Queue<br>Length | RFC                             | Queue<br>Length |
| Blyth Road | 0.83                   | 4.7             | 0.86                | 7.1             | 0.94                            | 11.3            |

- 7.13. The higher sensitivity traffic generation sees the queue length increase by around seven vehicles in the PM peak hour. The non-standard layout of the junction is may result in more gaps in traffic resulting in an increase in capacity on the Blyth Road arm of the junction. However, this effect has not been accounted for in the analysis presented in the table above.
- 7.14. Looking at the local road network assessed, it is concluded that the UTC will have no severe impacts on the operation of any of the local highway junctions, as currently proposed, and that no additional junction improvement works over and above those already proposed are required.

### Walking

- 7.15. The Global Academy UTC is predicted to generate up to an additional 80 two-way walking trips in the peak hour. There will also be pedestrian movements associated with trips by public transport between the bus stops and station and the UTC site and with any 'park and stride' trips where students are dropped off remotely from the UTC. Section 4 of this report has shown that the site is well served by existing footways and crossings and that there is good pedestrian connectivity to the local bus stops and station.
- 7.16. The S106 agreement for The Old Vinyl Factory includes conditions that will deliver pedestrian improvements including public realm improvements in the vicinity of the site and to Hayes Town Centre. The improvements proposed have taken account of the PERS assessment that was undertaken as part of The Old Vinyl Factory proposals. It is considered that the number of additional pedestrian movements predicted to be generated by the fully occupied Global Academy UTC will not trigger the need for any additional pedestrian improvements over and above those secured by the S106 requirements. The proposed public realm design for the local area, and in particular the creation of 'The Groove' will provide much improved facilities for pedestrians walking to and from the UTC.

### Cycling

- 7.17. The trip generation for the Global Academy UTC predicts around 77 two-way trips by cycle in the peak hours. Section 4 of this report has shown that the local area is accessible by bike. The S106 agreement for The Old Vinyl Factory includes measures to provide cycle connections between the site and Hayes Town Centre, a North West Hayes cycle connection, Dawley Road / North Hyde Road connection and provision to the local canal towpaths. It is considered that the additional cycle movements associated with the Global Academy UTC will not trigger the need for any additional cycle improvements in the local area over and above the secured S106 requirements.

### **Public Transport**

- 7.18. The Global Academy UTC will generate additional trips by public transport in the AM and PM peak hours compared to the consented cinema scheme. The numerous existing public transport services will be enhanced further in 2019 with the introduction of Crossrail. The Old Vinyl Factory transport assessment assessed the theoretical capacity of the local bus services as 6,500 passengers per hour and, based on a 10 trains per hour Crossrail service, an assumed capacity of 15,000 passengers per hour train service. The predicted increase of 473 two-way public transport trips in the AM peak equates to 2.2% of this total capacity. Further information on the capacity of the future public transport network in the vicinity of the proposed UTC has been requested from Transport for London through discussions held at the Greater London Authority pre-application meeting.
- 7.19. The S106 agreement for The Old Vinyl Factory includes measures to upgrade local bus stops and it is therefore considered that no further mitigation measures are required to accommodate the additional public transport trips associated with the Global Academy UTC.

### **Parking**

- 7.20. The London Borough of Hillingdon currently has no specific parking standards for educational establishments with parking provision assessed on an individual basis. Superseded parking standards applied a maximum of 1 space per 2 staff (giving a maximum of 30 parking spaces) whilst another previous revision applied a maximum of 1 space per 3 staff plus 1 space per 25 staff for visitor use (giving a total of 23 parking spaces).
- 7.21. The previously proposed cinema use provided for a total of 220 car parking spaces located in The Assembly Building (54), The Veneer Store (40) and surface parking (126). The cinema use also proposed 25 cycle parking spaces. The cinema will therefore require less parking than the cinema use. The reallocation of the parking areas previously proposed for the cinema are being considered by the Cathedral Group as part of the wider development proposals.
- 7.22. On the basis of the information on mode of travel to work for Hillingdon presented in the 2011 Census it is proposed to provide 40 parking spaces for the UTC in the Assembly Buildings. This is considered to be appropriate based on the staffing numbers and anticipated modal split presented in Table 6.1. Five disabled parking bays will be provided in addition to the 40 staff parking bays giving 45 spaces in total. The accessible parking bays will be located adjacent to the UTC building in close proximity to the main entrance. If the staff modal share by car was to increase to 85% then a total of 51 spaces would be required. The quantum of parking provision proposed is much greater than that of the superseded London Borough of Hillingdon parking standards.
- 7.23. The S106 agreement for The Old Vinyl Factory includes measures to discourage off-site parking including the requirement to carry out a study of the on-street parking situation in the vicinity of the development and, if required, introducing controlled parking zones in the vicinity of the development. Overall, the UTC proposals will generate less parking demand than the consented cinema use and will also be easier to manage through the UTC's Travel Plan.

- 7.24. The London Plan (FALP) cycle parking standards for colleges are 1 long-stay space per 4 staff, 1 long-stay space per 20 FTE students and 1 short-stay space per 7 FTE students. The proposed UTC should therefore provide 15 long-stay cycle spaces for staff, 40 long-stay cycle spaces and 115 short-stay cycle spaces for students, giving a total requirement of 170 cycle parking spaces. As a comparison the requirement based on a secondary school land use is 116 cycle parking spaces based on 1 long-stay space per 8 staff, 1 long-stay space per 8 students and 1 short-stay spare per 100 students. The cycle parking standards forming Annex 1 of the London Borough of Hillingdon UDP Saved Policies (2007) are for 1 cycle parking space per two students for higher and further education establishments (vocational and academic) producing a requirement for 400 cycle parking spaces.
- 7.25. Based on the anticipated modal split, it is therefore proposed that a minimum of 80 cycle parking spaces are provided. This accommodates the predicted mode share by cyclists and allows for visitor cycle parking. The cycle parking is to be located in a safe, secure and accessible location as near as possible to the building entrance.
- 7.26. A drop-off / pick-up lay-by will be provided, accessed from Blyth Road. This will remove the need for drivers picking up or dropping off students from having to stop on-street. The lay-by will also be available at off-peak times for coaches to pick-up and set-down. The layout will also accommodate deliveries by larger vehicles. Global Academy UTC will be responsible for managing service arrangements and timing deliveries so that they take place outside the peak arrival and departure times. A swept path assessment of the proposed drop-off is shown on Drawing 9002.

## 8.0 SUSTAINABILITY

### Public Transport

- 8.1. The site is situated within easy walking distance of bus stops on Claredon Road and Station Road. Bus services provide good connectivity between the site and the surrounding areas.
- 8.2. Hayes and Harlington train station is less than 10 minutes' walk from the site. When the full Crossrail service commences in 2019, it will provide ten trains per hour on the Great Western main line at peak times, with direct journeys to the West End, City and east London. There will be two trains per hour to Reading, another two trains per hour to Maidenhead, four trains per hour to Heathrow and two trains per hour to West Drayton.

### Pedestrians and Cyclists

- 8.3. Pedestrians and cyclists are catered for by a good network of footways and cycle facilities. This allows for easy access to and from the site by cyclists and for pedestrians to walk to and from the site and local facilities, bus stops and train station. Walking isochrones are shown in Figure 2 and cycling isochrones in Figure 3. The proposed public realm improvements will enhance the existing pedestrian and cyclist facilities.

### Travel Plan

- 8.4. The Travel Plan for the development will promote sustainable modes of transport for students, staff and visitors to encourage travel by means other than the private car.

## 9.0 CONCLUSIONS

- 9.1. This Transport Assessment has been prepared in support of a planning application for the proposed Global Academy University Technical College (UTC) at The Old Vinyl Factory site, Hayes in the London Borough of Hillingdon.
- 9.2. The current network of footways in the locality provides a reasonable footway network to all local services, facilities and public transport nodes in and around the site. Hayes and Harlington train station is approximately a six minute walk with Hayes town centre approximately an eight minute walk from the site. The improvements proposed to the public realm as part of The Old Vinyl Factory works will further enhance walking, cycling and public transport provision.
- 9.3. The Global Academy UTC will generate approximately half the number of daily vehicle trips expected from the previous cinema proposals, although the AM peak hour will see additional trips by all modes of travel. The additional trips have been shown to be able to be accommodated on the local junctions without any severe adverse impacts. It is not expected that the Global Academy UTC additional trips will generate the need for any additional mitigation measures.
- 9.4. The UTC proposals take account of the opportunities for sustainable transport modes provided by the forthcoming improvements brought about by Crossrail; provides safe and suitable access to the site through the public realm improvements proposed in the local area; and benefits from improvements to local junctions designed to help mitigate the impact of other committed developments.
- 9.5. The desirability of establishing a new school is considered to outweigh any of the potential negative traffic impacts. It is therefore concluded that the Global Academy UTC proposals can be accommodated, without any severe residual negative impacts, and will tie in with The Old Vinyl Factory's redevelopment proposals. Thus, the development proposals should be given positive consideration as stated in the National Planning Policy Framework paragraph 32, London Plan Policy 3.18 and the Planning for School Development Policy Statement.

## **Appendix 1: Figures and Drawings**



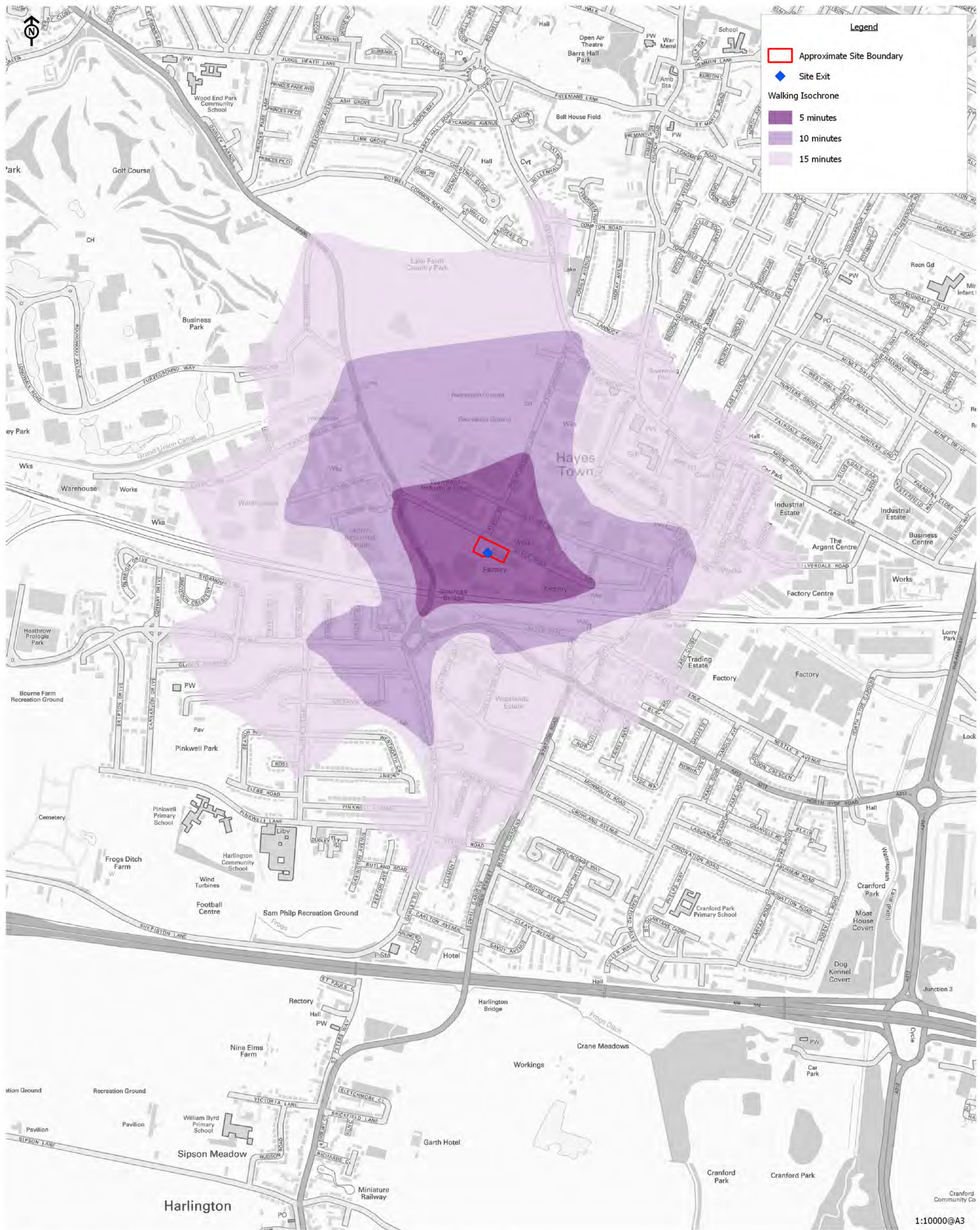
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Figure 1:  
Site Location

Scale: 1:20000@A4  
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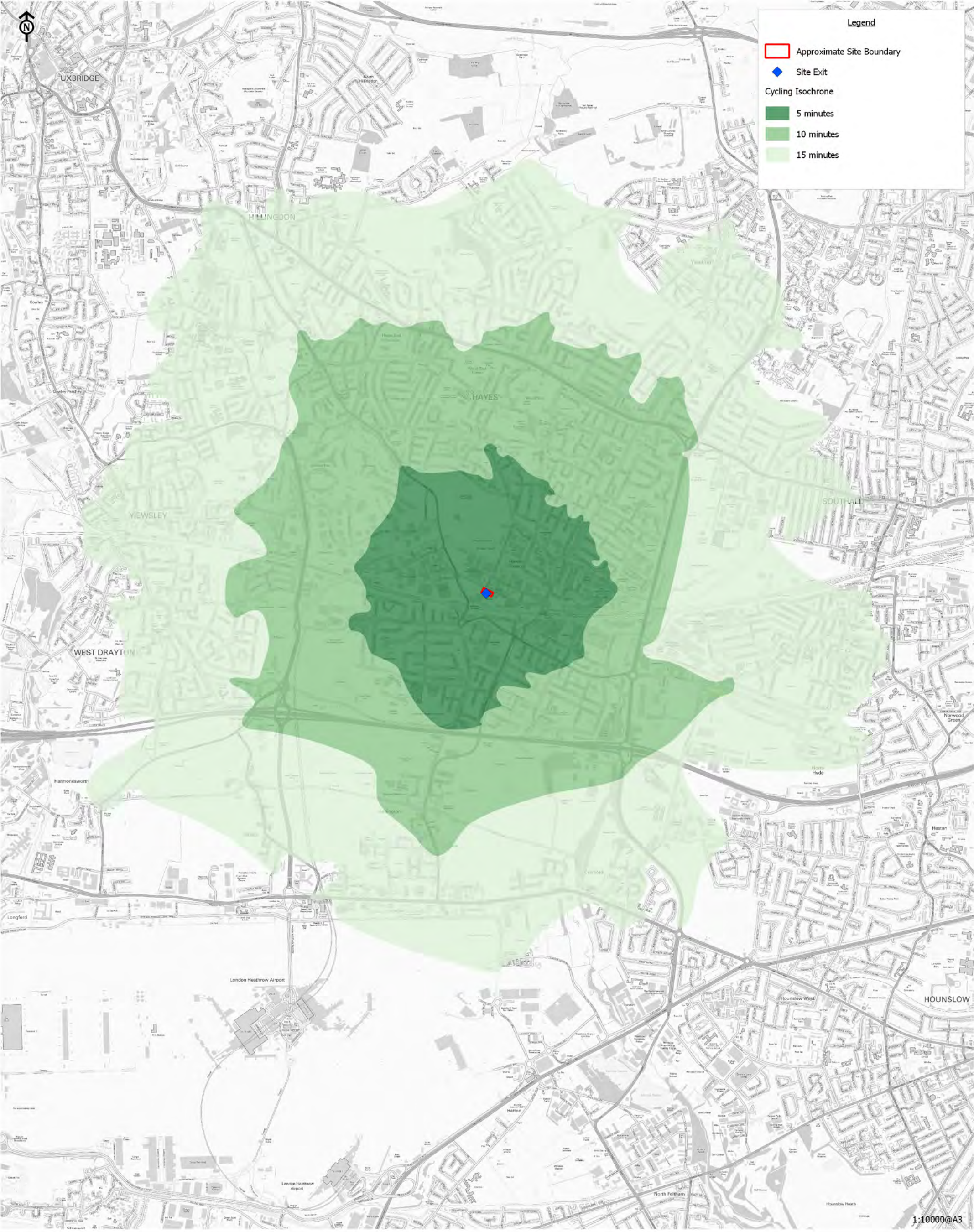
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Figure 2:  
Walking Isochrone

Scale: 1:10000@A3  
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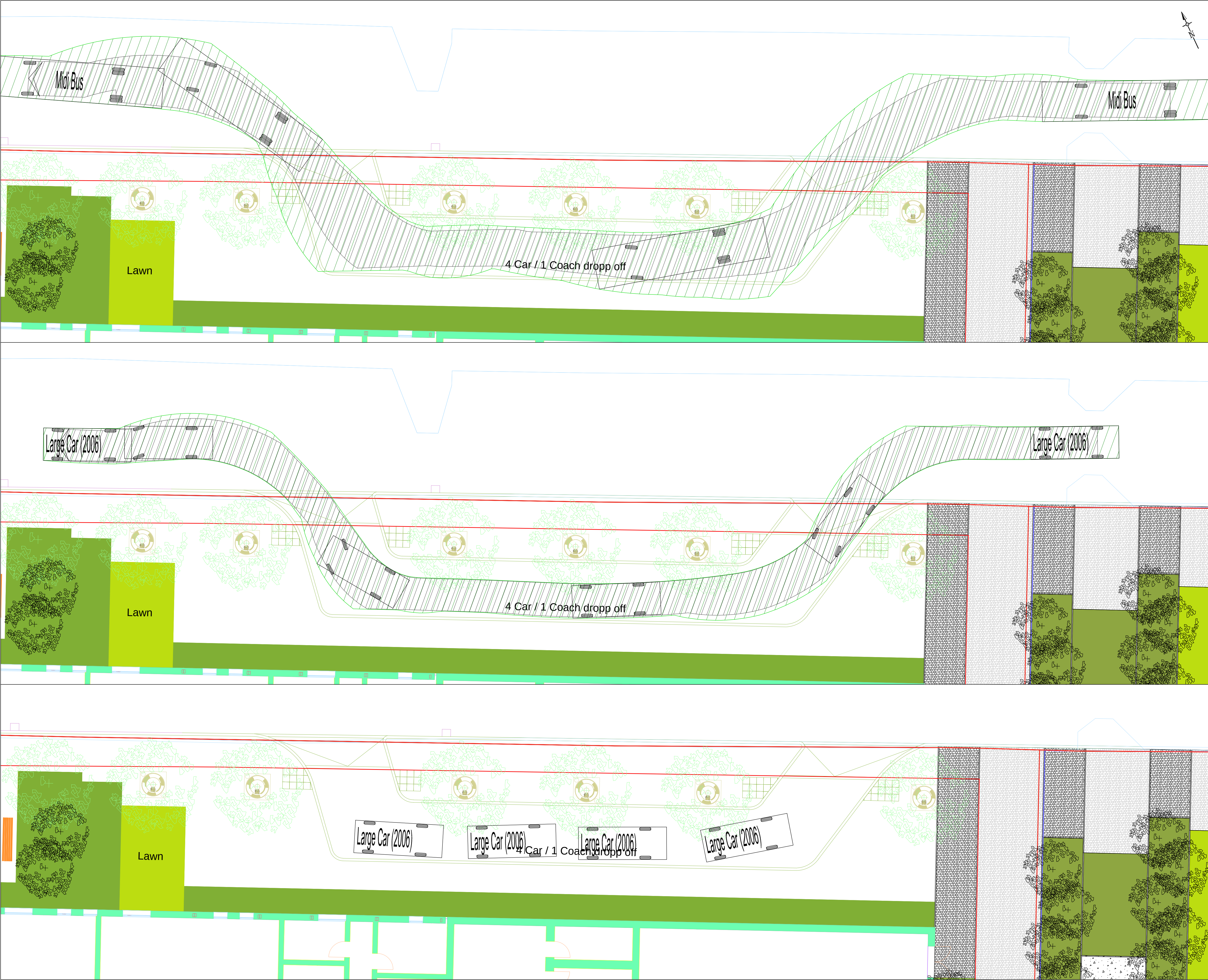
1:10000@A3

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Figure 3:  
Cycling Isochrone

Scale: 1:10000@A3  
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7

5.079

0.310

3.035

Denotes Section Number.

Denotes Drawing Number

Large Car (2006)

Overall Length 5.079m

Overall Width 1.872m

Overall Body Height 1.525m

Min Body Ground Clearance 0.310m

Max Track Width 1.831m

Lock to Lock Time 4.00s

Kerb to Kerb Turning Radius 5.900m

10

2.25

5.115

Midi Bus

Overall Length 10.000m

Overall Width 2.286m

Overall Body Height 3.003m

Min Body Ground Clearance 0.244m

Track Width 1.975m

Lock to Lock Time 6.00s

Kerb to Kerb Turning Radius 8.340m

VEHICLE BODY SWEEP PATH WHEN MOVING FORWARD

VEHICLE CHASSIS SWEEP PATH WHEN MOVING FORWARD

VEHICLE BODY SWEEP PATH WHEN REVERSING

VEHICLE CHASSIS SWEEP PATH WHEN REVERSING

|            |                        |          |    |
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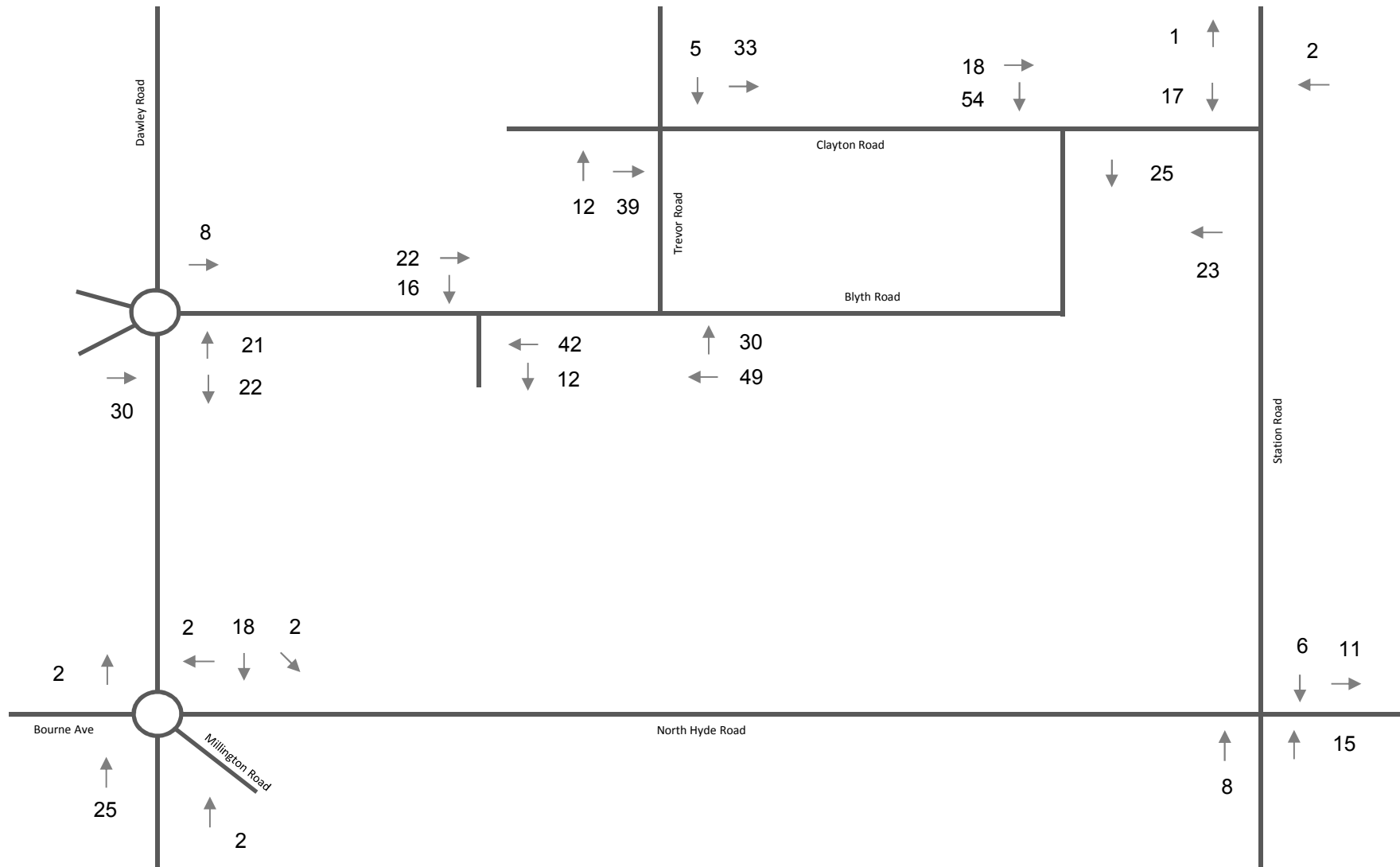
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PROPOSED DROP-OFF FACILITY

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| drawn | date     | scale @ A1 | C1 checked | CR Project No. |
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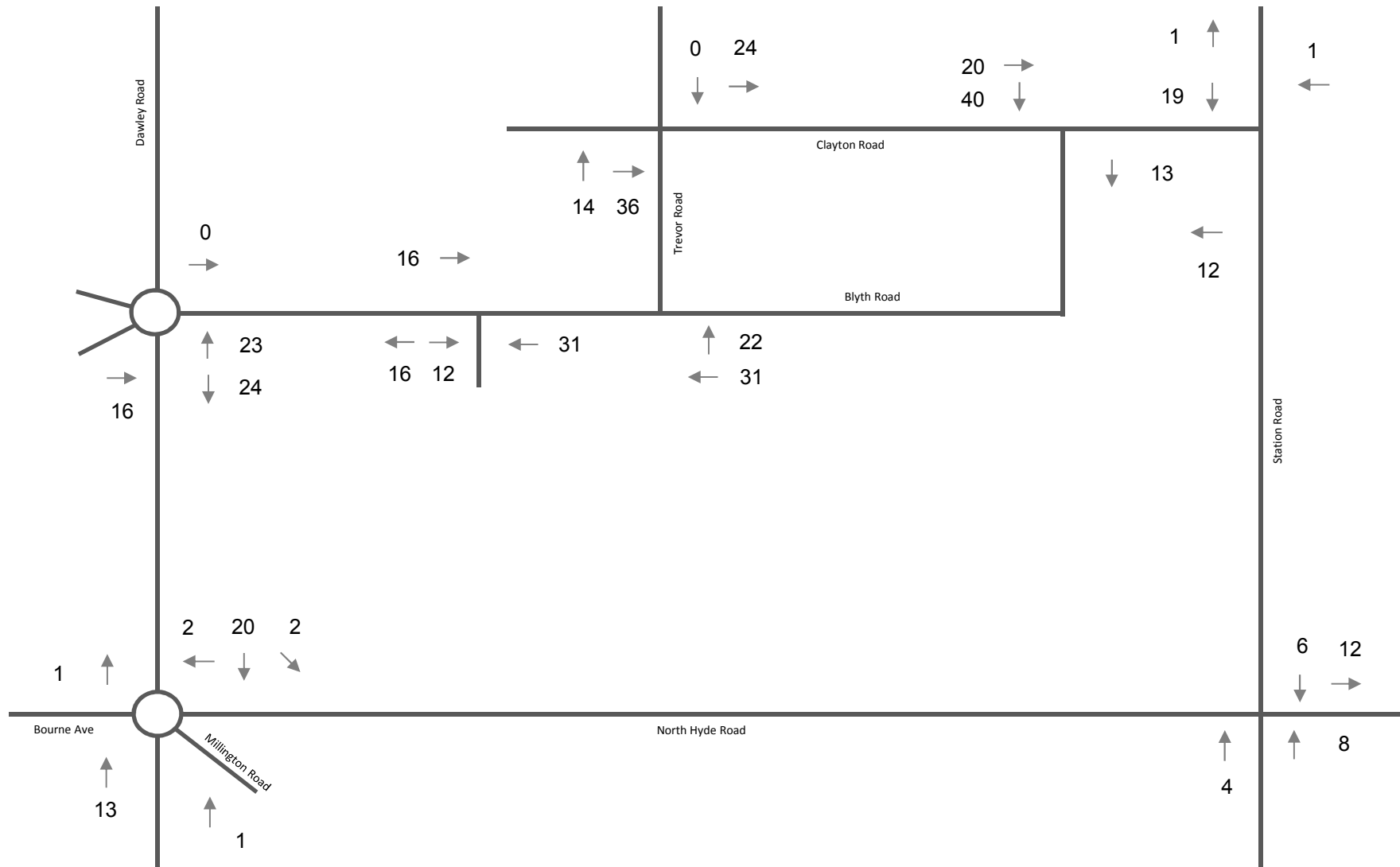
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Figure T1: AM peak development trips  
(08:00-09:00)



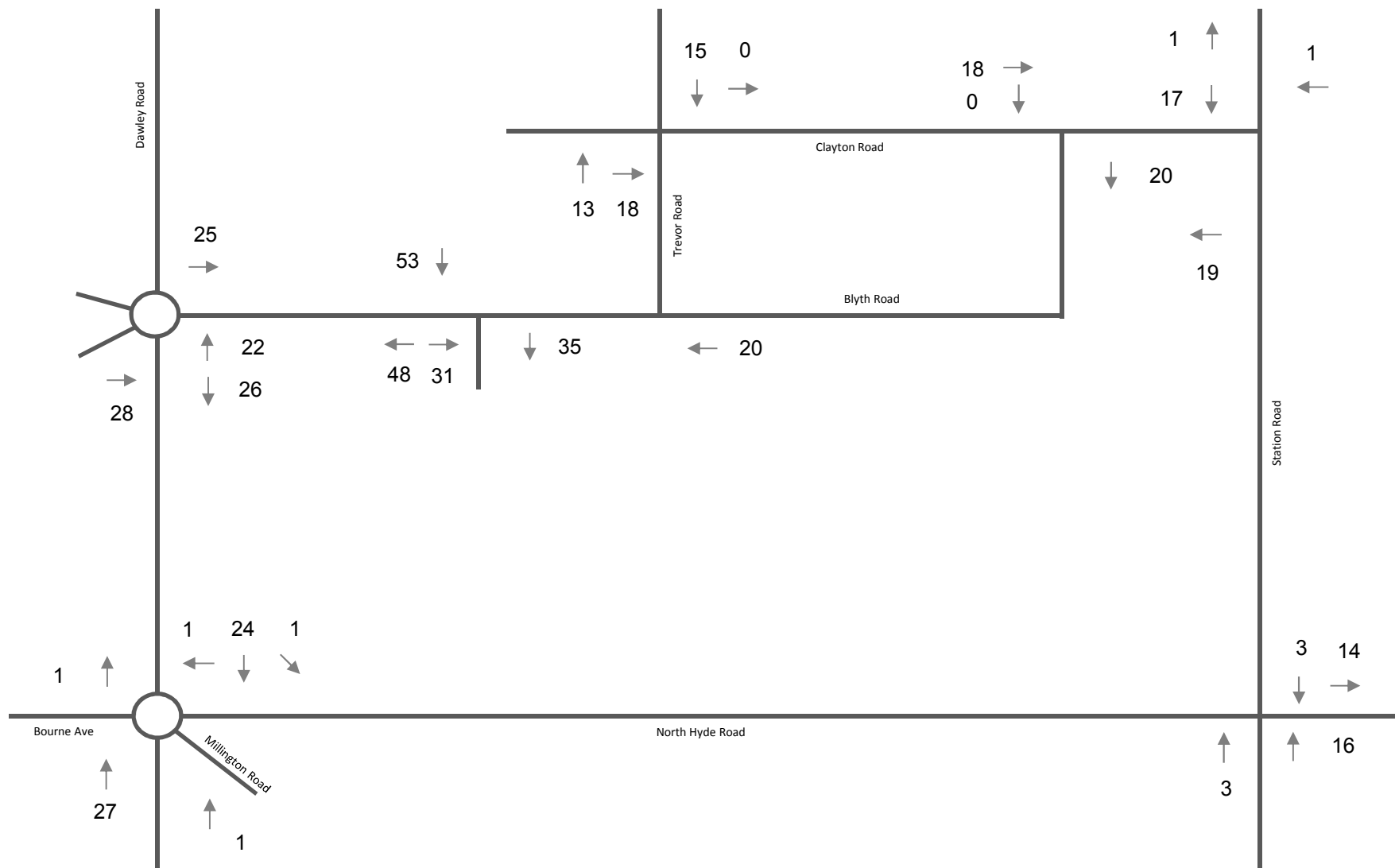
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Figure T2: PM peak development trips  
(17:00-18:00)



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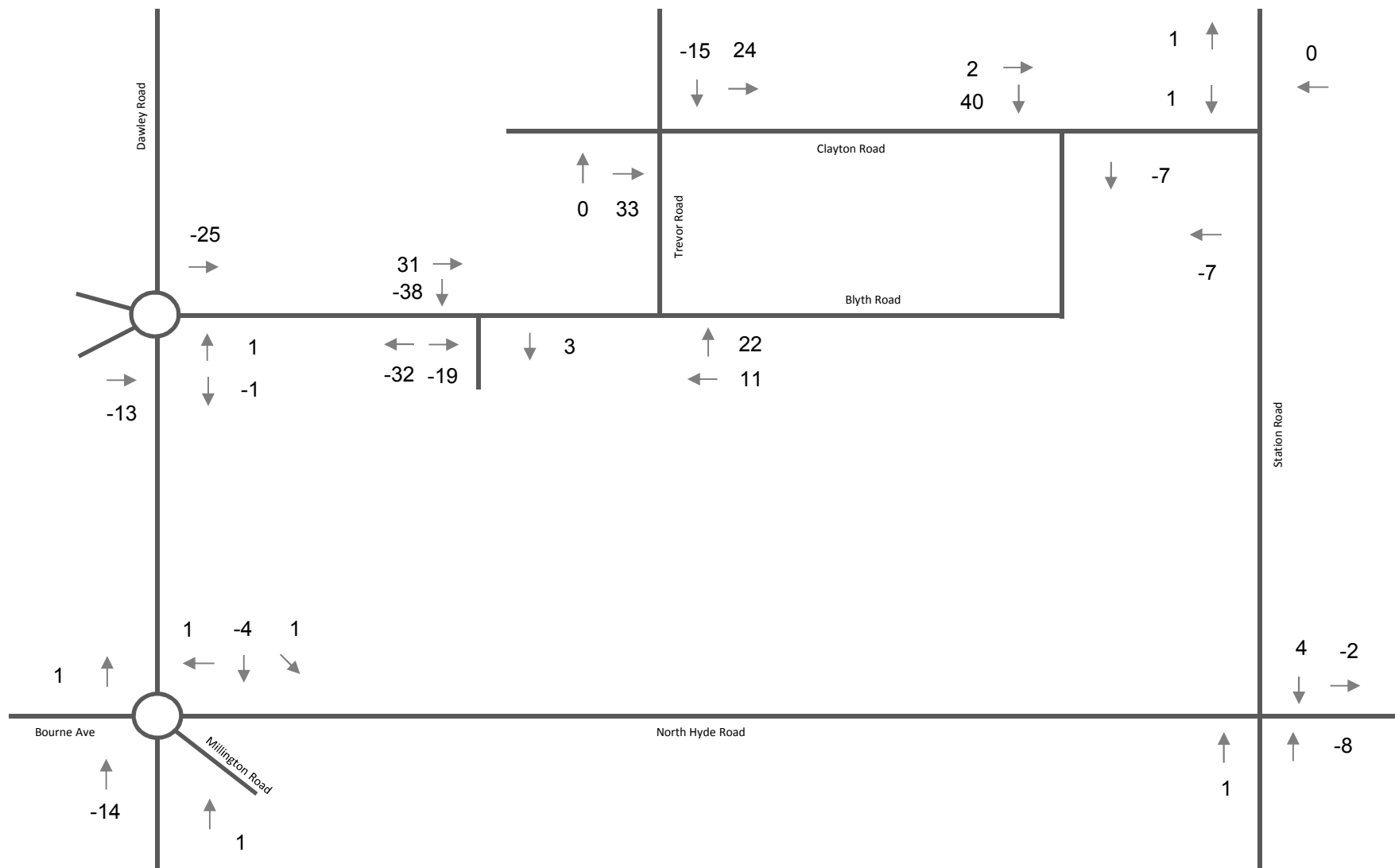
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Figure T3: PM peak cinema trips  
(17:00-18:00)



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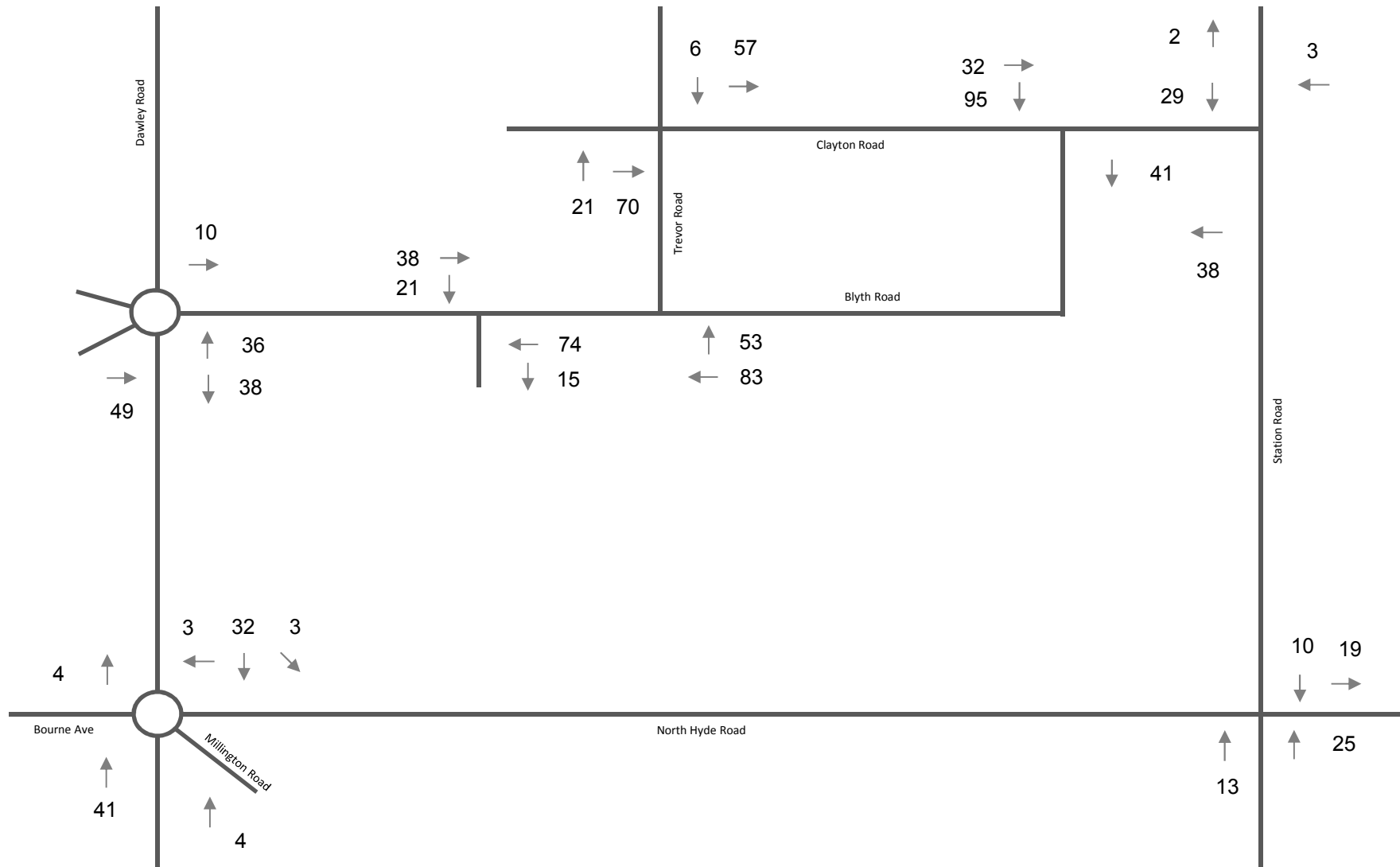
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Figure T4: Difference in PM peak trips  
(17:00-18:00)



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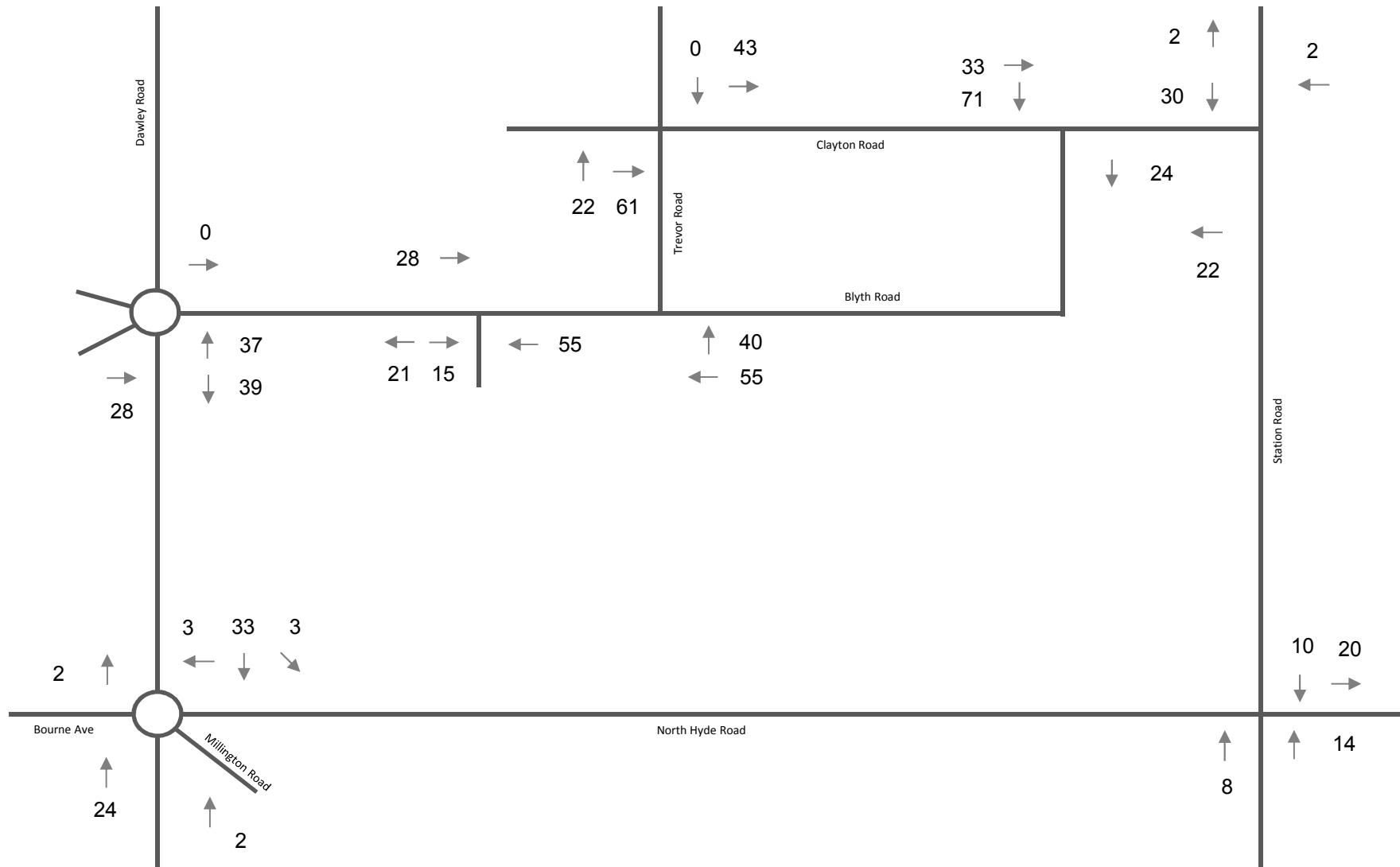
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Figure T5: AM peak sensitivity test  
(08:00-09:00)



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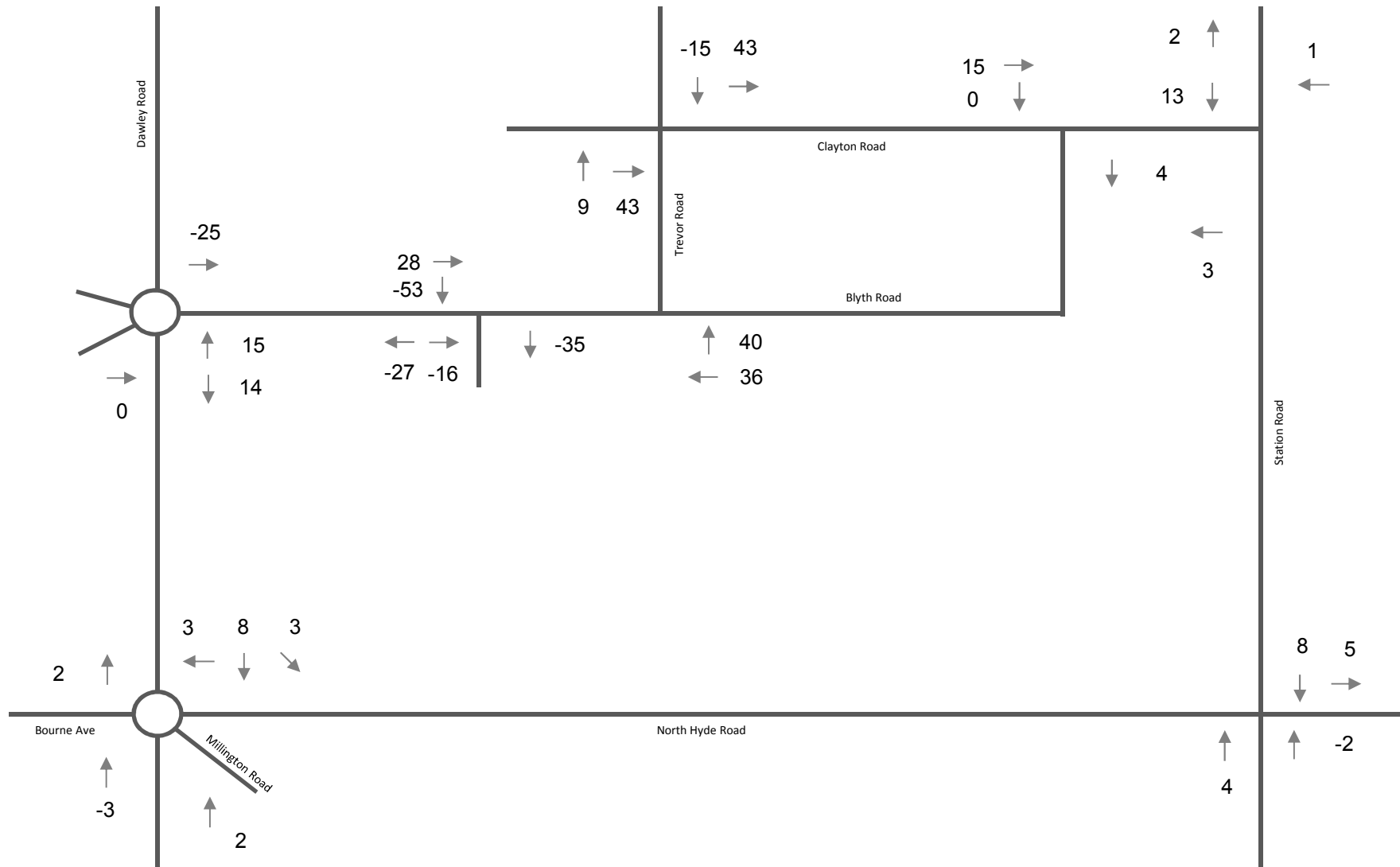
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Global Academy UTC, Hayes

Figure T6: PM peak sensitivity test  
(17:00-18:00)



# TURNING MOVEMENTS

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Global Academy UTC, Hayes

Figure T7: Difference in PM sensitivity trips  
(17:00-18:00)

## **Appendix 2: Public Transport Information**

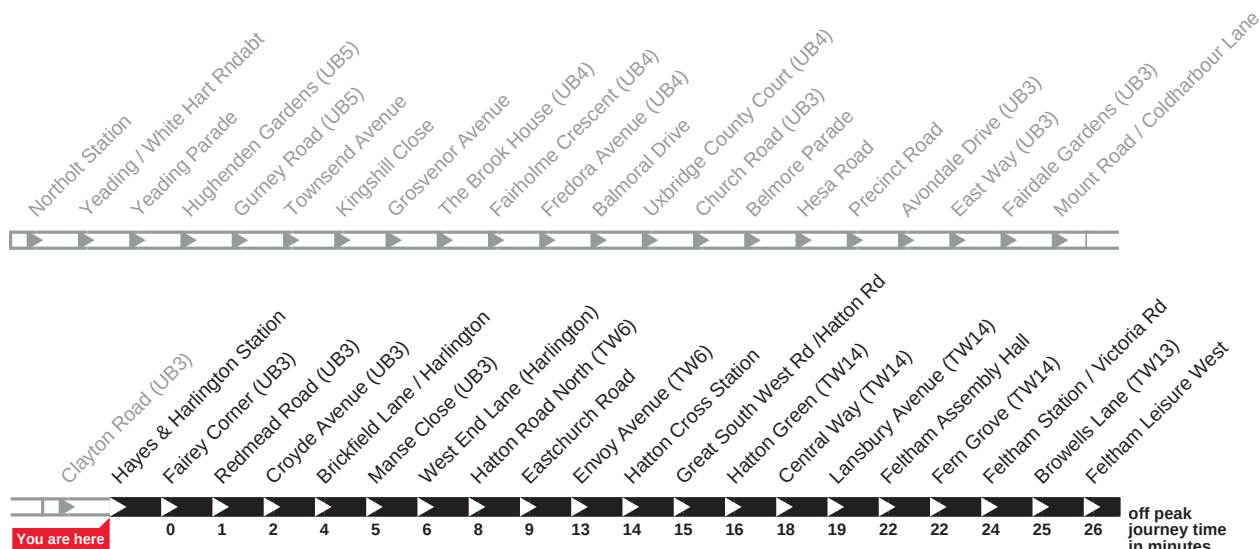
# London Buses

# 90

Daily



Buses towards Feltham Leisure West



## Monday to Friday

| First bus | 5 to 6am | 6 to 7am | 7am to 7pm  | 7 to 8pm | 8 to 9pm | 9 to 11pm   | 11pm to Midnight | Last buses |
|-----------|----------|----------|-------------|----------|----------|-------------|------------------|------------|
| 04 55     | 05 15    | 06 16    | about every | 19 06    | 20 12    | At these 06 | 23 06            | 00 05      |
|           | 05 36    | 06 36    | <b>9-11</b> | 19 17    | 20 26    | minutes 26  | 23 25            | 00 25      |
|           | 05 56    | 06 53    | minutes     | 19 30    | 20 46    | past the 46 | 23 45            | 00 45      |
|           |          |          |             | 19 45    |          | hour        |                  |            |
|           |          |          |             | 19 57    |          |             |                  |            |

## Saturday

| First bus | 5 to 6am | 6 to 7am | 7 to 8am | 8 to 9am | 9am to 7pm  | 7 to 8pm | 8 to 11pm   | 11pm to Midnight | Last buses |
|-----------|----------|----------|----------|----------|-------------|----------|-------------|------------------|------------|
| 04 55     | 05 15    | 06 11    | 07 11    | 08 13    | about every | 19 00    | At these 06 | 23 06            | 00 05      |
|           | 05 35    | 06 31    | 07 31    | 08 30    | <b>9-13</b> | 19 15    | minutes 26  | 23 25            | 00 25      |
|           | 05 51    | 06 51    | 07 53    | 08 45    | minutes     | 19 30    | past the 46 | 23 45            | 00 45      |
|           |          |          |          |          |             | 19 50    | hour        |                  |            |

## Sunday

| First bus | 5 to 6am | 6 to 10am   | 10am to 7pm | 7 to 8pm | 8 to 11pm   | 11pm to Midnight | Last buses |
|-----------|----------|-------------|-------------|----------|-------------|------------------|------------|
| 04 55     | 05 25    | At these 11 | At these 08 | 19 08    | At these 06 | 23 06            | 00 05      |
|           | 05 51    | minutes 31  | minutes 28  | 19 28    | minutes 26  | 23 25            | 00 25      |
|           |          | past the 51 | past the 48 | 19 46    | past the 46 | 23 45            | 00 45      |
|           |          | hour        | hour        |          | hour        |                  |            |

Operated by Metroline for London Buses

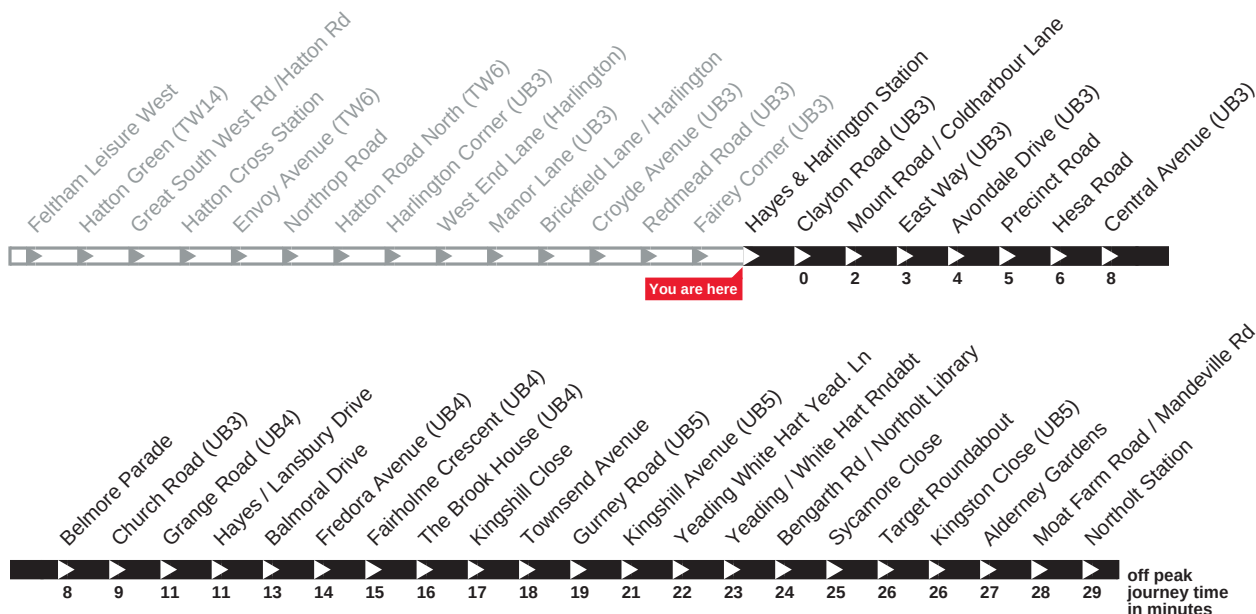
# London Buses

# 90

Daily



## Buses towards Northolt Station



### Monday to Friday

| First buses | 6 to 7am | 7 to 8am | 8am to 7pm  | 7 to 8pm | 8 to 9pm | 9 to 11pm   | 11pm to Midnight | Midnight to 1am | Last buses |
|-------------|----------|----------|-------------|----------|----------|-------------|------------------|-----------------|------------|
| 05 04       | 06 04    | 07 16    | about every | 19 04    | 20 09    | At these 19 | 23 19            | 00 12           | 01 12      |
| 05 24       | 06 24    | 07 27    | <b>9-11</b> | 19 14    | 20 24    | minutes 39  | 23 38            | 00 32           | 01 32      |
| 05 44       | 06 44    | 07 37    | minutes     | 19 24    | 20 39    | past the 59 | 23 57            | 00 52           |            |
|             | 06 59    | 07 47    |             | 19 39    | 20 59    | hour        |                  |                 |            |
|             |          | 07 57    |             | 19 54    |          |             |                  |                 |            |

### Saturday

| First buses | 6 to 8am    | 8 to 9am | 9 to 10am | 10am to 7pm | 7 to 8pm | 8 to 11pm   | 11pm to Midnight | Midnight to 1am | Last buses |
|-------------|-------------|----------|-----------|-------------|----------|-------------|------------------|-----------------|------------|
| 05 04       | At these 04 | 08 04    | 09 09     | about every | 19 04    | At these 18 | 23 18            | 00 12           | 01 12      |
| 05 24       | minutes 24  | 08 24    | 09 24     | <b>9-10</b> | 19 19    | minutes 38  | 23 38            | 00 32           | 01 32      |
| 05 44       | past the 44 | 08 40    | 09 34     | minutes     | 19 38    | past the 58 | 23 57            | 00 52           |            |
|             | hour        | 08 55    | 09 44     |             | 19 58    | hour        |                  |                 |            |
|             |             |          | 09 54     |             |          |             |                  |                 |            |

### Sunday

| First buses | 6 to 9am    | 9 to 10am | 10 to 11am | 11am to 6pm | 6 to 7pm | 7 to 8pm | 8 to 9pm | 9 to 11pm   | 11pm to Midnight | Midnight to 1am | Last buses |
|-------------|-------------|-----------|------------|-------------|----------|----------|----------|-------------|------------------|-----------------|------------|
| 05 04       | At these 04 | 09 04     | 10 06      | At these 07 | 18 07    | 19 04    | 20 04    | At these 19 | 23 19            | 00 12           | 01 12      |
| 05 34       | minutes 24  | 09 25     | 10 27      | minutes 27  | 18 27    | 19 24    | 20 24    | minutes 39  | 23 39            | 00 32           | 01 32      |
|             | past the 44 | 09 46     | 10 47      | past the 47 | 18 46    | 19 44    | 20 44    | past the 59 | 23 57            | 00 52           |            |
|             | hour        |           |            | hour        |          |          | 20 59    | hour        |                  |                 |            |

Operated by Metroline for London Buses

# London Buses

# 140

**24 hour service**

Buses towards Heathrow Central Bus Station



## Monday to Friday

| Midnight to 00:30am | 00:30 to 1am | 1 to 2am       | 2 to 3am       | 3 to 4am       | 4 to 5am                         | 5am to Midnight                                             | Midnight to 1am         |
|---------------------|--------------|----------------|----------------|----------------|----------------------------------|-------------------------------------------------------------|-------------------------|
|                     | 00 42        | 01 12<br>01 42 | 02 15<br>02 45 | 03 10<br>03 40 | 04 10<br>04 34<br>04 44<br>04 54 | <i>about every</i><br><br><b>6-10</b><br><br><i>minutes</i> | 00 03<br>00 13<br>00 23 |

## Saturday

| 1 to 2am       | 2 to 3am       | 3 to 4am       | 4 to 5am                         | 5am to Midnight                                             | Midnight to 1am                  |
|----------------|----------------|----------------|----------------------------------|-------------------------------------------------------------|----------------------------------|
| 01 12<br>01 42 | 02 12<br>02 42 | 03 10<br>03 40 | 04 10<br>04 34<br>04 44<br>04 54 | <i>about every</i><br><br><b>6-10</b><br><br><i>minutes</i> | 00 03<br>00 13<br>00 23<br>00 42 |

## Sunday

| 1 to 2am       | 2 to 3am       | 3 to 4am       | 4 to 5am                         | 5am to Midnight                                             | Midnight to 1am                  |
|----------------|----------------|----------------|----------------------------------|-------------------------------------------------------------|----------------------------------|
| 01 12<br>01 42 | 02 12<br>02 42 | 03 10<br>03 40 | 04 10<br>04 34<br>04 44<br>04 54 | <i>about every</i><br><br><b>8-12</b><br><br><i>minutes</i> | 00 03<br>00 13<br>00 23<br>00 42 |

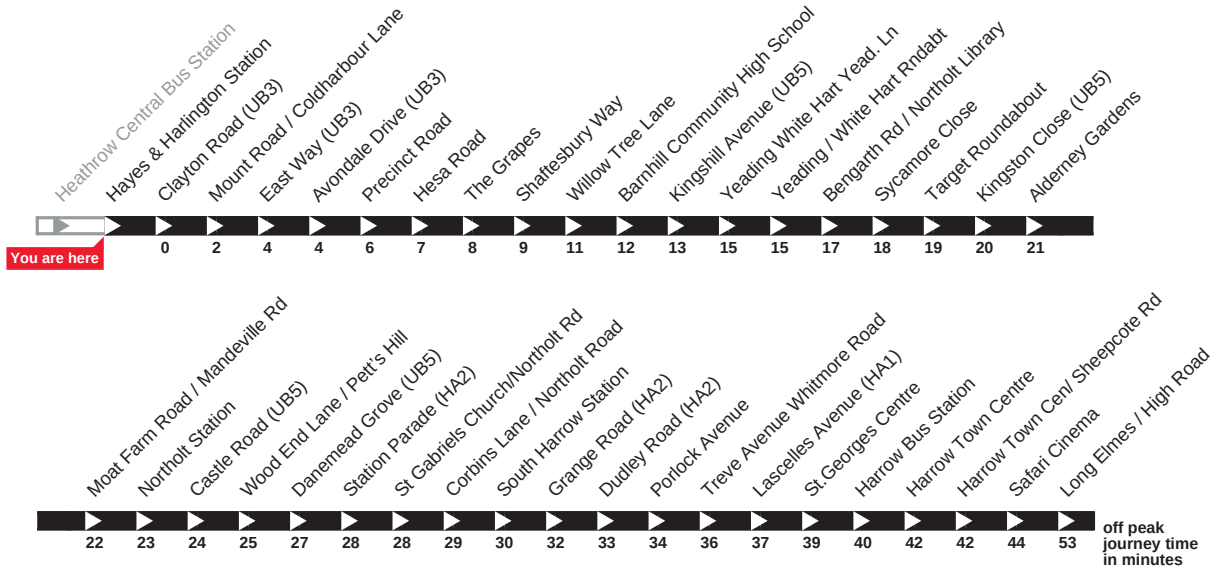
Operated by Metroline for London Buses

# London Buses

# 140

## 24 hour service

Buses towards Long Elmes / High Road



### Monday to Friday

| Midnight to 00:30am | 00:30 to 1am            | 1 to 3am                                   | 3 to 5am                                   | 5 to 6am                                  | 6am to 9pm                           | 9pm to Midnight                       | Midnight to 1am |
|---------------------|-------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|--------------------------------------|---------------------------------------|-----------------|
| 00 19<br>00 29      | 00 39<br>00 49<br>00 59 | At these 14<br>minutes 44<br>past the hour | At these 15<br>minutes 45<br>past the hour | 05 15<br>05 25<br>05 35<br>05 45<br>05 56 | about every<br><b>5-8</b><br>minutes | about every<br><b>6-10</b><br>minutes | 00 00<br>00 09  |

### Saturday

| Midnight to 00:30am | 00:30 to 1am            | 1 to 3am                                   | 3 to 5am                                   | 5 to 6am                                  | 6am to Midnight                       | Midnight to 1am |
|---------------------|-------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------------------------------|-----------------|
| 00 19<br>00 29      | 00 39<br>00 49<br>00 59 | At these 14<br>minutes 44<br>past the hour | At these 15<br>minutes 45<br>past the hour | 05 15<br>05 25<br>05 35<br>05 45<br>05 55 | about every<br><b>6-10</b><br>minutes | 00 00<br>00 09  |

### Sunday

| Midnight to 00:30am | 00:30 to 1am            | 1 to 3am                                   | 3 to 5am                                   | 5 to 6am                                  | 6 to 10am                              | 10am to Midnight                      | Midnight to 1am |
|---------------------|-------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|----------------------------------------|---------------------------------------|-----------------|
| 00 19<br>00 29      | 00 39<br>00 49<br>00 59 | At these 14<br>minutes 44<br>past the hour | At these 15<br>minutes 45<br>past the hour | 05 15<br>05 25<br>05 35<br>05 45<br>05 57 | about every<br><b>12-13</b><br>minutes | about every<br><b>8-11</b><br>minutes | 00 00<br>00 09  |

Operated by Metroline for London Buses

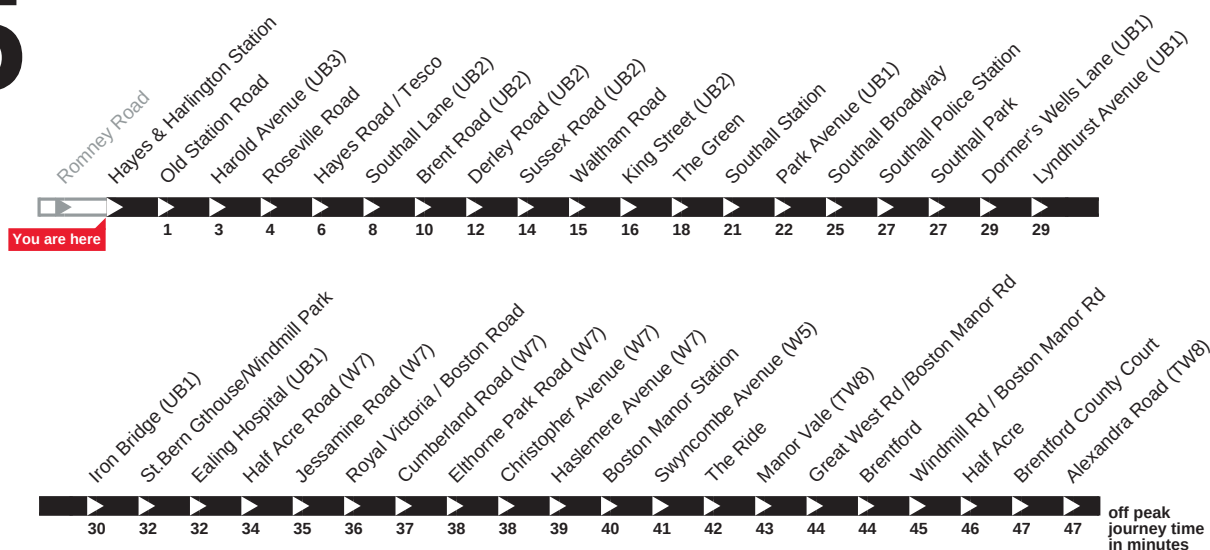
# London Buses

# 195

Daily



Buses towards Alexandra Road (TW8)



## Monday to Friday

| First buses | 6 to 7am | 7am to 7pm  | 7 to 8pm | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|-------------|----------|----------|-----------------|------------|
| 0531        | 0611     | about every | 1907     | 2012     | At these 02     | 0002       |
| 0551        | 0630     | 10-13       | 1919     | 2027     | minutes 22      | 0022       |
|             | 0642     | minutes     | 1931     | 2042     | past the 42     | 0042       |
|             | 0654     |             | 1944     |          | hour            |            |
|             |          |             | 1959     |          |                 |            |

## Saturday

| First buses | 6 to 7am | 7 to 8am | 8 to 9am | 9am to 6pm  | 6 to 7pm | 7 to 8pm | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|----------|----------|-------------|----------|----------|----------|-----------------|------------|
| 0531        | 0611     | 0711     | 0800     | about every | 1801     | 1910     | 2004     | At these 02     | 0002       |
| 0551        | 0631     | 0731     | 0816     | 12-13       | 1813     | 1925     | 2022     | minutes 22      | 0022       |
|             | 0651     | 0746     | 0831     | minutes     | 1825     | 1944     | 2042     | past the 42     | 0042       |
|             |          |          | 0843     |             | 1840     |          |          | hour            |            |
|             |          |          | 0857     |             | 1855     |          |          |                 |            |

## Sunday

| First buses | 6 to 7am | 7 to 8am | 8 to 9am | 9 to 10am | 10 to 11am | 11am to Midday | Midday to 6pm | 6 to 7pm | 7 to 8pm | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|----------|----------|-----------|------------|----------------|---------------|----------|----------|----------|-----------------|------------|
| 0531        | 0611     | 0711     | 0808     | 0912      | 1007       | about every    | At these 00   | 1800     | 1911     | 2004     | At these 02     | 0002       |
| 0551        | 0631     | 0731     | 0829     | 0932      | 1022       | 13-14          | minutes 15    | 1815     | 1926     | 2022     | minutes 22      | 0022       |
|             | 0651     | 0747     | 0849     | 0952      | 1037       | minutes        | past the 30   | 1829     | 1944     | 2042     | past the 42     | 0042       |
|             |          |          |          |           | 1052       |                | hour 45       | 1843     |          |          | hour            |            |
|             |          |          |          |           |            |                |               | 1858     |          |          |                 |            |

Operated by Metroline for London Buses

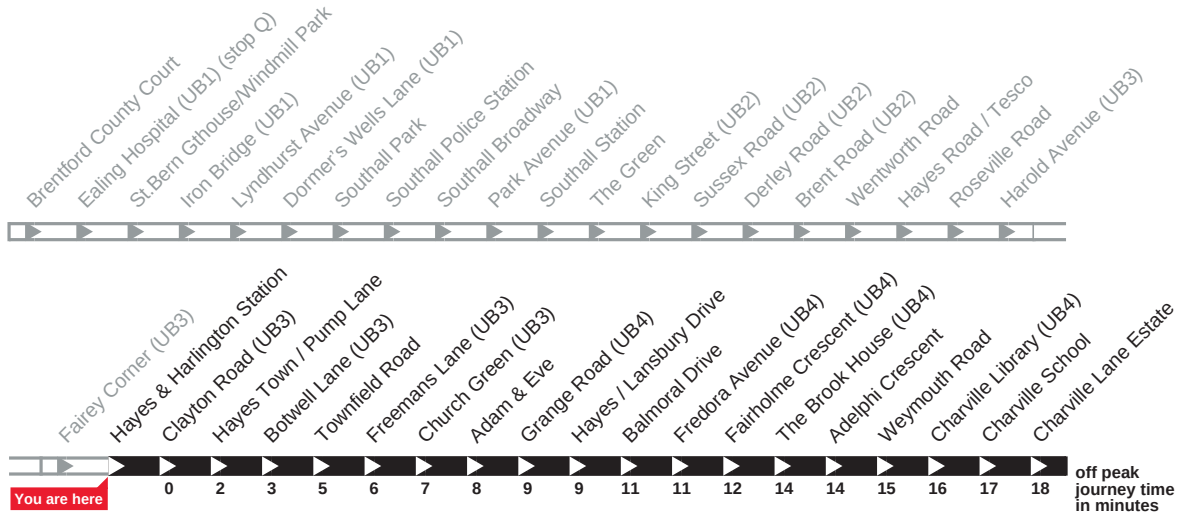
# London Buses

# 195

Daily



Buses towards Charville Lane Estate



## Monday to Friday

| First buses | 6 to 7am | 7 to 8am | 8am to 8pm   | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|----------|--------------|----------|-----------------|------------|
| 05 31       | 06 11    | 07 07    | about every  | 20 01    | At these 04     | 00 04      |
| 05 51       | 06 31    | 07 22    | <b>10-13</b> | 20 11    | minutes 24      | 00 24      |
|             | 06 47    | 07 34    | minutes      | 20 21    | past the 44     | 00 44      |
|             |          | 07 46    |              | 20 31    | hour            |            |
|             |          | 07 58    |              | 20 44    |                 |            |

## Saturday

| First buses | 6 to 7am | 7 to 8am | 8 to 9am | 9 to 10am | 10am to 6pm  | 6 to 7pm | 7 to 8pm     | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|----------|----------|-----------|--------------|----------|--------------|----------|-----------------|------------|
| 05 31       | 06 11    | 07 11    | 08 09    | 09 02     | about every  | 18 03    | about every  | 20 04    | At these 04     | 00 04      |
| 05 51       | 06 31    | 07 31    | 08 28    | 09 17     | <b>12-13</b> | 18 15    | <b>13-14</b> | 20 18    | minutes 24      | 00 24      |
|             | 06 51    | 07 50    | 08 46    | 09 32     | minutes      | 18 27    | minutes      | 20 31    | past the 44     | 00 44      |
|             |          |          |          | 09 44     |              | 18 39    |              | 20 44    | hour            |            |
|             |          |          |          | 09 56     |              | 18 54    |              |          |                 |            |

## Sunday

| First buses | 6 to 7am | 7 to 8am | 8 to 9am | 9 to 10am | 10am to 6pm | 6 to 7pm | 7 to 8pm     | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|----------|----------|-----------|-------------|----------|--------------|----------|-----------------|------------|
| 05 31       | 06 11    | 07 11    | 08 19    | 09 02     | At these 06 | 18 06    | about every  | 20 10    | At these 04     | 00 04      |
| 05 51       | 06 31    | 07 33    | 08 40    | 09 24     | minutes 21  | 18 21    | <b>13-14</b> | 20 24    | minutes 24      | 00 24      |
|             | 06 51    | 07 56    |          | 09 46     | past the 36 | 18 35    | minutes      | 20 44    | past the 44     | 00 44      |
|             |          |          |          |           | hour 51     | 18 48    |              |          | hour            |            |

Operated by Metroline for London Buses

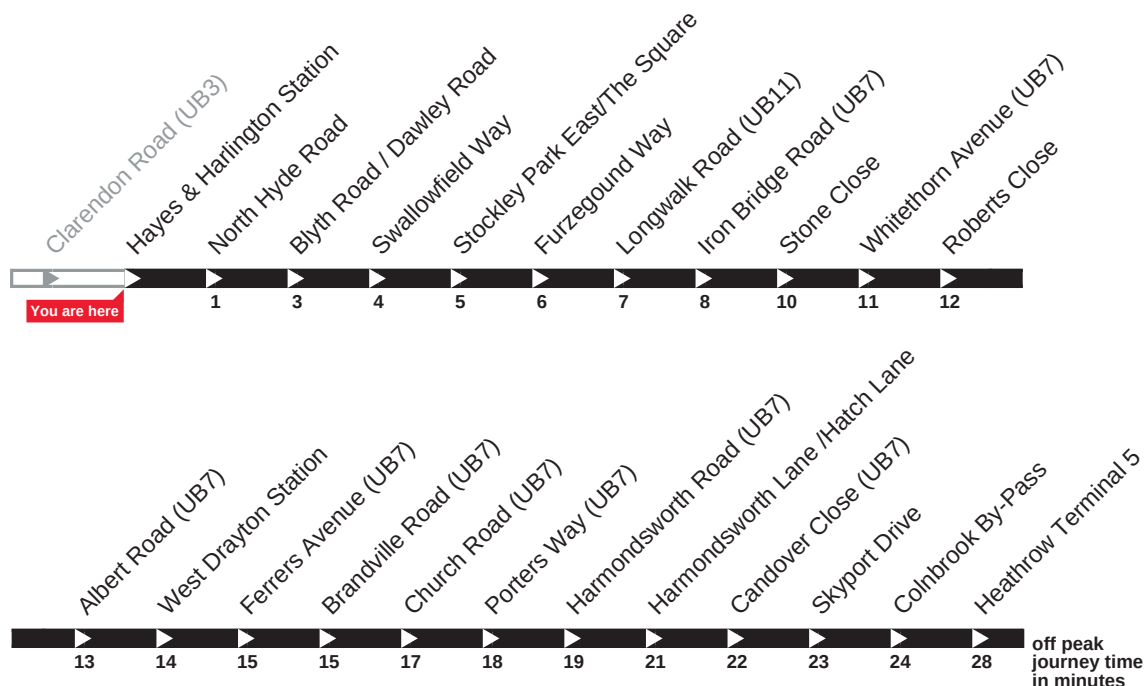
# London Buses

# 350

Daily



## Buses towards Heathrow Terminal 5



### Monday to Friday

| First bus | 4 to 5am                | 5 to 6am                         | 6 to 7am                                  | 7am to 7pm                                     | 7 to 8pm                         | 8 to 9pm                | 9pm to Midnight                                  | Last bus |
|-----------|-------------------------|----------------------------------|-------------------------------------------|------------------------------------------------|----------------------------------|-------------------------|--------------------------------------------------|----------|
| 03 31     | 04 01<br>04 21<br>04 41 | 05 01<br>05 16<br>05 31<br>05 46 | 06 01<br>06 16<br>06 31<br>06 41<br>06 51 | about every<br><br><b>11-13</b><br><br>minutes | 19 02<br>19 17<br>19 32<br>19 47 | 20 02<br>20 21<br>20 41 | At these 01<br>minutes 21<br>past the 41<br>hour | 00 01    |

### Saturday

| First bus | 4 to 8am                                         | 8 to 9am                         | 9 to 10am               | 10 to 11am              | 11am to 8pm                                      | 8 to 9pm       | 9 to 10pm               | 10pm to Midnight                                 | Last bus |
|-----------|--------------------------------------------------|----------------------------------|-------------------------|-------------------------|--------------------------------------------------|----------------|-------------------------|--------------------------------------------------|----------|
| 03 31     | At these 01<br>minutes 21<br>past the 41<br>hour | 08 01<br>08 21<br>08 41<br>08 59 | 09 19<br>09 39<br>09 59 | 10 19<br>10 39<br>10 58 | At these 18<br>minutes 38<br>past the 58<br>hour | 20 18<br>20 39 | 21 00<br>21 21<br>21 41 | At these 01<br>minutes 21<br>past the 41<br>hour | 00 01    |

### Sunday

| First bus | 4 to 8am                                         | 8 to 9am                         | 9 to 10am               | 10 to 11am              | 11am to 8pm                                      | 8 to 9pm       | 9 to 10pm               | 10pm to Midnight                                 | Last bus |
|-----------|--------------------------------------------------|----------------------------------|-------------------------|-------------------------|--------------------------------------------------|----------------|-------------------------|--------------------------------------------------|----------|
| 03 31     | At these 01<br>minutes 21<br>past the 41<br>hour | 08 01<br>08 21<br>08 41<br>08 59 | 09 19<br>09 39<br>09 59 | 10 19<br>10 39<br>10 58 | At these 18<br>minutes 38<br>past the 58<br>hour | 20 18<br>20 39 | 21 00<br>21 21<br>21 41 | At these 01<br>minutes 21<br>past the 41<br>hour | 00 01    |

Operated by Abellio London for London Buses

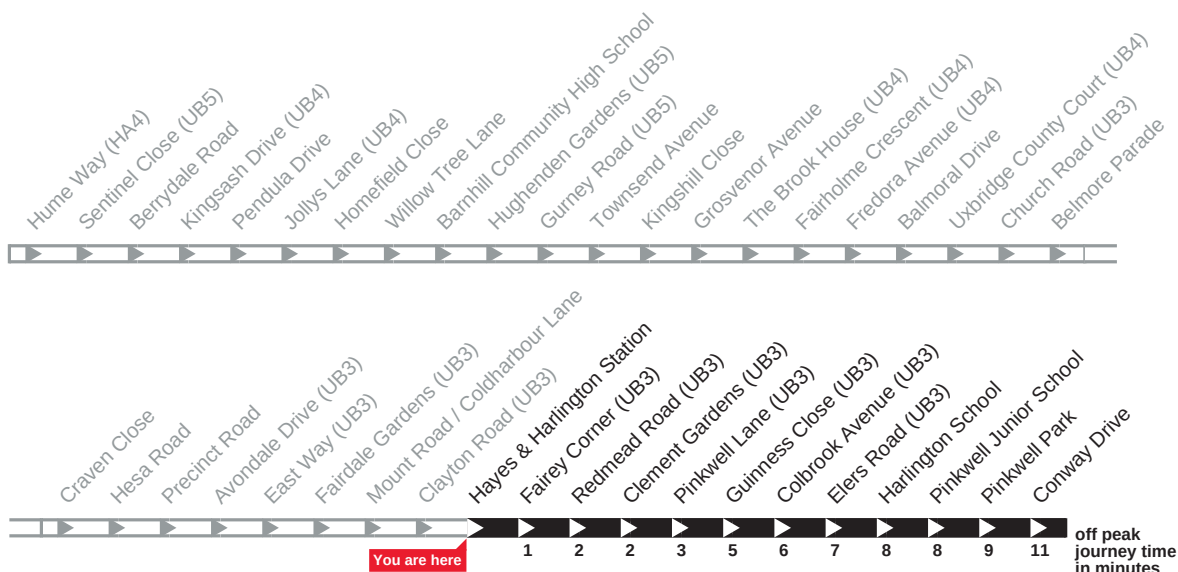
# London Buses

# 696

Monday - Friday



Buses towards Conway Drive



## School Monday

### First buses

1617  
1619

## School Tuesday

### First bus

1617

### Last bus

1732

## School Wednesday

### First buses

1617  
1619

## School Thursday

### First buses

1617  
1619

## School Friday

### First buses

1552  
1554

Operated by London United for London Buses

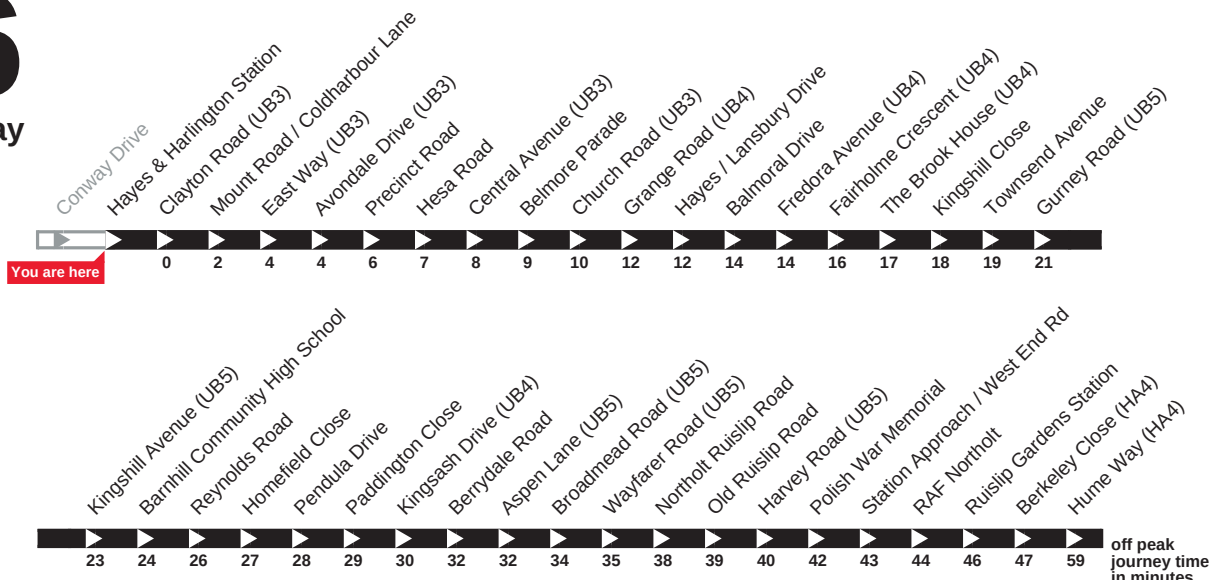
# London Buses

# 696

Monday - Friday



Buses towards Hume Way (HA4)



## School Monday

### First buses

0720

0722

## School Tuesday

### First buses

0720

0722

## School Wednesday

### First buses

0720

0722

## School Thursday

### First buses

0720

0722

## School Friday

### First buses

0720

0722

Operated by London United for London Buses

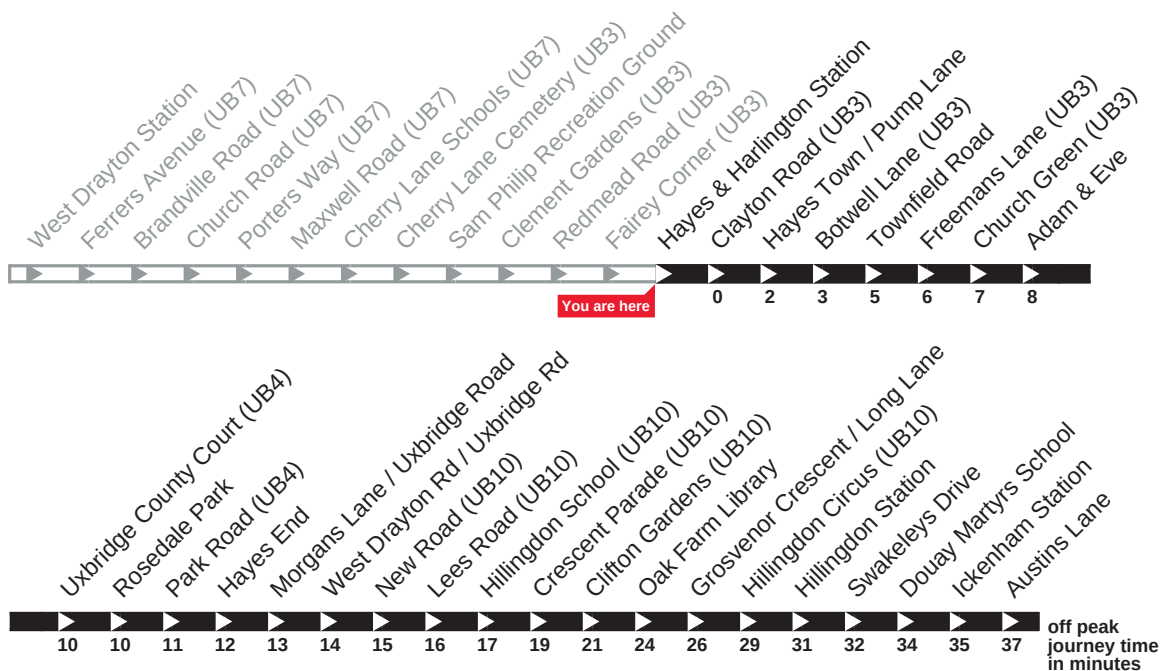
# London Buses

# 698

Monday - Friday



## Buses towards Austins Lane



## Mon-Fri Schooldays

### First buses

0740

0746

0752

0758

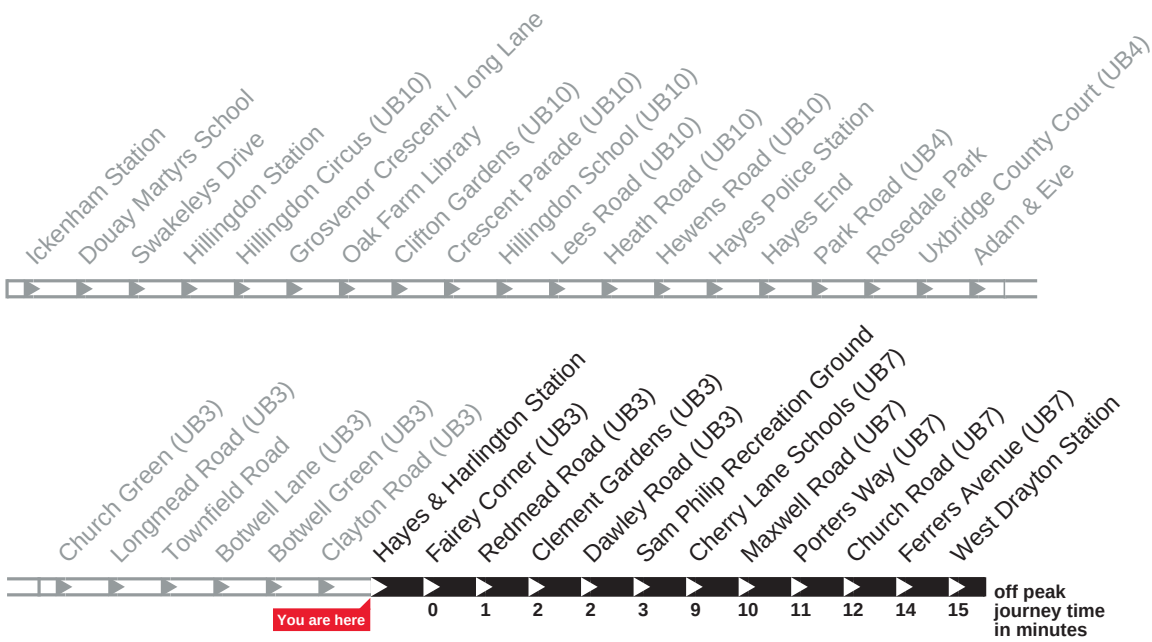
Operated by London United for London Buses

698

Monday - Friday



Buses towards West Drayton Station



Mon-Fri Schooldays

First buses

1542  
1544  
1546  
1550

Last bus

1610

Operated by London United for London Buses



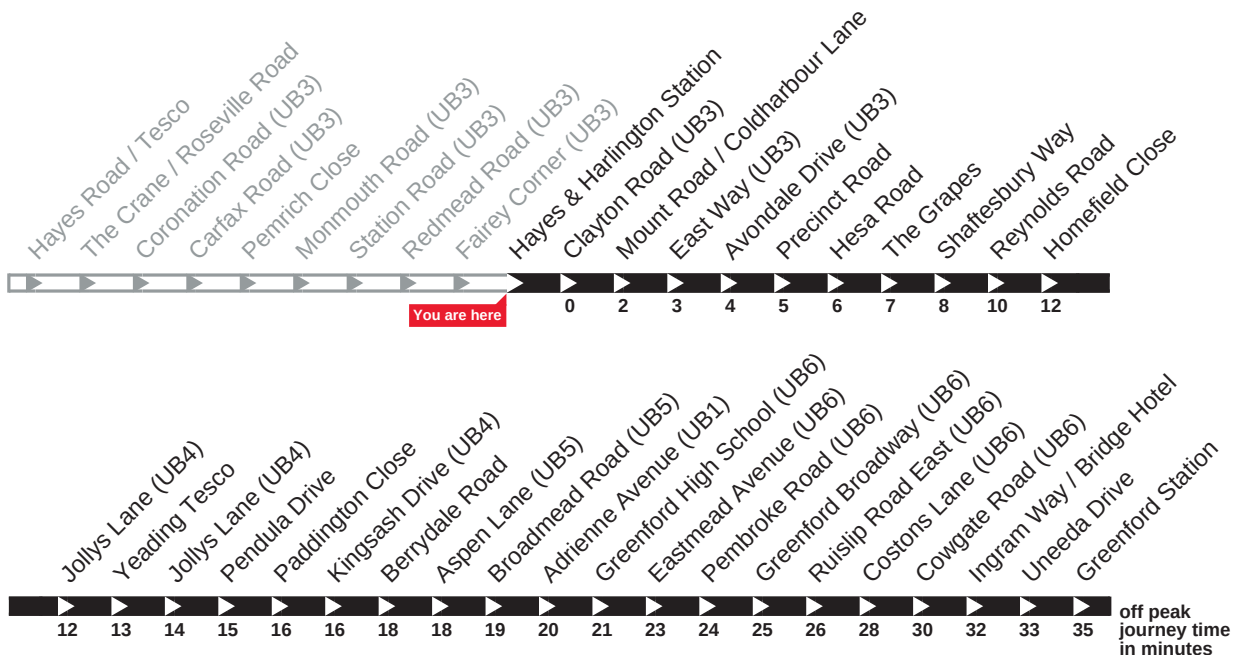
# London Buses

# E6

Daily



## Buses towards Greenford Station



### Monday to Friday

| First buses | 5 to 6am | 6 to 7am | 7am to 7pm         | 7 to 8pm | 8pm to Midnight | Last buses |
|-------------|----------|----------|--------------------|----------|-----------------|------------|
| 0439        | 0519     | 0604     | <i>about every</i> | 1909     | At these 04     | 0004       |
| 0459        | 0534     | 0619     | <b>9-10</b>        | 1919     | minutes 19      | 0019       |
|             | 0549     | 0629     | <i>minutes</i>     | 1934     | past the 34     |            |
|             |          | 0639     |                    | 1949     | hour 49         |            |
|             |          | 0649     |                    |          |                 |            |
|             |          | 0659     |                    |          |                 |            |

### Saturday

| First buses | 5 to 7am    | 7 to 8am | 8 to 9am | 9am to 6pm         | 6 to 7pm | 7pm to Midnight | Last buses |
|-------------|-------------|----------|----------|--------------------|----------|-----------------|------------|
| 0439        | At these 19 | 0719     | 0809     | <i>about every</i> | 1800     | At these 04     | 0004       |
| 0459        | minutes 39  | 0739     | 0824     | <b>10</b>          | 1810     | minutes 19      | 0019       |
|             | past the 59 | 0754     | 0840     | <i>minutes</i>     | 1819     | past the 34     |            |
|             | hour        |          | 0855     |                    | 1834     | hour 49         |            |
|             |             |          |          |                    | 1849     |                 |            |

### Sunday

| First buses | 7 to 8am | 8 to 9am | 9 to 10am | 10am to 6pm | 6pm to Midnight | Last buses |
|-------------|----------|----------|-----------|-------------|-----------------|------------|
| 0604        | 0704     | 0804     | 0919      | At these 05 | At these 04     | 0004       |
| 0624        | 0724     | 0824     | 0935      | minutes 20  | minutes 19      | 0019       |
| 0644        | 0744     | 0844     | 0950      | past the 35 | past the 34     |            |
|             |          | 0859     |           | hour 50     | hour 49         |            |

Operated by Metroline for London Buses

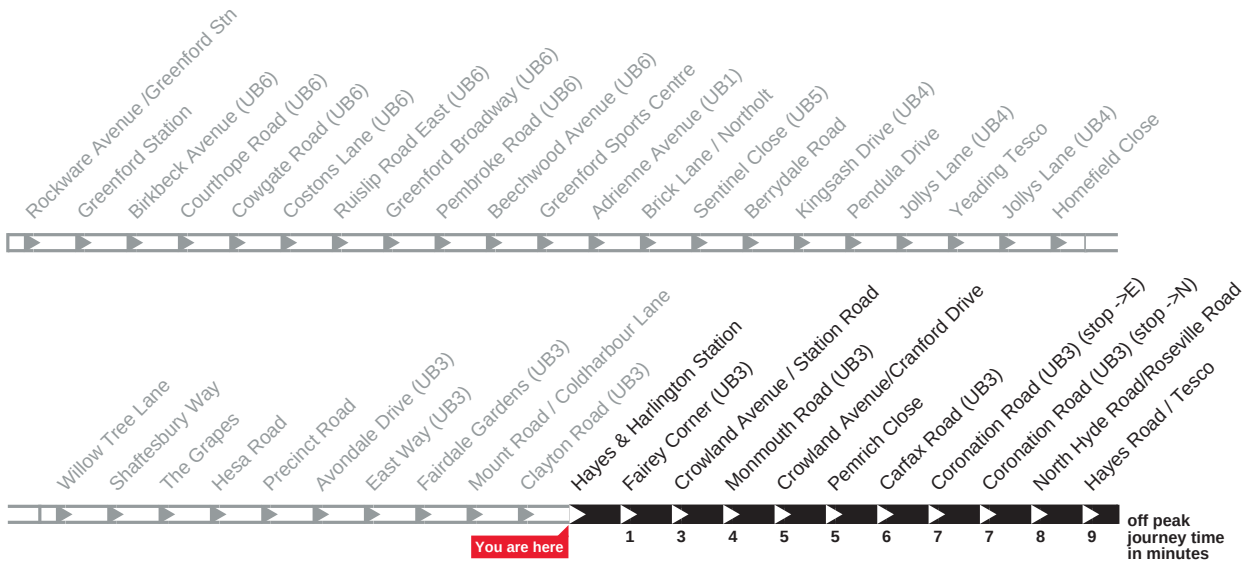
# London Buses

# E6

Daily



Buses towards Hayes Road / Tesco



## Monday to Friday

| First buses | 6 to 7am | 7 to 8am | 8am to 8pm         | 8 to 9pm | 9pm to 1am  | Last buses |
|-------------|----------|----------|--------------------|----------|-------------|------------|
| 05 37       | 06 17    | 07 05    | <i>about every</i> | 20 06    | At these 02 | 01 02      |
| 05 57       | 06 32    | 07 25    | <b>8-12</b>        | 20 17    | minutes 17  | 01 17      |
|             | 06 47    | 07 40    | <i>minutes</i>     | 20 32    | past the 32 |            |
|             |          | 07 50    |                    | 20 47    | hour 47     |            |

## Saturday

| First buses | 6 to 8am    | 8 to 9am | 9 to 10am | 10am to 7pm        | 7 to 8pm | 8 to 9pm | 9pm to 1am  | Last buses |
|-------------|-------------|----------|-----------|--------------------|----------|----------|-------------|------------|
| 05 37       | At these 17 | 08 17    | 09 14     | <i>about every</i> | 19 04    | 20 05    | At these 02 | 01 02      |
| 05 57       | minutes 37  | 08 37    | 09 34     | <b>8-10</b>        | 19 14    | 20 17    | minutes 17  | 01 17      |
|             | past the 57 | 08 55    | 09 49     | <i>minutes</i>     | 19 24    | 20 32    | past the 32 |            |
|             | hour        |          | 09 59     |                    | 19 39    | 20 47    | hour 47     |            |
|             |             |          |           |                    | 19 52    |          |             |            |

## Sunday

| First buses | 8 to 9am | 9 to 10am | 10am to 6pm | 6 to 7pm           | 7pm to 1am  | Last buses |
|-------------|----------|-----------|-------------|--------------------|-------------|------------|
| 07 02       | 08 02    | 09 02     | At these 11 | <i>about every</i> | At these 02 | 01 02      |
| 07 22       | 08 22    | 09 22     | minutes 26  | <b>13</b>          | minutes 17  | 01 17      |
| 07 42       | 08 42    | 09 41     | past the 41 | <i>minutes</i>     | past the 32 |            |
|             |          | 09 56     | hour 56     |                    | hour 47     |            |

Operated by Metroline for London Buses

# H98

Daily



Buses towards Hounslow Bus Station



| Monday to Friday |          |                            |          |           |            |                  |            |
|------------------|----------|----------------------------|----------|-----------|------------|------------------|------------|
| First buses      | 6 to 7am | 7am to 8pm                 | 8 to 9pm | 9 to 10pm | 10 to 11pm | 11pm to Midnight | Last buses |
| 05 17            | 06 08    | about every                | 20 06    | 21 03     | 22 02      | 23 02            | 00 00      |
| 05 37            | 06 23    | <b>7-10</b><br><br>minutes | 20 18    | 21 17     | 22 17      | 23 16            | 00 15      |
| 05 53            | 06 34    |                            | 20 33    | 21 32     | 22 32      | 23 30            |            |
|                  | 06 44    |                            | 20 48    | 21 47     | 22 47      | 23 45            |            |
|                  | 06 54    |                            |          |           |            |                  |            |

| Saturday    |          |          |          |             |              |          |           |            |                  |            |
|-------------|----------|----------|----------|-------------|--------------|----------|-----------|------------|------------------|------------|
| First buses | 6 to 7am | 7 to 8am | 8 to 9am | 9am to 7pm  | 7 to 8pm     | 8 to 9pm | 9 to 10pm | 10 to 11pm | 11pm to Midnight | Last buses |
| 05 17       | 06 17    | 07 17    | 08 08    | about every | about every  | 20 03    | 21 03     | 22 02      | 23 02            | 00 00      |
| 05 37       | 06 37    | 07 37    | 08 23    | <b>7-10</b> | <b>10-12</b> | 20 18    | 21 17     | 22 17      | 23 16            | 00 15      |
| 05 57       | 06 57    | 07 53    | 08 33    | minutes     | minutes      | 20 33    | 21 32     | 22 32      | 23 30            |            |
|             |          |          | 08 43    |             |              | 20 48    | 21 47     | 22 47      | 23 45            |            |
|             |          |          | 08 53    |             |              |          |           |            |                  |            |

| Sunday      |             |           |                |               |             |          |          |          |          |          |          |           |                  |            |
|-------------|-------------|-----------|----------------|---------------|-------------|----------|----------|----------|----------|----------|----------|-----------|------------------|------------|
| First buses | 7 to 9am    | 9 to 10am | 10am to Midday | Midday to 1pm | 1 to 3pm    | 3 to 4pm | 4 to 5pm | 5 to 6pm | 6 to 7pm | 7 to 8pm | 8 to 9pm | 9 to 10pm | 10pm to Midnight | Last buses |
| 06 16       | At these 16 | 09 15     | At these 06    | 12 06         | At these 05 | 15 05    | 16 04    | 17 04    | 18 03    | 19 03    | 20 02    | 21 02     | At these 00      | 00 00      |
| 06 36       | minutes 36  | 09 34     | minutes 21     | 12 21         | minutes 20  | 15 19    | 16 19    | 17 19    | 18 18    | 19 18    | 20 17    | 21 17     | minutes 15       | 00 15      |
| 06 56       | past the 56 | 09 51     | past the 36    | 12 35         | past the 35 | 15 34    | 16 34    | 17 34    | 18 33    | 19 33    | 20 32    | 21 31     | past the 30      |            |
|             | hour        |           | hour 51        | 12 50         | hour 50     | 15 49    | 16 49    | 17 48    | 18 48    | 19 47    | 20 47    | 21 45     | hour 45          |            |

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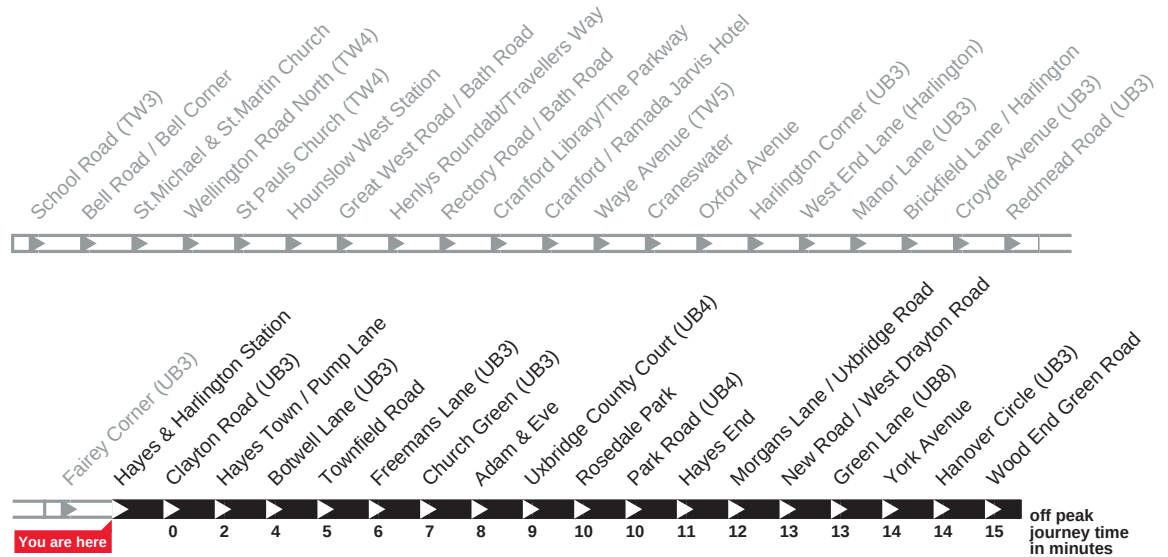
# London Buses

# H98

Daily



Buses towards Wood End Green Road



| Monday to Friday |          |             |          |             |                  |            |
|------------------|----------|-------------|----------|-------------|------------------|------------|
| First buses      | 6 to 7am | 7am to 8pm  | 8 to 9pm | 9 to 10pm   | 10pm to Midnight | Last buses |
| 05 25            | 06 05    | about every | 20 01    | about every | At these 02      | 00 02      |
| 05 45            | 06 20    | <b>7-10</b> | 20 10    | <b>14</b>   | minutes 17       | 00 17      |
|                  | 06 30    | minutes     | 20 20    | minutes     | past the 32      |            |
|                  | 06 40    |             | 20 35    |             | hour 47          |            |
|                  | 06 50    |             | 20 50    |             |                  |            |

| Saturday    |          |          |          |             |          |          |             |                  |            |
|-------------|----------|----------|----------|-------------|----------|----------|-------------|------------------|------------|
| First buses | 6 to 7am | 7 to 8am | 8 to 9am | 9am to 7pm  | 7 to 8pm | 8 to 9pm | 9 to 10pm   | 10pm to Midnight | Last buses |
| 05 25       | 06 05    | 07 05    | 08 06    | about every | 19 07    | 20 06    | about every | At these 02      | 00 02      |
| 05 45       | 06 25    | 07 21    | 08 21    | <b>7-10</b> | 19 17    | 20 20    | <b>14</b>   | minutes 17       | 00 17      |
|             | 06 45    | 07 36    | 08 36    | minutes     | 19 27    | 20 35    | minutes     | past the 32      |            |
|             |          | 07 51    | 08 51    |             | 19 37    | 20 50    |             | hour 47          |            |
|             |          |          |          |             | 19 52    |          |             |                  |            |

| Sunday      |             |           |            |             |          |             |          |          |          |           |                  |            |
|-------------|-------------|-----------|------------|-------------|----------|-------------|----------|----------|----------|-----------|------------------|------------|
| First buses | 7 to 9am    | 9 to 10am | 10 to 11am | 11am to 3pm | 3 to 4pm | 4 to 6pm    | 6 to 7pm | 7 to 8pm | 8 to 9pm | 9 to 10pm | 10pm to Midnight | Last buses |
| 06 25       | At these 05 | 09 05     | 10 09      | At these 10 | 15 10    | At these 09 | 18 08    | 19 06    | 20 04    | 21 04     | At these 02      | 00 02      |
| 06 45       | minutes 25  | 09 21     | 10 24      | minutes 25  | 15 24    | minutes 24  | 18 23    | 19 21    | 20 19    | 21 18     | minutes 17       | 00 17      |
|             | past the 45 | 09 37     | 10 39      | past the 40 | 15 39    | past the 39 | 18 37    | 19 35    | 20 34    | 21 32     | past the 32      |            |
|             | hour        | 09 53     | 10 55      | hour 55     | 15 54    | hour 54     | 18 52    | 19 50    | 20 49    | 21 47     | hour 47          |            |

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# London Buses

# U4

Daily



## Buses towards Belmont Road (UB8)



### Monday to Friday

| First buses | 6 to 7am | 7am to 7pm         | 7 to 8pm           | 8 to 9pm | 9pm to Midnight | Last bus |
|-------------|----------|--------------------|--------------------|----------|-----------------|----------|
| 0524        | 0609     | <i>about every</i> | <i>about every</i> | 2002     | At these 14     | 0014     |
| 0539        | 0624     | <b>6-10</b>        | <b>10-12</b>       | 2014     | minutes 34      |          |
| 0554        | 0634     | <i>minutes</i>     | <i>minutes</i>     | 2034     | past the 54     |          |
|             | 0644     |                    |                    | 2054     | hour            |          |
|             | 0654     |                    |                    |          |                 |          |

### Saturday

| First buses | 6 to 7am | 7 to 8am | 8 to 9am           | 9am to 7pm         | 7 to 8pm | 8pm to Midnight | Last bus |
|-------------|----------|----------|--------------------|--------------------|----------|-----------------|----------|
| 0524        | 0604     | 0714     | <i>about every</i> | <i>about every</i> | 1905     | At these 14     | 0014     |
| 0544        | 0624     | 0729     | <b>10-12</b>       | <b>7-10</b>        | 1915     | minutes 34      |          |
|             | 0644     | 0744     | <i>minutes</i>     | <i>minutes</i>     | 1934     | past the 54     |          |
|             | 0659     | 0756     |                    |                    | 1954     | hour            |          |

### Sunday

| First bus | 6 to 8am                                      | 8 to 9am     | 9am to 6pm                                          | 6 to 7pm                     | 7pm to Midnight                                  | Last bus |
|-----------|-----------------------------------------------|--------------|-----------------------------------------------------|------------------------------|--------------------------------------------------|----------|
| 0556      | At these 26<br>minutes 56<br>past the<br>hour | 0826<br>0846 | At these 06<br>minutes 21<br>past the 36<br>hour 51 | 1806<br>1821<br>1836<br>1854 | At these 14<br>minutes 34<br>past the 54<br>hour | 0014     |

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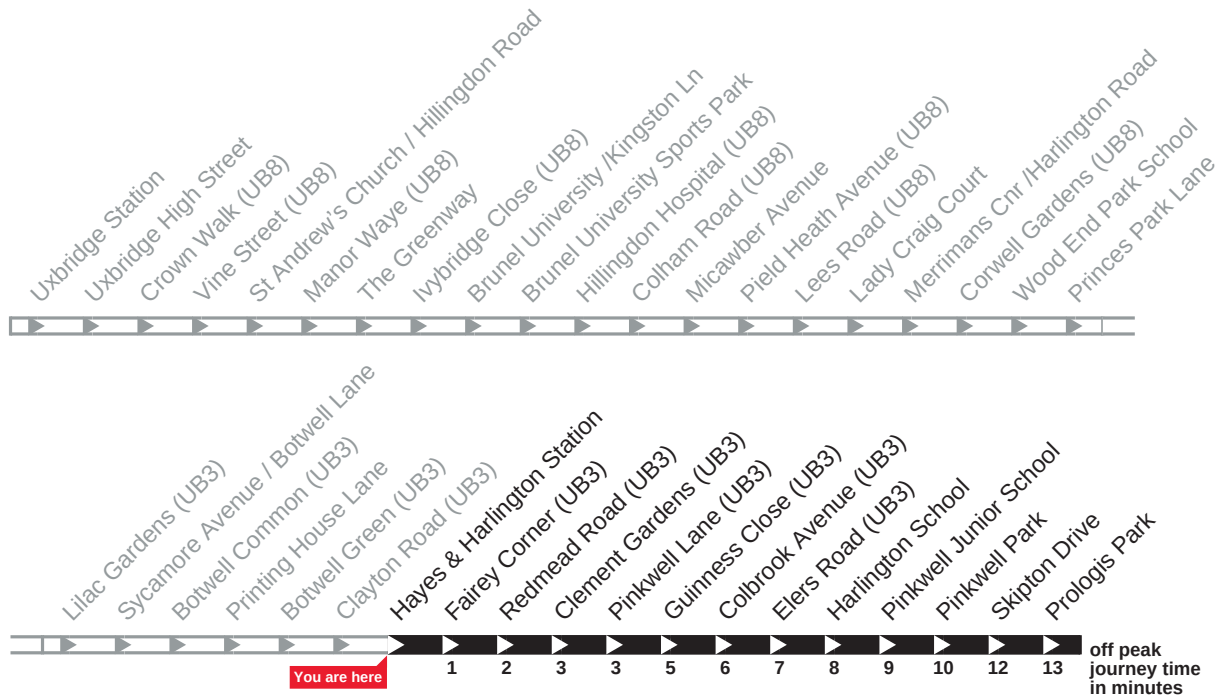
# London Buses

# U4

Daily



## Buses towards Prologis Park



### Monday to Friday

| First buses | 6 to 7am | 7am to 7pm  | 7 to 8pm    | 8 to 9pm | 9pm to Midnight | Last buses |
|-------------|----------|-------------|-------------|----------|-----------------|------------|
| 0537        | 0607     | about every | about every | 2002     | At these 06     | 0006       |
| 0552        | 0622     | <b>6-8</b>  | <b>7-11</b> | 2014     | minutes 26      | 0026       |
|             | 0637     |             |             | 2026     | past the 46     |            |
|             | 0647     | minutes     | minutes     | 2046     | hour            |            |
|             | 0657     |             |             |          |                 |            |

### Saturday

| First buses | 6 to 7am | 7 to 8am | 8 to 9am    | 9am to 7pm  | 7 to 8pm | 8pm to Midnight | Last buses |
|-------------|----------|----------|-------------|-------------|----------|-----------------|------------|
| 0537        | 0617     | 0717     | about every | about every | 1908     | At these 06     | 0006       |
| 0557        | 0637     | 0732     | <b>12</b>   | <b>7-10</b> | 1917     | minutes 26      | 0026       |
|             | 0657     | 0747     | minutes     | minutes     | 1926     | past the 46     |            |
|             |          |          |             |             | 1946     | hour            |            |

### Sunday

| First buses | 7 to 8am | 8 to 9am | 9 to 10am | 10 to 11am | 11am to 7pm | 7 to 8pm | 8pm to Midnight | Last buses |
|-------------|----------|----------|-----------|------------|-------------|----------|-----------------|------------|
| 0629        | 0729     | 0829     | 0909      | 1009       | At these 08 | 1908     | At these 06     | 0006       |
| 0659        | 0759     | 0849     | 0924      | 1024       | minutes 23  | 1926     | minutes 26      | 0026       |
|             |          |          | 0939      | 1038       | past the 38 | 1946     | past the 46     |            |
|             |          |          | 0954      | 1053       | hour 53     |          | hour            |            |

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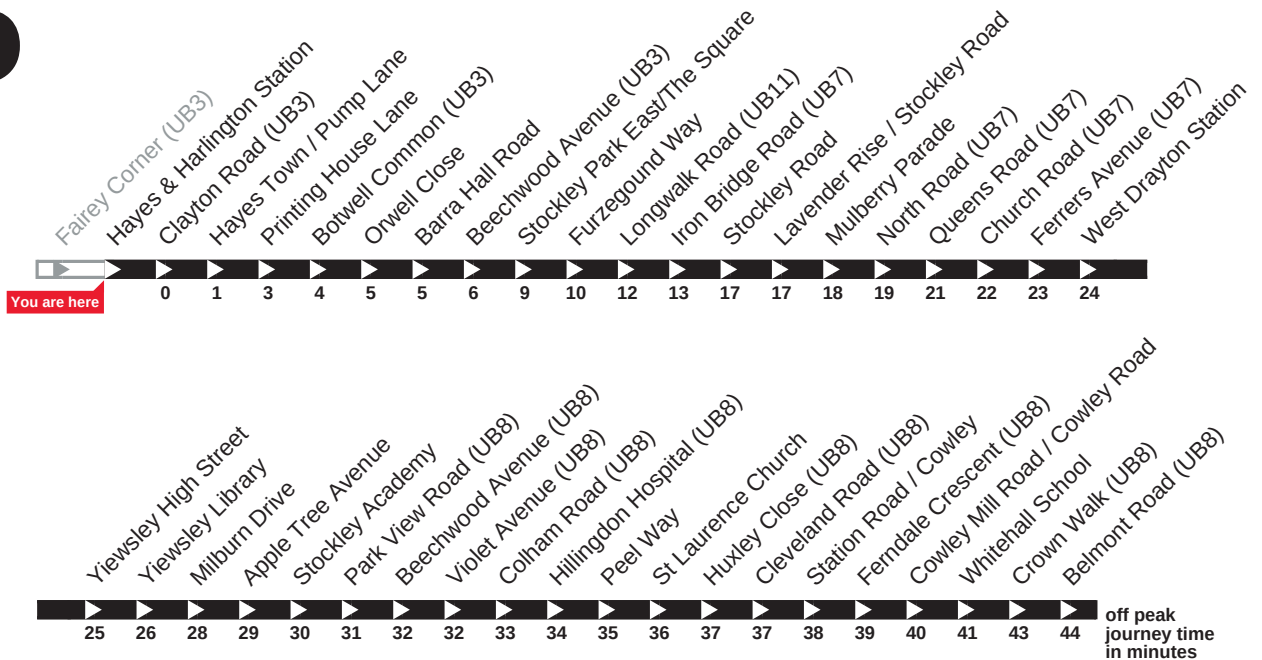
# London Buses

# U5

Daily



## Buses towards Belmont Road (UB8)



### Monday to Friday

| First buses | 6am to 7pm         | 7 to 8pm | 8 to 9pm | 9pm to Midnight | Last bus |
|-------------|--------------------|----------|----------|-----------------|----------|
| 05 04       | <i>about every</i> | 19 01    | 20 01    | At these 12     | 00 12    |
| 05 19       | <b>10-12</b>       | 19 16    | 20 16    | minutes 32      |          |
| 05 34       | <i>minutes</i>     | 19 31    | 20 32    | past the 52     |          |
| 05 49       |                    | 19 46    | 20 52    | hour            |          |

### Saturday

| First buses | 6 to 7am | 7 to 8am | 8am to 6pm         | 6 to 7pm | 7 to 8pm | 8pm to Midnight | Last bus |
|-------------|----------|----------|--------------------|----------|----------|-----------------|----------|
| 05 04       | 06 04    | 07 14    | <i>about every</i> | 18 03    | 19 13    | At these 12     | 00 12    |
| 05 24       | 06 24    | 07 29    | <b>10-12</b>       | 18 15    | 19 32    | minutes 32      |          |
| 05 44       | 06 44    | 07 44    | <i>minutes</i>     | 18 29    | 19 52    | past the 52     |          |
|             | 06 59    | 07 59    |                    | 18 43    |          | hour            |          |
|             |          |          |                    | 18 58    |          |                 |          |

### Sunday

| First bus | 6 to 8am    | 8 to 9am | 9 to 10am | 10am to 6pm | 6 to 7pm | 7pm to Midnight | Last bus |
|-----------|-------------|----------|-----------|-------------|----------|-----------------|----------|
| 05 49     | At these 19 | 08 19    | 09 01     | At these 16 | 18 16    | At these 12     | 00 12    |
|           | minutes 49  | 08 41    | 09 19     | minutes 36  | 18 36    | minutes 32      |          |
|           | past the    |          | 09 37     | past the 56 | 18 54    | past the 52     |          |
|           | hour        |          | 09 56     | hour        |          | hour            |          |

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## **Appendix 3: Trip Generation**

# Technical Note T1

**Project:** Global Academy UTC

**From:** Neal Murphy

**Reviewed:** Alan Dumbrell

**File Ref:** NMnm12024-130415-  
TN1.docx

**Pages:** 6

**Date:** 13/4/2015

**Subject** Trip Generation

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- 1.1. The purpose of this technical note is to present the trip generation methodology for the Global Academy UTC. This has been based on the work undertaken by Mott MacDonald in their Transport Review Report as well as interrogation of the TRICS trip rate database, 2011 Census and Transport Assessment for an existing UTC facility. There are positive and negative aspects to each source of data. These factors have been considered and taken account of in order to arrive at what is considered to be a realistic, robust trip generation.

## **Mott MacDonald mode share estimation**

- 1.2. The mode share predictions proposed by Mott MacDonald for student and staff travel are presented in Table 1. This prediction was based on the public transport accessibility, the age range of students, the expected catchment area of the UTC and the implementation of a Travel Plan to actively encourage travel by walking, cycling and public transport.

*Table 1: Mott MacDonald Mode Share Predictions*

|                     | Student Proportion | No. of Students | Staff Proportion | No. of Staff |
|---------------------|--------------------|-----------------|------------------|--------------|
| Public Transport    | 69%                | 552             | 27%              | 16           |
| Walking             | 11%                | 88              | 7%               | 4            |
| Cycling             | 9%                 | 72              | 5%               | 3            |
| Car Drop-off        | 8%                 | 64              | 0%               | 0            |
| Car Passenger       | 2%                 | 16              | 5%               | 3            |
| Motorbike / scooter | 1%                 | 8               | 0%               | 0            |
| Car Driver          | 0%                 | 0               | 56%              | 34           |
| <i>Total</i>        | <i>100%</i>        | <i>800</i>      | <i>100%</i>      | <i>60</i>    |

- 1.3. This approach made the robust assumption that all students and staff arrive in the AM peak hour and depart in the PM peak hour and that the departure trips in the AM peak hour and the arrival trips in the PM peak hour are associated with the car drop-off movements using the conservative assumption of one student drop-off per car. Table 2 summarises the number of trips with the number of trips by each mode of transport using this methodology summarised in Table 3, however it is unlikely that the PM peak hour mode split will mirror the AM peak, as suggested.

*Table 2: Person trip rates*

|              | Predicted Trips In | Predicted Trips Out | Predicted Total Trips |
|--------------|--------------------|---------------------|-----------------------|
| AM Peak Hour | 860                | 64                  | 924                   |
| PM Peak Hour | 64                 | 860                 | 924                   |

*Table 3: Predicted trips by mode of travel*

|                       | AM Peak Hour       |                     |               | PM Peak Hour       |                     |               |
|-----------------------|--------------------|---------------------|---------------|--------------------|---------------------|---------------|
|                       | Predicted Trips In | Predicted Trips Out | Two-way Trips | Predicted Trips In | Predicted Trips Out | Two-way Trips |
| Car Driver / Drop-off | 98                 | 64                  | 162           | 64                 | 98                  | 162           |
| Car Passenger         | 19                 | 0                   | 19            | 0                  | 19                  | 19            |
| Motorcycle / scooter  | 8                  | 0                   | 8             | 0                  | 8                   | 8             |
| Walking               | 92                 | 0                   | 92            | 0                  | 92                  | 92            |
| Cycling               | 75                 | 0                   | 75            | 0                  | 75                  | 75            |
| Public Transport      | 568                | 0                   | 568           | 0                  | 568                 | 568           |
| <i>Total</i>          | <i>860</i>         | <i>64</i>           | <i>924</i>    | <i>64</i>          | <i>860</i>          | <i>924</i>    |

### TRICS database estimation

- 1.4. The mode share and trip generation predictions tabled above have been compared with data contained within the TRICS database for secondary schools in Greater London. The database contains two relevant surveys; the Islington Arts & Media School in Finsbury Park and the Lilian Bayliss Technology School in Vauxhall. Details of the sites in TRICS are presented in Table 4.

*Table 4: TRICS sites*

| Name                             | Size                    | PTAL | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------|-------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Islington Arts & Media School    | 850 pupils<br>120 staff | 3    | This site is located on Turle Road, in a residential area of Finsbury Park. Local roads lead south-east to Seven Sisters Road, south-west to Hornsey Road, and north-east to Stroud Green Road. Finsbury Park and Finsbury Park train station are located to the east of the site. There are also residential developments in the local area. The site has 3 pedestrian access points off Turle Road, Montern Street and Almington Street. The site has recently been refurbished. |
| Lilian Bayliss Technology School | 624 pupils<br>34 staff  | 6b   | The site is located on the A3204 Kennington Lane in south London. Local roads lead in all directions. The nearest tube station is Vauxhall which also has a mainline rail station. The nearest bus stops are on Kennington Lane.                                                                                                                                                                                                                                                   |

- 1.5. The concept of the proposed UTC hours of operation are relatively new and therefore it has been deemed necessary to assess the extended school days by using the trip generation between 15:00 and 17:00 for staff and student trips leaving school. The two-hour school trip generation will be combined and applied to the time period 17:00-18:00 to provide a robust assessment based on the proposed UTC hours.
- 1.6. The total person trip rates and modal split percentages are summarised in Table 5.

*Table 5: Trip rates from TRICS database for secondary schools in Greater London*

| Trip rates per pupil | AM Peak      |               |                   | PM Peak      |               |                   |
|----------------------|--------------|---------------|-------------------|--------------|---------------|-------------------|
|                      | Trip rate in | Trip rate out | Two-way trip rate | Trip rate in | Trip rate out | Two-way trip rate |
| <i>Total People</i>  | <i>0.647</i> | <i>0.080</i>  | <i>0.727</i>      | <i>0.155</i> | <i>0.884</i>  | <i>1.039</i>      |
| <i>Vehicles</i>      | <i>0.059</i> | <i>0.054</i>  | <i>0.113</i>      | <i>0.011</i> | <i>0.032</i>  | <i>0.043</i>      |
| Walking              | 0.238        | 0.016         | 0.254             | 0.053        | 0.358         | 0.411             |
| Cycling              | 0.008        | 0             | 0.008             | 0.005        | 0.017         | 0.022             |
| Public Transport     | 0.310        | 0.003         | 0.313             | 0.081        | 0.462         | 0.543             |
| Vehicle Occupants    | 0.090        | 0.060         | 0.150             | 0.015        | 0.047         | 0.062             |

- 1.7. Based on 800 pupils, the trip generation for each mode of transport is summarised in Table 6.

*Table 6: Trip generation using TRICS database for secondary schools in Greater London*

| Trip rates per pupil | AM Peak      |               |                   | PM Peak      |               |                   |
|----------------------|--------------|---------------|-------------------|--------------|---------------|-------------------|
|                      | Trip rate in | Trip rate out | Two-way trip rate | Trip rate in | Trip rate out | Two-way trip rate |
| <i>Total People</i>  | <i>518</i>   | <i>64</i>     | <i>582</i>        | <i>124</i>   | <i>707</i>    | <i>831</i>        |
| <i>Vehicles</i>      | <i>47</i>    | <i>43</i>     | <i>90</i>         | <i>9</i>     | <i>26</i>     | <i>34</i>         |
| Walking              | 190          | 13            | 203               | 42           | 286           | 329               |
| Cycling              | 6            | 0             | 6                 | 4            | 14            | 18                |
| Public Transport     | 248          | 2             | 250               | 65           | 370           | 434               |
| Vehicle Occupants    | 72           | 48            | 120               | 12           | 38            | 50                |

- 1.8. This data source shows that there are departures in the AM peak and arrivals in the PM peak by a range of modes of travel. The number of trips by vehicle in the PM peak is much less than in the AM peak suggesting that less students are picked up after school than dropped off before school.
- 1.9. The data also shows a larger proportion of trips by walking. This is likely to be due to the local catchments of the schools compared to the regional catchment proposed for the UTC. The enrolment criteria for the UTC states that a maximum of 50% of students will be from within a 5 mile radius of the college with the other 50% being based on distance from the college. If one criterion is undersubscribed then the shortfall will be given to the other criteria. This essentially means that the modal share by walking will be less for the UTC with the longer journeys most likely to be taken by public transport and cars with a smaller proportion by cycling.
- 1.10. The total number of trips based on TRICS trip rates is less than that estimated in Table 3. This is considered to be due to the fact that less than 100% of arrivals and departures occur within the school peak hours and a reduction in trips due to a level of absence each day.
- 1.11. Table 7 summarises the modal split based on the TRICS trip and vehicle occupancy rates.

*Table 7: TRICS modal split*

|                          | AM Peak Hour |             | PM Peak Hour |             |
|--------------------------|--------------|-------------|--------------|-------------|
|                          | Trips In     | Trips Out   | Trips In     | Trips Out   |
| Single Vehicle Occupants | 5.5%         | 58.0%       | 4.5%         | 2.0%        |
| Multi Vehicle Occupants  | 8.5%         | 18.0%       | 5.5%         | 3.0%        |
| Walking                  | 37%          | 20%         | 34%          | 41%         |
| Cycling                  | 1%           | 0%          | 3%           | 2%          |
| Public Transport         | 48%          | 4%          | 53%          | 52%         |
| <i>Total</i>             | <i>100%</i>  | <i>100%</i> | <i>100%</i>  | <i>100%</i> |

### East London UTC estimation

- 1.12. A further comparison has been made by referring to the Transport Assessment produced for the East London UTC (ELUTec) located in Rainham, London Borough of Havering. Table 8 shows the comparison between the two methods described above with the proposed mode split used in the Transport Assessment for ELUTec. It should be noted that the ELUTec mode split by vehicle is higher, potentially due to the provision of parking for older students.

*Table 8: Comparison of mode split data for AM and PM Peaks*

| AM Peak          | Trips In    |       |                    | Trips Out   |       |                    |
|------------------|-------------|-------|--------------------|-------------|-------|--------------------|
|                  | MM estimate | TRICS | ELUTec as proposed | MM estimate | TRICS | ELUTec as proposed |
| By vehicle       | 14%         | 14%   | 23%                | 100%        | 76%   | 59%                |
| Walking          | 11%         | 37%   | 9%                 | 0%          | 20%   | 21%                |
| Cycling          | 9%          | 1%    | 1%                 | 0%          | 0%    | 0%                 |
| Public Transport | 66%         | 48%   | 67%                | 0%          | 4%    | 20%                |
| PM Peak          | Trips In    |       |                    | Trips Out   |       |                    |
|                  | MM estimate | TRICS | ELUTec as proposed | MM estimate | TRICS | ELUTec as proposed |
| By vehicle       | 100%        | 10%   | 33%                | 14%         | 5%    | 18%                |
| Walking          | 0%          | 34%   | 29%                | 11%         | 40%   | 11%                |
| Cycling          | 0%          | 3%    | 1%                 | 9%          | 2%    | 1%                 |
| Public Transport | 0%          | 53%   | 37%                | 66%         | 52%   | 70%                |

## Comparison of data sources

- 1.13. The advantages and disadvantages of each of the data sources are summarised in Table 9.

*Table 9: Comparison of data sources*

| Data               | Advantages                                                                                                              | Disadvantages                                                                                                                            |
|--------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Mott Macdonald TRR | Takes account of this site's public transport accessibility as well as the age range of students and expected catchment | No raw data to substantiate the mode split presented. AM / PM peaks mirrored                                                             |
| TRICS database     | Survey data presents detailed trips rates for all modes and includes vehicle occupancy information                      | Includes trips by younger students who are more likely to be escorted to school and is likely to be based on a more local catchment area |
| ELUTec             | Based on UTC age range of students and catchment                                                                        | Includes provision for student parking on-site and lower PTAL                                                                            |

## Global Academy UTC estimation

- 1.14. The proposed modal split for the Global Academy UTC has been calculated separately for staff and students. For staff trips the Census 2011 information for journeys to work in Hillingdon has been applied. Table 10 presents the modal split for staff. 70% of staff arrivals are assumed to occur between 08:00-09:00 based on information contained in the TRICS database.

*Table 10: Staff modal split based on Census 2011 data and associated number of trips*

|                            | %           | Trips     |
|----------------------------|-------------|-----------|
| Driving a car / motorcycle | 66%         | 40        |
| Passenger in car / van     | 3%          | 2         |
| Walking                    | 6%          | 4         |
| Cycling                    | 2%          | 1         |
| Public Transport           | 22%         | 13        |
| Other                      | 1%          | 0         |
| <i>Total</i>               | <i>100%</i> | <i>60</i> |

- 1.15. The TRICS modal split has been used as the starting point when considering the Global Academy UTC student trip generation due to the comprehensive information on trip rates by all modes of travel. The proportion of single occupancy vehicle trips has been omitted as these are primarily staff trips which have been assessed separately. To take account of the regional catchment area associated with the proposed UTC the proportion of trips by walking has been reduced to 10% of arrivals in the AM peak to match the estimate used by Mott MacDonald and in the ELUTec TA. The reduction of 29% by foot has been split between vehicle trips, public transport trips and cycling. A similar approach has been applied for departures in the PM peak with the walking proportion again being reduced and redistributed to vehicle, public transport and cycling trips. Table 11 shows the modified modal split.

*Table 11: Modified student modal split*

|                            | AM Peak     | PM Peak     |
|----------------------------|-------------|-------------|
|                            | Trips In    | Trips Out   |
| Single Vehicle Occupants   | 0%          | 0%          |
| Multiple Vehicle Occupants | 19%         | 14%         |
| Walking                    | 10%         | 12%         |
| Cycling                    | 10%         | 10%         |
| Public Transport           | 61%         | 64%         |
| <i>Total</i>               | <i>100%</i> | <i>100%</i> |

- 1.16. Information on attendance levels in secondary schools from the Department of Education shows a level of 5% absenteeism for Hillingdon. The number of students travelling has therefore been reduced by 5% to allow for this.
- 1.17. The TRICS data suggests an occupancy rate of 2.4 passengers per multiple occupancy vehicles for AM arrivals. In order to present a robust assessment, a reduced occupancy rate of 2 passengers per multiple occupancy vehicle has been used. Table 12 shows the calculated number of student trips by each mode of travel.

*Table 12: Student trips*

|                          | AM Peak  |           | PM Peak  |           |
|--------------------------|----------|-----------|----------|-----------|
|                          | Trips In | Trips Out | Trips In | Trips Out |
| Car (pick-up / drop-off) | 72       | 72        | 53       | 53        |
| Walking                  | 76       | -         | -        | 91        |
| Cycling                  | 76       | -         | -        | 76        |
| Public Transport         | 464      | -         | -        | 486       |

- 1.18. By adding the estimated staff and student trips together the number of trips by car, on foot, by cycle and by public transport is shown in Table 13.

*Table 13: Staff and Student trips*

|                  | AM Peak Hour |           | PM Peak Hour |           |
|------------------|--------------|-----------|--------------|-----------|
|                  | Trips In     | Trips Out | Trips In     | Trips Out |
| Car              | 100          | 72        | 53           | 93        |
| Walking          | 79           | -         | -            | 95        |
| Cycling          | 77           | -         | -            | 77        |
| Public Transport | 473          | -         | -            | 499       |

- 1.19. The trips by public transport will see the journey between the bus stop / station and the college made on foot. Therefore the number of walking trips in the immediate vicinity of the UTC will be 557 arrivals in the AM peak and 594 departures in the PM peak.
- 1.20. This trip generation is considered to be robust as:
- It assumes all student travel occurs between 08:00-09:00 and 17:00-18:00
  - It uses a reduced proportion of trips by walking due to the proposed regional catchment
  - It assumes a reduced level of occupancy from that presented in the TRICS database

**APPENDIX:**

TRICS site information

Census 2011 Journey to Work table

DoE absenteeism table

Extract from ELUTec TA

Calculation Reference: AUDIT-426201-150326-0317

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION  
 Category : B - SECONDARY  
**MULTI-MODAL VEHICLES**

Selected regions and areas:

|    |                |        |
|----|----------------|--------|
| 01 | GREATER LONDON |        |
| IS | ISLINGTON      | 1 days |
| LB | LAMBETH        | 1 days |

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

## Filtering Stage 2 selection:

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

|                         |                       |
|-------------------------|-----------------------|
| Parameter:              | Number of pupils      |
| Actual Range:           | 624 to 850 (units: )  |
| Range Selected by User: | 610 to 1200 (units: ) |

Public Transport Provision:

|               |                     |
|---------------|---------------------|
| Selection by: | Include all surveys |
|---------------|---------------------|

|             |                      |
|-------------|----------------------|
| Date Range: | 01/01/06 to 25/11/09 |
|-------------|----------------------|

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

Selected survey days:

|           |        |
|-----------|--------|
| Tuesday   | 1 days |
| Wednesday | 1 days |

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

Selected survey types:

|                       |        |
|-----------------------|--------|
| Manual count          | 2 days |
| Directional ATC Count | 0 days |

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

Selected Locations:

|                                    |   |
|------------------------------------|---|
| Town Centre                        | 1 |
| Suburban Area (PPS6 Out of Centre) | 1 |

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

Selected Location Sub Categories:

|                  |   |
|------------------|---|
| Residential Zone | 1 |
| No Sub Category  | 1 |

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

## Filtering Stage 3 selection:

Use Class:

D1

2 days

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

Population within 1 mile:

50,001 to 100,000

1 days

101,000 or More

1 days

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

Population within 5 miles:

500,001 or More

2 days

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

Car ownership within 5 miles:

0.5 or Less

1 days

0.6 to 1.0

1 days

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

Travel Plan:

No

2 days

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

LIST OF SITES relevant to selection parameters

|   |                                                                         |                  |                     |
|---|-------------------------------------------------------------------------|------------------|---------------------|
| 1 | IS-04-B-01<br>TURLE ROAD                                                | SECONDARY SCH.   | ISLINGTON           |
|   | FINSBURY PARK<br>Suburban Area (PPS6 Out of Centre)<br>Residential Zone |                  |                     |
|   | Total Number of pupils:                                                 | 850              |                     |
|   | Survey date: WEDNESDAY                                                  | 25/11/09         | Survey Type: MANUAL |
| 2 | LB-04-B-01<br>KENNINGTON LANE                                           | SECONDARY SCHOOL | LAMBETH             |
|   | VAUXHALL<br>Town Centre<br>No Sub Category                              |                  |                     |
|   | Total Number of pupils:                                                 | 624              |                     |
|   | Survey date: TUESDAY                                                    | 06/10/09         | Survey Type: MANUAL |

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

**MULTI-MODAL VEHICLES**

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.019     | 2          | 737         | 0.002     | 2        | 737         | 0.021     |
| 08:00 - 09:00 | 2        | 737         | 0.059     | 2          | 737         | 0.054     | 2        | 737         | 0.113     |
| 09:00 - 10:00 | 2        | 737         | 0.010     | 2          | 737         | 0.004     | 2        | 737         | 0.014     |
| 10:00 - 11:00 | 2        | 737         | 0.013     | 2          | 737         | 0.007     | 2        | 737         | 0.020     |
| 11:00 - 12:00 | 2        | 737         | 0.005     | 2          | 737         | 0.005     | 2        | 737         | 0.010     |
| 12:00 - 13:00 | 2        | 737         | 0.012     | 2          | 737         | 0.011     | 2        | 737         | 0.023     |
| 13:00 - 14:00 | 2        | 737         | 0.006     | 2          | 737         | 0.004     | 2        | 737         | 0.010     |
| 14:00 - 15:00 | 2        | 737         | 0.004     | 2          | 737         | 0.007     | 2        | 737         | 0.011     |
| 15:00 - 16:00 | 2        | 737         | 0.007     | 2          | 737         | 0.020     | 2        | 737         | 0.027     |
| 16:00 - 17:00 | 2        | 737         | 0.004     | 2          | 737         | 0.012     | 2        | 737         | 0.016     |
| 17:00 - 18:00 | 2        | 737         | 0.004     | 2          | 737         | 0.007     | 2        | 737         | 0.011     |
| 18:00 - 19:00 | 2        | 737         | 0.017     | 2          | 737         | 0.018     | 2        | 737         | 0.035     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.160     |            |             | 0.151     |          |             | 0.311     |

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

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

## Parameter summary

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

MULTI-MODAL TAXIS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 08:00 - 09:00 | 2        | 737         | 0.003     | 2          | 737         | 0.003     | 2        | 737         | 0.006     |
| 09:00 - 10:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 10:00 - 11:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 11:00 - 12:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 12:00 - 13:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 13:00 - 14:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 14:00 - 15:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 15:00 - 16:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 16:00 - 17:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 18:00 - 19:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.007     |            |             | 0.007     |          |             | 0.014     |

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

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

#### Parameter summary

|                                          |                     |
|------------------------------------------|---------------------|
| Trip rate parameter range selected:      | 624 - 850 (units: ) |
| Survey date range:                       | 01/01/06 - 25/11/09 |
| Number of weekdays (Monday-Friday):      | 2                   |
| Number of Saturdays:                     | 0                   |
| Number of Sundays:                       | 0                   |
| Surveys manually removed from selection: | 0                   |

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

MULTI-MODAL OGVS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 08:00 - 09:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 09:00 - 10:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 10:00 - 11:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 11:00 - 12:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 12:00 - 13:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 13:00 - 14:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 14:00 - 15:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 15:00 - 16:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 16:00 - 17:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 18:00 - 19:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.001     |            |             | 0.001     |          |             | 0.002     |

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

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

#### Parameter summary

|                                          |                     |
|------------------------------------------|---------------------|
| Trip rate parameter range selected:      | 624 - 850 (units: ) |
| Survey date range:                       | 01/01/06 - 25/11/09 |
| Number of weekdays (Monday-Friday):      | 2                   |
| Number of Saturdays:                     | 0                   |
| Number of Sundays:                       | 0                   |
| Surveys manually removed from selection: | 0                   |

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

MULTI-MODAL PSVS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 08:00 - 09:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 09:00 - 10:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 10:00 - 11:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 11:00 - 12:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 12:00 - 13:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 13:00 - 14:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 14:00 - 15:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 15:00 - 16:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 16:00 - 17:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 18:00 - 19:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          | 0.000       |           |            | 0.000       |           |          | 0.000       |           |

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

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

#### Parameter summary

|                                          |                     |
|------------------------------------------|---------------------|
| Trip rate parameter range selected:      | 624 - 850 (units: ) |
| Survey date date range:                  | 01/01/06 - 25/11/09 |
| Number of weekdays (Monday-Friday):      | 2                   |
| Number of Saturdays:                     | 0                   |
| Number of Sundays:                       | 0                   |
| Surveys manually removed from selection: | 0                   |

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

MULTI-MODAL CYCLISTS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.007     | 2          | 737         | 0.001     | 2        | 737         | 0.008     |
| 08:00 - 09:00 | 2        | 737         | 0.008     | 2          | 737         | 0.000     | 2        | 737         | 0.008     |
| 09:00 - 10:00 | 2        | 737         | 0.001     | 2          | 737         | 0.000     | 2        | 737         | 0.001     |
| 10:00 - 11:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 11:00 - 12:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 12:00 - 13:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 13:00 - 14:00 | 2        | 737         | 0.000     | 2          | 737         | 0.001     | 2        | 737         | 0.001     |
| 14:00 - 15:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 15:00 - 16:00 | 2        | 737         | 0.004     | 2          | 737         | 0.010     | 2        | 737         | 0.014     |
| 16:00 - 17:00 | 2        | 737         | 0.001     | 2          | 737         | 0.007     | 2        | 737         | 0.008     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.002     | 2        | 737         | 0.002     |
| 18:00 - 19:00 | 2        | 737         | 0.000     | 2          | 737         | 0.001     | 2        | 737         | 0.001     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.024     |            |             | 0.025     |          |             | 0.049     |

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

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

#### Parameter summary

|                                          |                     |
|------------------------------------------|---------------------|
| Trip rate parameter range selected:      | 624 - 850 (units: ) |
| Survey date range:                       | 01/01/06 - 25/11/09 |
| Number of weekdays (Monday-Friday):      | 2                   |
| Number of Saturdays:                     | 0                   |
| Number of Sundays:                       | 0                   |
| Surveys manually removed from selection: | 0                   |

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY  
**MULTI-MODAL VEHICLE OCCUPANTS**  
 Calculation factor: 1 PUPILS  
 BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.024     | 2          | 737         | 0.004     | 2        | 737         | 0.028     |
| 08:00 - 09:00 | 2        | 737         | 0.090     | 2          | 737         | 0.060     | 2        | 737         | 0.150     |
| 09:00 - 10:00 | 2        | 737         | 0.021     | 2          | 737         | 0.007     | 2        | 737         | 0.028     |
| 10:00 - 11:00 | 2        | 737         | 0.018     | 2          | 737         | 0.010     | 2        | 737         | 0.028     |
| 11:00 - 12:00 | 2        | 737         | 0.008     | 2          | 737         | 0.005     | 2        | 737         | 0.013     |
| 12:00 - 13:00 | 2        | 737         | 0.013     | 2          | 737         | 0.014     | 2        | 737         | 0.027     |
| 13:00 - 14:00 | 2        | 737         | 0.007     | 2          | 737         | 0.003     | 2        | 737         | 0.010     |
| 14:00 - 15:00 | 2        | 737         | 0.004     | 2          | 737         | 0.007     | 2        | 737         | 0.011     |
| 15:00 - 16:00 | 2        | 737         | 0.007     | 2          | 737         | 0.028     | 2        | 737         | 0.035     |
| 16:00 - 17:00 | 2        | 737         | 0.008     | 2          | 737         | 0.019     | 2        | 737         | 0.027     |
| 17:00 - 18:00 | 2        | 737         | 0.008     | 2          | 737         | 0.009     | 2        | 737         | 0.017     |
| 18:00 - 19:00 | 2        | 737         | 0.020     | 2          | 737         | 0.024     | 2        | 737         | 0.044     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.228     |            |             | 0.190     |          |             | 0.418     |

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

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

#### Parameter summary

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.020     | 2          | 737         | 0.003     | 2        | 737         | 0.023     |
| 08:00 - 09:00 | 2        | 737         | 0.238     | 2          | 737         | 0.016     | 2        | 737         | 0.254     |
| 09:00 - 10:00 | 2        | 737         | 0.091     | 2          | 737         | 0.007     | 2        | 737         | 0.098     |
| 10:00 - 11:00 | 2        | 737         | 0.013     | 2          | 737         | 0.009     | 2        | 737         | 0.022     |
| 11:00 - 12:00 | 2        | 737         | 0.032     | 2          | 737         | 0.030     | 2        | 737         | 0.062     |
| 12:00 - 13:00 | 2        | 737         | 0.030     | 2          | 737         | 0.047     | 2        | 737         | 0.077     |
| 13:00 - 14:00 | 2        | 737         | 0.039     | 2          | 737         | 0.024     | 2        | 737         | 0.063     |
| 14:00 - 15:00 | 2        | 737         | 0.020     | 2          | 737         | 0.017     | 2        | 737         | 0.037     |
| 15:00 - 16:00 | 2        | 737         | 0.031     | 2          | 737         | 0.277     | 2        | 737         | 0.308     |
| 16:00 - 17:00 | 2        | 737         | 0.022     | 2          | 737         | 0.081     | 2        | 737         | 0.103     |
| 17:00 - 18:00 | 2        | 737         | 0.011     | 2          | 737         | 0.045     | 2        | 737         | 0.056     |
| 18:00 - 19:00 | 2        | 737         | 0.010     | 2          | 737         | 0.016     | 2        | 737         | 0.026     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.557     |            |             | 0.572     |          |             | 1.129     |

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

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

#### Parameter summary

|                                          |                     |
|------------------------------------------|---------------------|
| Trip rate parameter range selected:      | 624 - 850 (units: ) |
| Survey date range:                       | 01/01/06 - 25/11/09 |
| Number of weekdays (Monday-Friday):      | 2                   |
| Number of Saturdays:                     | 0                   |
| Number of Sundays:                       | 0                   |
| Surveys manually removed from selection: | 0                   |

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY  
**MULTI-MODAL BUS/TRAM PASSENGERS**  
 Calculation factor: 1 PUPILS  
 BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.033     | 2          | 737         | 0.000     | 2        | 737         | 0.033     |
| 08:00 - 09:00 | 2        | 737         | 0.260     | 2          | 737         | 0.003     | 2        | 737         | 0.263     |
| 09:00 - 10:00 | 2        | 737         | 0.086     | 2          | 737         | 0.001     | 2        | 737         | 0.087     |
| 10:00 - 11:00 | 2        | 737         | 0.005     | 2          | 737         | 0.001     | 2        | 737         | 0.006     |
| 11:00 - 12:00 | 2        | 737         | 0.005     | 2          | 737         | 0.001     | 2        | 737         | 0.006     |
| 12:00 - 13:00 | 2        | 737         | 0.009     | 2          | 737         | 0.005     | 2        | 737         | 0.014     |
| 13:00 - 14:00 | 2        | 737         | 0.001     | 2          | 737         | 0.001     | 2        | 737         | 0.002     |
| 14:00 - 15:00 | 2        | 737         | 0.003     | 2          | 737         | 0.008     | 2        | 737         | 0.011     |
| 15:00 - 16:00 | 2        | 737         | 0.033     | 2          | 737         | 0.298     | 2        | 737         | 0.331     |
| 16:00 - 17:00 | 2        | 737         | 0.012     | 2          | 737         | 0.050     | 2        | 737         | 0.062     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.041     | 2        | 737         | 0.041     |
| 18:00 - 19:00 | 2        | 737         | 0.013     | 2          | 737         | 0.024     | 2        | 737         | 0.037     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.460     |            |             | 0.433     |          |             | 0.893     |

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

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

#### Parameter summary

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY  
**MULTI-MODAL TOTAL RAIL PASSENGERS**  
 Calculation factor: 1 PUPILS  
 BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.007     | 2          | 737         | 0.000     | 2        | 737         | 0.007     |
| 08:00 - 09:00 | 2        | 737         | 0.050     | 2          | 737         | 0.000     | 2        | 737         | 0.050     |
| 09:00 - 10:00 | 2        | 737         | 0.029     | 2          | 737         | 0.000     | 2        | 737         | 0.029     |
| 10:00 - 11:00 | 2        | 737         | 0.003     | 2          | 737         | 0.001     | 2        | 737         | 0.004     |
| 11:00 - 12:00 | 2        | 737         | 0.002     | 2          | 737         | 0.001     | 2        | 737         | 0.003     |
| 12:00 - 13:00 | 2        | 737         | 0.001     | 2          | 737         | 0.000     | 2        | 737         | 0.001     |
| 13:00 - 14:00 | 2        | 737         | 0.002     | 2          | 737         | 0.000     | 2        | 737         | 0.002     |
| 14:00 - 15:00 | 2        | 737         | 0.001     | 2          | 737         | 0.005     | 2        | 737         | 0.006     |
| 15:00 - 16:00 | 2        | 737         | 0.033     | 2          | 737         | 0.103     | 2        | 737         | 0.136     |
| 16:00 - 17:00 | 2        | 737         | 0.003     | 2          | 737         | 0.011     | 2        | 737         | 0.014     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.009     | 2        | 737         | 0.009     |
| 18:00 - 19:00 | 2        | 737         | 0.003     | 2          | 737         | 0.007     | 2        | 737         | 0.010     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.134     |            |             | 0.137     |          |             | 0.271     |

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

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

#### Parameter summary

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY  
**MULTI-MODAL COACH PASSENGERS**  
 Calculation factor: 1 PUPILS  
 BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 08:00 - 09:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 09:00 - 10:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 10:00 - 11:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 11:00 - 12:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 12:00 - 13:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 13:00 - 14:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 14:00 - 15:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 15:00 - 16:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 16:00 - 17:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 18:00 - 19:00 | 2        | 737         | 0.000     | 2          | 737         | 0.000     | 2        | 737         | 0.000     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          | 0.000       |           |            | 0.000       |           |          | 0.000       |           |

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

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

#### Parameter summary

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY  
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.040     | 2          | 737         | 0.000     | 2        | 737         | 0.040     |
| 08:00 - 09:00 | 2        | 737         | 0.310     | 2          | 737         | 0.003     | 2        | 737         | 0.313     |
| 09:00 - 10:00 | 2        | 737         | 0.115     | 2          | 737         | 0.001     | 2        | 737         | 0.116     |
| 10:00 - 11:00 | 2        | 737         | 0.009     | 2          | 737         | 0.002     | 2        | 737         | 0.011     |
| 11:00 - 12:00 | 2        | 737         | 0.007     | 2          | 737         | 0.002     | 2        | 737         | 0.009     |
| 12:00 - 13:00 | 2        | 737         | 0.009     | 2          | 737         | 0.005     | 2        | 737         | 0.014     |
| 13:00 - 14:00 | 2        | 737         | 0.003     | 2          | 737         | 0.001     | 2        | 737         | 0.004     |
| 14:00 - 15:00 | 2        | 737         | 0.004     | 2          | 737         | 0.014     | 2        | 737         | 0.018     |
| 15:00 - 16:00 | 2        | 737         | 0.066     | 2          | 737         | 0.401     | 2        | 737         | 0.467     |
| 16:00 - 17:00 | 2        | 737         | 0.015     | 2          | 737         | 0.061     | 2        | 737         | 0.076     |
| 17:00 - 18:00 | 2        | 737         | 0.000     | 2          | 737         | 0.050     | 2        | 737         | 0.050     |
| 18:00 - 19:00 | 2        | 737         | 0.016     | 2          | 737         | 0.031     | 2        | 737         | 0.047     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 0.594     |            |             | 0.571     |          |             | 1.165     |

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

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

#### Parameter summary

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. PUPILS | Trip Rate | No. Days   | Ave. PUPILS | Trip Rate | No. Days | Ave. PUPILS | Trip Rate |
| 00:00 - 01:00 |          |             |           |            |             |           |          |             |           |
| 01:00 - 02:00 |          |             |           |            |             |           |          |             |           |
| 02:00 - 03:00 |          |             |           |            |             |           |          |             |           |
| 03:00 - 04:00 |          |             |           |            |             |           |          |             |           |
| 04:00 - 05:00 |          |             |           |            |             |           |          |             |           |
| 05:00 - 06:00 |          |             |           |            |             |           |          |             |           |
| 06:00 - 07:00 |          |             |           |            |             |           |          |             |           |
| 07:00 - 08:00 | 2        | 737         | 0.091     | 2          | 737         | 0.008     | 2        | 737         | 0.099     |
| 08:00 - 09:00 | 2        | 737         | 0.647     | 2          | 737         | 0.080     | 2        | 737         | 0.727     |
| 09:00 - 10:00 | 2        | 737         | 0.229     | 2          | 737         | 0.016     | 2        | 737         | 0.245     |
| 10:00 - 11:00 | 2        | 737         | 0.040     | 2          | 737         | 0.021     | 2        | 737         | 0.061     |
| 11:00 - 12:00 | 2        | 737         | 0.048     | 2          | 737         | 0.037     | 2        | 737         | 0.085     |
| 12:00 - 13:00 | 2        | 737         | 0.053     | 2          | 737         | 0.067     | 2        | 737         | 0.120     |
| 13:00 - 14:00 | 2        | 737         | 0.050     | 2          | 737         | 0.028     | 2        | 737         | 0.078     |
| 14:00 - 15:00 | 2        | 737         | 0.029     | 2          | 737         | 0.039     | 2        | 737         | 0.068     |
| 15:00 - 16:00 | 2        | 737         | 0.108     | 2          | 737         | 0.716     | 2        | 737         | 0.824     |
| 16:00 - 17:00 | 2        | 737         | 0.047     | 2          | 737         | 0.168     | 2        | 737         | 0.215     |
| 17:00 - 18:00 | 2        | 737         | 0.019     | 2          | 737         | 0.107     | 2        | 737         | 0.126     |
| 18:00 - 19:00 | 2        | 737         | 0.046     | 2          | 737         | 0.071     | 2        | 737         | 0.117     |
| 19:00 - 20:00 |          |             |           |            |             |           |          |             |           |
| 20:00 - 21:00 |          |             |           |            |             |           |          |             |           |
| 21:00 - 22:00 |          |             |           |            |             |           |          |             |           |
| 22:00 - 23:00 |          |             |           |            |             |           |          |             |           |
| 23:00 - 24:00 |          |             |           |            |             |           |          |             |           |
| Total Rates:  |          |             | 1.407     |            |             | 1.358     |          |             | 2.765     |

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

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

#### Parameter summary

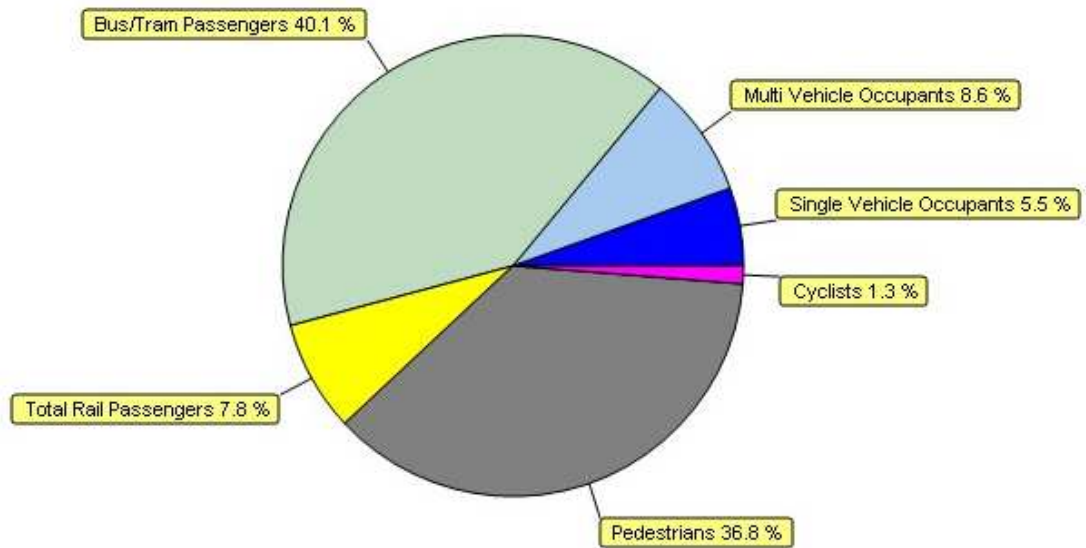
Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

08:00-0900

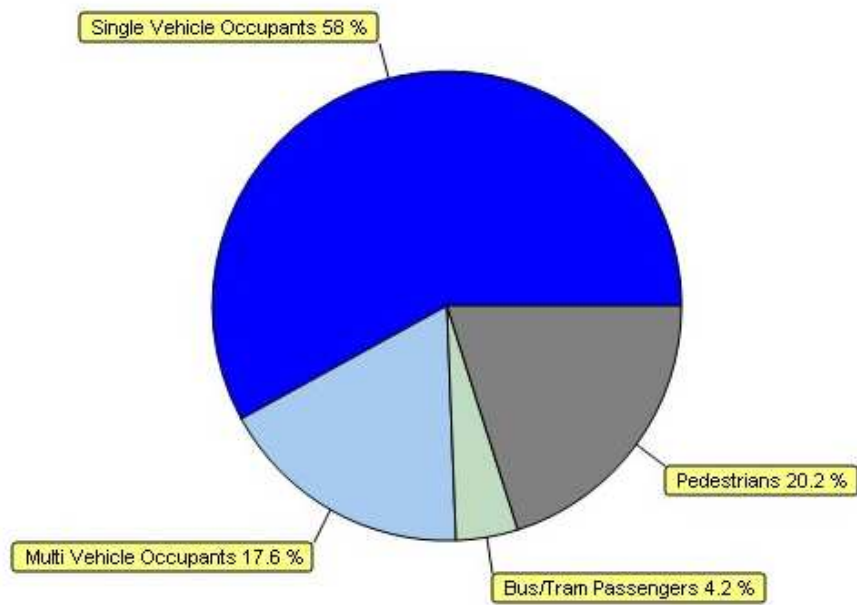
## Arrivals

Modal Split Percentages



## Departures

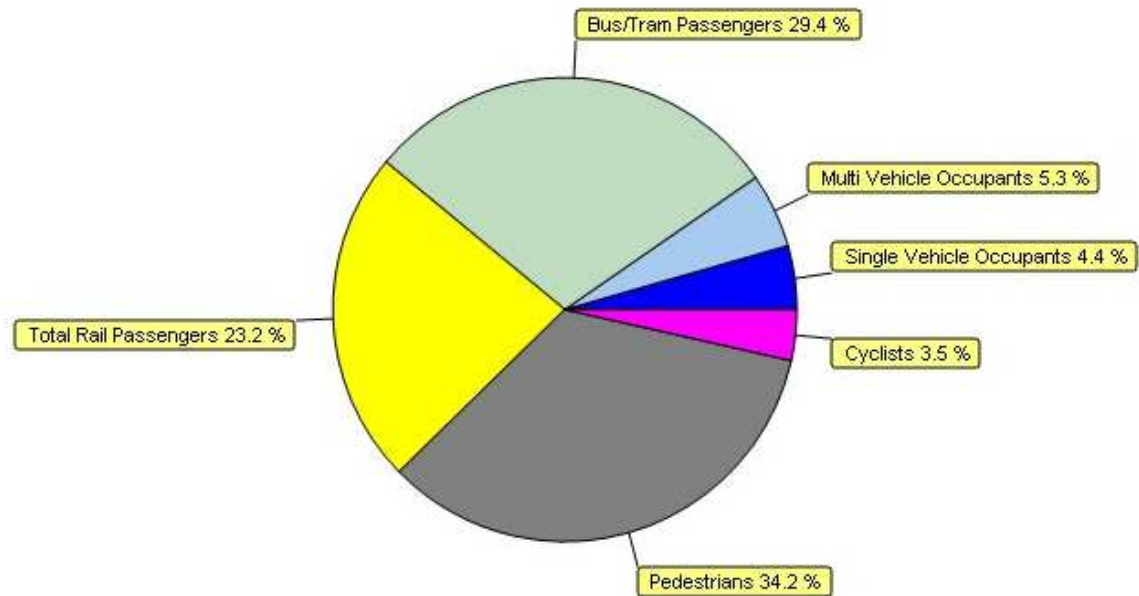
Modal Split Percentages



15:00-17:00

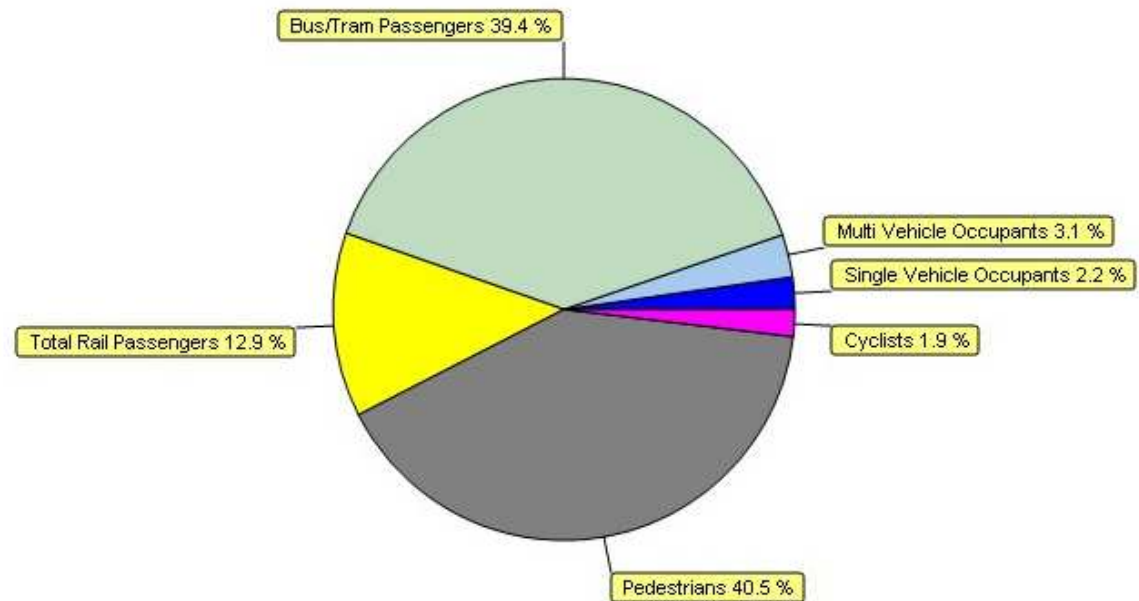
## Arrivals

Modal Split Percentages



## Departures

Modal Split Percentages



**WU03UK - Location of usual residence and place of work by method of travel to work**  
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population units  
date  
place of work

All usual residents aged 16 and over in employment the week before the census  
Persons  
2011  
Hillingdon (2011 census merged local authority district)

| usual residence : 2011<br>census merged local<br>authority district | All categories:<br>Method of travel to<br>work (2001<br>specification) | Work mainly at<br>or from home | Underground,<br>metro, light rail<br>or tram | Train        | Bus, minibus or<br>coach | Taxi       | Motorcycle,<br>scooter or<br>moped | Driving a car or<br>van | Passenger in a<br>car or van | Bicycle      | On foot      | Other method of<br>travel to work |
|---------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------|----------------------------------------------|--------------|--------------------------|------------|------------------------------------|-------------------------|------------------------------|--------------|--------------|-----------------------------------|
| %                                                                   |                                                                        | 0.0%                           |                                              | 21.9%        |                          | 0.1%       | 0.9%                               | 65.4%                   | 3.1%                         | 1.6%         | 6.1%         | 0.8%                              |
| <b>TOTAL</b>                                                        | <b>143,012</b>                                                         | <b>0</b>                       | <b>8,492</b>                                 | <b>4,651</b> | <b>18,187</b>            | <b>204</b> | <b>1,247</b>                       | <b>93,563</b>           | <b>4,486</b>                 | <b>2,280</b> | <b>8,693</b> | <b>1,209</b>                      |
| Hillingdon                                                          | 45,948                                                                 | 0                              | 1,364                                        | 600          | 8,166                    | 96         | 285                                | 25,195                  | 1,826                        | 1,182        | 7,132        | 102                               |
| Hounslow                                                            | 11,954                                                                 | 0                              | 1,371                                        | 287          | 3,125                    | 9          | 100                                | 6,315                   | 363                          | 186          | 178          | 20                                |
| Ealing                                                              | 11,650                                                                 | 0                              | 1,040                                        | 631          | 2,703                    | 16         | 87                                 | 6,452                   | 313                          | 163          | 205          | 40                                |
| Harrow                                                              | 6,261                                                                  | 0                              | 865                                          | 284          | 753                      | 3          | 24                                 | 3,943                   | 154                          | 54           | 191          | 10                                |
| Slough                                                              | 5,458                                                                  | 0                              | 18                                           | 176          | 608                      | 7          | 50                                 | 4,211                   | 234                          | 53           | 88           | 13                                |
| Spelthorne                                                          | 4,219                                                                  | 0                              | 9                                            | 36           | 371                      | 6          | 69                                 | 3,400                   | 135                          | 129          | 55           | 9                                 |
| South Bucks                                                         | 3,478                                                                  | 0                              | 8                                            | 36           | 122                      | 1          | 35                                 | 3,001                   | 142                          | 57           | 71           | 5                                 |
| Windsor and Maidenhead                                              | 2,868                                                                  | 0                              | 8                                            | 32           | 39                       | 4          | 35                                 | 2,596                   | 65                           | 28           | 12           | 5                                 |
| Wycombe                                                             | 2,508                                                                  | 0                              | 2                                            | 30           | 58                       | 5          | 29                                 | 2,295                   | 62                           | 7            | 15           | 5                                 |
| Brent                                                               | 2,423                                                                  | 0                              | 647                                          | 243          | 200                      | 1          | 20                                 | 1,225                   | 53                           | 11           | 21           | 2                                 |
| Three Rivers                                                        | 2,352                                                                  | 0                              | 64                                           | 37           | 50                       | 5          | 23                                 | 2,045                   | 72                           | 22           | 30           | 4                                 |
| Richmond upon Thames                                                | 2,149                                                                  | 0                              | 103                                          | 52           | 219                      | 3          | 42                                 | 1,626                   | 40                           | 49           | 13           | 2                                 |
| Chiltern                                                            | 1,805                                                                  | 0                              | 28                                           | 14           | 19                       | 2          | 9                                  | 1,658                   | 50                           | 12           | 11           | 2                                 |
| Runnymede                                                           | 1,687                                                                  | 0                              | 4                                            | 18           | 54                       | 2          | 30                                 | 1,489                   | 51                           | 22           | 16           | 1                                 |
| Bracknell Forest                                                    | 1,431                                                                  | 0                              | 0                                            | 17           | 4                        | 1          | 25                                 | 1,347                   | 25                           | 1            | 8            | 3                                 |
| Surrey Heath                                                        | 1,238                                                                  | 0                              | 0                                            | 7            | 13                       | 0          | 13                                 | 1,177                   | 23                           | 5            | 0            | 0                                 |
| Hammersmith and Fulham                                              | 1,174                                                                  | 0                              | 430                                          | 70           | 70                       | 0          | 18                                 | 536                     | 31                           | 8            | 7            | 4                                 |
| Watford                                                             | 1,108                                                                  | 0                              | 6                                            | 26           | 30                       | 2          | 12                                 | 923                     | 28                           | 11           | 13           | 3                                 |
| Wokingham                                                           | 1,099                                                                  | 0                              | 2                                            | 44           | 11                       | 0          | 7                                  | 1,015                   | 16                           | 2            | 2            | 0                                 |
| Elmbridge                                                           | 994                                                                    | 0                              | 5                                            | 21           | 25                       | 1          | 25                                 | 890                     | 13                           | 9            | 5            | 0                                 |
| Barnet                                                              | 971                                                                    | 0                              | 126                                          | 27           | 45                       | 1          | 11                                 | 721                     | 26                           | 3            | 10           | 1                                 |
| Dacorum                                                             | 782                                                                    | 0                              | 0                                            | 10           | 9                        | 0          | 11                                 | 729                     | 20                           | 1            | 1            | 1                                 |
| Wandsworth                                                          | 759                                                                    | 0                              | 167                                          | 143          | 31                       | 9          | 10                                 | 380                     | 9                            | 10           | 7            | 0                                 |
| Kingston upon Thames                                                | 752                                                                    | 0                              | 17                                           | 23           | 100                      | 2          | 16                                 | 560                     | 14                           | 16           | 3            | 1                                 |
| Aylesbury Vale                                                      | 750                                                                    | 0                              | 3                                            | 21           | 5                        | 1          | 6                                  | 679                     | 29                           | 0            | 6            | 0                                 |
| Woking                                                              | 690                                                                    | 0                              | 1                                            | 8            | 20                       | 1          | 7                                  | 631                     | 15                           | 3            | 4            | 0                                 |
| Hart                                                                | 662                                                                    | 0                              | 0                                            | 6            | 3                        | 0          | 6                                  | 631                     | 11                           | 3            | 2            | 2                                 |
| Westminster, City of London                                         | 613                                                                    | 0                              | 154                                          | 186          | 30                       | 7          | 2                                  | 207                     | 2                            | 10           | 5            | 0                                 |
| Guildford                                                           | 533                                                                    | 0                              | 0                                            | 7            | 6                        | 0          | 8                                  | 494                     | 11                           | 2            | 5            | 0                                 |
| South Oxfordshire                                                   | 512                                                                    | 0                              | 0                                            | 12           | 7                        | 0          | 4                                  | 470                     | 14                           | 2            | 3            | 0                                 |
| Nottingham                                                          | 510                                                                    | 0                              | 2                                            | 0            | 121                      | 1          | 5                                  | 275                     | 53                           | 32           | 20           | 1                                 |
| Lambeth                                                             | 508                                                                    | 0                              | 159                                          | 103          | 42                       | 0          | 4                                  | 185                     | 3                            | 4            | 4            | 4                                 |
| Hertsmere                                                           | 501                                                                    | 0                              | 1                                            | 11           | 14                       | 1          | 7                                  | 445                     | 7                            | 4            | 4            | 0                                 |
| Rushmoor                                                            | 499                                                                    | 0                              | 0                                            | 7            | 6                        | 0          | 10                                 | 465                     | 9                            | 0            | 1            | 1                                 |
| Reading                                                             | 478                                                                    | 0                              | 1                                            | 52           | 61                       | 1          | 4                                  | 343                     | 4                            | 3            | 9            | 0                                 |
| Kensington and Chelsea                                              | 466                                                                    | 0                              | 137                                          | 58           | 16                       | 3          | 3                                  | 236                     | 10                           | 1            | 1            | 1                                 |
| Croydon                                                             | 461                                                                    | 0                              | 50                                           | 64           | 70                       | 2          | 3                                  | 246                     | 7                            | 1            | 14           | 4                                 |
| St Albans                                                           | 457                                                                    | 0                              | 7                                            | 12           | 8                        | 1          | 0                                  | 415                     | 3                            | 0            | 3            | 0                                 |
| Camden                                                              | 442                                                                    | 0                              | 206                                          | 57           | 12                       | 1          | 3                                  | 151                     | 2                            | 6            | 3            | 1                                 |
| Merton                                                              | 437                                                                    | 0                              | 98                                           | 34           | 28                       | 0          | 8                                  | 260                     | 5                            | 3            | 1            | 0                                 |
| Reigate and Banstead                                                | 421                                                                    | 0                              | 0                                            | 22           | 14                       | 1          | 2                                  | 368                     | 8                            | 1            | 5            | 0                                 |
| Basingstoke and Deane                                               | 415                                                                    | 0                              | 1                                            | 8            | 395                      | 0          | 2                                  | 378                     | 10                           | 0            | 3            | 0                                 |
| Crawley                                                             | 380                                                                    | 0                              | 0                                            | 31           | 2                        | 0          | 2                                  | 321                     | 13                           | 2            | 2            | 1                                 |
| Central Bedfordshire                                                | 378                                                                    | 0                              | 4                                            | 7            | 4                        | 0          | 6                                  | 346                     | 5                            | 2            | 2            | 2                                 |
| Enfield                                                             | 378                                                                    | 0                              | 63                                           | 16           | 29                       | 0          | 5                                  | 253                     | 9                            | 0            | 2            | 1                                 |
| Haringey                                                            | 372                                                                    | 0                              | 118                                          | 39           | 18                       | 1          | 6                                  | 180                     | 7                            | 2            | 1            | 0                                 |
| Southwark                                                           | 367                                                                    | 0                              | 127                                          | 60           | 42                       | 0          | 6                                  | 113                     | 4                            | 0            | 8            | 0                                 |
| West Berkshire                                                      | 366                                                                    | 0                              | 0                                            | 16           | 4                        | 0          | 0                                  | 331                     | 4                            | 4            | 1            | 0                                 |
| Brighton and Hove                                                   | 341                                                                    | 0                              | 2                                            | 20           | 56                       | 0          | 0                                  | 253                     | 2                            | 1            | 5            | 2                                 |
| Waverley                                                            | 330                                                                    | 0                              | 0                                            | 4            | 1                        | 0          | 5                                  | 311                     | 8                            | 0            | 1            | 0                                 |
| Sutton                                                              | 329                                                                    | 0                              | 18                                           | 23           | 35                       | 0          | 5                                  | 241                     | 2                            | 2            | 2            | 1                                 |
| Horsham                                                             | 318                                                                    | 0                              | 0                                            | 4            | 4                        | 0          | 3                                  | 302                     | 0                            | 0            | 0            | 0                                 |
| Newham                                                              | 300                                                                    | 0                              | 150                                          | 50           | 26                       | 0          | 1                                  | 63                      | 3                            | 2            | 5            | 0                                 |
| Broxtowe                                                            | 296                                                                    | 0                              | 2                                            | 1            | 16                       | 0          | 2                                  | 168                     | 23                           | 26           | 58           | 0                                 |
| Luton                                                               | 285                                                                    | 0                              | 1                                            | 6            | 15                       | 3          | 3                                  | 232                     | 13                           | 3            | 7            | 2                                 |
| Islington                                                           | 277                                                                    | 0                              | 117                                          | 25           | 10                       | 0          | 4                                  | 104                     | 3                            | 5            | 8            | 1                                 |
| Wiltshire                                                           | 275                                                                    | 0                              | 1                                            | 5            | 3                        | 0          | 0                                  | 249                     | 8                            | 0            | 5            | 1                                 |
| Mid Sussex                                                          | 262                                                                    | 0                              | 1                                            | 13           | 7                        | 0          | 0                                  | 232                     | 7                            | 4            | 1            | 2                                 |
| Redbridge                                                           | 252                                                                    | 0                              | 89                                           | 19           | 6                        | 0          | 0                                  | 132                     | 1                            | 3            | 1            | 1                                 |
| Mole Valley                                                         | 249                                                                    | 0                              | 1                                            | 8            | 3                        | 0          | 2                                  | 233                     | 1                            | 0            | 1            | 0                                 |
| Waltham Forest                                                      | 248                                                                    | 0                              | 107                                          | 19           | 10                       | 0          | 1                                  | 101                     | 3                            | 1            | 4            | 2                                 |
| Levensham                                                           | 246                                                                    | 0                              | 81                                           | 48           | 28                       | 0          | 2                                  | 48                      | 6                            | 79           | 0            | 0                                 |
| Milton Keynes                                                       | 225                                                                    | 0                              | 0                                            | 20           | 3                        | 1          | 2                                  | 167                     | 7                            | 1            | 3            | 1                                 |
| Epsom and Ewell                                                     | 217                                                                    | 0                              | 2                                            | 8            | 6                        | 0          | 10                                 | 179                     | 3                            | 7            | 1            | 1                                 |
| Welwyn Hatfield                                                     | 204                                                                    | 0                              | 2                                            | 10           | 12                       | 1          | 1                                  | 164                     | 11                           | 1            | 1            | 1                                 |
| Tower Hamlets                                                       | 201                                                                    | 0                              | 109                                          | 31           | 6                        | 0          | 6                                  | 40                      | 1                            | 1            | 7            | 0                                 |
| Bromley                                                             | 200                                                                    | 0                              | 20                                           | 41           | 6                        | 0          | 2                                  | 123                     | 6                            | 2            | 0            | 0                                 |
| Hackney                                                             | 196                                                                    | 0                              | 89                                           | 22           | 17                       | 0          | 2                                  | 73                      | 2                            | 7            | 3            | 1                                 |
| Greenwich                                                           | 195                                                                    | 0                              | 67                                           | 46           | 13                       | 0          | 4                                  | 56                      | 5                            | 0            | 2            | 2                                 |
| Cherwell                                                            | 191                                                                    | 0                              | 0                                            | 5            | 4                        | 0          | 0                                  | 177                     | 3                            | 1            | 1            | 0                                 |
| Birmingham                                                          | 190                                                                    | 0                              | 0                                            | 5            | 24                       | 1          | 0                                  | 131                     | 19                           | 2            | 7            | 1                                 |
| Rushcliffe                                                          | 185                                                                    | 0                              | 1                                            | 0            | 10                       | 1          | 1                                  | 157                     | 10                           | 4            | 1            | 1                                 |
| East Hampshire                                                      | 181                                                                    | 0                              | 0                                            | 0            | 0                        | 0          | 1                                  | 174                     | 5                            | 0            | 0            | 1                                 |
| Oxford                                                              | 169                                                                    | 0                              | 2                                            | 2            | 27                       | 0          | 1                                  | 118                     | 6                            | 2            | 11           | 0                                 |
| North Hertfordshire                                                 | 152                                                                    | 0                              | 0                                            | 12           | 1                        | 0          | 0                                  | 130                     | 8                            | 0            | 1            | 0                                 |
| Tandridge                                                           | 149                                                                    | 0                              | 0                                            | 11           | 2                        | 0          | 1                                  | 133                     | 2                            | 0            | 0            | 0                                 |
| Manchester                                                          | 143                                                                    | 0                              | 7                                            | 11           | 32                       | 0          | 1                                  | 78                      | 2                            | 1            | 78           | 10                                |
| Gedling                                                             | 140                                                                    | 0                              | 1                                            | 0            | 20                       | 0          | 4                                  | 107                     | 5                            | 2            | 1            | 0                                 |
| Swindon                                                             | 140                                                                    | 0                              | 1                                            | 1            | 8                        | 0          | 1                                  | 118                     | 7                            | 1            | 2            | 1                                 |
| Erewash                                                             | 135                                                                    | 0                              | 0                                            | 2            | 8                        | 0          | 1                                  | 107                     | 12                           | 5            | 0            | 0                                 |
| Glasgow City                                                        | 128                                                                    | 0                              | 2                                            | 4            | 5                        | 0          | 0                                  | 6                       | 2                            | 1            | 0            | 108                               |
| Barking and Dagenham                                                | 126                                                                    | 0                              | 30                                           | 18           | 8                        | 0          | 1                                  | 66                      | 0                            | 1            | 0            | 2                                 |
| Bexley                                                              | 118                                                                    | 0                              | 22                                           | 13           | 6                        | 0          | 2                                  | 69                      | 2                            | 0            | 4            | 0                                 |
| Winchester                                                          | 115                                                                    | 0                              | 1                                            | 1            | 1                        | 0          | 1                                  | 106                     | 2                            | 0            | 3            | 0                                 |
| Vale of White Horse                                                 | 115                                                                    | 0                              | 0                                            | 3            | 9                        | 0          | 2                                  | 98                      | 1                            | 0            | 2            | 0                                 |
| East Hertfordshire                                                  | 114                                                                    | 0                              | 2                                            | 3            | 2                        | 0          | 2                                  | 98                      | 4                            | 0            | 3            | 0                                 |
| Medway                                                              | 109                                                                    | 0                              | 0                                            | 14           | 2                        | 0          | 0                                  | 86                      | 0                            | 0            | 2            | 0                                 |
| West Oxfordshire                                                    | 104                                                                    | 0                              | 0                                            | 0            | 6                        | 0          | 1                                  | 89                      | 5                            | 1            | 2            | 0                                 |
| Renfrewshire                                                        | 103                                                                    | 0                              | 0                                            | 1            | 3                        | 2          | 0                                  | 5                       | 0                            | 0            | 0            | 92                                |
| Southampton                                                         | 102                                                                    | 0                              | 0                                            | 1            | 6                        | 0          | 2                                  | 84                      | 1                            | 0            | 8            | 0                                 |
| Arun                                                                | 101                                                                    | 0                              | 2                                            | 5            | 4                        | 0          | 1                                  | 85                      | 2                            | 0            | 1            | 1                                 |
| South Northamptonshire                                              | 99                                                                     | 0                              | 0                                            | 5            | 1                        | 0          | 1                                  | 90                      | 2                            | 0            | 0            | 0                                 |
| Wealden                                                             | 95                                                                     | 0                              | 0                                            | 3            | 0                        | 0          | 0                                  | 90                      | 0                            | 0            | 2            | 0                                 |
| Gravesham                                                           | 91                                                                     | 0                              | 1                                            | 7            | 4                        | 0          | 1                                  | 59                      | 16                           | 0            | 0            | 3                                 |
| Solihull                                                            | 88                                                                     | 0                              | 0                                            | 0            | 3                        | 0          | 0                                  | 78                      | 4                            | 0            | 3            | 0                                 |
| Chichester                                                          | 88                                                                     | 0                              | 0                                            | 4            | 1                        | 0          | 0                                  | 80                      | 2                            | 0            | 1            | 0                                 |
| Worthing                                                            | 88                                                                     | 0                              | 0                                            | 7            | 0                        | 0          | 0                                  | 72                      | 0                            | 0            | 0            | 2                                 |
| Havering                                                            | 87                                                                     | 0                              | 14                                           | 9            | 1                        | 0          | 2                                  | 58                      | 2                            | 1            | 0            | 0                                 |
| Stevenage                                                           | 84                                                                     | 0                              | 0                                            | 2            | 1                        | 0          | 4                                  | 74                      | 3                            | 0            | 0            | 0                                 |
| Test Valley                                                         | 84                                                                     | 0                              | 0                                            | 2            | 0                        | 0          | 0                                  | 77                      | 3                            | 0            | 2            | 0                                 |
| Northampton                                                         | 83                                                                     | 0                              | 0                                            | 5            | 4                        | 0          | 2                                  | 65                      | 2                            | 0            | 4            | 1                                 |
| Stratford-on-Avon                                                   | 83                                                                     | 0                              | 0                                            | 1            | 0                        | 0          | 0                                  | 78                      | 3                            | 0            | 1            | 0                                 |
| Bournemouth                                                         | 83                                                                     | 0                              | 0                                            | 1            | 15                       | 0          | 0                                  | 62                      | 0                            | 0            | 4            | 1                                 |
| Derby                                                               | 81                                                                     | 0                              | 0                                            | 7            | 7                        | 0          | 1                                  | 58                      | 5                            | 1            | 2            | 0                                 |
| Portsmouth                                                          | 79                                                                     | 0                              | 0                                            | 4            | 4                        | 0          | 0                                  | 61                      | 4                            | 1            | 5            | 0                                 |
| Ashfield                                                            | 78                                                                     | 0                              | 1                                            | 1            | 3                        | 0          | 2                                  | 62                      | 7                            | 0            | 2            | 0                                 |
| Leads                                                               | 76                                                                     | 0                              | 0                                            | 8            | 2                        | 0          | 0                                  | 48                      | 2                            | 0            | 9            | 1                                 |
| Broxbourne                                                          | 76                                                                     | 0                              | 1                                            | 3            | 2                        | 0          | 4                                  | 61                      | 2                            | 0            | 3            | 0                                 |
| New Forest                                                          | 76                                                                     | 0                              | 0                                            | 0            | 5                        | 0          | 1                                  | 67                      | 0                            | 0            | 3            | 0                                 |
| Sevenoaks                                                           | 75                                                                     | 0                              | 0                                            | 4            | 1                        | 0          | 3                                  | 62                      | 0                            | 0            | 5            | 0                                 |
| Bedford                                                             | 73                                                                     | 0                              | 0                                            | 4            | 1                        | 0          | 0                                  | 66                      | 0                            | 0            | 1            | 1                                 |
| Epping Forest                                                       | 73                                                                     | 0                              | 0                                            | 8            | 1                        | 0          | 0                                  | 61                      | 2                            | 1            | 0            | 0                                 |
| Eastleigh                                                           | 72                                                                     | 0                              | 0                                            | 1            | 0                        | 0          | 0                                  | 69                      | 2                            | 0            | 0            | 0                                 |
| Cheshire East                                                       | 71                                                                     | 0                              | 0                                            | 12           | 4                        | 2          | 0                                  | 44                      | 0                            | 0            | 1            | 8                                 |
| Poole                                                               | 67                                                                     | 0                              | 0                                            | 1            | 4                        | 0          | 1                                  | 57                      | 2                            | 2            | 0            | 0                                 |
| Cheshire West and Chester                                           | 65                                                                     | 0                              | 0                                            | 6            | 3                        | 0          | 0                                  | 47                      | 4                            | 1            | 2            | 2                                 |
| Liverpool                                                           | 63                                                                     | 0                              | 1                                            | 7            | 0                        | 0          | 1                                  | 38                      | 1                            | 0            | 1            | 1                                 |
| Havant                                                              | 62                                                                     | 0                              | 1                                            | 2            | 1                        | 0          | 1                                  | 50                      | 3                            | 1            | 3            | 0                                 |
| Fareham                                                             | 61                                                                     | 0                              | 0                                            | 1            | 1                        | 0          | 1                                  | 52                      | 2                            | 2            | 2            | 0                                 |
| East Dorset                                                         | 61                                                                     | 0                              | 0                                            | 0            | 2                        | 1          | 0                                  | 55                      | 1                            | 1            | 1            | 0                                 |
| Leicester                                                           | 59                                                                     | 0                              | 0                                            | 0            | 8                        | 0          | 0                                  | 38                      | 4                            | 0            | 9            | 0                                 |
| Thurrock                                                            | 59                                                                     | 0                              | 0                                            | 6            | 0                        | 0          | 4                                  | 41                      | 0                            | 0            | 0            | 0                                 |
| City of Edinburgh                                                   | 59                                                                     | 0                              | 0                                            | 0            | 1                        | 1          | 0                                  | 8                       | 0                            | 0            | 1            | 48                                |
| Warwick                                                             | 58                                                                     | 0                              | 0                                            | 1            | 3                        | 0          | 0                                  | 52                      | 1                            | 0            | 1            | 0                                 |
| Bristol, City of                                                    | 58                                                                     | 0                              | 0                                            | 2            | 3                        | 0          | 0                                  | 44                      | 0                            | 0            | 9            | 0                                 |
| Huntingdonshire                                                     | 57                                                                     | 0                              | 0                                            | 5            | 0                        | 0          | 0                                  | 48                      | 2                            | 0            | 2            | 0                                 |
| Cotswold                                                            | 57                                                                     | 0                              | 0                                            | 0            | 0                        | 0          | 0                                  | 55                      | 0                            | 1            | 1            | 0                                 |
| Braintree                                                           | 55                                                                     | 0                              | 0                                            | 0            | 1                        | 0          | 0                                  | 52                      | 0                            | 1            | 1            | 0                                 |

|                              |    |   |   |    |   |   |   |    |    |   |    |    |
|------------------------------|----|---|---|----|---|---|---|----|----|---|----|----|
| Chelmsford                   | 54 | 0 | 3 | 6  | 0 | 0 | 0 | 44 | 0  | 1 | 0  | 0  |
| Bury                         | 52 | 0 | 0 | 2  | 3 | 0 | 0 | 34 | 1  | 2 | 5  | 5  |
| Bath and North East Somerset | 52 | 0 | 0 | 6  | 6 | 0 | 0 | 33 | 1  | 1 | 5  | 0  |
| Sheffield                    | 51 | 0 | 1 | 0  | 9 | 0 | 0 | 16 | 21 | 0 | 4  | 0  |
| Stockport                    | 50 | 0 | 2 | 3  | 3 | 0 | 0 | 32 | 2  | 0 | 0  | 8  |
| Southend-on-Sea              | 50 | 0 | 1 | 9  | 2 | 0 | 1 | 33 | 0  | 0 | 3  | 0  |
| South Lanarkshire            | 50 | 0 | 0 | 0  | 0 | 0 | 0 | 6  | 0  | 1 | 6  | 42 |
| Coventry                     | 49 | 0 | 1 | 0  | 3 | 0 | 1 | 34 | 6  | 0 | 3  | 0  |
| Maidstone                    | 49 | 0 | 1 | 1  | 1 | 0 | 0 | 44 | 2  | 0 | 0  | 0  |
| Wirral                       | 48 | 0 | 0 | 0  | 3 | 0 | 0 | 38 | 4  | 1 | 0  | 2  |
| North Lanarkshire            | 48 | 0 | 0 | 0  | 1 | 0 | 0 | 4  | 0  | 0 | 1  | 42 |
| Northumberland               | 47 | 0 | 2 | 1  | 0 | 0 | 0 | 16 | 0  | 1 | 4  | 22 |
| Dudley                       | 47 | 0 | 0 | 0  | 2 | 0 | 0 | 40 | 1  | 0 | 4  | 0  |
| Uttlesford                   | 47 | 0 | 0 | 2  | 1 | 0 | 0 | 41 | 1  | 1 | 1  | 0  |
| Trafford                     | 46 | 0 | 2 | 4  | 0 | 0 | 1 | 31 | 1  | 0 | 0  | 7  |
| Tonbridge and Malling        | 46 | 0 | 0 | 5  | 0 | 0 | 1 | 38 | 1  | 0 | 0  | 0  |
| Cornwall, Isles of Scilly    | 46 | 0 | 0 | 2  | 1 | 0 | 2 | 32 | 0  | 1 | 6  | 2  |
| Basildon                     | 45 | 0 | 1 | 8  | 1 | 0 | 0 | 34 | 1  | 0 | 0  | 0  |
| Fife                         | 45 | 0 | 1 | 1  | 1 | 0 | 0 | 7  | 1  | 0 | 0  | 34 |
| East Dunbartonshire          | 45 | 0 | 0 | 0  | 0 | 0 | 0 | 6  | 2  | 0 | 0  | 37 |
| Daventry                     | 44 | 0 | 0 | 3  | 0 | 0 | 0 | 40 | 0  | 0 | 0  | 1  |
| North Somerset               | 44 | 0 | 0 | 1  | 0 | 0 | 0 | 41 | 0  | 0 | 2  | 0  |
| Bradford                     | 43 | 0 | 1 | 4  | 7 | 0 | 0 | 28 | 2  | 0 | 0  | 1  |
| South Cambridgeshire         | 43 | 0 | 1 | 0  | 1 | 0 | 2 | 36 | 2  | 0 | 1  | 0  |
| Ashford                      | 42 | 0 | 4 | 2  | 0 | 0 | 0 | 32 | 0  | 0 | 3  | 0  |
| Sefton                       | 40 | 0 | 0 | 3  | 4 | 0 | 0 | 25 | 4  | 1 | 2  | 1  |
| Leaves                       | 40 | 0 | 1 | 3  | 3 | 1 | 0 | 31 | 1  | 0 | 3  | 0  |
| Cheltenham                   | 40 | 0 | 0 | 0  | 4 | 0 | 0 | 34 | 1  | 1 | 0  | 0  |
| Charmwood                    | 39 | 0 | 1 | 1  | 3 | 0 | 0 | 31 | 2  | 1 | 0  | 0  |
| Harlow                       | 39 | 0 | 0 | 2  | 0 | 0 | 2 | 34 | 0  | 0 | 1  | 0  |
| South Somerset               | 39 | 0 | 0 | 3  | 0 | 0 | 1 | 32 | 0  | 0 | 0  | 0  |
| Cardiff                      | 39 | 0 | 0 | 1  | 6 | 0 | 0 | 21 | 0  | 1 | 9  | 1  |
| Shropshire                   | 38 | 0 | 0 | 2  | 0 | 0 | 1 | 28 | 0  | 0 | 4  | 3  |
| Colchester                   | 38 | 0 | 0 | 5  | 1 | 0 | 0 | 29 | 1  | 0 | 2  | 0  |
| Dartford                     | 38 | 0 | 1 | 7  | 0 | 0 | 0 | 29 | 1  | 0 | 0  | 0  |
| Adur                         | 38 | 0 | 0 | 1  | 0 | 0 | 0 | 34 | 0  | 1 | 1  | 0  |
| North Ayrshire               | 38 | 0 | 1 | 0  | 0 | 0 | 0 | 1  | 0  | 0 | 0  | 35 |
| North West Leicestershire    | 37 | 0 | 0 | 0  | 0 | 0 | 0 | 35 | 1  | 0 | 1  | 0  |
| Walsall                      | 37 | 0 | 0 | 1  | 2 | 1 | 0 | 29 | 3  | 0 | 1  | 0  |
| Peterborough                 | 37 | 0 | 2 | 4  | 0 | 0 | 1 | 26 | 0  | 0 | 3  | 0  |
| East Renfrewshire            | 37 | 0 | 0 | 0  | 0 | 0 | 0 | 4  | 1  | 0 | 0  | 32 |
| Salford                      | 36 | 0 | 1 | 4  | 4 | 1 | 0 | 20 | 0  | 0 | 4  | 1  |
| North Kesteven               | 35 | 0 | 0 | 1  | 0 | 0 | 0 | 26 | 1  | 0 | 7  | 0  |
| East Northamptonshire        | 35 | 0 | 0 | 0  | 0 | 0 | 0 | 33 | 0  | 0 | 2  | 0  |
| Newark and Sherwood          | 35 | 0 | 0 | 3  | 0 | 0 | 0 | 31 | 0  | 0 | 1  | 0  |
| Tendring                     | 35 | 0 | 3 | 2  | 0 | 0 | 2 | 22 | 0  | 4 | 0  | 0  |
| Eastbourne                   | 35 | 0 | 0 | 3  | 1 | 0 | 0 | 30 | 0  | 0 | 1  | 0  |
| Canterbury                   | 35 | 0 | 1 | 3  | 4 | 0 | 0 | 21 | 5  | 1 | 0  | 0  |
| Warrington                   | 34 | 0 | 0 | 0  | 1 | 0 | 2 | 24 | 1  | 0 | 3  | 3  |
| Wigan                        | 34 | 0 | 1 | 3  | 1 | 0 | 0 | 22 | 1  | 0 | 6  | 0  |
| South Kesteven               | 34 | 0 | 1 | 1  | 0 | 0 | 0 | 28 | 0  | 1 | 0  | 0  |
| Sandwell                     | 34 | 0 | 1 | 1  | 2 | 0 | 1 | 23 | 4  | 0 | 2  | 0  |
| South Gloucestershire        | 34 | 0 | 1 | 0  | 1 | 0 | 0 | 32 | 0  | 0 | 0  | 0  |
| Doncaster                    | 32 | 0 | 0 | 4  | 2 | 0 | 0 | 24 | 0  | 0 | 2  | 0  |
| St Edmundsbury               | 32 | 0 | 1 | 1  | 1 | 0 | 0 | 25 | 1  | 0 | 2  | 1  |
| Tunbridge Wells              | 32 | 0 | 0 | 0  | 0 | 0 | 0 | 30 | 2  | 0 | 0  | 0  |
| Kirkcaldy                    | 31 | 0 | 0 | 1  | 4 | 0 | 0 | 23 | 0  | 1 | 2  | 0  |
| Hinckley and Bosworth        | 31 | 0 | 0 | 1  | 1 | 0 | 0 | 27 | 1  | 0 | 1  | 0  |
| Herefordshire, County of     | 31 | 0 | 0 | 0  | 0 | 0 | 0 | 26 | 3  | 1 | 1  | 0  |
| Newcastle upon Tyne          | 30 | 0 | 2 | 4  | 4 | 0 | 0 | 8  | 2  | 0 | 2  | 8  |
| Oldham                       | 30 | 0 | 1 | 30 | 6 | 0 | 0 | 2  | 18 | 2 | 0  | 0  |
| Amber Valley                 | 30 | 0 | 0 | 0  | 0 | 0 | 1 | 26 | 2  | 1 | 0  | 0  |
| Wellingborough               | 30 | 0 | 0 | 2  | 0 | 0 | 0 | 26 | 1  | 0 | 1  | 0  |
| Wychavon                     | 30 | 0 | 1 | 1  | 0 | 0 | 0 | 27 | 0  | 0 | 1  | 0  |
| Thanet                       | 30 | 0 | 0 | 1  | 1 | 0 | 0 | 23 | 3  | 0 | 2  | 0  |
| Stockton-on-Tees             | 29 | 0 | 4 | 4  | 3 | 0 | 1 | 17 | 0  | 0 | 1  | 0  |
| South Ayrshire               | 29 | 0 | 1 | 0  | 0 | 0 | 0 | 4  | 0  | 0 | 0  | 24 |
| Dover                        | 28 | 0 | 1 | 1  | 1 | 0 | 0 | 20 | 2  | 0 | 1  | 2  |
| Rhondda Cynon Taf            | 28 | 0 | 1 | 0  | 1 | 0 | 0 | 22 | 1  | 0 | 3  | 0  |
| Inverclyde                   | 28 | 0 | 0 | 1  | 0 | 0 | 0 | 0  | 0  | 0 | 0  | 27 |
| East Riding of Yorkshire     | 26 | 0 | 0 | 1  | 0 | 0 | 0 | 18 | 0  | 0 | 5  | 0  |
| Harborough                   | 26 | 0 | 0 | 2  | 0 | 0 | 0 | 22 | 0  | 0 | 1  | 1  |
| Mansfield                    | 26 | 0 | 0 | 0  | 0 | 0 | 0 | 26 | 0  | 0 | 0  | 0  |
| Gosport                      | 26 | 0 | 0 | 0  | 0 | 0 | 1 | 24 | 0  | 0 | 1  | 0  |
| North Tyneside               | 25 | 0 | 2 | 2  | 1 | 0 | 0 | 13 | 1  | 1 | 1  | 4  |
| South Derbyshire             | 25 | 0 | 0 | 0  | 0 | 0 | 0 | 25 | 0  | 0 | 0  | 0  |
| Rother                       | 25 | 0 | 2 | 1  | 0 | 0 | 0 | 22 | 0  | 0 | 0  | 0  |
| Aberdeenshire                | 25 | 0 | 0 | 0  | 0 | 0 | 0 | 1  | 0  | 0 | 1  | 23 |
| York                         | 24 | 0 | 0 | 3  | 1 | 0 | 0 | 13 | 1  | 1 | 5  | 0  |
| Stoke-on-Trent               | 24 | 0 | 1 | 2  | 4 | 0 | 0 | 14 | 0  | 0 | 1  | 2  |
| Isle of Wight                | 24 | 0 | 0 | 1  | 2 | 0 | 0 | 1  | 0  | 1 | 17 | 0  |
| Swale                        | 24 | 0 | 0 | 3  | 2 | 0 | 0 | 18 | 0  | 1 | 0  | 0  |
| County Durham                | 23 | 0 | 0 | 1  | 1 | 0 | 0 | 14 | 0  | 0 | 2  | 5  |
| Wolverhampton                | 23 | 0 | 0 | 1  | 2 | 0 | 0 | 16 | 0  | 4 | 0  | 0  |
| Shepway                      | 23 | 0 | 0 | 1  | 0 | 0 | 1 | 19 | 1  | 0 | 0  | 1  |
| West Dorset                  | 23 | 0 | 0 | 1  | 0 | 0 | 0 | 1  | 0  | 0 | 1  | 0  |
| Bolton                       | 22 | 0 | 0 | 1  | 3 | 0 | 0 | 16 | 0  | 0 | 2  | 0  |
| Rotherham                    | 22 | 0 | 1 | 0  | 0 | 0 | 0 | 18 | 3  | 0 | 0  | 0  |
| Telford and Wrekin           | 22 | 0 | 0 | 2  | 0 | 0 | 0 | 18 | 1  | 0 | 1  | 0  |
| Teignbridge                  | 22 | 0 | 0 | 3  | 0 | 0 | 0 | 16 | 1  | 0 | 2  | 0  |
| Aberdeen City                | 22 | 0 | 0 | 1  | 0 | 0 | 0 | 2  | 0  | 0 | 0  | 19 |
| Kettering                    | 21 | 0 | 0 | 3  | 0 | 0 | 0 | 18 | 0  | 0 | 0  | 0  |
| Cambridge                    | 21 | 0 | 0 | 5  | 3 | 0 | 0 | 9  | 0  | 4 | 0  | 0  |
| Fenland                      | 21 | 0 | 1 | 0  | 0 | 0 | 0 | 18 | 1  | 0 | 1  | 0  |
| Brentwood                    | 21 | 0 | 3 | 2  | 0 | 0 | 0 | 16 | 0  | 0 | 0  | 0  |
| Rochford                     | 21 | 0 | 0 | 3  | 0 | 0 | 0 | 17 | 0  | 0 | 1  | 0  |
| East Devon                   | 21 | 0 | 0 | 0  | 0 | 0 | 0 | 19 | 1  | 0 | 1  | 0  |
| Sedgemoor                    | 21 | 0 | 0 | 0  | 0 | 0 | 0 | 20 | 0  | 1 | 0  | 0  |
| Highland                     | 21 | 0 | 1 | 0  | 1 | 0 | 0 | 2  | 0  | 0 | 2  | 15 |
| Sunderland                   | 20 | 0 | 0 | 0  | 2 | 0 | 0 | 9  | 1  | 0 | 5  | 3  |
| South Holland                | 20 | 0 | 0 | 0  | 0 | 0 | 0 | 20 | 0  | 0 | 0  | 0  |
| Corby                        | 20 | 0 | 0 | 4  | 0 | 0 | 0 | 14 | 2  | 0 | 0  | 0  |
| Broadland                    | 20 | 0 | 0 | 1  | 1 | 0 | 0 | 15 | 1  | 0 | 2  | 0  |
| Christchurch                 | 20 | 0 | 0 | 2  | 1 | 0 | 0 | 17 | 0  | 0 | 0  | 0  |
| Twickenham                   | 20 | 0 | 0 | 0  | 0 | 0 | 1 | 18 | 1  | 0 | 0  | 0  |
| West Lothian                 | 20 | 0 | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 0 | 3  | 17 |
| Wakefield                    | 19 | 0 | 0 | 3  | 0 | 0 | 1 | 15 | 0  | 0 | 0  | 0  |
| Blaby                        | 19 | 0 | 0 | 0  | 0 | 0 | 0 | 18 | 0  | 0 | 1  | 0  |
| Nuneaton and Bedworth        | 19 | 0 | 0 | 2  | 0 | 0 | 0 | 15 | 1  | 0 | 1  | 0  |
| North Dorset                 | 19 | 0 | 0 | 0  | 0 | 0 | 0 | 18 | 0  | 1 | 0  | 0  |
| Purbeck                      | 19 | 0 | 0 | 0  | 1 | 0 | 0 | 16 | 0  | 0 | 2  | 0  |
| West Dunbartonshire          | 19 | 0 | 0 | 1  | 0 | 0 | 0 | 2  | 0  | 0 | 0  | 16 |
| Halton                       | 18 | 0 | 0 | 0  | 0 | 0 | 0 | 16 | 0  | 0 | 1  | 1  |
| Bolsover                     | 18 | 0 | 0 | 2  | 1 | 0 | 0 | 15 | 0  | 0 | 0  | 0  |
| High Peak                    | 18 | 0 | 0 | 1  | 0 | 0 | 0 | 13 | 0  | 0 | 3  | 1  |
| Plymouth                     | 18 | 0 | 2 | 2  | 0 | 0 | 0 | 9  | 0  | 0 | 4  | 9  |
| Torbay                       | 18 | 0 | 0 | 0  | 1 | 0 | 2 | 12 | 1  | 0 | 2  | 0  |
| Exeter                       | 18 | 0 | 1 | 0  | 1 | 0 | 0 | 13 | 2  | 0 | 1  | 0  |
| Swansea                      | 18 | 0 | 0 | 0  | 0 | 0 | 0 | 16 | 2  | 0 | 0  | 0  |
| Rugby                        | 17 | 0 | 1 | 1  | 0 | 0 | 0 | 15 | 0  | 0 | 0  | 0  |
| South Norfolk                | 17 | 0 | 1 | 0  | 1 | 0 | 0 | 15 | 0  | 0 | 0  | 0  |
| Hastings                     | 17 | 0 | 0 | 0  | 0 | 0 | 0 | 15 | 0  | 0 | 2  | 0  |
| Torridge                     | 17 | 0 | 0 | 1  | 0 | 0 | 0 | 14 | 0  | 0 | 2  | 0  |
| Forest of Dean               | 17 | 0 | 0 | 1  | 0 | 0 | 0 | 15 | 0  | 0 | 1  | 0  |
| Camarthenshire               | 17 | 0 | 0 | 1  | 0 | 0 | 0 | 12 | 0  | 0 | 4  | 0  |
| Falkirk                      | 17 | 0 | 0 | 1  | 0 | 0 | 0 | 3  | 0  | 0 | 3  | 13 |
| Tameside                     | 16 | 0 | 0 | 1  | 2 | 0 | 0 | 11 | 0  | 1 | 0  | 1  |
| Lichfield                    | 16 | 0 | 0 | 2  | 1 | 0 | 0 | 13 | 0  | 0 | 0  | 0  |
| North Warwickshire           | 16 | 0 | 0 | 2  | 1 | 0 | 0 | 13 | 0  | 0 | 0  | 0  |
| Worcester                    | 16 | 0 | 0 | 1  | 0 | 0 | 0 | 15 | 0  | 0 | 0  | 0  |
| Great Yarmouth               | 16 | 0 | 0 | 0  | 1 | 0 | 0 | 14 | 0  | 0 | 0  | 0  |
| Babergh                      | 16 | 0 | 1 | 0  | 0 | 0 | 0 | 13 | 0  | 0 | 2  | 0  |
| Mid Suffolk                  | 16 | 0 | 0 | 3  | 0 | 0 | 0 | 12 | 0  | 0 | 1  | 0  |
| Stroud                       | 16 | 0 | 0 | 0  | 1 | 0 | 0 | 13 | 0  | 0 | 0  | 1  |
| Gateshead                    | 15 | 0 | 0 | 1  | 1 | 1 | 0 | 6  | 0  | 1 | 2  | 4  |
| South Tyneside               | 15 | 0 | 2 | 0  | 0 | 0 | 0 | 6  | 1  | 0 | 3  | 0  |
| North East Lincolnshire      | 15 | 0 | 0 | 0  | 3 | 0 | 0 | 9  | 2  | 0 | 0  | 1  |
| Staffordshire Moorlands      | 15 | 0 | 0 | 1  | 2 | 0 | 0 | 9  | 0  | 0 | 3  | 0  |
| King's Lynn and West Norfolk | 15 | 0 | 0 | 1  | 2 | 0 | 0 | 10 | 2  | 0 | 0  | 0  |
| Merrip                       | 15 | 0 | 0 | 0  | 0 | 0 | 0 | 13 | 0  | 0 | 2  | 0  |
| Denbighshire                 | 15 | 0 | 0 | 0  | 0 | 0 | 0 | 11 | 0  | 0 | 3  | 0  |
| The Vale of Glamorgan        | 15 | 0 | 0 | 1  | 1 | 0 | 0 | 11 | 1  | 0 | 0  | 1  |
| Perth and Kinross            |    |   |   |    |   |   |   |    |    |   |    |    |

|                             |    |   |   |   |   |   |   |    |    |   |   |    |    |
|-----------------------------|----|---|---|---|---|---|---|----|----|---|---|----|----|
| Coucester                   | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0  | 10 | 1 | 0 | 2  | 0  |
| East Lothian                | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 2 | 11 | 0  |
| Argyll and Bute             | 14 | 0 | 0 | 2 | 0 | 0 | 0 | 2  | 0  | 0 | 0 | 10 | 0  |
| Hartlepool                  | 13 | 0 | 0 | 2 | 0 | 0 | 0 | 10 | 0  | 0 | 1 | 0  | 0  |
| Redcar and Cleveland        | 13 | 0 | 0 | 2 | 0 | 0 | 0 | 7  | 0  | 1 | 3 | 0  | 0  |
| Darlington                  | 13 | 0 | 1 | 0 | 0 | 0 | 1 | 11 | 0  | 0 | 0 | 0  | 0  |
| Chorley                     | 13 | 0 | 1 | 2 | 0 | 0 | 0 | 8  | 0  | 1 | 0 | 2  | 0  |
| South Ribble                | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | 0  | 0 | 1 | 0  | 0  |
| Rochdale                    | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | 1  | 0 | 0 | 0  | 0  |
| St. Helens                  | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | 0  | 0 | 1 | 0  | 0  |
| Kingston upon Hull, City of | 13 | 0 | 0 | 2 | 1 | 0 | 0 | 7  | 0  | 0 | 3 | 0  | 0  |
| North Lincolnshire          | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | 0  | 0 | 1 | 0  | 0  |
| Harrogate                   | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 0  | 0 | 0 | 0  | 0  |
| Chesterfield                | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | 1  | 0 | 0 | 0  | 0  |
| East Staffordshire          | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 0  | 2 | 4 | 0  | 0  |
| Bromsgrove                  | 13 | 0 | 0 | 0 | 2 | 0 | 0 | 10 | 0  | 0 | 0 | 0  | 0  |
| Norwich                     | 13 | 0 | 0 | 1 | 1 | 0 | 1 | 7  | 0  | 1 | 2 | 0  | 0  |
| Suffolk Coastal             | 13 | 0 | 0 | 2 | 0 | 0 | 2 | 9  | 0  | 0 | 0 | 0  | 0  |
| Wrexham                     | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 0  | 2 | 0 | 0  | 0  |
| Pembrokeshire               | 13 | 0 | 2 | 2 | 2 | 0 | 0 | 6  | 0  | 0 | 1 | 0  | 0  |
| East Ayrshire               | 13 | 0 | 0 | 0 | 1 | 0 | 1 | 0  | 1  | 0 | 0 | 11 | 0  |
| Moray                       | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 1  | 12 |
| Middlesbrough               | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 8  | 1  | 0 | 2 | 0  | 0  |
| West Lancashire             | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 9  | 0  | 0 | 1 | 1  | 0  |
| North East Derbyshire       | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | 0  | 0 | 0 | 0  | 0  |
| Melton                      | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0  | 0 | 0 | 0  | 0  |
| East Cambridgeshire         | 12 | 0 | 0 | 2 | 1 | 0 | 0 | 8  | 0  | 0 | 1 | 0  | 0  |
| Waveney                     | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 9  | 0  | 0 | 2 | 0  | 0  |
| Mid Devon                   | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 2  | 0 | 0 | 0  | 0  |
| Conwy                       | 12 | 0 | 0 | 3 | 0 | 0 | 0 | 9  | 0  | 0 | 0 | 0  | 0  |
| Flintshire                  | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 7  | 1  | 0 | 2 | 0  | 0  |
| Neath Port Talbot           | 12 | 0 | 0 | 2 | 0 | 0 | 0 | 9  | 0  | 0 | 0 | 0  | 0  |
| Caerphilly                  | 12 | 0 | 0 | 0 | 1 | 0 | 1 | 9  | 0  | 0 | 1 | 0  | 0  |
| Monmouthshire               | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0  | 0 | 0 | 0  | 0  |
| Newport                     | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0  | 0 | 0 | 0  | 0  |
| Stirling                    | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0  | 0  | 0 | 1 | 0  | 10 |
| Leisburn                    | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 12 | 0  |
| Knowsley                    | 11 | 0 | 0 | 2 | 1 | 0 | 1 | 4  | 1  | 0 | 2 | 0  | 0  |
| Stafford                    | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 0  | 0 | 0 | 0  | 0  |
| Tamworth                    | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 3  | 0 | 1 | 0  | 0  |
| Calderdale                  | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 8  | 0  | 0 | 0 | 1  | 0  |
| West Lindsey                | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 9  | 0  | 0 | 1 | 0  | 0  |
| Maldon                      | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 8  | 0  | 0 | 0 | 0  | 0  |
| North Norfolk               | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 8  | 1  | 0 | 0 | 0  | 0  |
| Ipswich                     | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 8  | 0  | 0 | 0 | 0  | 0  |
| Bridgend                    | 10 | 0 | 0 | 2 | 1 | 0 | 0 | 7  | 0  | 0 | 0 | 0  | 0  |
| Belfast                     | 9  | 0 | 0 | 1 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 9  | 0  |
| Allerdale                   | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 0  | 0 | 0 | 0  | 1  |
| Preston                     | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 8  | 0  | 0 | 0 | 0  | 1  |
| Wyre                        | 9  | 0 | 0 | 1 | 0 | 0 | 0 | 8  | 0  | 0 | 0 | 0  | 0  |
| East Lindsey                | 9  | 0 | 0 | 0 | 1 | 0 | 0 | 8  | 0  | 0 | 0 | 0  | 0  |
| Lincoln                     | 9  | 0 | 0 | 0 | 1 | 0 | 0 | 7  | 1  | 0 | 0 | 0  | 0  |
| Newcastle-under-Lyme        | 9  | 0 | 0 | 0 | 1 | 0 | 0 | 7  | 0  | 0 | 1 | 0  | 0  |
| Malvern Hills               | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 9  | 0  | 0 | 0 | 0  | 0  |
| Wyre Forest                 | 9  | 0 | 0 | 0 | 0 | 0 | 1 | 8  | 0  | 0 | 0 | 0  | 0  |
| Breckland                   | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 9  | 0  | 0 | 0 | 0  | 0  |
| South Hams                  | 9  | 0 | 0 | 1 | 0 | 0 | 0 | 7  | 0  | 0 | 1 | 0  | 0  |
| Weymouth and Portland       | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 8  | 0 | 0 | 0  | 0  |
| Taunton Deane               | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 1  | 0 | 1 | 0  | 0  |
| Angus                       | 9  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 9  | 0  |
| Carlisle                    | 8  | 0 | 1 | 0 | 0 | 0 | 0 | 6  | 0  | 0 | 0 | 1  | 0  |
| Rossendale                  | 8  | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 0  | 0 | 0 | 1  | 0  |
| Scarborough                 | 8  | 0 | 0 | 0 | 0 | 0 | 5 | 1  | 0  | 2 | 0 | 0  | 0  |
| Oadby and Wigston           | 8  | 0 | 1 | 1 | 0 | 0 | 0 | 6  | 0  | 0 | 0 | 0  | 0  |
| Bassetlaw                   | 8  | 0 | 0 | 1 | 0 | 0 | 0 | 7  | 0  | 0 | 0 | 0  | 0  |
| Redditch                    | 8  | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 1  | 0 | 0 | 0  | 0  |
| North Devon                 | 8  | 0 | 0 | 0 | 0 | 0 | 0 | 8  | 0  | 0 | 0 | 0  | 0  |
| Gwynedd                     | 8  | 0 | 0 | 0 | 1 | 0 | 0 | 7  | 0  | 0 | 0 | 0  | 0  |
| North Down                  | 8  | 0 | 0 | 1 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 7  | 0  |
| Craigavon                   | 8  | 0 | 0 | 3 | 0 | 0 | 0 | 0  | 1  | 1 | 0 | 3  | 0  |
| Fylde                       | 7  | 0 | 0 | 0 | 0 | 0 | 0 | 5  | 0  | 0 | 2 | 0  | 0  |
| Barnsley                    | 7  | 0 | 0 | 0 | 0 | 0 | 1 | 6  | 0  | 0 | 0 | 0  | 0  |
| South Staffordshire         | 7  | 0 | 0 | 0 | 0 | 0 | 0 | 7  | 0  | 0 | 0 | 0  | 0  |
| West Devon                  | 7  | 0 | 0 | 2 | 0 | 0 | 0 | 4  | 0  | 0 | 0 | 0  | 0  |
| Powys                       | 7  | 0 | 0 | 0 | 0 | 0 | 0 | 6  | 0  | 0 | 1 | 0  | 0  |
| Merthyr Tydfil              | 7  | 0 | 0 | 0 | 2 | 0 | 0 | 5  | 0  | 0 | 0 | 0  | 0  |
| Clackmannanshire            | 7  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 6  | 0  |
| Blackpool                   | 6  | 0 | 0 | 2 | 1 | 0 | 0 | 0  | 1  | 1 | 1 | 0  | 0  |
| Copeland                    | 6  | 0 | 0 | 0 | 1 | 0 | 0 | 0  | 5  | 0 | 0 | 0  | 0  |
| Pendle                      | 6  | 0 | 0 | 1 | 0 | 0 | 0 | 4  | 1  | 0 | 0 | 0  | 0  |
| Selby                       | 6  | 0 | 0 | 0 | 0 | 0 | 0 | 5  | 0  | 0 | 1 | 0  | 0  |
| Derbyshire Dales            | 6  | 0 | 0 | 0 | 0 | 0 | 0 | 5  | 1  | 0 | 0 | 0  | 0  |
| Forest Heath                | 6  | 0 | 1 | 0 | 0 | 0 | 0 | 5  | 0  | 0 | 0 | 0  | 0  |
| Ceredigion                  | 6  | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 0  | 1 | 0 | 0  | 0  |
| Torfaen                     | 6  | 0 | 0 | 0 | 2 | 0 | 0 | 4  | 0  | 0 | 0 | 0  | 0  |
| Dumfries and Galloway       | 6  | 0 | 0 | 2 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 4  | 0  |
| Ards                        | 6  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 5  | 0  |
| Coleraine                   | 6  | 0 | 0 | 2 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 0  | 0  |
| Blackburn with Darwen       | 5  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 5  | 0 | 0 | 0  | 0  |
| South Lakeland              | 5  | 0 | 0 | 0 | 0 | 0 | 0 | 5  | 0  | 0 | 0 | 0  | 0  |
| Burnley                     | 5  | 0 | 0 | 0 | 1 | 0 | 0 | 4  | 0  | 0 | 0 | 0  | 0  |
| Hyndburn                    | 5  | 0 | 0 | 1 | 0 | 0 | 0 | 3  | 0  | 0 | 0 | 1  | 0  |
| Ryedale                     | 5  | 0 | 0 | 1 | 1 | 0 | 0 | 3  | 0  | 0 | 0 | 0  | 0  |
| Rutland                     | 5  | 0 | 0 | 0 | 0 | 0 | 0 | 4  | 0  | 1 | 0 | 0  | 0  |
| West Somerset               | 5  | 0 | 0 | 1 | 0 | 0 | 0 | 4  | 0  | 0 | 0 | 0  | 0  |
| Dundee City                 | 5  | 0 | 0 | 0 | 1 | 0 | 0 | 1  | 0  | 0 | 0 | 3  | 0  |
| Newry and Mourne            | 5  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 0 | 0 | 4  | 0  |
| Antrim                      | 5  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1  | 0 | 2 | 1  | 0  |
| Barrow-in-Furness           | 4  | 0 | 0 | 2 | 1 | 0 | 0 | 0  | 0  | 0 | 1 | 0  | 0  |
| Lancaster                   | 4  | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 0  | 1 | 0 | 0  | 0  |
| Craven                      | 4  | 0 | 0 | 0 | 0 | 0 | 0 | 4  | 0  | 0 | 0 | 0  | 0  |
| Boston                      | 4  | 0 | 0 | 0 | 0 | 0 | 0 | 4  | 0  | 0 | 0 | 0  | 0  |
| Armagh                      | 4  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 3  | 0  |
| Banbridge                   | 4  | 0 | 0 | 1 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 2  | 0  |
| Newtownabbey                | 4  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 3 | 0  | 0  |
| Ribble Valley               | 3  | 0 | 0 | 1 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 1  | 0  |
| Eilean Siar                 | 3  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 2  | 0  |
| Midlothian                  | 3  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 2  | 0  |
| Scottish Borders            | 3  | 0 | 1 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 0  | 0  |
| Castlereagh                 | 3  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 3  | 0  |
| Down                        | 3  | 0 | 0 | 0 | 1 | 0 | 0 | 1  | 0  | 0 | 0 | 1  | 0  |
| Eden                        | 2  | 0 | 0 | 1 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 0  | 0  |
| Cannock Chase               | 2  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 1 | 0 | 0  | 0  |
| Blaenau Gwent               | 2  | 0 | 0 | 1 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 0  | 0  |
| Bailymena                   | 2  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 0 | 0 | 1  | 0  |
| Derry                       | 2  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 1  | 0  |
| Carrickfergus               | 2  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 2  | 0  |
| Ballymoney                  | 2  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 2  | 0  |
| Richmondshire               | 1  | 0 | 1 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 0  | 0  |
| Isle of Angelsey            | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 0  | 0  |
| Orkney Islands              | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 1 | 0  | 0  |
| Shetland Islands            | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 1  | 0  |
| Dungannon                   | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 0  | 0  |
| Larne                       | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0 | 0 | 0  | 0  |
| Strabane                    | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 0  | 1  |
| Omagh                       | 1  | 0 | 0 | 0 | 0 | 0 | 1 | 0  | 0  | 0 | 0 | 0  | 0  |
| Limvady                     | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 0  | 1  |
| Cookstown                   | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0 | 0 | 0  | 0  |

Table 11.1

**Pupil absence by type of school****State-funded primary, secondary and special schools**

2013/14, five half terms

By local authority area and region in England

| LA Code                            | State-funded primary schools                   |                                    |                    |                      |                                    |                                        | State-funded secondary schools                 |                                    |                    |                      |                                    |                                        |
|------------------------------------|------------------------------------------------|------------------------------------|--------------------|----------------------|------------------------------------|----------------------------------------|------------------------------------------------|------------------------------------|--------------------|----------------------|------------------------------------|----------------------------------------|
|                                    | Pupil enrolments in schools during 2013/14 (1) | Percentage of sessions missed (2): |                    |                      | Number of persistent absentees (3) | Percentage of persistent absentees (4) | Pupil enrolments in schools during 2013/14 (1) | Percentage of sessions missed (2): |                    |                      | Number of persistent absentees (3) | Percentage of persistent absentees (4) |
|                                    |                                                | Overall absence                    | Authorised absence | Unauthorised absence |                                    |                                        |                                                | Overall absence                    | Authorised absence | Unauthorised absence |                                    |                                        |
| <b>OUTER LONDON (5)</b>            | <b>375,960</b>                                 | <b>3.9</b>                         | <b>3.0</b>         | <b>0.8</b>           | <b>7,890</b>                       | <b>2.1</b>                             | <b>266,990</b>                                 | <b>4.7</b>                         | <b>3.6</b>         | <b>1.1</b>           | <b>11,120</b>                      | <b>4.2</b>                             |
| E09000002 301 Barking and Dagenham | 20,104                                         | 3.9                                | 2.8                | 1.0                  | 519                                | 2.6                                    | 11,331                                         | 4.9                                | 3.4                | 1.5                  | 522                                | 4.6                                    |
| E09000003 302 Barnet               | 24,512                                         | 4.1                                | 3.3                | 0.7                  | 519                                | 2.1                                    | 18,346                                         | 4.6                                | 3.6                | 1.0                  | 677                                | 3.7                                    |
| E09000004 303 Bexley               | 17,573                                         | 3.7                                | 3.0                | 0.7                  | 321                                | 1.8                                    | 17,261                                         | 4.1                                | 3.3                | 0.8                  | 546                                | 3.2                                    |
| E09000005 304 Brent                | 22,014                                         | 3.9                                | 3.1                | 0.8                  | 436                                | 2.0                                    | 15,640                                         | 5.1                                | 3.8                | 1.3                  | 696                                | 4.5                                    |
| E09000006 305 Bromley              | 22,105                                         | 3.7                                | 3.0                | 0.7                  | 471                                | 2.1                                    | 16,825                                         | 4.7                                | 3.9                | 0.8                  | 757                                | 4.5                                    |
| E09000008 306 Croydon              | 27,437                                         | 3.8                                | 2.8                | 1.0                  | 588                                | 2.1                                    | 18,619                                         | 4.8                                | 3.3                | 1.5                  | 838                                | 4.5                                    |
| E09000009 307 Ealing               | 25,078                                         | 3.7                                | 3.1                | 0.7                  | 458                                | 1.8                                    | 14,968                                         | 4.7                                | 3.6                | 1.2                  | 644                                | 4.3                                    |
| E09000010 308 Enfield              | 26,692                                         | 4.4                                | 3.0                | 1.4                  | 832                                | 3.1                                    | 18,653                                         | 5.0                                | 3.2                | 1.8                  | 915                                | 4.9                                    |
| E09000011 203 Greenwich            | 19,325                                         | 3.5                                | 2.4                | 1.1                  | 335                                | 1.7                                    | 11,364                                         | 4.7                                | 3.2                | 1.5                  | 496                                | 4.4                                    |
| E09000015 310 Harrow               | 17,366                                         | 3.9                                | 3.4                | 0.5                  | 312                                | 1.8                                    | 10,760                                         | 4.3                                | 3.5                | 0.8                  | 343                                | 3.2                                    |
| E09000016 311 Havering             | 17,524                                         | 4.1                                | 3.4                | 0.7                  | 459                                | 2.6                                    | 15,129                                         | 5.3                                | 4.4                | 0.9                  | 795                                | 5.3                                    |
| E09000017 312 Hillingdon           | 22,798                                         | 3.9                                | 3.2                | 0.8                  | 447                                | 2.0                                    | 16,274                                         | 5.0                                | 3.9                | 1.1                  | 790                                | 4.9                                    |
| E09000018 313 Hounslow             | 18,207                                         | 3.9                                | 3.0                | 0.9                  | 320                                | 1.8                                    | 13,422                                         | 4.7                                | 3.4                | 1.3                  | 497                                | 3.7                                    |
| E09000021 314 Kingston upon Thames | 11,086                                         | 3.6                                | 3.0                | 0.6                  | 194                                | 1.7                                    | 7,806                                          | 4.4                                | 3.7                | 0.7                  | 285                                | 3.7                                    |
| E09000024 315 Merton               | 14,014                                         | 3.8                                | 3.1                | 0.7                  | 314                                | 2.2                                    | 7,620                                          | 4.8                                | 3.5                | 1.3                  | 343                                | 4.5                                    |
| E09000026 317 Redbridge            | 23,804                                         | 4.2                                | 3.3                | 0.9                  | 499                                | 2.1                                    | 17,723                                         | 4.7                                | 3.8                | 0.9                  | 586                                | 3.3                                    |
| E09000027 318 Richmond upon Thames | 13,012                                         | 3.4                                | 2.8                | 0.6                  | 168                                | 1.3                                    | 7,205                                          | 4.8                                | 3.6                | 1.2                  | 341                                | 4.7                                    |
| E09000029 319 Sutton               | 13,176                                         | 3.7                                | 3.0                | 0.7                  | 282                                | 2.1                                    | 13,795                                         | 4.5                                | 3.6                | 0.9                  | 516                                | 3.7                                    |
| E09000031 320 Waltham Forest       | 20,131                                         | 4.0                                | 3.1                | 0.9                  | 418                                | 2.1                                    | 14,249                                         | 4.6                                | 3.4                | 1.3                  | 535                                | 3.8                                    |

(1) Number of enrolments in 2013/14. Includes pupils on the school roll for at least one session who are aged between 5 and 15, excluding boarders. Some pupils may be counted more than once (if they moved schools during the academic year or are registered at more than one school). See Chapter 2 of the "Guide to absence statistics" for more information.

(2) The number of sessions missed due to overall/authorised/unauthorised absence expressed as a percentage of the total number of possible sessions. See Chapter 3 of the "Guide to absence statistics" for more information.

(3) Persistent absentees are defined as having an overall absence rate of around 15 per cent or more. This equates to 46 or more sessions of absence (authorised and unauthorised) during the year.

(4) Number of persistent absentees expressed as a percentage of the total number of enrolments.

(5) National and regional totals and totals across school types have been rounded to the nearest 5. There may be discrepancies between totals and the sum of constituent parts.

| Mode                      | Mode Share (%) |
|---------------------------|----------------|
| Walk                      | 9.5%           |
| Walk and public transport | 56.1%          |
| Bus                       | 10.9%          |
| Car Driver                | 9.2%           |
| Car Passenger             | 13.5%          |
| Cycle                     | 0.6%           |
| Motorcycle                | 0.1%           |
| Taxi                      | 0.1%           |
| <b>Total</b>              | <b>100%</b>    |

*\*Any inaccuracies are due to rounding errors*

**Table 5-7 : Proposed ELUTec Mode Split**

- 5.4.2 Given the site in question it is considered that the Walk and Public Transport mode share will in general represent bus travel, it is therefore concluded that the total bus mode split will be around 67 per cent. Anyone travelling by rail will catch a bus to/from the station. Please note that Car Driver indicates the number of pupils driven to school by a parent, whereas Car Passenger represents the number of pupils driven to school by others.
- 5.4.3 It is considered that the mode split for ELUTec shown in Table 5-7 above would be a reasonable scenario in relation to the proposal site based on knowledge of typical secondary school mode shares. Furthermore the values correlate well with the calculated vehicle trip attraction shown in Table 5-5 for ELUTec as a whole. When the total estimated population proposed at the UTC (some 610 pupils and around 60 staff including non-teaching provision) are multiplied by the Car Driver mode share of around 9 per cent, a total of 60 arrival trips may be expected in the morning peak. When this value is multiplied by a typical attendance percentage of 85 per cent, some 51 trips are calculated which relates well to the 48 trips calculated above.

# Technical Note T4

**Project:** Global Academy UTC

**From:** Neal Murphy

**Reviewed:** Alan Dumbrell

**File Ref:** NMnm12024-060515-  
TN4.docx

**Pages:** 3

**Date:** 06/05/2015

**Subject** Response to Highways feedback

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This technical note responds to the feedback received from London Borough of Hillingdon Highways regarding the proposed trip generation of the Global Academy UTC development. The comments received are shown in italics with our response underneath each point.

*a. Trip generation: The references to work by Mott MacDonald, TRICs sites, East London UTC and secondary schools in London have not demonstrated comparability in term of car parking, PTALs, size etc for the corresponding data to be considered suitable for the current TAR. I have attached results of pupil travel survey at Guru Nanak Singh School and Harlington Community Schools. While both these schools have very poor public transport accessibility, these schools are located in proximity of the proposed UTC. The results indicate that a significant number of pupils travel to school by car / car share and in light of such evidence I would urge you to reconsider your modified student modal splits as indicated at Table 11, particularly given that 50% of pupils will be from the regional catchment area of the current proposals.*

It is recognised that each source of data does not provide a direct comparison to the Global Academy UTC which is why the trip generation exercise has been undertaken from first principles based on the number of students and staff, using relevant data from each source. The data provided for the Hillingdon schools are welcomed. The survey responses for Year 10 and older have been collated and summarised and this shows an average of 40% of pupils travelling by car or car share. Whilst it is agreed that both these schools have very poor public transport accessibility it is considered that this proportion of travel by car should be used as part of a sensitivity test for the assessment of the development's greatest impact in the morning peak hour.

It is noted that 50% of pupils will be from a regional catchment. Whilst students in the regional catchment will be less inclined to cycle to the UTC it is considered that the greater travel distance could decrease the level of student drop-offs associated with schools with a more localised catchment due to the UTC not being on the route of a parent's existing trip or the general inconvenience of a longer car journey. The age of students attending the UTC will be such that cycling and public transport modes are genuine alternatives for travel and offer greater flexibility than relying on lifts by car. The small proportion of students that are of a legal age to drive and who have passed their driving test will be discouraged from driving through UTC policy and through the availability of discounted public transport fares.

*b. The use of Census 2011 information for journey to work in Hillingdon is considered too general and should use data for the Hayes area only. Evidence from other schools in Hillingdon indicates that the majority of staff drive to school (85%+).*

The data for Hillingdon was used in the first instance as this presents the mode split for journeys TO work in a certain area. Local level information is not publically available for this dataset. For comparison, the Census 2011 information for journeys to work FROM the local middle super output areas Hillingdon 026, 027 and 030 have been interrogated. This reveals that 50.6% of journeys to work from these areas are made by driving a car or van. It is therefore considered that the 66% mode split by car for staff is reasonable and robust for the site's proposed location.

*c. The application for a reduction factor for 5% pupil absenteeism at secondary schools in Hillingdon is not considered appropriate because it is too general and on a day to day basis this average is not robustly representative of normal situation at the UTC. Furthermore, no evidence has been provided regarding the attendance level at the schools from the TRICS database at the time of survey and which potentially would have already reduced the trip rates due to absent pupils in any event.*

The TRICS trip rates have not been used to form the proposed development's trip generation. Only the profiles and car occupancy rates are used to assist in understanding the traffic movements. If the TRICS data is compared it can be seen that the average number of pupils for the two TRICS sites is 737 which give a trip rate of 0.647 arrivals per pupil for the 08:00-09:00 time period (477 total arrival trips by students and staff). The number of arrivals during the peak hour is therefore likely to be much less than the total number of students on the school roll. The trip generation methodology used for the UTC assumes an arrival trip rate of more than 1.000 per pupil for the morning peak hour and is considered to be robust.

*d. The reallocation of walking trip to Public transport and cycling in light of the regional catchment for the proposed UTC is not considered appropriate. There is a high potential for pupils being driven / driving to UTC and parking in the local area. Without demonstrating that is possibility is unlikely because there is no capacity for parking in the area within 20 minutes walk distance, such an assumption would not result in a robust TAR.*

The response to point (a) lists potential reasons why the reallocated mode split may not see all of the reallocated walking trips transferring to car trips. The UTC includes a dedicated drop-off provision on Blyth Road to accommodate the drop-off and pick-up trips. As pointed out, there may be a small proportion of trips by car which drop-off students further away from the site. These trips would not have an impact on the local road junctions although there would be an increase in walking locally associated with the 'park and stride' trip.

*e. I note that the Public Transport trip will now also be considered as walking trip within the local area, however I suggest that all car trips also be similarly considered given that no car parking for pupils is proposed on site.*

The dedicated drop-off on Blyth Road is expected to provide for the majority of student trips by car. The point about 'park and stride' trips will be raised in the Transport Assessment.

*In light of my previous advice regarding the need to assess performance of other junctions in proximity of the UTC site that are subject of improvements as part of the overall development at the Old Vinyl Factory, it is important for the transport assessment to be robust in order to review design traffic flows on the network and the corresponding design of mitigation proposals.*

The junctions of Printing House Lane / Trevor Road / Clayton Road and Trevor Road / Blyth Road are now included in the Transport Assessment and are based on the modifications proposed as part of the overall development strategy. These junctions are included due to the development traffic associated with the routing of trips to and from the Blyth Road drop-off facility. It is noted that these junctions come under increased pressure with the committed development and traffic associated with the wider Old Vinyl Factory proposals. The traffic generation shown for the UTC is considered to show a robust assessment that can be used in conjunction with the existing studies to bring forward appropriate highway proposals.

## SCHOOL TRAVEL PLAN - PUPILS HANDS UP SURVEY

| School Name: | Harlington Community School |
|--------------|-----------------------------|
|--------------|-----------------------------|

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 10M1               | Car           | 3       |           | 10%     |
|                    | Car Share     | 0       |           | 0%      |
|                    | Park & Stride | 0       |           | 0%      |
|                    | School Bus    | 0       |           | 0%      |
|                    | rail          | 0       |           | 0%      |
|                    | Bus           | 21      |           | 70%     |
|                    | Bicycle       | 0       |           | 0%      |
|                    | Walk          | 6       |           | 20%     |
|                    | Other         | 0       |           | 0%      |
| Students Response: |               | 30      | 0         |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 11D1               | Car           | 1       | 10        | 4%      |
|                    | Car Share     | 0       | 0         | 0%      |
|                    | Park & Stride | 1       | 1         | 4%      |
|                    | School Bus    | 0       | 3         | 0%      |
|                    | rail          | 0       | 0         | 0%      |
|                    | Bus           | 10      | 6         | 42%     |
|                    | Bicycle       | 0       | 1         | 0%      |
|                    | Walk          | 12      | 1         | 50%     |
|                    | Other         | 0       | 2         | 0%      |
| Students Response: |               | 24      | 24        |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 11P6               | Car           | 3       |           | 13%     |
|                    | Car Share     | 0       |           | 0%      |
|                    | Park & Stride | 0       |           | 0%      |
|                    | School Bus    | 0       |           | 0%      |
|                    | rail          | 0       |           | 0%      |
|                    | Bus           | 13      |           | 54%     |
|                    | Bicycle       | 0       |           | 0%      |
|                    | Walk          | 8       |           | 33%     |
|                    | Other         | 0       |           | 0%      |
| Students Response: |               | 24      | 0         |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 13B3               | Car           | 5       | 1         | 20%     |
|                    | Car Share     | 0       | 3         | 0%      |
|                    | Park & Stride | 0       | 0         | 0%      |
|                    | School Bus    | 0       | 0         | 0%      |
|                    | rail          | 0       | 0         | 0%      |
|                    | Bus           | 13      | 0         | 52%     |
|                    | Bicycle       | 0       | 0         | 0%      |
|                    | Walk          | 7       | 0         | 28%     |
|                    | Other         | 0       | 21        | 0%      |
| Students Response: |               | 25      | 25        |         |

| School Name: | Harlington Community School summary |
|--------------|-------------------------------------|
|--------------|-------------------------------------|

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| Year 10+           | Car           | 26      | 34        | 13%     |
|                    | Car Share     | 4       | 7         | 2%      |
|                    | Park & Stride | 1       | 1         | 0%      |
|                    | School Bus    | 2       | 26        | 1%      |
|                    | rail          | 2       | 3         | 1%      |
|                    | Bus           | 100     | 17        | 48%     |
|                    | Bicycle       | 1       | 9         | 0%      |
|                    | Walk          | 66      | 11        | 32%     |
|                    | Other         | 5       | 25        | 2%      |
| Students Response: |               | 207     | 133       |         |

| School Name: | Guru Nanak Singh |
|--------------|------------------|
|--------------|------------------|

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 10IS and the rest  | Car           | 175     | 125       | 47%     |
|                    | Car Share     | 26      | 10        | 7%      |
|                    | Park & Stride | 17      | 8         | 5%      |
|                    | School Bus    | 0       | 1         | 0%      |
|                    | rail          | 1       | 3         | 0%      |
|                    | Bus           | 59      | 49        | 16%     |
|                    | Bicycle       | 3       | 25        | 1%      |
|                    | Walk          | 88      | 53        | 24%     |
|                    | Other         | 0       | 0         | 0%      |
| Students Response: |               | 369     | 274       |         |

| School Name: | Both Schools |
|--------------|--------------|
|--------------|--------------|

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| Year 10+           | Car           | 201     | 159       | 35%     |
|                    | Car Share     | 30      | 17        | 5%      |
|                    | Park & Stride | 18      | 9         | 3%      |
|                    | School Bus    | 2       | 27        | 0%      |
|                    | rail          | 3       | 6         | 1%      |
|                    | Bus           | 159     | 66        | 28%     |
|                    | Bicycle       | 4       | 34        | 1%      |
|                    | Walk          | 154     | 64        | 27%     |
|                    | Other         | 5       | 25        | 1%      |
| Students Response: |               | 576     | 407       |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 10D7               | Car           | 3       | 11        | 10%     |
|                    | Car Share     | 1       | 0         | 3%      |
|                    | Park & Stride | 0       | 0         | 0%      |
|                    | School Bus    | 0       | 5         | 0%      |
|                    | rail          | 0       | 0         | 0%      |
|                    | Bus           | 16      | 5         | 55%     |
|                    | Bicycle       | 1       | 1         | 3%      |
|                    | Walk          | 8       | 7         | 28%     |
|                    | Other         | 0       | 0         | 0%      |
| Students Response: |               | 29      | 29        |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 11D3               | Car           | 3       | 5         | 10%     |
|                    | Car Share     | 3       | 0         | 10%     |
|                    | Park & Stride | 0       | 0         | 0%      |
|                    | School Bus    | 2       | 11        | 6%      |
|                    | rail          | 2       | 2         | 6%      |
|                    | Bus           | 6       | 4         | 19%     |
|                    | Bicycle       | 0       | 2         | 0%      |
|                    | Walk          | 10      | 2         | 32%     |
|                    | Other         | 5       | 2         | 16%     |
| Students Response: |               | 31      | 28        |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 11B7               | Car           | 2       | 3         | 9%      |
|                    | Car Share     | 0       | 0         | 0%      |
|                    | Park & Stride | 0       | 0         | 0%      |
|                    | School Bus    | 0       | 2         | 0%      |
|                    | rail          | 0       | 1         | 0%      |
|                    | Bus           | 15      | 2         | 65%     |
|                    | Bicycle       | 0       | 0         | 0%      |
|                    | Walk          | 6       | 0         | 26%     |
|                    | Other         | 0       | 0         | 0%      |
| Students Response: |               | 23      | 8         |         |

| Class              | Mode          | Usually | Preferred | Usually |
|--------------------|---------------|---------|-----------|---------|
| 12D4               | Car           | 6       | 4         | 29%     |
|                    | Car Share     | 0       | 4         | 0%      |
|                    | Park & Stride | 0       | 0         | 0%      |
|                    | School Bus    | 0       | 5         | 0%      |
|                    | rail          | 0       | 0         | 0%      |
|                    | Bus           | 6       | 0         | 29%     |
|                    | Bicycle       | 0       | 5         | 0%      |
|                    | Walk          | 9       | 1         | 43%     |
|                    | Other         | 0       | 0         | 0%      |
| Students Response: |               | 21      | 19        |         |

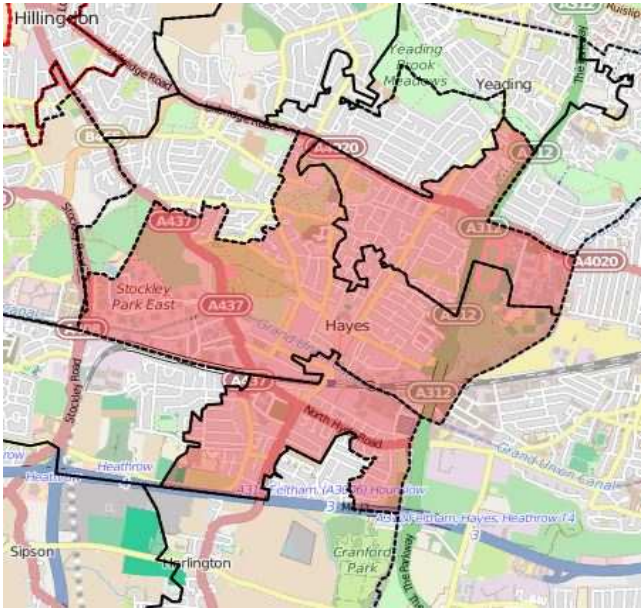
QS703EW - Method of Travel to Work (2001 specification)

ONS Crown Copyright Reserved [from Nomis on 5 May 2015]

population All usual residents aged 16 to 74  
units Persons  
date 2011

| Method of Travel to Work                 | msoa2011:Hillingdon<br>026 |       |       | msoa2011:Hillingdon<br>027 |       |       | msoa2011:Hillingdon<br>030 |       |       |
|------------------------------------------|----------------------------|-------|-------|----------------------------|-------|-------|----------------------------|-------|-------|
| All categories: Method of travel to work | 6,189                      | 3,443 |       | 8,121                      | 4,499 |       | 6,910                      | 4,107 |       |
| Work mainly at or from home              | 242                        |       |       | 380                        |       |       | 288                        |       |       |
| Underground, metro, light rail, tram     | 210                        | 210   | 6.1%  | 308                        | 308   | 6.8%  | 264                        | 264   | 6.4%  |
| Train                                    | 175                        | 175   | 5.1%  | 331                        | 331   | 7.4%  | 398                        | 398   | 9.7%  |
| Bus, minibus or coach                    | 807                        | 807   | 23.4% | 1,041                      | 1,041 | 23.1% | 907                        | 907   | 22.1% |
| Taxi                                     | 9                          | 9     | 0.3%  | 7                          | 7     | 0.2%  | 19                         | 19    | 0.5%  |
| Motorcycle, scooter or moped             | 19                         | 19    | 0.6%  | 24                         | 24    | 0.5%  | 16                         | 16    | 0.4%  |
| Driving a car or van                     | 1,781                      | 1,781 | 51.7% | 2,220                      | 2,220 | 49.3% | 2,095                      | 2,095 | 51.0% |
| Passenger in a car or van                | 154                        | 154   | 4.5%  | 154                        | 154   | 3.4%  | 138                        | 138   | 3.4%  |
| Bicycle                                  | 48                         | 48    | 1.4%  | 72                         | 72    | 1.6%  | 49                         | 49    | 1.2%  |
| On foot                                  | 222                        | 222   | 6.4%  | 326                        | 326   | 7.2%  | 199                        | 199   | 4.8%  |
| Other method of travel to work           | 18                         | 18    | 0.5%  | 16                         | 16    | 0.4%  | 22                         | 22    | 0.5%  |
| Not in employment                        | 2,504                      |       |       | 3,242                      |       |       | 2,515                      |       |       |

| Method of Travel to Work             | 026, 027, 030 combined |       |  |
|--------------------------------------|------------------------|-------|--|
| Underground, metro, light rail, tram | 782                    | 6.5%  |  |
| Train                                | 904                    | 7.5%  |  |
| Bus, minibus or coach                | 2,755                  | 22.9% |  |
| Taxi                                 | 35                     | 0.3%  |  |
| Motorcycle, scooter or moped         | 59                     | 0.5%  |  |
| Driving a car or van                 | 6,096                  | 50.6% |  |
| Passenger in a car or van            | 446                    | 3.7%  |  |
| Bicycle                              | 169                    | 1.4%  |  |
| On foot                              | 747                    | 6.2%  |  |
| Other method of travel to work       | 56                     | 0.5%  |  |
|                                      | 12,049                 |       |  |



TRIP RATE for Land Use 04 - EDUCATION/B - SECONDARY

**MULTI-MODAL TOTAL PEOPLE****Calculation factor: 1 PUPILS****BOLD print indicates peak (busiest) period**

| Time Range    | ARRIVALS |             |              | DEPARTURES |             |              | TOTALS   |             |              |
|---------------|----------|-------------|--------------|------------|-------------|--------------|----------|-------------|--------------|
|               | No. Days | Ave. PUPILS | Trip Rate    | No. Days   | Ave. PUPILS | Trip Rate    | No. Days | Ave. PUPILS | Trip Rate    |
| 00:00 - 01:00 |          |             |              |            |             |              |          |             |              |
| 01:00 - 02:00 |          |             |              |            |             |              |          |             |              |
| 02:00 - 03:00 |          |             |              |            |             |              |          |             |              |
| 03:00 - 04:00 |          |             |              |            |             |              |          |             |              |
| 04:00 - 05:00 |          |             |              |            |             |              |          |             |              |
| 05:00 - 06:00 |          |             |              |            |             |              |          |             |              |
| 06:00 - 07:00 |          |             |              |            |             |              |          |             |              |
| 07:00 - 08:00 | 2        | 737         | 0.091        | 2          | 737         | 0.008        | 2        | 737         | 0.099        |
| 08:00 - 09:00 | <b>2</b> | <b>737</b>  | <b>0.647</b> | 2          | 737         | 0.080        | 2        | 737         | 0.727        |
| 09:00 - 10:00 | 2        | 737         | 0.229        | 2          | 737         | 0.016        | 2        | 737         | 0.245        |
| 10:00 - 11:00 | 2        | 737         | 0.040        | 2          | 737         | 0.021        | 2        | 737         | 0.061        |
| 11:00 - 12:00 | 2        | 737         | 0.048        | 2          | 737         | 0.037        | 2        | 737         | 0.085        |
| 12:00 - 13:00 | 2        | 737         | 0.053        | 2          | 737         | 0.067        | 2        | 737         | 0.120        |
| 13:00 - 14:00 | 2        | 737         | 0.050        | 2          | 737         | 0.028        | 2        | 737         | 0.078        |
| 14:00 - 15:00 | 2        | 737         | 0.029        | 2          | 737         | 0.039        | 2        | 737         | 0.068        |
| 15:00 - 16:00 | 2        | 737         | 0.108        | <b>2</b>   | <b>737</b>  | <b>0.716</b> | <b>2</b> | <b>737</b>  | <b>0.824</b> |
| 16:00 - 17:00 | 2        | 737         | 0.047        | 2          | 737         | 0.168        | 2        | 737         | 0.215        |
| 17:00 - 18:00 | 2        | 737         | 0.019        | 2          | 737         | 0.107        | 2        | 737         | 0.126        |
| 18:00 - 19:00 | 2        | 737         | 0.046        | 2          | 737         | 0.071        | 2        | 737         | 0.117        |
| 19:00 - 20:00 |          |             |              |            |             |              |          |             |              |
| 20:00 - 21:00 |          |             |              |            |             |              |          |             |              |
| 21:00 - 22:00 |          |             |              |            |             |              |          |             |              |
| 22:00 - 23:00 |          |             |              |            |             |              |          |             |              |
| 23:00 - 24:00 |          |             |              |            |             |              |          |             |              |
| Total Rates:  |          |             | 1.407        |            |             | 1.358        |          |             | 2.765        |

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

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

**Parameter summary**

Trip rate parameter range selected: 624 - 850 (units: )  
 Survey date range: 01/01/06 - 25/11/09  
 Number of weekdays (Monday-Friday): 2  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

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

## **Appendix 4: Junction Assessment**

| Junctions 8                                                                                                                                                                 |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| ARCADY 8 - Roundabout Module                                                                                                                                                |  |  |  |
| Version: 8.0.4.487 [15039,24/03/2014]<br>© Copyright TRL Limited, 2015                                                                                                      |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |

Filename: DawleyRd.arc8

Path: I:\Documents\12000-12249\12024 - Global Academy UTC\CR Docs\Reports\Transport\Arcady

Report generation date: 13/05/2015 11:30:34

- » Old Vinyl Factory improvements - 2022, AM
- » Old Vinyl Factory improvements - 2022, PM
- » Old Vinyl Factory improvements - 2022 with UTC, AM
- » Old Vinyl Factory improvements - 2022 with UTC, PM
- » Old Vinyl Factory improvements - 2022 with UTC sensitivity, AM
- » Old Vinyl Factory improvements - 2022 with UTC sensitivity, PM

## Summary of junction performance

|                                                            | AM          |           |      |     | PM          |           |      |     |
|------------------------------------------------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                                                            | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| Old Vinyl Factory improvements - 2022                      |             |           |      |     |             |           |      |     |
| Arm 1                                                      | 2.81        | 10.00     | 0.74 | A   | 15.92       | 46.85     | 0.96 | E   |
| Arm 2                                                      | 3.35        | 16.79     | 0.78 | C   | 1.71        | 10.36     | 0.64 | B   |
| Arm 3                                                      | 5.26        | 14.37     | 0.85 | B   | 3.49        | 9.43      | 0.78 | A   |
| Arm 4                                                      | 0.36        | 24.91     | 0.27 | C   | 0.15        | 13.98     | 0.13 | B   |
| Arm 5                                                      | 0.48        | 19.40     | 0.33 | C   | 0.12        | 8.95      | 0.11 | A   |
| Old Vinyl Factory improvements - 2022 with UTC             |             |           |      |     |             |           |      |     |
| Arm 1                                                      | 3.09        | 10.93     | 0.76 | B   | 17.75       | 51.71     | 0.97 | F   |
| Arm 2                                                      | 4.46        | 21.31     | 0.83 | C   | 2.15        | 12.09     | 0.69 | B   |
| Arm 3                                                      | 6.55        | 17.68     | 0.88 | C   | 3.88        | 10.38     | 0.80 | B   |
| Arm 4                                                      | 0.43        | 30.47     | 0.31 | D   | 0.17        | 15.19     | 0.14 | C   |
| Arm 5                                                      | 0.58        | 23.39     | 0.37 | C   | 0.13        | 9.53      | 0.12 | A   |
| Old Vinyl Factory improvements - 2022 with UTC sensitivity |             |           |      |     |             |           |      |     |
| Arm 1                                                      | 3.26        | 11.51     | 0.77 | B   | 19.31       | 55.73     | 0.98 | F   |
| Arm 2                                                      | 7.26        | 32.63     | 0.89 | D   | 2.50        | 13.45     | 0.72 | B   |
| Arm 3                                                      | 8.60        | 23.13     | 0.91 | C   | 4.20        | 11.15     | 0.81 | B   |
| Arm 4                                                      | 0.60        | 41.60     | 0.39 | E   | 0.18        | 16.13     | 0.15 | C   |
| Arm 5                                                      | 0.66        | 26.95     | 0.41 | D   | 0.14        | 9.97      | 0.12 | A   |

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

"D1 - 2022, AM" model duration: 07:45 - 09:15

"D2 - 2022, PM" model duration: 16:45 - 18:15

"D3 - 2022 with UTC, AM" model duration: 07:45 - 09:15

"D4 - 2022 with UTC, PM" model duration: 16:45 - 18:15

"D5 - 2022 with UTC sensitivity, AM" model duration: 07:45 - 09:15

"D6 - 2022 with UTC sensitivity, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 13/05/2015 11:30:32

## File summary

|             |                                                  |
|-------------|--------------------------------------------------|
| Title       | Dawley Road / Blyth Road - 2019                  |
| Location    | Hayes                                            |
| Site Number |                                                  |
| Date        | 30/03/2015                                       |
| Version     |                                                  |
| Status      |                                                  |
| Identifier  |                                                  |
| Client      |                                                  |
| Jobnumber   |                                                  |
| Enumerator  | nealm                                            |
| Description | With Development including junction improvements |

## Analysis Options

| Vehicle Length (m) | Do Queue Variations | Calculate Residual Capacity | Residual Capacity Criteria Type | RFC Threshold | Average Delay Threshold (s) | Queue Threshold (PCU) |
|--------------------|---------------------|-----------------------------|---------------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                     |                             | N/A                             | 0.85          | 36.00                       | 20.00                 |

## 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         | Veh                 | Veh                   | perHour    | s                   | -Min              | perMin              |

# Old Vinyl Factory improvements - 2022, AM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                           | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|--------------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| Old Vinyl Factory improvements | ARCADY                    |             |        | 100.000                         |                            |

## Demand Set Details

| Name     | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|----------|---------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| 2022, AM | 2022          | AM               |             | ONE HOUR             | 07:45                    | 09:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name                     | Junction Type | Arm Order | Grade Separated | Large Roundabout | Junction Delay (s) | Junction LOS |
|----------|--------------------------|---------------|-----------|-----------------|------------------|--------------------|--------------|
| 1        | Dawley Road / Blyth Road | Roundabout    | 1,2,3,4,5 |                 |                  | 13.85              | B            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name            | Description |
|-----|-----|-----------------|-------------|
| 1   | 1   | Dawley Road (N) |             |
| 2   | 2   | Blyth Road      |             |
| 3   | 3   | Dawley Road (S) |             |
| 4   | 4   | Kestrel Way     |             |
| 5   | 5   | Betam Road      |             |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) |
|-----|---------------------------|---------------------------|
| 1   | 0.00                      | 99999.00                  |
| 2   | 0.00                      | 99999.00                  |
| 3   | 0.00                      | 99999.00                  |
| 4   | 0.00                      | 99999.00                  |
| 5   | 0.00                      | 99999.00                  |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.50                             | 8.50                | 27.00                           | 9.80                 | 35.00                             | 28.00                              |           |
| 2   | 3.75                             | 8.50                | 11.00                           | 19.00                | 35.00                             | 22.00                              |           |
| 3   | 5.61                             | 9.40                | 10.20                           | 8.80                 | 35.00                             | 30.00                              |           |
| 4   | 4.31                             | 4.63                | 4.50                            | 3.70                 | 35.00                             | 20.00                              |           |
| 5   | 3.69                             | 7.74                | 6.00                            | 7.60                 | 35.00                             | 23.00                              |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|-----|------------------------------------|---------------|----------------------------|-------------|--------------------------|
| 1   |                                    | (calculated)  | (calculated)               | 0.683       | 1923.349                 |
| 2   |                                    | (calculated)  | (calculated)               | 0.676       | 1784.352                 |
| 3   |                                    | (calculated)  | (calculated)               | 0.711       | 2085.994                 |
| 4   |                                    | (calculated)  | (calculated)               | 0.481       | 1134.628                 |
| 5   |                                    | (calculated)  | (calculated)               | 0.578       | 1422.812                 |

The slope and intercept shown above include any corrections and adjustments.

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| ✓                   |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| 1   | ONE HOUR     | ✓                  | 939.00                       | 100.000                 |
| 2   | ONE HOUR     | ✓                  | 674.00                       | 100.000                 |
| 3   | ONE HOUR     | ✓                  | 1241.00                      | 100.000                 |
| 4   | ONE HOUR     | ✓                  | 48.00                        | 100.000                 |
| 5   | ONE HOUR     | ✓                  | 83.00                        | 100.000                 |

# Turning Proportions

## Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      |   | To      |         |         |        |        |
|------|---|---------|---------|---------|--------|--------|
| From |   | 1       | 2       | 3       | 4      | 5      |
|      | 1 | 0.000   | 117.000 | 814.000 | 1.000  | 7.000  |
|      | 2 | 349.000 | 0.000   | 321.000 | 2.000  | 2.000  |
|      | 3 | 824.000 | 378.000 | 0.000   | 24.000 | 15.000 |
|      | 4 | 4.000   | 3.000   | 40.000  | 0.000  | 1.000  |
|      | 5 | 31.000  | 17.000  | 34.000  | 1.000  | 0.000  |

## Turning Proportions (Veh) - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 0.00 | 0.12 | 0.87 | 0.00 | 0.01 |
|      | 2 | 0.52 | 0.00 | 0.48 | 0.00 | 0.00 |
|      | 3 | 0.66 | 0.30 | 0.00 | 0.02 | 0.01 |
|      | 4 | 0.08 | 0.06 | 0.83 | 0.00 | 0.02 |
|      | 5 | 0.37 | 0.20 | 0.41 | 0.01 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      |   | To    |       |       |       |       |
|------|---|-------|-------|-------|-------|-------|
| From |   | 1     | 2     | 3     | 4     | 5     |
|      | 1 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 2 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 3 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 4 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 5 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |      |      |      |      |      |
|------|----|------|------|------|------|------|
|      |    | 1    | 2    | 3    | 4    | 5    |
| From | 1  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 2  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 3  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 4  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 5  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.74    | 10.00         | 2.81            | A       |
| 2   | 0.78    | 16.79         | 3.35            | C       |
| 3   | 0.85    | 14.37         | 5.26            | B       |
| 4   | 0.27    | 24.91         | 0.36            | C       |
| 5   | 0.33    | 19.40         | 0.48            | C       |

### Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 706.93                | 703.43              | 354.05                    | 0.00                       | 1506.57           | 0.469 | 0.88            | 4.462     | A   |
| 2   | 507.42                | 504.38              | 671.77                    | 0.00                       | 1167.76           | 0.435 | 0.76            | 5.402     | A   |
| 3   | 934.29                | 929.49              | 270.90                    | 0.00                       | 1703.83           | 0.548 | 1.20            | 4.621     | A   |
| 4   | 36.14                 | 35.80               | 1179.42                   | 0.00                       | 463.60            | 0.078 | 0.08            | 8.415     | A   |
| 5   | 62.49                 | 62.03               | 1196.51                   | 0.00                       | 601.47            | 0.104 | 0.11            | 6.668     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 844.14                | 842.23              | 423.88                    | 0.00                       | 1458.85           | 0.579 | 1.35            | 5.838     | A   |
| 2   | 605.91                | 603.91              | 804.41                    | 0.00                       | 1078.04           | 0.562 | 1.26            | 7.561     | A   |
| 3   | 1115.63               | 1112.49             | 324.36                    | 0.00                       | 1665.84           | 0.670 | 1.99            | 6.468     | A   |
| 4   | 43.15                 | 42.93               | 1411.76                   | 0.00                       | 351.73            | 0.123 | 0.14            | 11.649    | B   |
| 5   | 74.62                 | 74.32               | 1432.28                   | 0.00                       | 465.11            | 0.160 | 0.19            | 9.206     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1033.86               | 1028.30             | 515.72                    | 0.00                       | 1396.10           | 0.741 | 2.74            | 9.642     | A   |
| 2   | 742.09                | 734.36              | 981.63                    | 0.00                       | 958.17            | 0.774 | 3.19            | 15.572    | C   |
| 3   | 1366.37               | 1354.29             | 394.46                    | 0.00                       | 1616.02           | 0.846 | 5.00            | 13.182    | B   |
| 4   | 52.85                 | 52.05               | 1718.20                   | 0.00                       | 204.18            | 0.259 | 0.34            | 23.543    | C   |
| 5   | 91.38                 | 90.31               | 1742.95                   | 0.00                       | 285.43            | 0.320 | 0.46            | 18.350    | C   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1033.86               | 1033.57             | 520.35                    | 0.00                       | 1392.93           | 0.742 | 2.81            | 9.997     | A   |
| 2   | 742.09                | 741.47              | 987.26                    | 0.00                       | 954.37            | 0.778 | 3.35            | 16.794    | C   |
| 3   | 1366.37               | 1365.36             | 398.24                    | 0.00                       | 1613.33           | 0.847 | 5.26            | 14.373    | B   |
| 4   | 52.85                 | 52.77               | 1732.80                   | 0.00                       | 197.15            | 0.268 | 0.36            | 24.909    | C   |
| 5   | 91.38                 | 91.29               | 1758.06                   | 0.00                       | 276.69            | 0.330 | 0.48            | 19.400    | C   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 844.14                | 849.78              | 430.54                    | 0.00                       | 1454.30           | 0.580 | 1.40            | 6.011     | A   |
| 2   | 605.91                | 614.00              | 812.50                    | 0.00                       | 1072.57           | 0.565 | 1.32            | 7.984     | A   |
| 3   | 1115.63               | 1128.31             | 329.73                    | 0.00                       | 1662.03           | 0.671 | 2.09            | 6.900     | A   |
| 4   | 43.15                 | 43.99               | 1432.58                   | 0.00                       | 341.71            | 0.126 | 0.15            | 12.126    | B   |
| 5   | 74.62                 | 75.74               | 1453.86                   | 0.00                       | 452.63            | 0.165 | 0.20            | 9.581     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 706.93                | 708.97              | 357.56                    | 0.00                       | 1504.17           | 0.470 | 0.89            | 4.538     | A   |
| 2   | 507.42                | 509.59              | 677.43                    | 0.00                       | 1163.93           | 0.436 | 0.78            | 5.519     | A   |
| 3   | 934.29                | 937.71              | 273.69                    | 0.00                       | 1701.85           | 0.549 | 1.23            | 4.731     | A   |
| 4   | 36.14                 | 36.38               | 1190.24                   | 0.00                       | 458.39            | 0.079 | 0.09            | 8.536     | A   |
| 5   | 62.49                 | 62.81               | 1207.73                   | 0.00                       | 594.97            | 0.105 | 0.12            | 6.768     | A   |

## Old Vinyl Factory improvements - 2022, PM

### Data Errors and Warnings

No errors or warnings

### Analysis Set Details

| Name                           | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|--------------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| Old Vinyl Factory improvements | ARCADY                    |             |        | 100.000                         |                            |

### Demand Set Details

| Name     | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|----------|---------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| 2022, PM | 2022          | PM               |             | ONE HOUR             | 16:45                    | 18:15                     | 90                             | 15                        |                          |        |

## Junction Network

### Junctions

| Junction | Name                     | Junction Type | Arm Order | Grade Separated | Large Roundabout | Junction Delay (s) | Junction LOS |
|----------|--------------------------|---------------|-----------|-----------------|------------------|--------------------|--------------|
| 1        | Dawley Road / Blyth Road | Roundabout    | 1,2,3,4,5 |                 |                  | 24.05              | C            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name            | Description |
|-----|-----|-----------------|-------------|
| 1   | 1   | Dawley Road (N) |             |
| 2   | 2   | Blyth Road      |             |
| 3   | 3   | Dawley Road (S) |             |
| 4   | 4   | Kestrel Way     |             |
| 5   | 5   | Betam Road      |             |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) |
|-----|---------------------------|---------------------------|
| 1   | 0.00                      | 99999.00                  |
| 2   | 0.00                      | 99999.00                  |
| 3   | 0.00                      | 99999.00                  |
| 4   | 0.00                      | 99999.00                  |
| 5   | 0.00                      | 99999.00                  |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.50                             | 8.50                | 27.00                           | 9.80                 | 35.00                             | 28.00                              |           |
| 2   | 3.75                             | 8.50                | 11.00                           | 19.00                | 35.00                             | 22.00                              |           |
| 3   | 5.61                             | 9.40                | 10.20                           | 8.80                 | 35.00                             | 30.00                              |           |
| 4   | 4.31                             | 4.63                | 4.50                            | 3.70                 | 35.00                             | 20.00                              |           |
| 5   | 3.69                             | 7.74                | 6.00                            | 7.60                 | 35.00                             | 23.00                              |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|-----|------------------------------------|---------------|----------------------------|-------------|--------------------------|
| 1   |                                    | (calculated)  | (calculated)               | 0.683       | 1923.349                 |
| 2   |                                    | (calculated)  | (calculated)               | 0.676       | 1784.352                 |
| 3   |                                    | (calculated)  | (calculated)               | 0.711       | 2085.994                 |
| 4   |                                    | (calculated)  | (calculated)               | 0.481       | 1134.628                 |
| 5   |                                    | (calculated)  | (calculated)               | 0.578       | 1422.812                 |

The slope and intercept shown above include any corrections and adjustments.

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| ✓                   |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| 1   | ONE HOUR     | ✓                  | 1169.00                      | 100.000                 |
| 2   | ONE HOUR     | ✓                  | 549.00                       | 100.000                 |
| 3   | ONE HOUR     | ✓                  | 1237.00                      | 100.000                 |
| 4   | ONE HOUR     | ✓                  | 36.00                        | 100.000                 |
| 5   | ONE HOUR     | ✓                  | 45.00                        | 100.000                 |

# Turning Proportions

## Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      |   | To      |         |         |        |        |
|------|---|---------|---------|---------|--------|--------|
| From |   | 1       | 2       | 3       | 4      | 5      |
|      | 1 | 0.000   | 303.000 | 826.000 | 10.000 | 30.000 |
|      | 2 | 123.000 | 0.000   | 393.000 | 4.000  | 29.000 |
|      | 3 | 673.000 | 493.000 | 0.000   | 33.000 | 38.000 |
|      | 4 | 9.000   | 4.000   | 20.000  | 0.000  | 3.000  |
|      | 5 | 11.000  | 10.000  | 23.000  | 1.000  | 0.000  |

## Turning Proportions (Veh) - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 0.00 | 0.26 | 0.71 | 0.01 | 0.03 |
|      | 2 | 0.22 | 0.00 | 0.72 | 0.01 | 0.05 |
|      | 3 | 0.54 | 0.40 | 0.00 | 0.03 | 0.03 |
|      | 4 | 0.25 | 0.11 | 0.56 | 0.00 | 0.08 |
|      | 5 | 0.24 | 0.22 | 0.51 | 0.02 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      | To |       |       |       |       |       |
|------|----|-------|-------|-------|-------|-------|
|      |    | 1     | 2     | 3     | 4     | 5     |
| From | 1  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 2  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 3  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 4  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 5  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |      |      |      |      |      |
|------|----|------|------|------|------|------|
|      |    | 1    | 2    | 3    | 4    | 5    |
| From | 1  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 2  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 3  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 4  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 5  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.96    | 46.85         | 15.92           | E       |
| 2   | 0.64    | 10.36         | 1.71            | B       |
| 3   | 0.78    | 9.43          | 3.49            | A       |
| 4   | 0.13    | 13.98         | 0.15            | B       |
| 5   | 0.11    | 8.95          | 0.12            | A       |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 880.08                | 874.18              | 412.82                    | 0.00                       | 1466.41           | 0.600 | 1.48            | 6.021     | A   |
| 2   | 413.32                | 411.13              | 680.50                    | 0.00                       | 1161.86           | 0.356 | 0.55            | 4.782     | A   |
| 3   | 931.28                | 926.99              | 147.48                    | 0.00                       | 1791.54           | 0.520 | 1.07            | 4.143     | A   |
| 4   | 27.10                 | 26.89               | 1038.52                   | 0.00                       | 531.44            | 0.051 | 0.05            | 7.131     | A   |
| 5   | 33.88                 | 33.68               | 990.54                    | 0.00                       | 720.59            | 0.047 | 0.05            | 5.239     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1050.91               | 1045.59             | 494.26                    | 0.00                       | 1410.76           | 0.745 | 2.81            | 9.716     | A   |
| 2   | 493.54                | 492.36              | 814.03                    | 0.00                       | 1071.54           | 0.461 | 0.84            | 6.203     | A   |
| 3   | 1112.04               | 1109.68             | 176.58                    | 0.00                       | 1770.87           | 0.628 | 1.66            | 5.425     | A   |
| 4   | 32.36                 | 32.26               | 1243.23                   | 0.00                       | 432.88            | 0.075 | 0.08            | 8.984     | A   |
| 5   | 40.45                 | 40.37               | 1185.87                   | 0.00                       | 607.62            | 0.067 | 0.07            | 6.346     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1287.09               | 1247.68             | 603.54                    | 0.00                       | 1336.09           | 0.963 | 12.66           | 31.837    | D   |
| 2   | 604.46                | 601.30              | 972.47                    | 0.00                       | 964.37            | 0.627 | 1.63            | 9.830     | A   |
| 3   | 1361.96               | 1354.96             | 214.65                    | 0.00                       | 1743.81           | 0.781 | 3.41            | 9.095     | A   |
| 4   | 39.64                 | 39.36               | 1517.31                   | 0.00                       | 300.91            | 0.132 | 0.15            | 13.750    | B   |
| 5   | 49.55                 | 49.35               | 1447.99                   | 0.00                       | 456.02            | 0.109 | 0.12            | 8.847     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1287.09               | 1274.03             | 606.52                    | 0.00                       | 1334.05           | 0.965 | 15.92           | 46.849    | E   |
| 2   | 604.46                | 604.16              | 992.24                    | 0.00                       | 950.99            | 0.636 | 1.71            | 10.363    | B   |
| 3   | 1361.96               | 1361.64             | 216.37                    | 0.00                       | 1742.59           | 0.782 | 3.49            | 9.428     | A   |
| 4   | 39.64                 | 39.62               | 1525.28                   | 0.00                       | 297.07            | 0.133 | 0.15            | 13.983    | B   |
| 5   | 49.55                 | 49.54               | 1455.17                   | 0.00                       | 451.87            | 0.110 | 0.12            | 8.947     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1050.91               | 1102.27             | 498.50                    | 0.00                       | 1407.86           | 0.746 | 3.08            | 13.625    | B   |
| 2   | 493.54                | 496.73              | 856.38                    | 0.00                       | 1042.89           | 0.473 | 0.91            | 6.630     | A   |
| 3   | 1112.04               | 1119.13             | 179.77                    | 0.00                       | 1768.60           | 0.629 | 1.72            | 5.601     | A   |
| 4   | 32.36                 | 32.64               | 1255.09                   | 0.00                       | 427.17            | 0.076 | 0.08            | 9.130     | A   |
| 5   | 40.45                 | 40.65               | 1196.10                   | 0.00                       | 601.70            | 0.067 | 0.07            | 6.420     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 880.08                | 886.29              | 415.96                    | 0.00                       | 1464.26           | 0.601 | 1.53            | 6.295     | A   |
| 2   | 413.32                | 414.71              | 689.81                    | 0.00                       | 1155.56           | 0.358 | 0.56            | 4.869     | A   |
| 3   | 931.28                | 933.79              | 148.92                    | 0.00                       | 1790.52           | 0.520 | 1.09            | 4.213     | A   |
| 4   | 27.10                 | 27.22               | 1046.44                   | 0.00                       | 527.63            | 0.051 | 0.05            | 7.197     | A   |
| 5   | 33.88                 | 33.97               | 998.05                    | 0.00                       | 716.24            | 0.047 | 0.05            | 5.278     | A   |

# Old Vinyl Factory improvements - 2022 with UTC, AM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                           | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|--------------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| Old Vinyl Factory improvements | ARCADY                    |             |        | 100.000                         |                            |

## Demand Set Details

| Name              | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-------------------|---------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| 2022 with UTC, AM | 2022 with UTC | AM               |             | ONE HOUR             | 07:45                    | 09:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name                     | Junction Type | Arm Order | Grade Separated | Large Roundabout | Junction Delay (s) | Junction LOS |
|----------|--------------------------|---------------|-----------|-----------------|------------------|--------------------|--------------|
| 1        | Dawley Road / Blyth Road | Roundabout    | 1,2,3,4,5 |                 |                  | 16.80              | C            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name            | Description |
|-----|-----|-----------------|-------------|
| 1   | 1   | Dawley Road (N) |             |
| 2   | 2   | Blyth Road      |             |
| 3   | 3   | Dawley Road (S) |             |
| 4   | 4   | Kestrel Way     |             |
| 5   | 5   | Betam Road      |             |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) |
|-----|---------------------------|---------------------------|
| 1   | 0.00                      | 99999.00                  |
| 2   | 0.00                      | 99999.00                  |
| 3   | 0.00                      | 99999.00                  |
| 4   | 0.00                      | 99999.00                  |
| 5   | 0.00                      | 99999.00                  |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.50                             | 8.50                | 27.00                           | 9.80                 | 35.00                             | 28.00                              |           |
| 2   | 3.75                             | 8.50                | 11.00                           | 19.00                | 35.00                             | 22.00                              |           |
| 3   | 5.61                             | 9.40                | 10.20                           | 8.80                 | 35.00                             | 30.00                              |           |
| 4   | 4.31                             | 4.63                | 4.50                            | 3.70                 | 35.00                             | 20.00                              |           |
| 5   | 3.69                             | 7.74                | 6.00                            | 7.60                 | 35.00                             | 23.00                              |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|-----|------------------------------------|---------------|----------------------------|-------------|--------------------------|
| 1   |                                    | (calculated)  | (calculated)               | 0.683       | 1923.349                 |
| 2   |                                    | (calculated)  | (calculated)               | 0.676       | 1784.352                 |
| 3   |                                    | (calculated)  | (calculated)               | 0.711       | 2085.994                 |
| 4   |                                    | (calculated)  | (calculated)               | 0.481       | 1134.628                 |
| 5   |                                    | (calculated)  | (calculated)               | 0.578       | 1422.812                 |

The slope and intercept shown above include any corrections and adjustments.

## Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| ✓                   |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| 1   | ONE HOUR     | ✓                  | 947.00                       | 100.000                 |
| 2   | ONE HOUR     | ✓                  | 717.00                       | 100.000                 |
| 3   | ONE HOUR     | ✓                  | 1271.00                      | 100.000                 |
| 4   | ONE HOUR     | ✓                  | 48.00                        | 100.000                 |
| 5   | ONE HOUR     | ✓                  | 83.00                        | 100.000                 |

# Turning Proportions

## Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      |   | To      |         |         |        |        |
|------|---|---------|---------|---------|--------|--------|
| From |   | 1       | 2       | 3       | 4      | 5      |
|      | 1 | 0.000   | 125.000 | 814.000 | 1.000  | 7.000  |
|      | 2 | 370.000 | 0.000   | 343.000 | 2.000  | 2.000  |
|      | 3 | 824.000 | 408.000 | 0.000   | 24.000 | 15.000 |
|      | 4 | 4.000   | 3.000   | 40.000  | 0.000  | 1.000  |
|      | 5 | 31.000  | 17.000  | 34.000  | 1.000  | 0.000  |

## Turning Proportions (Veh) - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 0.00 | 0.13 | 0.86 | 0.00 | 0.01 |
|      | 2 | 0.52 | 0.00 | 0.48 | 0.00 | 0.00 |
|      | 3 | 0.65 | 0.32 | 0.00 | 0.02 | 0.01 |
|      | 4 | 0.08 | 0.06 | 0.83 | 0.00 | 0.02 |
|      | 5 | 0.37 | 0.20 | 0.41 | 0.01 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      |   | To    |       |       |       |       |
|------|---|-------|-------|-------|-------|-------|
| From |   | 1     | 2     | 3     | 4     | 5     |
|      | 1 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 2 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 3 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 4 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 5 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 2 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 3 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 4 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.76    | 10.93         | 3.09            | B       |
| 2   | 0.83    | 21.31         | 4.46            | C       |
| 3   | 0.88    | 17.68         | 6.55            | C       |
| 4   | 0.31    | 30.47         | 0.43            | D       |
| 5   | 0.37    | 23.39         | 0.58            | C       |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 712.95                | 709.32              | 376.42                    | 0.00                       | 1491.28           | 0.478 | 0.91            | 4.583     | A   |
| 2   | 539.80                | 536.40              | 671.67                    | 0.00                       | 1167.83           | 0.462 | 0.85            | 5.671     | A   |
| 3   | 956.88                | 951.74              | 286.53                    | 0.00                       | 1692.72           | 0.565 | 1.28            | 4.826     | A   |
| 4   | 36.14                 | 35.79               | 1217.31                   | 0.00                       | 445.36            | 0.081 | 0.09            | 8.783     | A   |
| 5   | 62.49                 | 62.01               | 1234.38                   | 0.00                       | 579.56            | 0.108 | 0.12            | 6.950     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 851.33                | 849.27              | 450.60                    | 0.00                       | 1440.59           | 0.591 | 1.42            | 6.068     | A   |
| 2   | 644.57                | 642.15              | 804.26                    | 0.00                       | 1078.15           | 0.598 | 1.45            | 8.211     | A   |
| 3   | 1142.60               | 1138.99             | 343.03                    | 0.00                       | 1652.58           | 0.691 | 2.19            | 6.959     | A   |
| 4   | 43.15                 | 42.91               | 1456.93                   | 0.00                       | 329.98            | 0.131 | 0.15            | 12.530    | B   |
| 5   | 74.62                 | 74.29               | 1477.43                   | 0.00                       | 438.99            | 0.170 | 0.20            | 9.862     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1042.67               | 1036.36             | 547.04                    | 0.00                       | 1374.69           | 0.758 | 3.00            | 10.448    | B   |
| 2   | 789.43                | 778.58              | 980.74                    | 0.00                       | 958.78            | 0.823 | 4.17            | 18.941    | C   |
| 3   | 1399.40               | 1383.70             | 415.96                    | 0.00                       | 1600.74           | 0.874 | 6.11            | 15.569    | C   |
| 4   | 52.85                 | 51.84               | 1769.18                   | 0.00                       | 179.64            | 0.294 | 0.40            | 27.957    | D   |
| 5   | 91.38                 | 90.05               | 1793.79                   | 0.00                       | 256.03            | 0.357 | 0.54            | 21.523    | C   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1042.67               | 1042.29             | 553.02                    | 0.00                       | 1370.61           | 0.761 | 3.09            | 10.934    | B   |
| 2   | 789.43                | 788.24              | 987.10                    | 0.00                       | 954.47            | 0.827 | 4.46            | 21.313    | C   |
| 3   | 1399.40               | 1397.63             | 421.07                    | 0.00                       | 1597.11           | 0.876 | 6.55            | 17.682    | C   |
| 4   | 52.85                 | 52.71               | 1787.91                   | 0.00                       | 170.62            | 0.310 | 0.43            | 30.473    | D   |
| 5   | 91.38                 | 91.21               | 1813.12                   | 0.00                       | 244.85            | 0.373 | 0.58            | 23.391    | C   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 851.33                | 857.77              | 459.50                    | 0.00                       | 1434.51           | 0.593 | 1.48            | 6.311     | A   |
| 2   | 644.57                | 656.25              | 813.49                    | 0.00                       | 1071.90           | 0.601 | 1.54            | 8.894     | A   |
| 3   | 1142.60               | 1159.53             | 350.47                    | 0.00                       | 1647.28           | 0.694 | 2.32            | 7.626     | A   |
| 4   | 43.15                 | 44.24               | 1484.45                   | 0.00                       | 316.73            | 0.136 | 0.16            | 13.261    | B   |
| 5   | 74.62                 | 76.06               | 1505.92                   | 0.00                       | 422.52            | 0.177 | 0.22            | 10.432    | B   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 712.95                | 715.17              | 380.46                    | 0.00                       | 1488.52           | 0.479 | 0.93            | 4.669     | A   |
| 2   | 539.80                | 542.47              | 677.63                    | 0.00                       | 1163.80           | 0.464 | 0.88            | 5.817     | A   |
| 3   | 956.88                | 960.88              | 289.76                    | 0.00                       | 1690.43           | 0.566 | 1.32            | 4.960     | A   |
| 4   | 36.14                 | 36.42               | 1229.47                   | 0.00                       | 439.50            | 0.082 | 0.09            | 8.938     | A   |
| 5   | 62.49                 | 62.86               | 1246.99                   | 0.00                       | 572.27            | 0.109 | 0.12            | 7.071     | A   |

## Old Vinyl Factory improvements - 2022 with UTC, PM

### Data Errors and Warnings

No errors or warnings

### Analysis Set Details

| Name                           | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|--------------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| Old Vinyl Factory improvements | ARCADY                    |             |        | 100.000                         |                            |

### Demand Set Details

| Name              | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-------------------|---------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| 2022 with UTC, PM | 2022 with UTC | PM               |             | ONE HOUR             | 16:45                    | 18:15                     | 90                             | 15                        |                          |        |

## Junction Network

### Junctions

| Junction | Name                     | Junction Type | Arm Order | Grade Separated | Large Roundabout | Junction Delay (s) | Junction LOS |
|----------|--------------------------|---------------|-----------|-----------------|------------------|--------------------|--------------|
| 1        | Dawley Road / Blyth Road | Roundabout    | 1,2,3,4,5 |                 |                  | 26.34              | D            |

### Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name            | Description |
|-----|-----|-----------------|-------------|
| 1   | 1   | Dawley Road (N) |             |
| 2   | 2   | Blyth Road      |             |
| 3   | 3   | Dawley Road (S) |             |
| 4   | 4   | Kestrel Way     |             |
| 5   | 5   | Betam Road      |             |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) |
|-----|---------------------------|---------------------------|
| 1   | 0.00                      | 99999.00                  |
| 2   | 0.00                      | 99999.00                  |
| 3   | 0.00                      | 99999.00                  |
| 4   | 0.00                      | 99999.00                  |
| 5   | 0.00                      | 99999.00                  |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.50                             | 8.50                | 27.00                           | 9.80                 | 35.00                             | 28.00                              |           |
| 2   | 3.75                             | 8.50                | 11.00                           | 19.00                | 35.00                             | 22.00                              |           |
| 3   | 5.61                             | 9.40                | 10.20                           | 8.80                 | 35.00                             | 30.00                              |           |
| 4   | 4.31                             | 4.63                | 4.50                            | 3.70                 | 35.00                             | 20.00                              |           |
| 5   | 3.69                             | 7.74                | 6.00                            | 7.60                 | 35.00                             | 23.00                              |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|-----|------------------------------------|---------------|----------------------------|-------------|--------------------------|
| 1   |                                    | (calculated)  | (calculated)               | 0.683       | 1923.349                 |
| 2   |                                    | (calculated)  | (calculated)               | 0.676       | 1784.352                 |
| 3   |                                    | (calculated)  | (calculated)               | 0.711       | 2085.994                 |
| 4   |                                    | (calculated)  | (calculated)               | 0.481       | 1134.628                 |
| 5   |                                    | (calculated)  | (calculated)               | 0.578       | 1422.812                 |

The slope and intercept shown above include any corrections and adjustments.

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| ✓                   |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| 1   | ONE HOUR     | ✓                  | 1169.00                      | 100.000                 |
| 2   | ONE HOUR     | ✓                  | 596.00                       | 100.000                 |
| 3   | ONE HOUR     | ✓                  | 1253.00                      | 100.000                 |
| 4   | ONE HOUR     | ✓                  | 36.00                        | 100.000                 |
| 5   | ONE HOUR     | ✓                  | 45.00                        | 100.000                 |

# Turning Proportions

## Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      |   | To      |         |         |        |        |
|------|---|---------|---------|---------|--------|--------|
| From |   | 1       | 2       | 3       | 4      | 5      |
|      | 1 | 0.000   | 303.000 | 826.000 | 10.000 | 30.000 |
|      | 2 | 146.000 | 0.000   | 417.000 | 4.000  | 29.000 |
|      | 3 | 673.000 | 509.000 | 0.000   | 33.000 | 38.000 |
|      | 4 | 9.000   | 4.000   | 20.000  | 0.000  | 3.000  |
|      | 5 | 11.000  | 10.000  | 23.000  | 1.000  | 0.000  |

## Turning Proportions (Veh) - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 0.00 | 0.26 | 0.71 | 0.01 | 0.03 |
|      | 2 | 0.24 | 0.00 | 0.70 | 0.01 | 0.05 |
|      | 3 | 0.54 | 0.41 | 0.00 | 0.03 | 0.03 |
|      | 4 | 0.25 | 0.11 | 0.56 | 0.00 | 0.08 |
|      | 5 | 0.24 | 0.22 | 0.51 | 0.02 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      |   | To    |       |       |       |       |
|------|---|-------|-------|-------|-------|-------|
| From |   | 1     | 2     | 3     | 4     | 5     |
|      | 1 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 2 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 3 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 4 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 5 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |      |      |      |      |      |
|------|----|------|------|------|------|------|
|      |    | 1    | 2    | 3    | 4    | 5    |
| From | 1  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 2  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 3  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 4  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 5  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.97    | 51.71         | 17.75           | F       |
| 2   | 0.69    | 12.09         | 2.15            | B       |
| 3   | 0.80    | 10.38         | 3.88            | B       |
| 4   | 0.14    | 15.19         | 0.17            | C       |
| 5   | 0.12    | 9.53          | 0.13            | A       |

### Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 880.08                | 874.10              | 424.75                    | 0.00                       | 1458.25           | 0.604 | 1.50            | 6.101     | A   |
| 2   | 448.70                | 446.21              | 680.43                    | 0.00                       | 1161.90           | 0.386 | 0.62            | 5.013     | A   |
| 3   | 943.32                | 938.86              | 164.67                    | 0.00                       | 1779.33           | 0.530 | 1.12            | 4.262     | A   |
| 4   | 27.10                 | 26.88               | 1067.58                   | 0.00                       | 517.45            | 0.052 | 0.05            | 7.335     | A   |
| 5   | 33.88                 | 33.68               | 1019.61                   | 0.00                       | 703.78            | 0.048 | 0.05            | 5.371     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1050.91               | 1045.38             | 508.53                    | 0.00                       | 1401.00           | 0.750 | 2.88            | 9.969     | A   |
| 2   | 535.79                | 534.34              | 813.86                    | 0.00                       | 1071.65           | 0.500 | 0.99            | 6.683     | A   |
| 3   | 1126.42               | 1123.86             | 197.15                    | 0.00                       | 1756.25           | 0.641 | 1.76            | 5.670     | A   |
| 4   | 32.36                 | 32.25               | 1277.98                   | 0.00                       | 416.15            | 0.078 | 0.08            | 9.374     | A   |
| 5   | 40.45                 | 40.36               | 1220.63                   | 0.00                       | 587.51            | 0.069 | 0.07            | 6.579     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1287.09               | 1243.81             | 620.63                    | 0.00                       | 1324.41           | 0.972 | 13.70           | 33.921    | D   |
| 2   | 656.21                | 652.00              | 969.58                    | 0.00                       | 966.33            | 0.679 | 2.04            | 11.304    | B   |
| 3   | 1379.58               | 1371.50             | 239.47                    | 0.00                       | 1726.17           | 0.799 | 3.78            | 9.927     | A   |
| 4   | 39.64                 | 39.33               | 1558.74                   | 0.00                       | 280.96            | 0.141 | 0.16            | 14.878    | B   |
| 5   | 49.55                 | 49.33               | 1489.55                   | 0.00                       | 431.98            | 0.115 | 0.13            | 9.403     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1287.09               | 1270.89             | 624.09                    | 0.00                       | 1322.04           | 0.974 | 17.75           | 51.708    | F   |
| 2   | 656.21                | 655.75              | 989.91                    | 0.00                       | 952.57            | 0.689 | 2.15            | 12.094    | B   |
| 3   | 1379.58               | 1379.15             | 241.53                    | 0.00                       | 1724.71           | 0.800 | 3.88            | 10.383    | B   |
| 4   | 39.64                 | 39.62               | 1567.99                   | 0.00                       | 276.51            | 0.143 | 0.17            | 15.194    | C   |
| 5   | 49.55                 | 49.54               | 1497.96                   | 0.00                       | 427.12            | 0.116 | 0.13            | 9.534     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1050.91               | 1109.16             | 513.44                    | 0.00                       | 1397.65           | 0.752 | 3.19            | 14.828    | B   |
| 2   | 535.79                | 540.08              | 861.51                    | 0.00                       | 1039.42           | 0.515 | 1.08            | 7.271     | A   |
| 3   | 1126.42               | 1134.65             | 201.06                    | 0.00                       | 1753.47           | 0.642 | 1.83            | 5.891     | A   |
| 4   | 32.36                 | 32.68               | 1291.81                   | 0.00                       | 409.49            | 0.079 | 0.09            | 9.563     | A   |
| 5   | 40.45                 | 40.67               | 1232.61                   | 0.00                       | 580.59            | 0.070 | 0.08            | 6.672     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 880.08                | 886.61              | 428.14                    | 0.00                       | 1455.94           | 0.604 | 1.55            | 6.392     | A   |
| 2   | 448.70                | 450.46              | 690.05                    | 0.00                       | 1155.40           | 0.388 | 0.64            | 5.119     | A   |
| 3   | 943.32                | 946.07              | 166.38                    | 0.00                       | 1778.11           | 0.531 | 1.14            | 4.342     | A   |
| 4   | 27.10                 | 27.22               | 1076.17                   | 0.00                       | 513.31            | 0.053 | 0.06            | 7.406     | A   |
| 5   | 33.88                 | 33.98               | 1027.77                   | 0.00                       | 699.06            | 0.048 | 0.05            | 5.415     | A   |

## Old Vinyl Factory improvements - 2022 with UTC sensitivity, AM

### Data Errors and Warnings

No errors or warnings

### Analysis Set Details

| Name                           | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|--------------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| Old Vinyl Factory improvements | ARCADY                    |             |        | 100.000                         |                            |

### Demand Set Details

| Name                          | Scenario Name             | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-------------------------------|---------------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| 2022 with UTC sensitivity, AM | 2022 with UTC sensitivity | AM               |             | ONE HOUR             | 07:45                    | 09:15                     | 90                             | 15                        |                          |        |

## Junction Network

### Junctions

| Junction | Name                     | Junction Type | Arm Order | Grade Separated | Large Roundabout | Junction Delay (s) | Junction LOS |
|----------|--------------------------|---------------|-----------|-----------------|------------------|--------------------|--------------|
| 1        | Dawley Road / Blyth Road | Roundabout    | 1,2,3,4,5 |                 |                  | 22.36              | C            |

## Junction Network Options

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

## Arms

### Arms

| Arm | Arm | Name            | Description |
|-----|-----|-----------------|-------------|
| 1   | 1   | Dawley Road (N) |             |
| 2   | 2   | Blyth Road      |             |
| 3   | 3   | Dawley Road (S) |             |
| 4   | 4   | Kestrel Way     |             |
| 5   | 5   | Betam Road      |             |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) |
|-----|---------------------------|---------------------------|
| 1   | 0.00                      | 99999.00                  |
| 2   | 0.00                      | 99999.00                  |
| 3   | 0.00                      | 99999.00                  |
| 4   | 0.00                      | 99999.00                  |
| 5   | 0.00                      | 99999.00                  |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.50                             | 8.50                | 27.00                           | 9.80                 | 35.00                             | 28.00                              |           |
| 2   | 3.75                             | 8.50                | 11.00                           | 19.00                | 35.00                             | 22.00                              |           |
| 3   | 5.61                             | 9.40                | 10.20                           | 8.80                 | 35.00                             | 30.00                              |           |
| 4   | 4.31                             | 4.63                | 4.50                            | 3.70                 | 35.00                             | 20.00                              |           |
| 5   | 3.69                             | 7.74                | 6.00                            | 7.60                 | 35.00                             | 23.00                              |           |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|-----|------------------------------------|---------------|----------------------------|-------------|--------------------------|
| 1   |                                    | (calculated)  | (calculated)               | 0.683       | 1923.349                 |
| 2   |                                    | (calculated)  | (calculated)               | 0.676       | 1784.352                 |
| 3   |                                    | (calculated)  | (calculated)               | 0.711       | 2085.994                 |
| 4   |                                    | (calculated)  | (calculated)               | 0.481       | 1134.628                 |
| 5   |                                    | (calculated)  | (calculated)               | 0.578       | 1422.812                 |

The slope and intercept shown above include any corrections and adjustments.

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| ✓                   |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| 1   | ONE HOUR     | ✓                  | 949.00                       | 100.000                 |
| 2   | ONE HOUR     | ✓                  | 776.00                       | 100.000                 |
| 3   | ONE HOUR     | ✓                  | 1290.00                      | 100.000                 |
| 4   | ONE HOUR     | ✓                  | 49.00                        | 100.000                 |
| 5   | ONE HOUR     | ✓                  | 83.00                        | 100.000                 |

# Turning Proportions

## Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      |   | To      |         |         |        |        |
|------|---|---------|---------|---------|--------|--------|
| From |   | 1       | 2       | 3       | 4      | 5      |
|      | 1 | 0.000   | 127.000 | 814.000 | 1.000  | 7.000  |
|      | 2 | 385.000 | 0.000   | 360.000 | 2.000  | 29.000 |
|      | 3 | 824.000 | 427.000 | 0.000   | 24.000 | 15.000 |
|      | 4 | 4.000   | 4.000   | 40.000  | 0.000  | 1.000  |
|      | 5 | 31.000  | 17.000  | 34.000  | 1.000  | 0.000  |

## Turning Proportions (Veh) - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 0.00 | 0.13 | 0.86 | 0.00 | 0.01 |
|      | 2 | 0.50 | 0.00 | 0.46 | 0.00 | 0.04 |
|      | 3 | 0.64 | 0.33 | 0.00 | 0.02 | 0.01 |
|      | 4 | 0.08 | 0.08 | 0.82 | 0.00 | 0.02 |
|      | 5 | 0.37 | 0.20 | 0.41 | 0.01 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      | To |       |       |       |       |       |
|------|----|-------|-------|-------|-------|-------|
|      |    | 1     | 2     | 3     | 4     | 5     |
| From | 1  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 2  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 3  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 4  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 5  | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |      |      |      |      |      |
|------|----|------|------|------|------|------|
|      |    | 1    | 2    | 3    | 4    | 5    |
| From | 1  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 2  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 3  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 4  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 5  | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.77    | 11.51         | 3.26            | B       |
| 2   | 0.89    | 32.63         | 7.26            | D       |
| 3   | 0.91    | 23.13         | 8.60            | C       |
| 4   | 0.39    | 41.60         | 0.60            | E       |
| 5   | 0.41    | 26.95         | 0.66            | D       |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 714.46                | 710.77              | 391.28                    | 0.00                       | 1481.13           | 0.482 | 0.92            | 4.651     | A   |
| 2   | 584.21                | 580.26              | 671.60                    | 0.00                       | 1167.88           | 0.500 | 0.99            | 6.087     | A   |
| 3   | 971.18                | 965.70              | 317.81                    | 0.00                       | 1670.50           | 0.581 | 1.37            | 5.068     | A   |
| 4   | 36.89                 | 36.51               | 1262.55                   | 0.00                       | 423.58            | 0.087 | 0.09            | 9.293     | A   |
| 5   | 62.49                 | 61.99               | 1260.16                   | 0.00                       | 564.65            | 0.111 | 0.12            | 7.156     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 853.13                | 850.99              | 468.30                    | 0.00                       | 1428.50           | 0.597 | 1.46            | 6.209     | A   |
| 2   | 697.61                | 694.43              | 804.14                    | 0.00                       | 1078.22           | 0.647 | 1.78            | 9.302     | A   |
| 3   | 1159.68               | 1155.49             | 380.34                    | 0.00                       | 1626.06           | 0.713 | 2.42            | 7.583     | A   |
| 4   | 44.05                 | 43.76               | 1510.76                   | 0.00                       | 304.07            | 0.145 | 0.17            | 13.814    | B   |
| 5   | 74.62                 | 74.26               | 1507.96                   | 0.00                       | 421.34            | 0.177 | 0.21            | 10.362    | B   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1044.87               | 1038.14             | 566.61                    | 0.00                       | 1361.32           | 0.768 | 3.14            | 10.915    | B   |
| 2   | 854.39                | 835.94              | 979.99                    | 0.00                       | 959.28            | 0.891 | 6.39            | 26.053    | D   |
| 3   | 1420.32               | 1399.17             | 457.97                    | 0.00                       | 1570.89           | 0.904 | 7.71            | 18.993    | C   |
| 4   | 53.95                 | 52.54               | 1826.77                   | 0.00                       | 151.91            | 0.355 | 0.52            | 35.752    | E   |
| 5   | 91.38                 | 89.86               | 1823.07                   | 0.00                       | 239.09            | 0.382 | 0.59            | 23.888    | C   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1044.87               | 1044.41             | 574.21                    | 0.00                       | 1356.13           | 0.770 | 3.26            | 11.508    | B   |
| 2   | 854.39                | 850.95              | 986.85                    | 0.00                       | 954.64            | 0.895 | 7.26            | 32.632    | D   |
| 3   | 1420.32               | 1416.75             | 466.08                    | 0.00                       | 1565.12           | 0.907 | 8.60            | 23.133    | C   |
| 4   | 53.95                 | 53.64               | 1852.08                   | 0.00                       | 139.72            | 0.386 | 0.60            | 41.602    | E   |
| 5   | 91.38                 | 91.11               | 1848.65                   | 0.00                       | 224.30            | 0.407 | 0.66            | 26.946    | D   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 853.13                | 860.03              | 480.63                    | 0.00                       | 1420.07           | 0.601 | 1.53            | 6.504     | A   |
| 2   | 697.61                | 718.93              | 814.42                    | 0.00                       | 1071.27           | 0.651 | 1.92            | 10.799    | B   |
| 3   | 1159.68               | 1183.61             | 393.58                    | 0.00                       | 1616.65           | 0.717 | 2.62            | 8.745     | A   |
| 4   | 44.05                 | 45.69               | 1551.48                   | 0.00                       | 284.46            | 0.155 | 0.19            | 15.173    | C   |
| 5   | 74.62                 | 76.33               | 1549.26                   | 0.00                       | 397.45            | 0.188 | 0.23            | 11.269    | B   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 714.46                | 716.80              | 395.92                    | 0.00                       | 1477.96           | 0.483 | 0.95            | 4.745     | A   |
| 2   | 584.21                | 587.82              | 677.81                    | 0.00                       | 1163.68           | 0.502 | 1.02            | 6.291     | A   |
| 3   | 971.18                | 975.99              | 321.92                    | 0.00                       | 1667.57           | 0.582 | 1.41            | 5.242     | A   |
| 4   | 36.89                 | 37.24               | 1276.73                   | 0.00                       | 416.75            | 0.089 | 0.10            | 9.496     | A   |
| 5   | 62.49                 | 62.91               | 1274.61                   | 0.00                       | 556.30            | 0.112 | 0.13            | 7.304     | A   |

# Old Vinyl Factory improvements - 2022 with UTC sensitivity, PM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                           | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|--------------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| Old Vinyl Factory improvements | ARCADY                    |             |        | 100.000                         |                            |

## Demand Set Details

| Name                          | Scenario Name             | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-------------------------------|---------------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| 2022 with UTC sensitivity, PM | 2022 with UTC sensitivity | PM               |             | ONE HOUR             | 16:45                    | 18:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name                     | Junction Type | Arm Order | Grade Separated | Large Roundabout | Junction Delay (s) | Junction LOS |
|----------|--------------------------|---------------|-----------|-----------------|------------------|--------------------|--------------|
| 1        | Dawley Road / Blyth Road | Roundabout    | 1,2,3,4,5 |                 |                  | 28.24              | D            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name            | Description |
|-----|-----|-----------------|-------------|
| 1   | 1   | Dawley Road (N) |             |
| 2   | 2   | Blyth Road      |             |
| 3   | 3   | Dawley Road (S) |             |
| 4   | 4   | Kestrel Way     |             |
| 5   | 5   | Betam Road      |             |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) |
|-----|---------------------------|---------------------------|
| 1   | 0.00                      | 99999.00                  |
| 2   | 0.00                      | 99999.00                  |
| 3   | 0.00                      | 99999.00                  |
| 4   | 0.00                      | 99999.00                  |
| 5   | 0.00                      | 99999.00                  |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.50                             | 8.50                | 27.00                           | 9.80                 | 35.00                             | 28.00                              |           |
| 2   | 3.75                             | 8.50                | 11.00                           | 19.00                | 35.00                             | 22.00                              |           |
| 3   | 5.61                             | 9.40                | 10.20                           | 8.80                 | 35.00                             | 30.00                              |           |
| 4   | 4.31                             | 4.63                | 4.50                            | 3.70                 | 35.00                             | 20.00                              |           |
| 5   | 3.69                             | 7.74                | 6.00                            | 7.60                 | 35.00                             | 23.00                              |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|-----|------------------------------------|---------------|----------------------------|-------------|--------------------------|
| 1   |                                    | (calculated)  | (calculated)               | 0.683       | 1923.349                 |
| 2   |                                    | (calculated)  | (calculated)               | 0.676       | 1784.352                 |
| 3   |                                    | (calculated)  | (calculated)               | 0.711       | 2085.994                 |
| 4   |                                    | (calculated)  | (calculated)               | 0.481       | 1134.628                 |
| 5   |                                    | (calculated)  | (calculated)               | 0.578       | 1422.812                 |

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| ✓                   |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| 1   | ONE HOUR     | ✓                  | 1169.00                      | 100.000                 |
| 2   | ONE HOUR     | ✓                  | 625.00                       | 100.000                 |
| 3   | ONE HOUR     | ✓                  | 1265.00                      | 100.000                 |
| 4   | ONE HOUR     | ✓                  | 36.00                        | 100.000                 |
| 5   | ONE HOUR     | ✓                  | 45.00                        | 100.000                 |

# Turning Proportions

## Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      |   | To      |         |         |        |        |
|------|---|---------|---------|---------|--------|--------|
| From |   | 1       | 2       | 3       | 4      | 5      |
|      | 1 | 0.000   | 303.000 | 826.000 | 10.000 | 30.000 |
|      | 2 | 160.000 | 0.000   | 432.000 | 4.000  | 29.000 |
|      | 3 | 673.000 | 521.000 | 0.000   | 33.000 | 38.000 |
|      | 4 | 9.000   | 4.000   | 20.000  | 0.000  | 3.000  |
|      | 5 | 11.000  | 10.000  | 23.000  | 1.000  | 0.000  |

## Turning Proportions (Veh) - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 0.00 | 0.26 | 0.71 | 0.01 | 0.03 |
|      | 2 | 0.26 | 0.00 | 0.69 | 0.01 | 0.05 |
|      | 3 | 0.53 | 0.41 | 0.00 | 0.03 | 0.03 |
|      | 4 | 0.25 | 0.11 | 0.56 | 0.00 | 0.08 |
|      | 5 | 0.24 | 0.22 | 0.51 | 0.02 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      |   | To    |       |       |       |       |
|------|---|-------|-------|-------|-------|-------|
| From |   | 1     | 2     | 3     | 4     | 5     |
|      | 1 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 2 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 3 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 4 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |
|      | 5 | 1.100 | 1.100 | 1.100 | 1.100 | 1.100 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|      |   | To   |      |      |      |      |
|------|---|------|------|------|------|------|
| From |   | 1    | 2    | 3    | 4    | 5    |
|      | 1 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 2 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 3 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 4 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
|      | 5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.98    | 55.73         | 19.31           | F       |
| 2   | 0.72    | 13.45         | 2.50            | B       |
| 3   | 0.81    | 11.15         | 4.20            | B       |
| 4   | 0.15    | 16.13         | 0.18            | C       |
| 5   | 0.12    | 9.97          | 0.14            | A       |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 880.08                | 874.04              | 433.70                    | 0.00                       | 1452.14           | 0.606 | 1.51            | 6.164     | A   |
| 2   | 470.53                | 467.84              | 680.38                    | 0.00                       | 1161.93           | 0.405 | 0.67            | 5.167     | A   |
| 3   | 952.36                | 947.76              | 175.12                    | 0.00                       | 1771.90           | 0.537 | 1.15            | 4.344     | A   |
| 4   | 27.10                 | 26.88               | 1086.94                   | 0.00                       | 508.13            | 0.053 | 0.06            | 7.477     | A   |
| 5   | 33.88                 | 33.67               | 1038.97                   | 0.00                       | 692.58            | 0.049 | 0.05            | 5.462     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1050.91               | 1045.22             | 519.23                    | 0.00                       | 1393.69           | 0.754 | 2.93            | 10.165    | B   |
| 2   | 561.86                | 560.22              | 813.74                    | 0.00                       | 1071.74           | 0.524 | 1.08            | 7.015     | A   |
| 3   | 1137.21               | 1134.49             | 209.66                    | 0.00                       | 1747.36           | 0.651 | 1.83            | 5.848     | A   |
| 4   | 32.36                 | 32.24               | 1301.13                   | 0.00                       | 405.00            | 0.080 | 0.09            | 9.654     | A   |
| 5   | 40.45                 | 40.36               | 1243.78                   | 0.00                       | 574.12            | 0.070 | 0.08            | 6.744     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1287.09               | 1240.64             | 633.41                    | 0.00                       | 1315.67           | 0.978 | 14.55           | 35.588    | E   |
| 2   | 688.14                | 683.08              | 967.20                    | 0.00                       | 967.93            | 0.711 | 2.35            | 12.421    | B   |
| 3   | 1392.79               | 1383.85             | 254.48                    | 0.00                       | 1715.50           | 0.812 | 4.07            | 10.577    | B   |
| 4   | 39.64                 | 39.30               | 1586.15                   | 0.00                       | 267.77            | 0.148 | 0.17            | 15.734    | C   |
| 5   | 49.55                 | 49.31               | 1517.07                   | 0.00                       | 416.07            | 0.119 | 0.13            | 9.810     | A   |

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

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1287.09               | 1268.06             | 637.25                    | 0.00                       | 1313.04           | 0.980 | 19.31           | 55.730    | F   |
| 2   | 688.14                | 687.53              | 987.81                    | 0.00                       | 953.99            | 0.721 | 2.50            | 13.453    | B   |
| 3   | 1392.79               | 1392.27             | 256.80                    | 0.00                       | 1713.85           | 0.813 | 4.20            | 11.146    | B   |
| 4   | 39.64                 | 39.62               | 1596.40                   | 0.00                       | 262.83            | 0.151 | 0.18            | 16.126    | C   |
| 5   | 49.55                 | 49.54               | 1526.45                   | 0.00                       | 410.64            | 0.121 | 0.14            | 9.969     | A   |

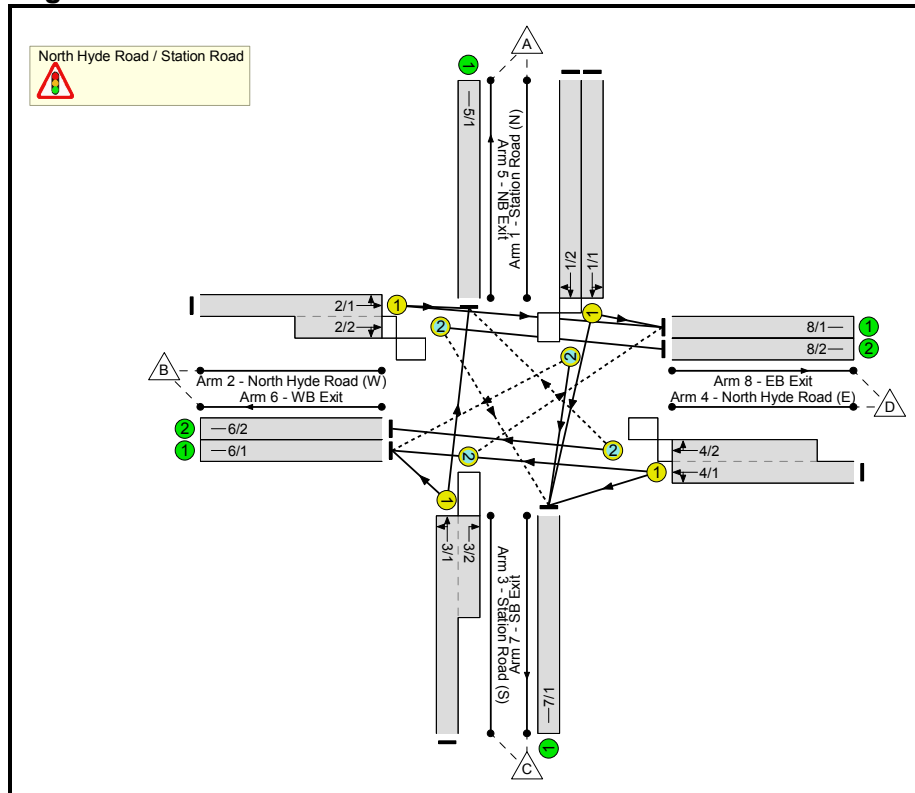
### Main results: (17:45-18:00)

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 1050.91               | 1115.06             | 524.69                    | 0.00                       | 1389.97           | 0.756 | 3.27            | 15.939    | C   |
| 2   | 561.86                | 567.04              | 865.91                    | 0.00                       | 1036.45           | 0.542 | 1.21            | 7.751     | A   |
| 3   | 1137.21               | 1146.37             | 214.16                    | 0.00                       | 1744.16           | 0.652 | 1.91            | 6.113     | A   |
| 4   | 32.36                 | 32.71               | 1316.55                   | 0.00                       | 397.57            | 0.081 | 0.09            | 9.875     | A   |
| 5   | 40.45                 | 40.69               | 1257.17                   | 0.00                       | 566.38            | 0.071 | 0.08            | 6.852     | A   |

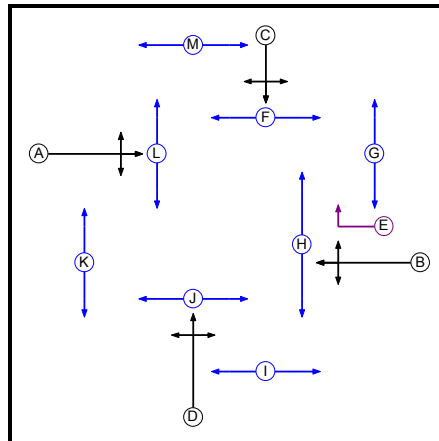
### Main results: (18:00-18:15)

| Arm | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------|---------------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| 1   | 880.08                | 886.87              | 437.27                    | 0.00                       | 1449.70           | 0.607 | 1.57            | 6.472     | A   |
| 2   | 470.53                | 472.58              | 690.25                    | 0.00                       | 1155.26           | 0.407 | 0.69            | 5.290     | A   |
| 3   | 952.36                | 955.29              | 177.03                    | 0.00                       | 1770.54           | 0.538 | 1.18            | 4.431     | A   |
| 4   | 27.10                 | 27.23               | 1096.03                   | 0.00                       | 503.75            | 0.054 | 0.06            | 7.558     | A   |
| 5   | 33.88                 | 33.98               | 1047.61                   | 0.00                       | 687.58            | 0.049 | 0.05            | 5.508     | A   |

## Network Layout Diagram



## Phase Diagram



**Phase Input Data**

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|--------------|------------|----------|
| A          | Traffic    | 1            |              | 7          | 7        |
| B          | Traffic    | 1            |              | 7          | 7        |
| C          | Traffic    | 1            |              | 7          | 7        |
| D          | Traffic    | 1            |              | 7          | 7        |
| E          | Ind. Arrow | 1            | B            | 4          | 4        |
| F          | Pedestrian | 1            |              | 5          | 5        |
| G          | Pedestrian | 1            |              | 5          | 5        |
| H          | Pedestrian | 1            |              | 5          | 5        |
| I          | Pedestrian | 1            |              | 5          | 5        |
| J          | Pedestrian | 1            |              | 5          | 5        |
| K          | Pedestrian | 1            |              | 5          | 5        |
| L          | Pedestrian | 1            |              | 5          | 5        |
| M          | Pedestrian | 1            |              | 5          | 5        |

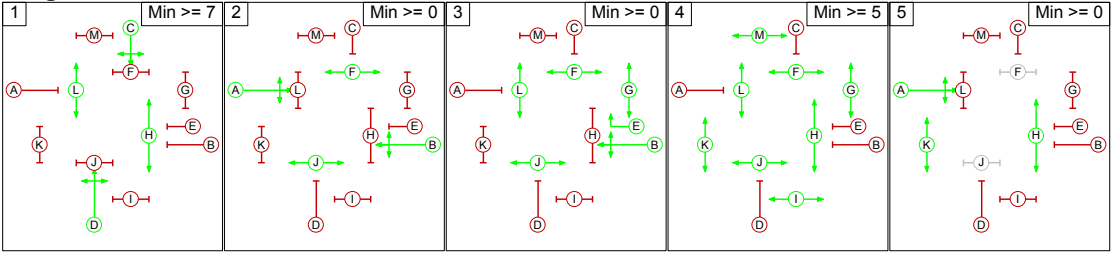
**Phase Intergreens Matrix**

|                   |   | Starting Phase |    |   |   |    |   |    |   |    |   |    |   |    |
|-------------------|---|----------------|----|---|---|----|---|----|---|----|---|----|---|----|
| Terminating Phase |   | A              | B  | C | D | E  | F | G  | H | I  | J | K  | L | M  |
|                   | A |                | -  | 6 | 6 | 5  | - | 9  | - | 10 | - | -  | 5 | 10 |
|                   | B | -              |    | 6 | 6 | -  | - | -  | 5 | 10 | - | 10 | - | 10 |
|                   | C | 7              | 7  |   | - | 5  | 5 | 10 | - | 9  | - | 10 | - | -  |
|                   | D | 7              | 7  | - |   | 5  | - | 10 | - | -  | 5 | 10 | - | 10 |
|                   | E | 7              | -  | 6 | 6 |    | - | -  | 5 | -  | - | -  | - | 10 |
|                   | F | -              | -  | 9 | - | -  |   | -  | - | -  | - | -  | - | -  |
|                   | G | 8              | -  | 8 | 8 | -  | - |    | - | -  | - | -  | - | -  |
|                   | H | -              | 10 | - | - | 10 | - | -  |   | -  | - | -  | - | -  |
|                   | I | 9              | 9  | 9 | - | -  | - | -  | - |    | - | -  | - | -  |
|                   | J | -              | -  | - | 9 | -  | - | -  | - | -  |   | -  | - | -  |
|                   | K | -              | 8  | 8 | 8 | -  | - | -  | - | -  | - |    | - | -  |
|                   | L | 9              | -  | - | - | -  | - | -  | - | -  | - | -  |   | -  |
|                   | M | 8              | 8  | - | 8 | 8  | - | -  | - | -  | - | -  | - |    |

**Phases in Stage**

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

Stage Diagram  
Stage Stream: 1



Phase Delays  
Stage Stream: 1

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

Prohibited Stage Change  
Stage Stream: 1

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

**Give-Way Lane Input Data**

| Junction: North Hyde Road / Station Road |             |                                   |                                   |               |                  |              |                          |                            |      |                        |                               |
|------------------------------------------|-------------|-----------------------------------|-----------------------------------|---------------|------------------|--------------|--------------------------|----------------------------|------|------------------------|-------------------------------|
| Lane                                     | Movement    | Max Flow when Giving Way (PCU/Hr) | Min Flow when Giving Way (PCU/Hr) | Opposing Lane | Opp. Lane Coeff. | Opp. Mvmnts. | Right Turn Storage (PCU) | Non-Blocking Storage (PCU) | RTF  | Right Turn Move up (s) | Max Turns in Intergreen (PCU) |
| 1/2 (Station Road (N))                   | 6/1 (Right) | 1000                              | 0                                 | 3/1           | 0.50             | All          | 3.00                     | 2.00                       | 0.50 | 2                      | 3.00                          |
| 2/2 (North Hyde Road (W))                | 7/1 (Right) | 1000                              | 0                                 | 4/1           | 0.50             | All          | 3.00                     | 2.00                       | 0.50 | 2                      | 3.00                          |
| 3/2 (Station Road (S))                   | 8/1 (Right) | 1000                              | 0                                 | 1/1           | 0.50             | All          | 3.00                     | -                          | 0.50 | 2                      | 3.00                          |
| 4/2 (North Hyde Road (E))                | 5/1 (Right) | 1000                              | 0                                 | 2/1           | 0.50             | All          | 3.00                     | 2.00                       | 0.50 | 2                      | 3.00                          |

**Lane Input Data**

| Junction: North Hyde Road / Station Road |           |        |             |           |                       |               |                                   |                |          |               |       |                    |
|------------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------|--------------------|
| Lane                                     | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns | Turning Radius (m) |
| 1/1 (Station Road (N))                   | U         | C      | 2           | 3         | 60.0                  | User          | 1735                              | -              | -        | -             | -     | -                  |
| 1/2 (Station Road (N))                   | O         | C      | 2           | 3         | 60.0                  | User          | 1666                              | -              | -        | -             | -     | -                  |
| 2/1 (North Hyde Road (W))                | U         | A      | 2           | 3         | 60.0                  | User          | 1741                              | -              | -        | -             | -     | -                  |
| 2/2 (North Hyde Road (W))                | O         | A      | 2           | 3         | 6.0                   | User          | 1442                              | -              | -        | -             | -     | -                  |
| 3/1 (Station Road (S))                   | U         | D      | 2           | 3         | 60.0                  | User          | 1664                              | -              | -        | -             | -     | -                  |
| 3/2 (Station Road (S))                   | O         | D      | 2           | 3         | 7.0                   | User          | 1633                              | -              | -        | -             | -     | -                  |
| 4/1 (North Hyde Road (E))                | U         | B      | 2           | 3         | 60.0                  | User          | 1778                              | -              | -        | -             | -     | -                  |
| 4/2 (North Hyde Road (E))                | O         | B E    | 2           | 3         | 10.0                  | User          | 1683                              | -              | -        | -             | -     | -                  |

**Traffic Flow Groups**

| Flow Group                              | Start Time | End Time | Duration | Formula |
|-----------------------------------------|------------|----------|----------|---------|
| 1: '2022 AM TOVF improvements'          | 08:00      | 09:00    | 01:00    |         |
| 2: '2022 PM TOVF improvements'          | 17:00      | 18:00    | 01:00    |         |
| 3: '2022 AM TOVF improvements with UTC' | 08:00      | 09:00    | 01:00    |         |
| 4: '2022 PM TOVF improvements with UTC' | 17:00      | 18:00    | 01:00    |         |
| 5: '2022 AM TOVF with UTC sensitivity'  | 08:00      | 09:00    | 01:00    |         |
| 6: '2022 PM TOVF with UTC sensitivity'  | 17:00      | 18:00    | 01:00    |         |

**Scenario 1: '2022 AM Do Something TOVF improvements'** (FG1: '2022 AM TOVF improvements', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 169 | 419 | 166 | 754  |
|        | B           | 120 | 0   | 92  | 317 | 529  |
|        | C           | 329 | 105 | 0   | 152 | 586  |
|        | D           | 243 | 588 | 324 | 0   | 1155 |
|        | Tot.        | 692 | 862 | 835 | 635 | 3024 |

| Lane                                     | Scenario 1:<br>2022 AM Do Something<br>TOVF improvements |
|------------------------------------------|----------------------------------------------------------|
| Junction: North Hyde Road / Station Road |                                                          |
| 1/1                                      | 530                                                      |
| 1/2                                      | 224                                                      |
| 2/1<br>(with short)                      | 529(In)<br>293(Out)                                      |
| 2/2<br>(short)                           | 236                                                      |
| 3/1<br>(with short)                      | 586(In)<br>434(Out)                                      |
| 3/2<br>(short)                           | 152                                                      |
| 4/1<br>(with short)                      | 1155(In)<br>619(Out)                                     |
| 4/2<br>(short)                           | 536                                                      |
| 5/1                                      | 692                                                      |
| 6/1                                      | 569                                                      |
| 6/2                                      | 293                                                      |
| 7/1                                      | 835                                                      |
| 8/1                                      | 491                                                      |
| 8/2                                      | 144                                                      |

| Junction: North Hyde Road / Station Road |                                                   |          |               |               |                    |               |                   |                          |
|------------------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Station Road (N) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1735              | 1735                     |
| 1/2<br>(Station Road (N) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1666              | 1666                     |
| 2/1<br>(North Hyde Road (W) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1741              | 1741                     |
| 2/2<br>(North Hyde Road (W) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1442              | 1442                     |
| 3/1<br>(Station Road (S) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1664              | 1664                     |
| 3/2<br>(Station Road (S) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1633              | 1633                     |
| 4/1<br>(North Hyde Road (E) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1778              | 1778                     |
| 4/2<br>(North Hyde Road (E) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1683              | 1683                     |

**Scenario 2: '2022 PM Do Something TOVF improvements'** (FG2: '2022 PM TOVF improvements', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |     |     |      |      |
|--------|-------------|-----|-----|-----|------|------|
|        |             | A   | B   | C   | D    | Tot. |
|        | A           | 0   | 173 | 410 | 378  | 961  |
|        | B           | 153 | 0   | 58  | 510  | 721  |
|        | C           | 341 | 63  | 0   | 266  | 670  |
|        | D           | 190 | 420 | 272 | 0    | 882  |
|        | Tot.        | 684 | 656 | 740 | 1154 | 3234 |

**Traffic Lane Flows**

| Lane                                            | Scenario 2:<br>2022 PM Do Something<br>TOVF improvements |
|-------------------------------------------------|----------------------------------------------------------|
| <b>Junction: North Hyde Road / Station Road</b> |                                                          |
| 1/1                                             | 502                                                      |
| 1/2                                             | 459                                                      |
| 2/1<br>(with short)                             | 721(In)<br>493(Out)                                      |
| 2/2<br>(short)                                  | 228                                                      |
| 3/1<br>(with short)                             | 670(In)<br>404(Out)                                      |
| 3/2<br>(short)                                  | 266                                                      |
| 4/1<br>(with short)                             | 882(In)<br>491(Out)                                      |
| 4/2<br>(short)                                  | 391                                                      |
| 5/1                                             | 684                                                      |
| 6/1                                             | 455                                                      |
| 6/2                                             | 201                                                      |
| 7/1                                             | 740                                                      |
| 8/1                                             | 984                                                      |
| 8/2                                             | 170                                                      |

**Lane Saturation Flows**

| Junction: North Hyde Road / Station Road |                                                   |          |               |               |                    |               |                   |                          |
|------------------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Station Road (N) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1735              | 1735                     |
| 1/2<br>(Station Road (N) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1666              | 1666                     |
| 2/1<br>(North Hyde Road (W) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1741              | 1741                     |
| 2/2<br>(North Hyde Road (W) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1442              | 1442                     |
| 3/1<br>(Station Road (S) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1664              | 1664                     |
| 3/2<br>(Station Road (S) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1633              | 1633                     |
| 4/1<br>(North Hyde Road (E) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1778              | 1778                     |
| 4/2<br>(North Hyde Road (E) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1683              | 1683                     |

**Scenario 3: '2022 AM DS TOVF improvements with UTC'** (FG3: '2022 AM TOVF improvements with UTC', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
|        | A           | 0   | 169 | 425 | 177 | 771  |
|        | B           | 120 | 0   | 92  | 317 | 529  |
|        | C           | 337 | 105 | 0   | 152 | 594  |
|        | D           | 258 | 588 | 324 | 0   | 1170 |
|        | Tot.        | 715 | 862 | 841 | 646 | 3064 |

| Lane                                     | Scenario 3:<br>2022 AM DS TOVF<br>improvements with UTC |
|------------------------------------------|---------------------------------------------------------|
| Junction: North Hyde Road / Station Road |                                                         |
| 1/1                                      | 534                                                     |
| 1/2                                      | 237                                                     |
| 2/1<br>(with short)                      | 529(In)<br>293(Out)                                     |
| 2/2<br>(short)                           | 236                                                     |
| 3/1<br>(with short)                      | 594(In)<br>442(Out)                                     |
| 3/2<br>(short)                           | 152                                                     |
| 4/1<br>(with short)                      | 1170(In)<br>643(Out)                                    |
| 4/2<br>(short)                           | 527                                                     |
| 5/1                                      | 715                                                     |
| 6/1                                      | 593                                                     |
| 6/2                                      | 269                                                     |
| 7/1                                      | 841                                                     |
| 8/1                                      | 502                                                     |
| 8/2                                      | 144                                                     |

| Junction: North Hyde Road / Station Road |                                                   |          |               |               |                    |               |                   |                          |
|------------------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Station Road (N) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1735              | 1735                     |
| 1/2<br>(Station Road (N) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1666              | 1666                     |
| 2/1<br>(North Hyde Road (W) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1741              | 1741                     |
| 2/2<br>(North Hyde Road (W) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1442              | 1442                     |
| 3/1<br>(Station Road (S) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1664              | 1664                     |
| 3/2<br>(Station Road (S) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1633              | 1633                     |
| 4/1<br>(North Hyde Road (E) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1778              | 1778                     |
| 4/2<br>(North Hyde Road (E) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1683              | 1683                     |

**Scenario 4: '2022 PM DS TOVF improvements with UTC'** (FG4: '2022 PM TOVF improvements with UTC', Plan 1: 'Network Control Plan 1')

### Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination |     |     |     |      |      |
|--------|-------------|-----|-----|-----|------|------|
|        |             | A   | B   | C   | D    | Tot. |
|        | A           | 0   | 173 | 414 | 376  | 963  |
|        | B           | 153 | 0   | 58  | 510  | 721  |
|        | C           | 342 | 63  | 0   | 266  | 671  |
|        | D           | 182 | 420 | 272 | 0    | 874  |
|        | Tot.        | 677 | 656 | 744 | 1152 | 3229 |

### Traffic Lane Flows

| Lane                                            | Scenario 4:<br>2022 PM DS TOVF<br>improvements with UTC |
|-------------------------------------------------|---------------------------------------------------------|
| <b>Junction: North Hyde Road / Station Road</b> |                                                         |
| 1/1                                             | 502                                                     |
| 1/2                                             | 461                                                     |
| 2/1<br>(with short)                             | 721(In)<br>495(Out)                                     |
| 2/2<br>(short)                                  | 226                                                     |
| 3/1<br>(with short)                             | 671(In)<br>405(Out)                                     |
| 3/2<br>(short)                                  | 266                                                     |
| 4/1<br>(with short)                             | 874(In)<br>471(Out)                                     |
| 4/2<br>(short)                                  | 403                                                     |
| 5/1                                             | 677                                                     |
| 6/1                                             | 435                                                     |
| 6/2                                             | 221                                                     |
| 7/1                                             | 744                                                     |
| 8/1                                             | 984                                                     |
| 8/2                                             | 168                                                     |

**Lane Saturation Flows**

| Junction: North Hyde Road / Station Road |                                                   |          |               |               |                    |               |                   |                          |
|------------------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Station Road (N) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1735              | 1735                     |
| 1/2<br>(Station Road (N) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1666              | 1666                     |
| 2/1<br>(North Hyde Road (W) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1741              | 1741                     |
| 2/2<br>(North Hyde Road (W) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1442              | 1442                     |
| 3/1<br>(Station Road (S) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1664              | 1664                     |
| 3/2<br>(Station Road (S) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1633              | 1633                     |
| 4/1<br>(North Hyde Road (E) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1778              | 1778                     |
| 4/2<br>(North Hyde Road (E) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1683              | 1683                     |

**Scenario 5: '2022 AM Do Something TOVF sensitivity'** (FG5: '2022 AM TOVF with UTC sensitivity', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 169 | 429 | 185 | 783  |
|        | B           | 120 | 0   | 92  | 317 | 529  |
|        | C           | 342 | 105 | 0   | 152 | 599  |
|        | D           | 268 | 588 | 324 | 0   | 1180 |
|        | Tot.        | 730 | 862 | 845 | 654 | 3091 |

| Lane                                     | Scenario 5:<br>2022 AM Do<br>Something TOVF<br>sensitivity |
|------------------------------------------|------------------------------------------------------------|
| Junction: North Hyde Road / Station Road |                                                            |
| 1/1                                      | 541                                                        |
| 1/2                                      | 242                                                        |
| 2/1<br>(with short)                      | 529(In)<br>294(Out)                                        |
| 2/2<br>(short)                           | 235                                                        |
| 3/1<br>(with short)                      | 599(In)<br>447(Out)                                        |
| 3/2<br>(short)                           | 152                                                        |
| 4/1<br>(with short)                      | 1180(In)<br>646(Out)                                       |
| 4/2<br>(short)                           | 534                                                        |
| 5/1                                      | 730                                                        |
| 6/1                                      | 596                                                        |
| 6/2                                      | 266                                                        |
| 7/1                                      | 845                                                        |
| 8/1                                      | 511                                                        |
| 8/2                                      | 143                                                        |

| Junction: North Hyde Road / Station Road |                                                   |          |               |               |                    |               |                   |                          |
|------------------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Station Road (N) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1735              | 1735                     |
| 1/2<br>(Station Road (N) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1666              | 1666                     |
| 2/1<br>(North Hyde Road (W) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1741              | 1741                     |
| 2/2<br>(North Hyde Road (W) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1442              | 1442                     |
| 3/1<br>(Station Road (S) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1664              | 1664                     |
| 3/2<br>(Station Road (S) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1633              | 1633                     |
| 4/1<br>(North Hyde Road (E) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1778              | 1778                     |
| 4/2<br>(North Hyde Road (E) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1683              | 1683                     |

**Scenario 6: '2022 PM Do Something TOVF sensitivity'** (FG6: '2022 PM TOVF with UTC sensitivity', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

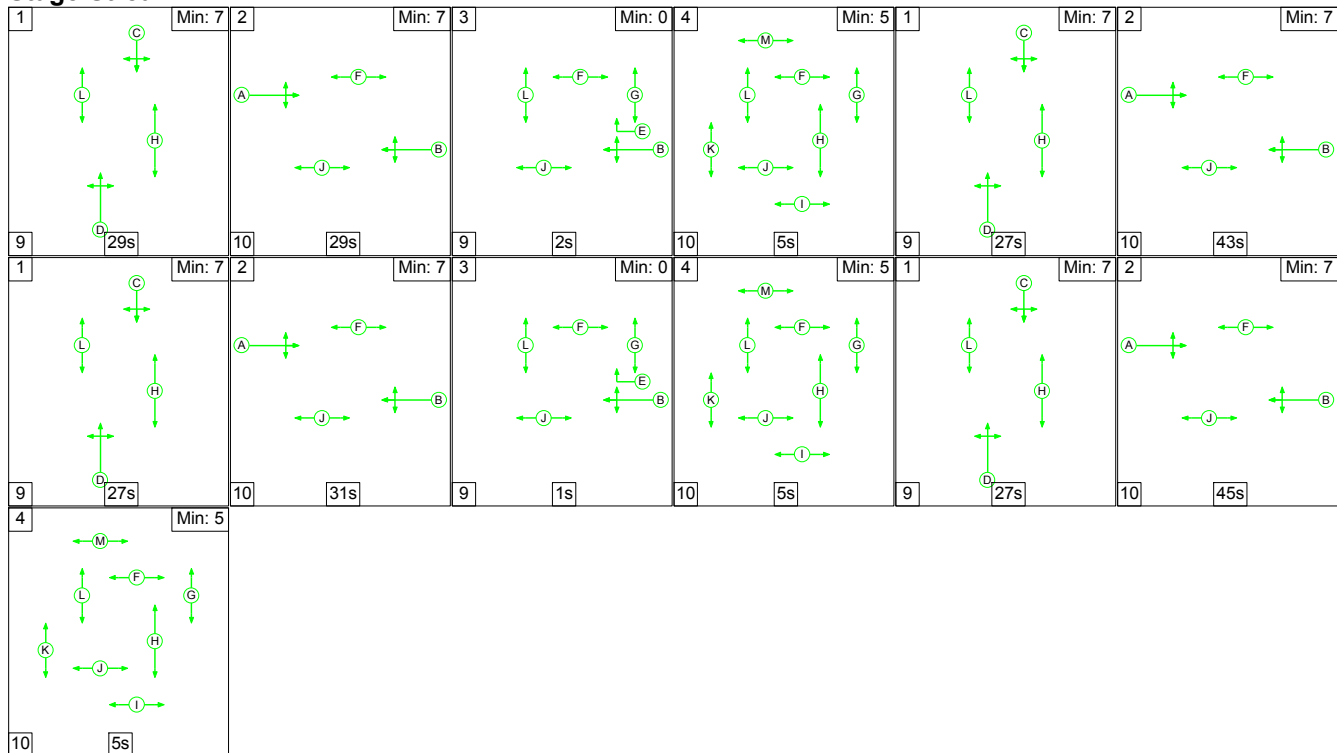
| Origin | Destination |     |     |     |      |      |
|--------|-------------|-----|-----|-----|------|------|
|        |             | A   | B   | C   | D    | Tot. |
|        | A           | 0   | 173 | 418 | 383  | 974  |
|        | B           | 153 | 0   | 58  | 510  | 721  |
|        | C           | 345 | 63  | 0   | 266  | 674  |
|        | D           | 188 | 420 | 272 | 0    | 880  |
|        | Tot.        | 686 | 656 | 748 | 1159 | 3249 |

**Traffic Lane Flows**

| Lane                                            | Scenario 6:<br>2022 PM Do<br>Something TOVF<br>sensitivity |
|-------------------------------------------------|------------------------------------------------------------|
| <b>Junction: North Hyde Road / Station Road</b> |                                                            |
| 1/1                                             | 496                                                        |
| 1/2                                             | 478                                                        |
| 2/1<br>(with short)                             | 721(In)<br>428(Out)                                        |
| 2/2<br>(short)                                  | 293                                                        |
| 3/1<br>(with short)                             | 674(In)<br>408(Out)                                        |
| 3/2<br>(short)                                  | 266                                                        |
| 4/1<br>(with short)                             | 880(In)<br>473(Out)                                        |
| 4/2<br>(short)                                  | 407                                                        |
| 5/1                                             | 686                                                        |
| 6/1                                             | 437                                                        |
| 6/2                                             | 219                                                        |
| 7/1                                             | 748                                                        |
| 8/1                                             | 924                                                        |
| 8/2                                             | 235                                                        |

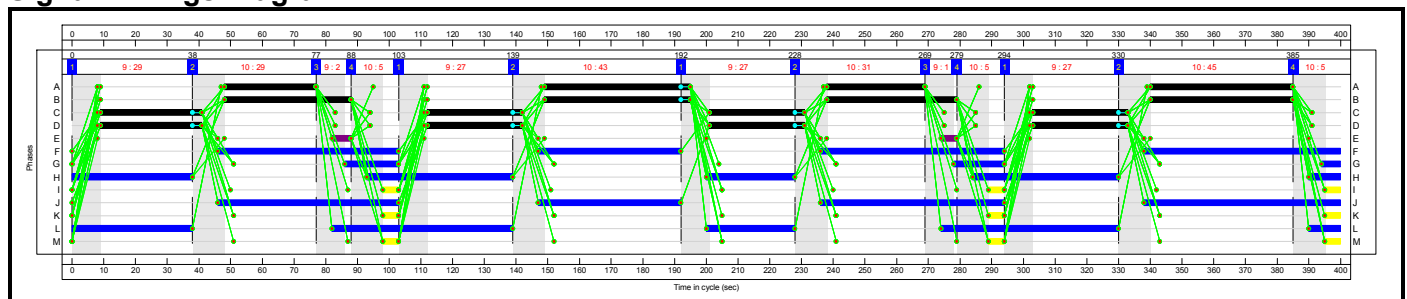
## Lane Saturation Flows

| Junction: North Hyde Road / Station Road |                                                   |          |               |               |                    |               |                   |                          |
|------------------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Station Road (N) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1735              | 1735                     |
| 1/2<br>(Station Road (N) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1666              | 1666                     |
| 2/1<br>(North Hyde Road (W) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1741              | 1741                     |
| 2/2<br>(North Hyde Road (W) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1442              | 1442                     |
| 3/1<br>(Station Road (S) Lane 1)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1664              | 1664                     |
| 3/2<br>(Station Road (S) Lane 2)         | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1633              | 1633                     |
| 4/1<br>(North Hyde Road (E) Lane 1)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1778              | 1778                     |
| 4/2<br>(North Hyde Road (E) Lane 2)      | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1683              | 1683                     |

**Scenario 1: '2022 AM Do Something TOVF improvements' (FG1: '2022 AM TOVF improvements', Plan 1: 'Network Control Plan 1')****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

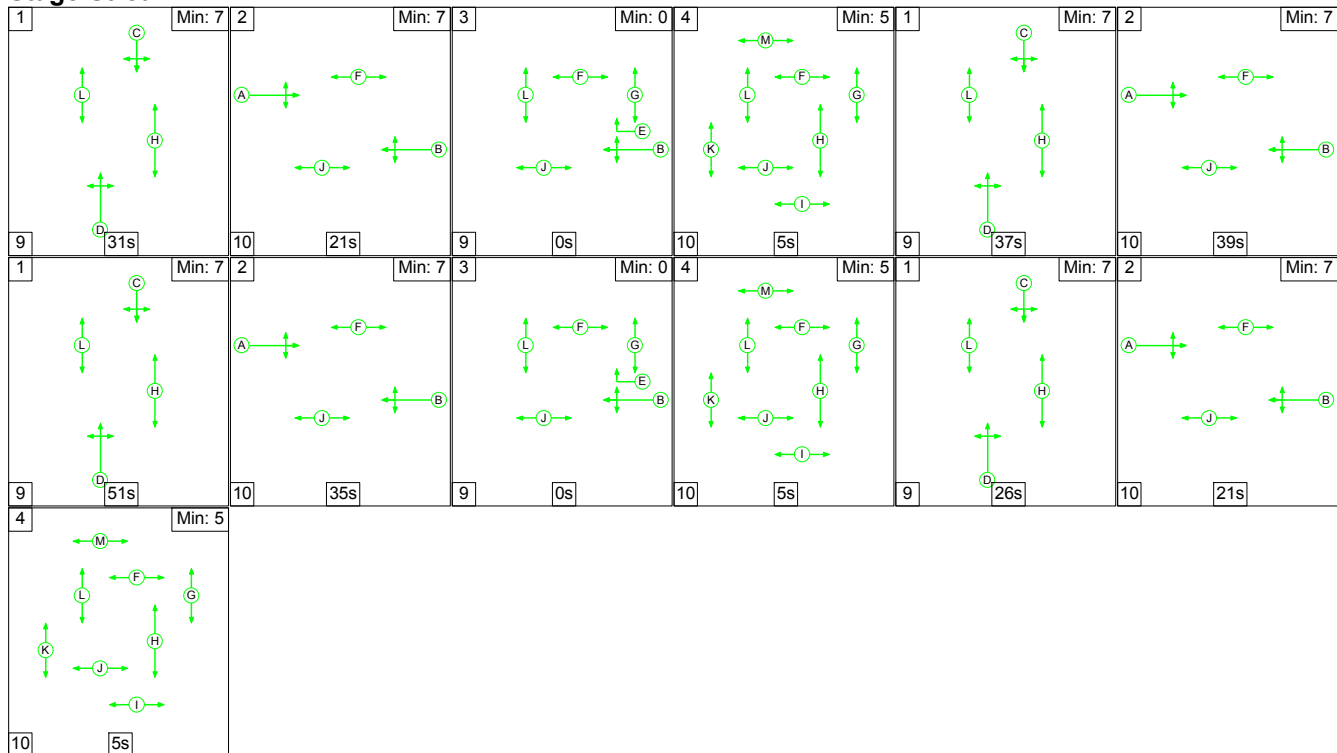
| Stage        | 1  | 2  | 3  | 4  | 1   | 2   | 1   | 2   | 3   | 4   |
|--------------|----|----|----|----|-----|-----|-----|-----|-----|-----|
| Duration     | 29 | 29 | 2  | 5  | 27  | 43  | 27  | 31  | 1   | 5   |
| Change Point | 0  | 38 | 77 | 88 | 103 | 139 | 192 | 228 | 269 | 279 |

| Stage        | 1   | 2   | 4   |  |  |  |  |  |  |  |
|--------------|-----|-----|-----|--|--|--|--|--|--|--|
| Duration     | 27  | 45  | 5   |  |  |  |  |  |  |  |
| Change Point | 294 | 330 | 385 |  |  |  |  |  |  |  |

**Signal Timings Diagram**

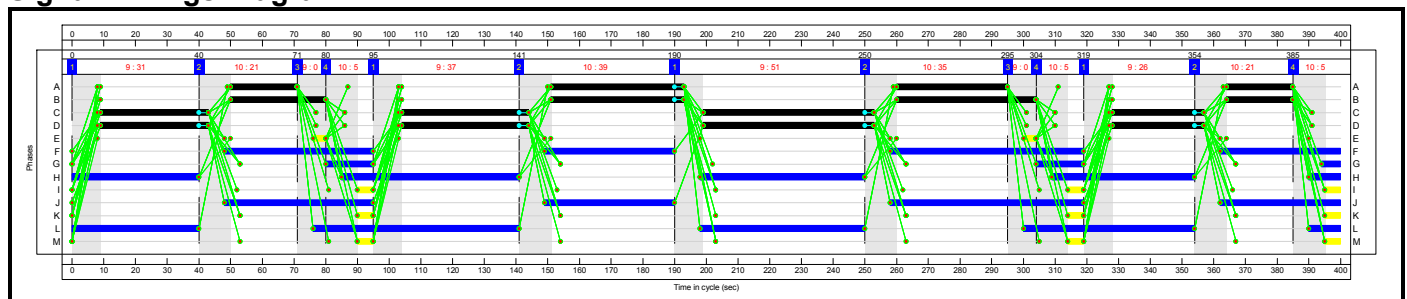
## Network Results

|    |                                        |       |                                          |        |                     |
|----|----------------------------------------|-------|------------------------------------------|--------|---------------------|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -18.0 | Total Delay for Signalled Lanes (pcuHr): | 103.14 | Cycle Time (s): 400 |
|    | PRC Over All Lanes (%):                | -18.0 | Total Delay Over All Lanes(pcuHr):       | 103.14 |                     |

**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

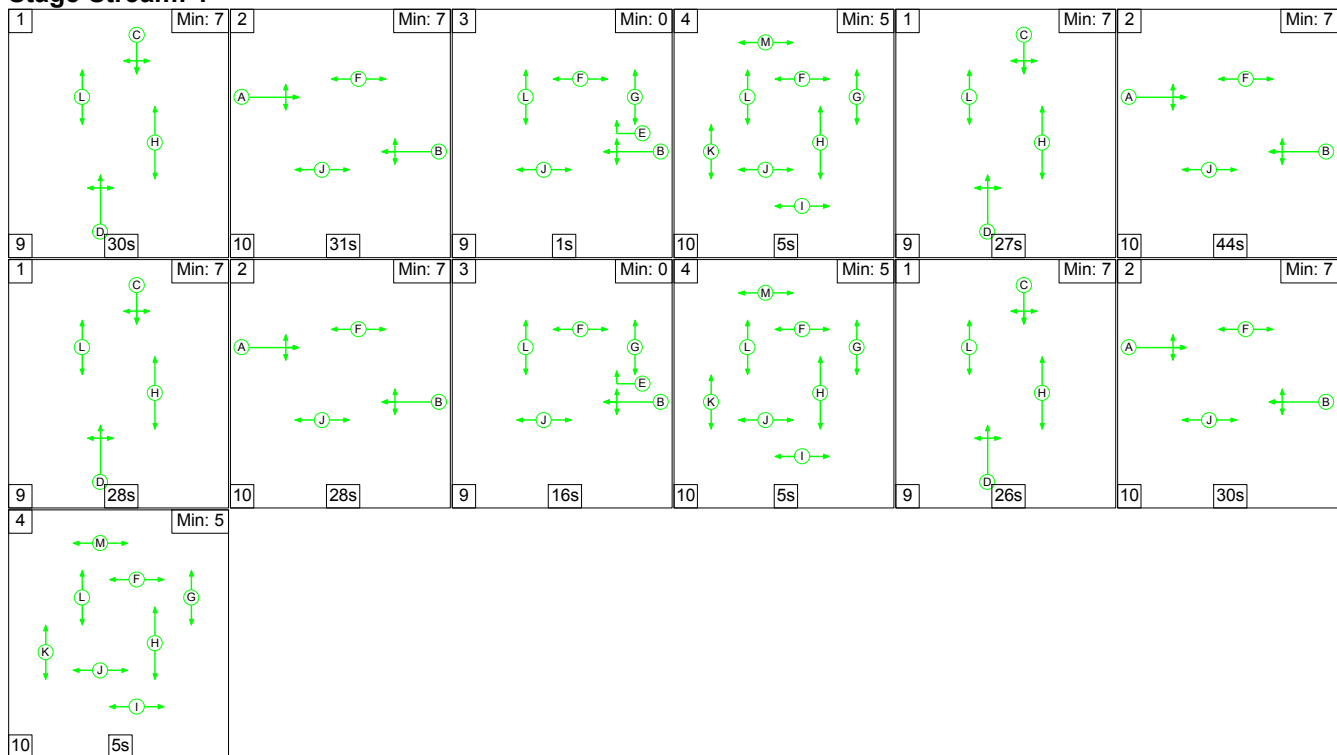
| Stage        | 1  | 2  | 3  | 4  | 1  | 2   | 1   | 2   | 3   | 4   |
|--------------|----|----|----|----|----|-----|-----|-----|-----|-----|
| Duration     | 31 | 21 | 0  | 5  | 37 | 39  | 51  | 35  | 0   | 5   |
| Change Point | 0  | 40 | 71 | 80 | 95 | 141 | 190 | 250 | 295 | 304 |

| Stage        | 1   | 2   | 4   |  |  |  |  |  |  |  |
|--------------|-----|-----|-----|--|--|--|--|--|--|--|
| Duration     | 26  | 21  | 5   |  |  |  |  |  |  |  |
| Change Point | 319 | 354 | 385 |  |  |  |  |  |  |  |

**Signal Timings Diagram**

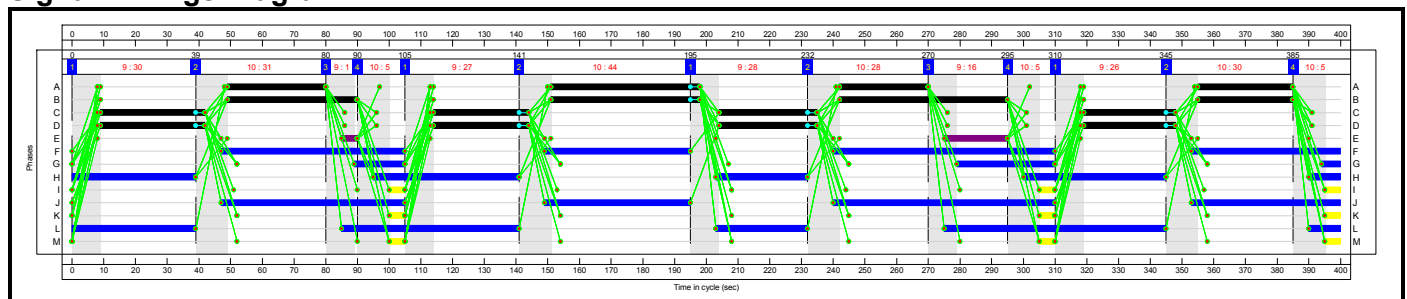
## Network Results

|    |                                        |       |                                          |        |                     |
|----|----------------------------------------|-------|------------------------------------------|--------|---------------------|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -28.7 | Total Delay for Signalled Lanes (pcuHr): | 152.64 | Cycle Time (s): 400 |
|    | PRC Over All Lanes (%):                | -28.7 | Total Delay Over All Lanes(pcuHr):       | 152.64 |                     |

**Scenario 3: '2022 AM DS TOVF improvements with UTC'** (FG3: '2022 AM TOVF improvements with UTC', Plan 1: 'Network Control Plan 1')**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

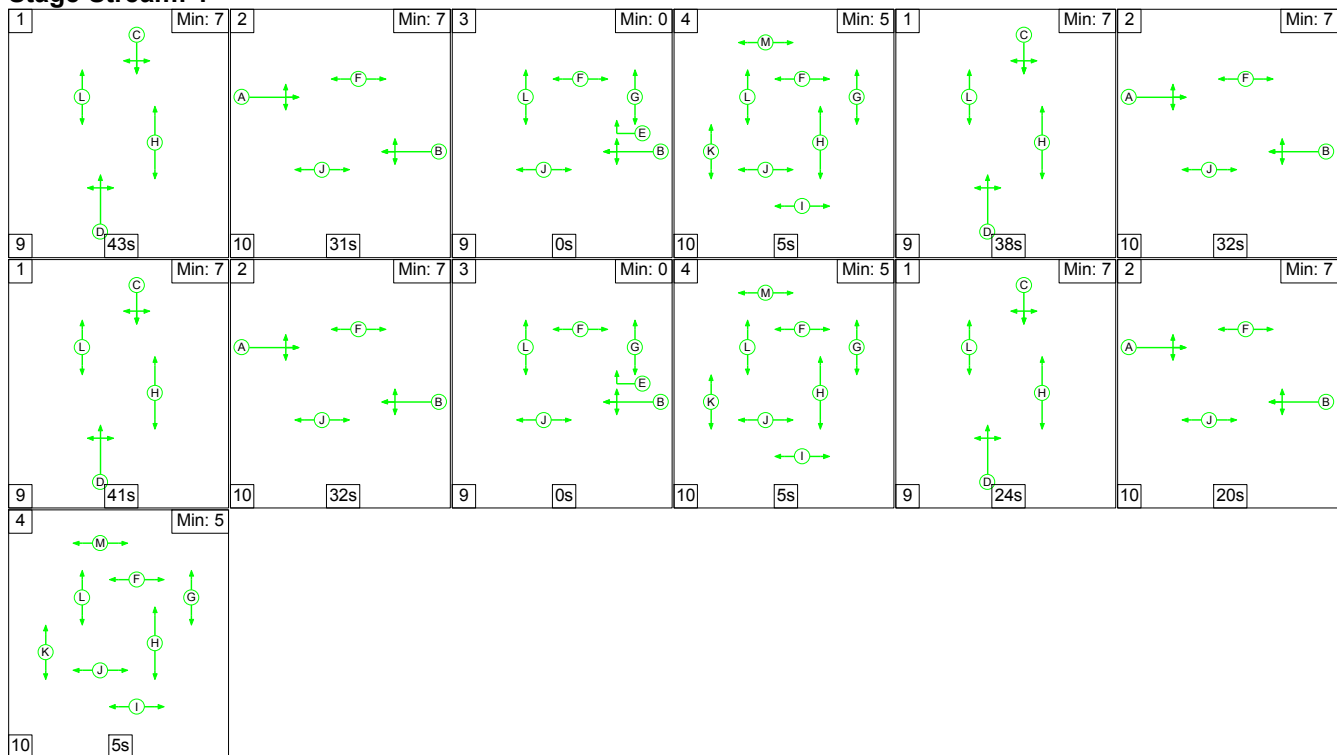
| Stage        | 1  | 2  | 3  | 4  | 1   | 2   | 1   | 2   | 3   | 4   |
|--------------|----|----|----|----|-----|-----|-----|-----|-----|-----|
| Duration     | 30 | 31 | 1  | 5  | 27  | 44  | 28  | 28  | 16  | 5   |
| Change Point | 0  | 39 | 80 | 90 | 105 | 141 | 195 | 232 | 270 | 295 |

| Stage        | 1   | 2   | 4   |  |  |  |  |  |  |  |
|--------------|-----|-----|-----|--|--|--|--|--|--|--|
| Duration     | 26  | 30  | 5   |  |  |  |  |  |  |  |
| Change Point | 310 | 345 | 385 |  |  |  |  |  |  |  |

**Signal Timings Diagram**

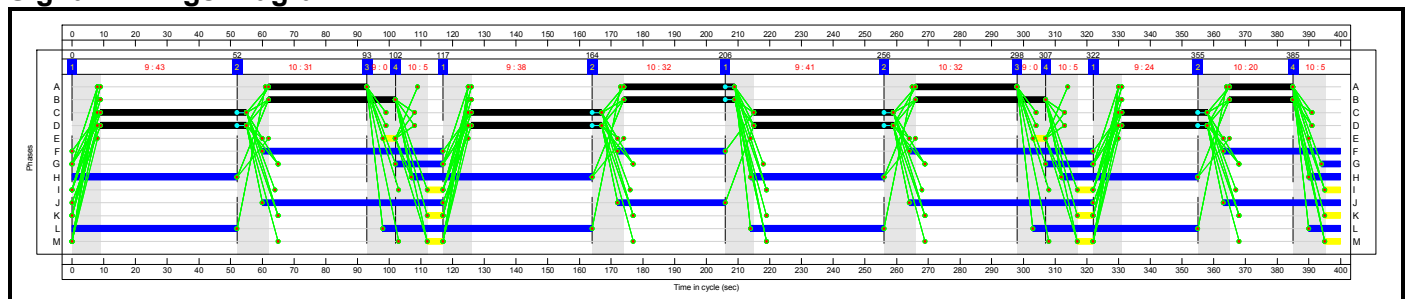
## Network Results

|    |                                        |       |                                          |        |                     |
|----|----------------------------------------|-------|------------------------------------------|--------|---------------------|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -21.9 | Total Delay for Signalled Lanes (pcuHr): | 130.57 | Cycle Time (s): 400 |
|    | PRC Over All Lanes (%):                | -21.9 | Total Delay Over All Lanes(pcuHr):       | 130.57 |                     |

**Scenario 4: '2022 PM DS TOVF improvements with UTC'** (FG4: '2022 PM TOVF improvements with UTC', Plan 1: 'Network Control Plan 1')**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

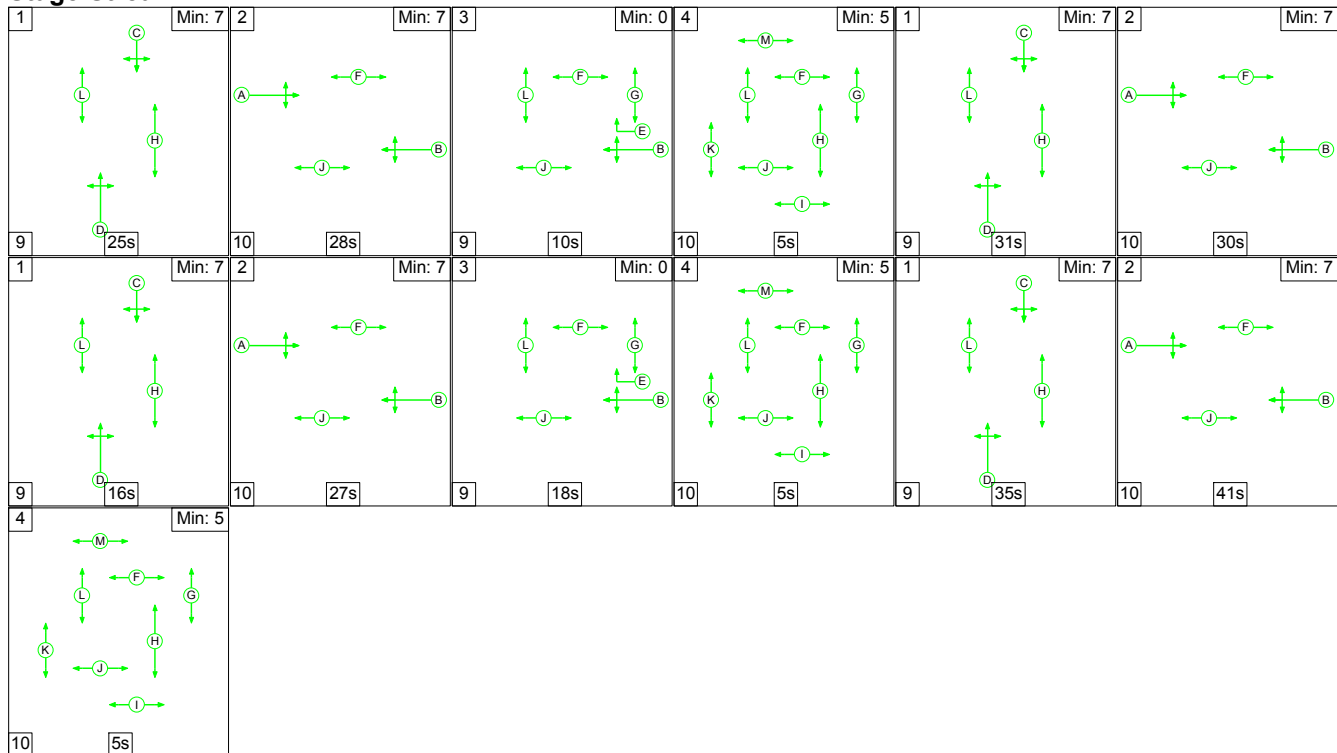
| Stage        | 1  | 2  | 3  | 4   | 1   | 2   | 1   | 2   | 3   | 4   |
|--------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| Duration     | 43 | 31 | 0  | 5   | 38  | 32  | 41  | 32  | 0   | 5   |
| Change Point | 0  | 52 | 93 | 102 | 117 | 164 | 206 | 256 | 298 | 307 |

| Stage        | 1   | 2   | 4   |  |  |  |  |  |  |  |
|--------------|-----|-----|-----|--|--|--|--|--|--|--|
| Duration     | 24  | 20  | 5   |  |  |  |  |  |  |  |
| Change Point | 322 | 355 | 385 |  |  |  |  |  |  |  |

**Signal Timings Diagram**

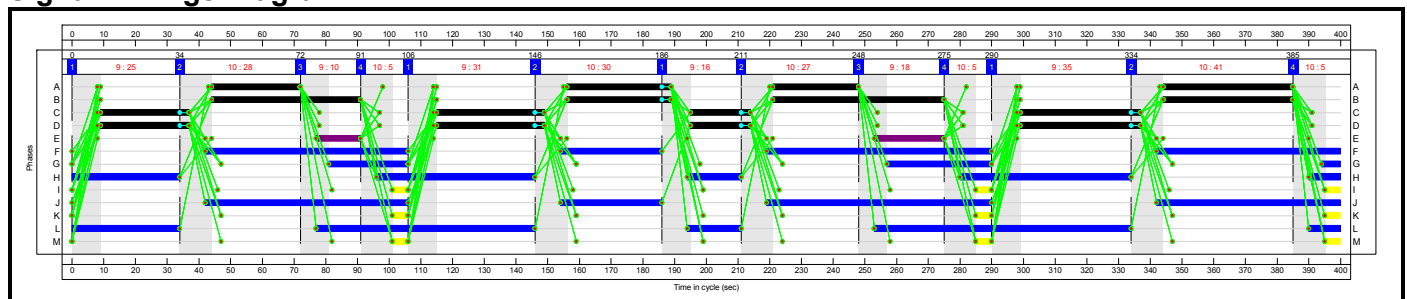
## Network Results

|    |                                        |       |                                          |        |                     |
|----|----------------------------------------|-------|------------------------------------------|--------|---------------------|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -29.8 | Total Delay for Signalled Lanes (pcuHr): | 148.63 | Cycle Time (s): 400 |
|    | PRC Over All Lanes (%):                | -29.8 | Total Delay Over All Lanes(pcuHr):       | 148.63 |                     |

**Scenario 5: '2022 AM Do Something TOVF sensitivity'** (FG5: '2022 AM TOVF with UTC sensitivity', Plan 1: 'Network Control Plan 1')**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

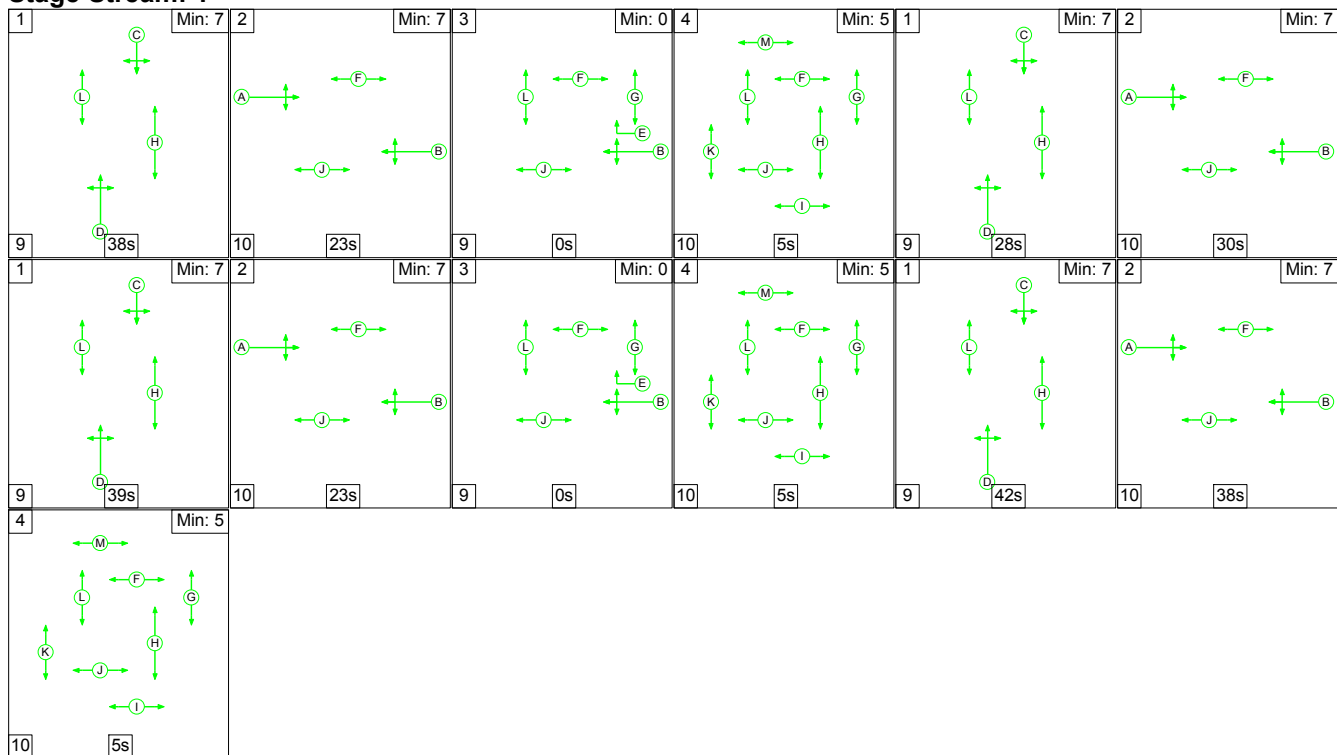
| Stage        | 1  | 2  | 3  | 4  | 1   | 2   | 1   | 2   | 3   | 4   |
|--------------|----|----|----|----|-----|-----|-----|-----|-----|-----|
| Duration     | 25 | 28 | 10 | 5  | 31  | 30  | 16  | 27  | 18  | 5   |
| Change Point | 0  | 34 | 72 | 91 | 106 | 146 | 186 | 211 | 248 | 275 |

| Stage        | 1   | 2   | 4   |  |  |  |  |  |  |  |
|--------------|-----|-----|-----|--|--|--|--|--|--|--|
| Duration     | 35  | 41  | 5   |  |  |  |  |  |  |  |
| Change Point | 290 | 334 | 385 |  |  |  |  |  |  |  |

**Signal Timings Diagram**

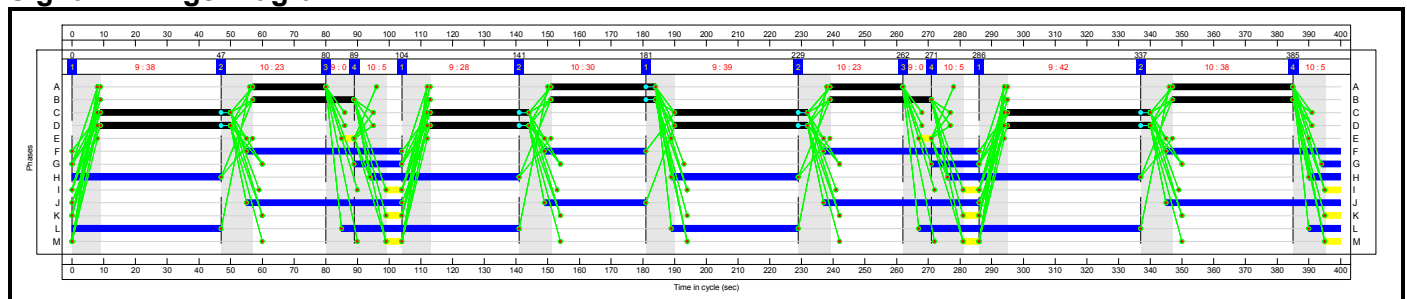
## Network Results

|    |                                        |       |                                          |        |                     |
|----|----------------------------------------|-------|------------------------------------------|--------|---------------------|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -20.7 | Total Delay for Signalled Lanes (pcuHr): | 142.24 | Cycle Time (s): 400 |
|    | PRC Over All Lanes (%):                | -20.7 | Total Delay Over All Lanes(pcuHr):       | 142.24 |                     |

**Scenario 6: '2022 PM Do Something TOVF sensitivity' (FG6: '2022 PM TOVF with UTC sensitivity', Plan 1: 'Network Control Plan 1')****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

| Stage        | 1  | 2  | 3  | 4  | 1   | 2   | 1   | 2   | 3   | 4   |
|--------------|----|----|----|----|-----|-----|-----|-----|-----|-----|
| Duration     | 38 | 23 | 0  | 5  | 28  | 30  | 39  | 23  | 0   | 5   |
| Change Point | 0  | 47 | 80 | 89 | 104 | 141 | 181 | 229 | 262 | 271 |

| Stage        | 1   | 2   | 4   |  |  |  |  |  |  |  |
|--------------|-----|-----|-----|--|--|--|--|--|--|--|
| Duration     | 42  | 38  | 5   |  |  |  |  |  |  |  |
| Change Point | 286 | 337 | 385 |  |  |  |  |  |  |  |

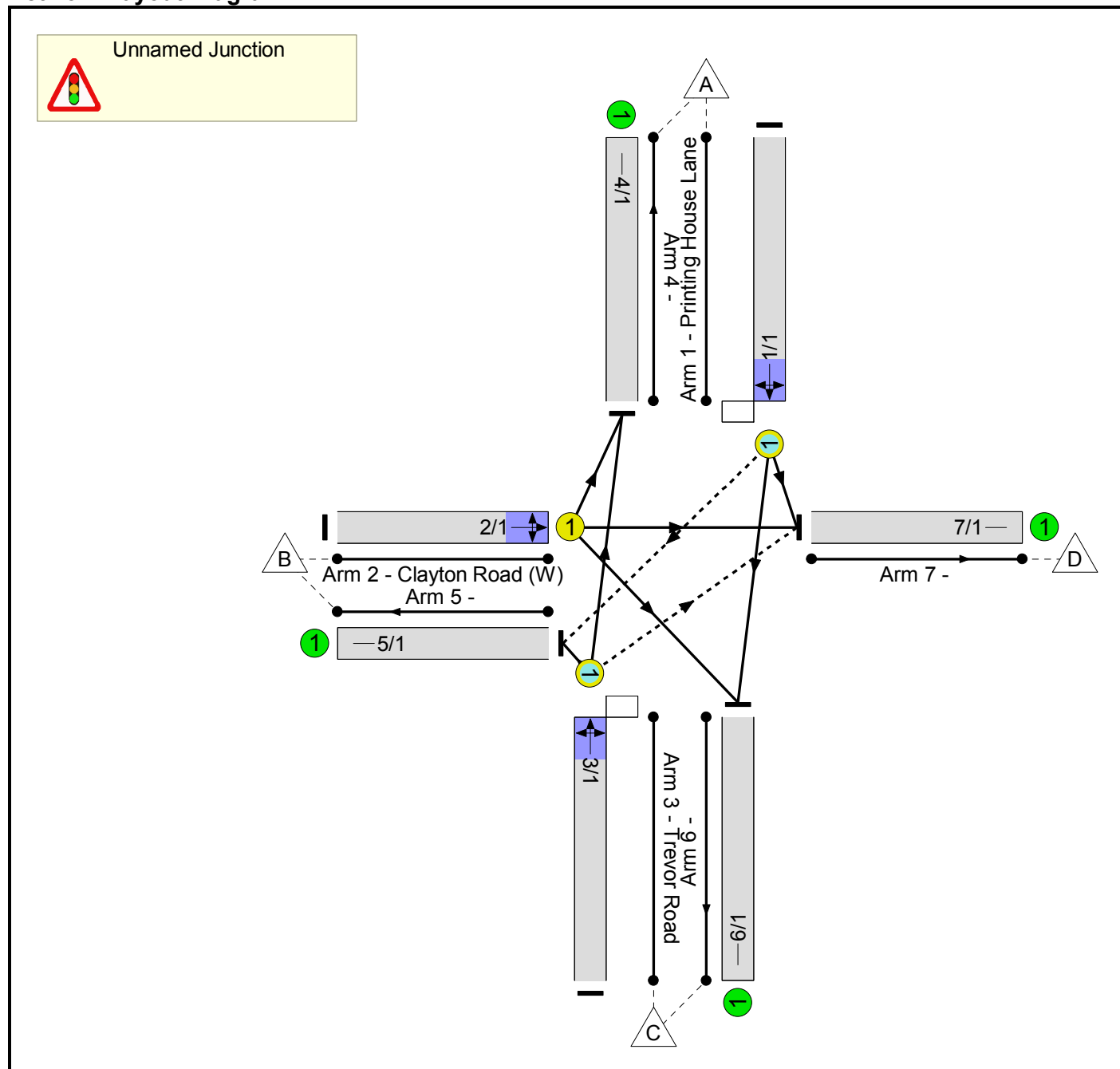
**Signal Timings Diagram**

## Network Results

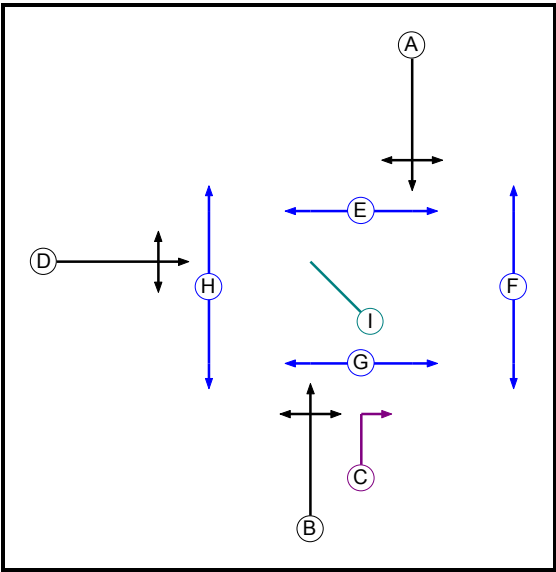
|    |                                        |       |                                          |        |                     |
|----|----------------------------------------|-------|------------------------------------------|--------|---------------------|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -22.0 | Total Delay for Signalled Lanes (pcuHr): | 117.06 | Cycle Time (s): 400 |
|    | PRC Over All Lanes (%):                | -22.0 | Total Delay Over All Lanes(pcuHr):       | 117.06 |                     |

Full Input Data And Results  
Full Input Data And Results

Network Layout Diagram



Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|--------------|------------|----------|
| A          | Traffic    | 1            |              | 7          | 7        |
| B          | Traffic    | 1            |              | 7          | 7        |
| C          | Ind. Arrow | 1            | B            | 4          | 4        |
| D          | Traffic    | 1            |              | 7          | 7        |
| E          | Pedestrian | 1            |              | 5          | 5        |
| F          | Pedestrian | 1            |              | 5          | 5        |
| G          | Pedestrian | 1            |              | 5          | 5        |
| H          | Pedestrian | 1            |              | 5          | 5        |
| I          | Dummy      | 1            |              | 7          | 7        |

Phase Intergreens Matrix

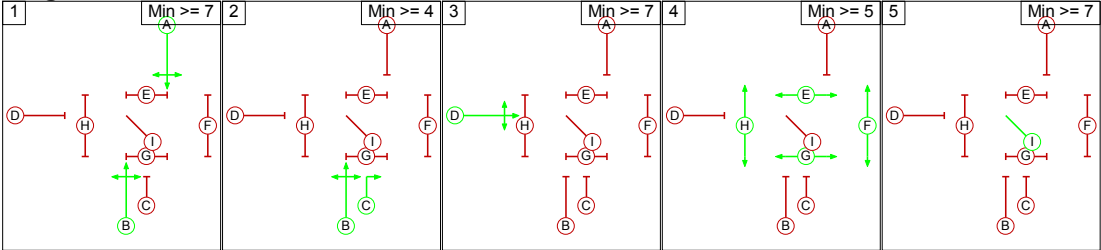
| Terminating<br>Phase | Starting Phase |   |   |   |   |   |   |   |   |   |
|----------------------|----------------|---|---|---|---|---|---|---|---|---|
|                      |                | A | B | C | D | E | F | G | H | I |
|                      | A              |   | - | 4 | 5 | 6 | 8 | 8 | 8 | 3 |
|                      | B              | - |   | - | 5 | 8 | 8 | 6 | 7 | 3 |
|                      | C              | 8 | - |   | 5 | - | 8 | 6 | - | 3 |
|                      | D              | 6 | 6 | 5 |   | 7 | 8 | 8 | 5 | 3 |
|                      | E              | 8 | 6 | - | 6 |   | - | - | - | 4 |
|                      | F              | 6 | 6 | 6 | 5 | - |   | - | - | 4 |
|                      | G              | 6 | 8 | 8 | 7 | - | - |   | - | 4 |
|                      | H              | 6 | 7 | - | 9 | - | - | - |   | 4 |
|                      | I              | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |   |

Phases in Stage

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

Stage Diagram

Stage Stream: 1



Phase Delays

Stage Stream: 1

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

Prohibited Stage Change  
Stage Stream: 1

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

Give-Way Lane Input Data

| Junction: Unnamed Junction |             |                                   |                                   |               |                  |                                 |                          |                            |      |                        |                               |
|----------------------------|-------------|-----------------------------------|-----------------------------------|---------------|------------------|---------------------------------|--------------------------|----------------------------|------|------------------------|-------------------------------|
| Lane                       | Movement    | Max Flow when Giving Way (PCU/Hr) | Min Flow when Giving Way (PCU/Hr) | Opposing Lane | Opp. Lane Coeff. | Opp. Mvmnts.                    | Right Turn Storage (PCU) | Non-Blocking Storage (PCU) | RTF  | Right Turn Move up (s) | Max Turns in Intergreen (PCU) |
| 1/1 (Printing House Lane)  | 5/1 (Right) | 1439                              | 0                                 | 3/1           | 1.09             | To 4/1 (Ahead)<br>To 5/1 (Left) | 1.00                     | 1.00                       | 0.50 | 1                      | 2.00                          |
| 3/1 (Trevor Road)          | 7/1 (Right) | 1439                              | 0                                 | 1/1           | 1.09             | To 6/1 (Ahead)<br>To 7/1 (Left) | 1.00                     | 1.00                       | 0.50 | 1                      | 2.00                          |

**Lane Input Data**

| Junction: Unnamed Junction   |           |        |             |           |                       |               |                                   |                |          |               |             |                    |
|------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| Lane                         | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns       | Turning Radius (m) |
| 1/1<br>(Printing House Lane) | O         | A      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.65           | 0.00     | Y             | Arm 5 Right | 10.00              |
|                              |           |        |             |           |                       |               |                                   |                |          |               | Arm 6 Ahead | Inf                |
|                              |           |        |             |           |                       |               |                                   |                |          |               | Arm 7 Left  | 12.00              |
| 2/1<br>(Clayton Road (W))    | U         | D      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.80           | 0.00     | Y             | Arm 4 Left  | 12.00              |
|                              |           |        |             |           |                       |               |                                   |                |          |               | Arm 6 Right | 15.00              |
|                              |           |        |             |           |                       |               |                                   |                |          |               | Arm 7 Ahead | Inf                |
| 3/1<br>(Trevor Road)         | O         | B C    | 2           | 3         | 60.0                  | Geom          | -                                 | 3.65           | 0.00     | Y             | Arm 4 Ahead | Inf                |
|                              |           |        |             |           |                       |               |                                   |                |          |               | Arm 5 Left  | 12.00              |
|                              |           |        |             |           |                       |               |                                   |                |          |               | Arm 7 Right | 10.00              |

**Traffic Flow Groups**

| Flow Group                                          | Start Time | End Time | Duration | Formula |
|-----------------------------------------------------|------------|----------|----------|---------|
| 1: '2020 AM Do Something TOVW'                      | 08:00      | 09:00    | 01:00    |         |
| 2: '2020 AM Do Something TOVW with UTC'             | 08:00      | 09:00    | 01:00    |         |
| 3: '2020 PM Do Something TOVW'                      | 17:00      | 18:00    | 01:00    |         |
| 4: '2020 PM Do Something TOVW with UTC'             | 17:00      | 18:00    | 01:00    |         |
| 5: '2020 AM Do Something TOVW with UTC sensitivity' | 08:00      | 09:00    | 01:00    |         |
| 6: '2020 AM Do Something TOVW with UTC sensitivity' | 17:00      | 18:00    | 01:00    |         |

**Scenario 1: '2020 AM Do Something TOVW'** (FG1: '2020 AM Do Something TOVW', Plan 2: '1,4,1,3')

**Traffic Flows, Desired**

**Desired Flow :**

|        | Destination |     |    |     |     |      |
|--------|-------------|-----|----|-----|-----|------|
|        |             | A   | B  | C   | D   | Tot. |
| Origin | A           | 0   | 17 | 420 | 420 | 857  |
|        | B           | 5   | 0  | 3   | 3   | 11   |
|        | C           | 470 | 36 | 0   | 239 | 745  |
|        | D           | 0   | 0  | 0   | 0   | 0    |
|        | Tot.        | 475 | 53 | 423 | 662 | 1613 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                       | Scenario 1:<br>2020 AM Do<br>Something TOVW |
|----------------------------|---------------------------------------------|
| Junction: Unnamed Junction |                                             |
| 1/1                        | 857                                         |
| 2/1                        | 11                                          |
| 3/1                        | 745                                         |
| 4/1                        | 475                                         |
| 5/1                        | 53                                          |
| 6/1                        | 423                                         |
| 7/1                        | 662                                         |

### Lane Saturation Flows

| Junction: Unnamed Junction   |                |          |               |               |                    |               |                   |                          |
|------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Printing House Lane) | 3.65           | 0.00     | Y             | Arm 5 Right   | 10.00              | 2.0 %         | 1860              | 1860                     |
|                              |                |          |               | Arm 6 Ahead   | Inf                | 49.0 %        |                   |                          |
|                              |                |          |               | Arm 7 Left    | 12.00              | 49.0 %        |                   |                          |
| 2/1<br>(Clayton Road (W))    | 3.80           | 0.00     | Y             | Arm 4 Left    | 12.00              | 45.5 %        | 1840              | 1840                     |
|                              |                |          |               | Arm 6 Right   | 15.00              | 27.3 %        |                   |                          |
|                              |                |          |               | Arm 7 Ahead   | Inf                | 27.3 %        |                   |                          |
| 3/1<br>(Trevor Road)         | 3.65           | 0.00     | Y             | Arm 4 Ahead   | Inf                | 63.1 %        | 1878              | 1878                     |
|                              |                |          |               | Arm 5 Left    | 12.00              | 4.8 %         |                   |                          |
|                              |                |          |               | Arm 7 Right   | 10.00              | 32.1 %        |                   |                          |

**Scenario 2: '2020 AM DS TOVW with UTC'** (FG2: '2020 AM Do Something TOVW with UTC', Plan 2: '1,4,1,3')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |     |    |     |     |      |
|--------|-------------|-----|----|-----|-----|------|
|        |             | A   | B  | C   | D   | Tot. |
| Origin | A           | 0   | 17 | 425 | 453 | 895  |
|        | B           | 5   | 0  | 3   | 3   | 11   |
|        | C           | 482 | 36 | 0   | 278 | 796  |
|        | D           | 0   | 0  | 0   | 0   | 0    |
|        | Tot.        | 487 | 53 | 428 | 734 | 1702 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                       | Scenario 2:<br>2020 AM DS TOVW<br>with UTC |
|----------------------------|--------------------------------------------|
| Junction: Unnamed Junction |                                            |
| 1/1                        | 895                                        |
| 2/1                        | 11                                         |
| 3/1                        | 796                                        |
| 4/1                        | 487                                        |
| 5/1                        | 53                                         |
| 6/1                        | 428                                        |
| 7/1                        | 734                                        |

### Lane Saturation Flows

| Junction: Unnamed Junction   |                |          |               |               |                    |               |                   |                          |
|------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Printing House Lane) | 3.65           | 0.00     | Y             | Arm 5 Right   | 10.00              | 1.9 %         | 1857              | 1857                     |
|                              |                |          |               | Arm 6 Ahead   | Inf                | 47.5 %        |                   |                          |
|                              |                |          |               | Arm 7 Left    | 12.00              | 50.6 %        |                   |                          |
| 2/1<br>(Clayton Road (W))    | 3.80           | 0.00     | Y             | Arm 4 Left    | 12.00              | 45.5 %        | 1840              | 1840                     |
|                              |                |          |               | Arm 6 Right   | 15.00              | 27.3 %        |                   |                          |
|                              |                |          |               | Arm 7 Ahead   | Inf                | 27.3 %        |                   |                          |
| 3/1<br>(Trevor Road)         | 3.65           | 0.00     | Y             | Arm 4 Ahead   | Inf                | 60.6 %        | 1871              | 1871                     |
|                              |                |          |               | Arm 5 Left    | 12.00              | 4.5 %         |                   |                          |
|                              |                |          |               | Arm 7 Right   | 10.00              | 34.9 %        |                   |                          |

### Scenario 3: '2020 PM Do Something TOVW' (FG3: '2020 PM Do Something TOVW', Plan 2: '1,4,1,3')

#### Traffic Flows, Desired

##### Desired Flow :

|        | Destination |     |    |     |     |      |
|--------|-------------|-----|----|-----|-----|------|
|        |             | A   | B  | C   | D   | Tot. |
| Origin | A           | 0   | 1  | 257 | 277 | 535  |
|        | B           | 10  | 0  | 25  | 15  | 50   |
|        | C           | 699 | 22 | 0   | 300 | 1021 |
|        | D           | 0   | 0  | 0   | 0   | 0    |
|        | Tot.        | 709 | 23 | 282 | 592 | 1606 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                       | Scenario 3:<br>2020 PM Do<br>Something TOVW |
|----------------------------|---------------------------------------------|
| Junction: Unnamed Junction |                                             |
| 1/1                        | 535                                         |
| 2/1                        | 50                                          |
| 3/1                        | 1021                                        |
| 4/1                        | 709                                         |
| 5/1                        | 23                                          |
| 6/1                        | 282                                         |
| 7/1                        | 592                                         |

### Lane Saturation Flows

| Junction: Unnamed Junction   |                |          |               |               |                    |               |                   |                          |
|------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Printing House Lane) | 3.65           | 0.00     | Y             | Arm 5 Right   | 10.00              | 0.2 %         | 1859              | 1859                     |
|                              |                |          |               | Arm 6 Ahead   | Inf                | 48.0 %        |                   |                          |
|                              |                |          |               | Arm 7 Left    | 12.00              | 51.8 %        |                   |                          |
| 2/1<br>(Clayton Road (W))    | 3.80           | 0.00     | Y             | Arm 4 Left    | 12.00              | 20.0 %        | 1856              | 1856                     |
|                              |                |          |               | Arm 6 Right   | 15.00              | 50.0 %        |                   |                          |
|                              |                |          |               | Arm 7 Ahead   | Inf                | 30.0 %        |                   |                          |
| 3/1<br>(Trevor Road)         | 3.65           | 0.00     | Y             | Arm 4 Ahead   | Inf                | 68.5 %        | 1892              | 1892                     |
|                              |                |          |               | Arm 5 Left    | 12.00              | 2.2 %         |                   |                          |
|                              |                |          |               | Arm 7 Right   | 10.00              | 29.4 %        |                   |                          |

**Scenario 4: '2020 PM DS TOVW with UTC'** (FG4: '2020 PM Do Something TOVW with UTC', Plan 2: '1,4,1,3')

### Traffic Flows, Desired

#### Desired Flow :

|        | Destination |     |    |     |     |      |
|--------|-------------|-----|----|-----|-----|------|
|        |             | A   | B  | C   | D   | Tot. |
| Origin | A           | 0   | 1  | 242 | 301 | 544  |
|        | B           | 10  | 0  | 25  | 15  | 50   |
|        | C           | 699 | 22 | 0   | 333 | 1054 |
|        | D           | 0   | 0  | 0   | 0   | 0    |
|        | Tot.        | 709 | 23 | 267 | 649 | 1648 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                       | Scenario 4:<br>2020 PM DS TOVW<br>with UTC |
|----------------------------|--------------------------------------------|
| Junction: Unnamed Junction |                                            |
| 1/1                        | 544                                        |
| 2/1                        | 50                                         |
| 3/1                        | 1054                                       |
| 4/1                        | 709                                        |
| 5/1                        | 23                                         |
| 6/1                        | 267                                        |
| 7/1                        | 649                                        |

### Lane Saturation Flows

| Junction: Unnamed Junction   |                |          |               |               |                    |               |                   |                          |
|------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Printing House Lane) | 3.65           | 0.00     | Y             | Arm 5 Right   | 10.00              | 0.2 %         | 1851              | 1851                     |
|                              |                |          |               | Arm 6 Ahead   | Inf                | 44.5 %        |                   |                          |
|                              |                |          |               | Arm 7 Left    | 12.00              | 55.3 %        |                   |                          |
| 2/1<br>(Clayton Road (W))    | 3.80           | 0.00     | Y             | Arm 4 Left    | 12.00              | 20.0 %        | 1856              | 1856                     |
|                              |                |          |               | Arm 6 Right   | 15.00              | 50.0 %        |                   |                          |
|                              |                |          |               | Arm 7 Ahead   | Inf                | 30.0 %        |                   |                          |
| 3/1<br>(Trevor Road)         | 3.65           | 0.00     | Y             | Arm 4 Ahead   | Inf                | 66.3 %        | 1886              | 1886                     |
|                              |                |          |               | Arm 5 Left    | 12.00              | 2.1 %         |                   |                          |
|                              |                |          |               | Arm 7 Right   | 10.00              | 31.6 %        |                   |                          |

**Scenario 5: '2020 AM DS TOVW with UTC sensitivity'** (FG5: '2020 AM Do Something TOVW with UTC sensitivity', Plan 2: '1,4,1,3')

### Traffic Flows, Desired

#### Desired Flow :

| Crosstabs: Row 1 |             |     |    |     |     |      |
|------------------|-------------|-----|----|-----|-----|------|
|                  | Destination |     |    |     |     |      |
| Origin           |             | A   | B  | C   | D   | Tot. |
|                  | A           | 0   | 17 | 426 | 477 | 920  |
|                  | B           | 5   | 0  | 3   | 3   | 11   |
|                  | C           | 491 | 36 | 0   | 309 | 836  |
|                  | D           | 0   | 0  | 0   | 0   | 0    |
|                  | Tot.        | 496 | 53 | 429 | 789 | 1767 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                       | Scenario 5:<br>2020 AM DS TOVW<br>with UTC<br>sensitivity |
|----------------------------|-----------------------------------------------------------|
| Junction: Unnamed Junction |                                                           |
| 1/1                        | 920                                                       |
| 2/1                        | 11                                                        |
| 3/1                        | 836                                                       |
| 4/1                        | 496                                                       |
| 5/1                        | 53                                                        |
| 6/1                        | 429                                                       |
| 7/1                        | 789                                                       |

### Lane Saturation Flows

| Junction: Unnamed Junction   |                |          |               |               |                    |               |                   |                          |
|------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Printing House Lane) | 3.65           | 0.00     | Y             | Arm 5 Right   | 10.00              | 1.8 %         | 1855              | 1855                     |
|                              |                |          |               | Arm 6 Ahead   | Inf                | 46.3 %        |                   |                          |
|                              |                |          |               | Arm 7 Left    | 12.00              | 51.8 %        |                   |                          |
| 2/1<br>(Clayton Road (W))    | 3.80           | 0.00     | Y             | Arm 4 Left    | 12.00              | 45.5 %        | 1840              | 1840                     |
|                              |                |          |               | Arm 6 Right   | 15.00              | 27.3 %        |                   |                          |
|                              |                |          |               | Arm 7 Ahead   | Inf                | 27.3 %        |                   |                          |
| 3/1<br>(Trevor Road)         | 3.65           | 0.00     | Y             | Arm 4 Ahead   | Inf                | 58.7 %        | 1866              | 1866                     |
|                              |                |          |               | Arm 5 Left    | 12.00              | 4.3 %         |                   |                          |
|                              |                |          |               | Arm 7 Right   | 10.00              | 37.0 %        |                   |                          |

**Scenario 6: '2020 PM DS TOVW with UTC sensitivity'** (FG6: '2020 AM Do Something TOVW with UTC sensitivity', Plan 2: '1,4,1,3')

### Traffic Flows, Desired

#### Desired Flow :

|        |      | Destination |    |     |     |      |
|--------|------|-------------|----|-----|-----|------|
| Origin |      | A           | B  | C   | D   | Tot. |
|        | A    | 0           | 1  | 257 | 320 | 578  |
|        | B    | 10          | 0  | 25  | 15  | 50   |
|        | C    | 721         | 22 | 0   | 361 | 1104 |
|        | D    | 0           | 0  | 0   | 0   | 0    |
|        | Tot. | 731         | 23 | 282 | 696 | 1732 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                       | Scenario 6:<br>2020 PM DS TOVW<br>with UTC<br>sensitivity |
|----------------------------|-----------------------------------------------------------|
| Junction: Unnamed Junction |                                                           |
| 1/1                        | 578                                                       |
| 2/1                        | 50                                                        |
| 3/1                        | 1104                                                      |
| 4/1                        | 731                                                       |
| 5/1                        | 23                                                        |
| 6/1                        | 282                                                       |
| 7/1                        | 696                                                       |

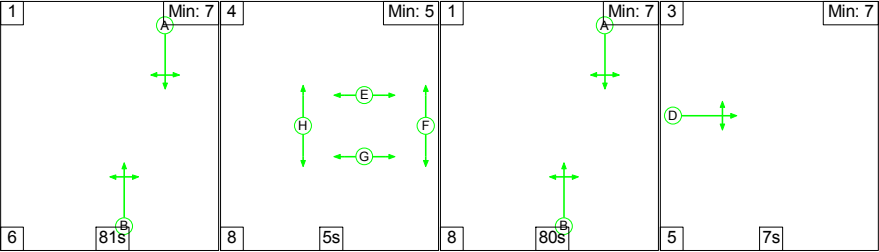
### Lane Saturation Flows

| Junction: Unnamed Junction   |                |          |               |               |                    |               |                   |                          |
|------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Printing House Lane) | 3.65           | 0.00     | Y             | Arm 5 Right   | 10.00              | 0.2 %         | 1851              | 1851                     |
|                              |                |          |               | Arm 6 Ahead   | Inf                | 44.5 %        |                   |                          |
|                              |                |          |               | Arm 7 Left    | 12.00              | 55.4 %        |                   |                          |
| 2/1<br>(Clayton Road (W))    | 3.80           | 0.00     | Y             | Arm 4 Left    | 12.00              | 20.0 %        | 1856              | 1856                     |
|                              |                |          |               | Arm 6 Right   | 15.00              | 50.0 %        |                   |                          |
|                              |                |          |               | Arm 7 Ahead   | Inf                | 30.0 %        |                   |                          |
| 3/1<br>(Trevor Road)         | 3.65           | 0.00     | Y             | Arm 4 Ahead   | Inf                | 65.3 %        | 1883              | 1883                     |
|                              |                |          |               | Arm 5 Left    | 12.00              | 2.0 %         |                   |                          |
|                              |                |          |               | Arm 7 Right   | 10.00              | 32.7 %        |                   |                          |

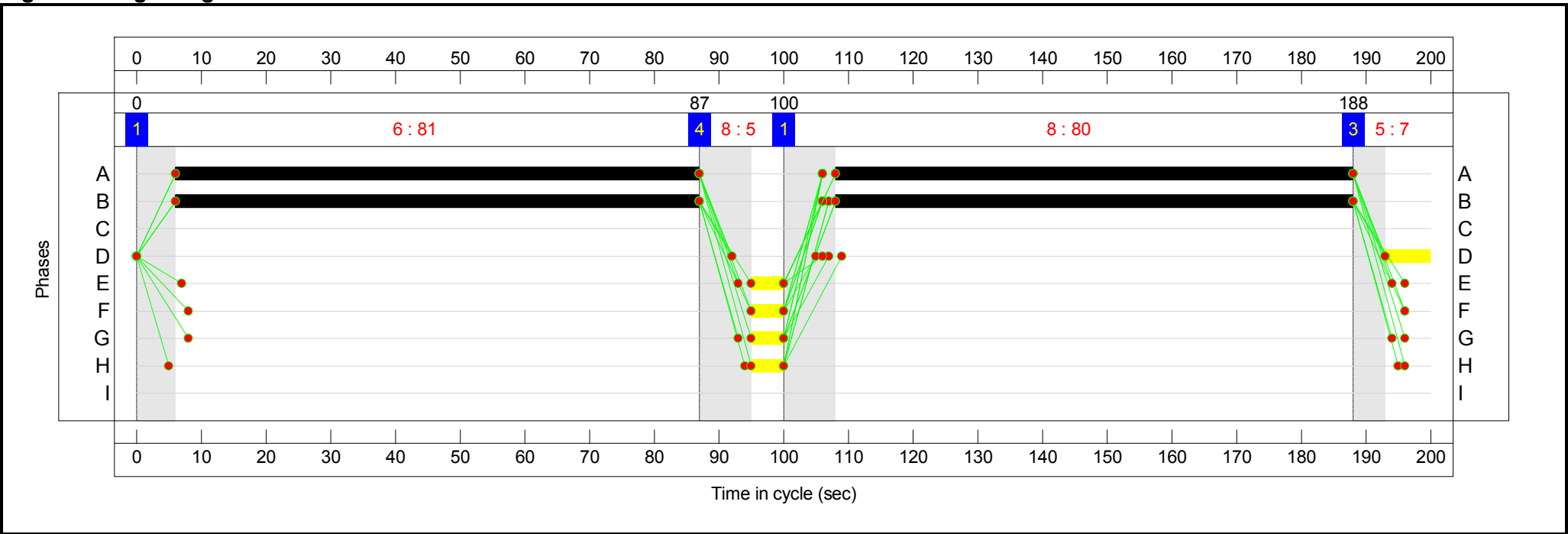
Full Input Data And Results  
Scenario 1: '2020 AM Do Something TOVW' (FG1: '2020 AM Do Something TOVW', Plan 2: '1,4,1,3')

Stage Sequence Diagram

Stage Stream: 1



Signal Timings Diagram

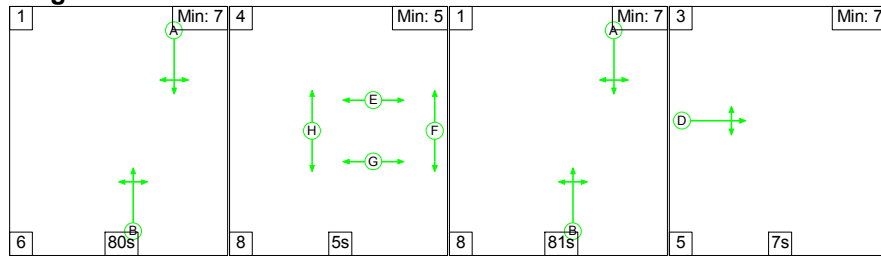


## Full Input Data And Results

## Network Results

[illegible]

**Stage Stream: 1**



## Full Input Data And Results

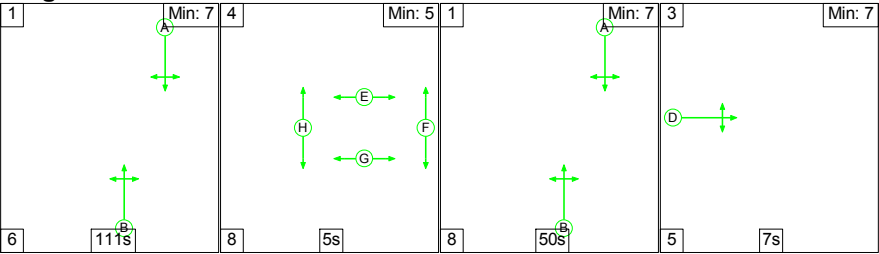
## Network Results

| Item                                                                                                                                                                                                                                 | Lane Description                     | Lane Type | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Mean Max Queue (pcu) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|-----------------------|------------------------------|-----------------------------|---------------------|---------------------------|----------------------|
| Network                                                                                                                                                                                                                              | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 84.2%       | 295                   | 0                            | 0                           | 7.2                 | -                         | -                    |
| Unnamed Junction                                                                                                                                                                                                                     | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 84.2%       | 295                   | 0                            | 0                           | 7.2                 | -                         | -                    |
| 1/1                                                                                                                                                                                                                                  | Printing House Lane Right Ahead Left | O         | A          |             | 2          | 161             | -               | 895               | 1857              | 1513           | 59.1%       | 17                    | 0                            | 0                           | 1.5                 | 6.2                       | 10.2                 |
| 2/1                                                                                                                                                                                                                                  | Clayton Road (W) Left Right Ahead    | U         | D          |             | 1          | 7               | -               | 11                | 1840              | 74             | 14.9%       | -                     | -                            | -                           | 0.4                 | 121.4                     | 0.7                  |
| 3/1                                                                                                                                                                                                                                  | Trevor Road Ahead Left Right         | O         | B          | C           | 2          | 161             | 0               | 796               | 1871              | 946            | 84.2%       | 278                   | 0                            | 0                           | 5.3                 | 23.8                      | 20.3                 |
| C1      Stream: 1    PRC for Signalled Lanes (%):      6.9      Total Delay for Signalled Lanes (pcuHr):      7.19      Cycle Time (s):    200<br>PRC Over All Lanes (%):      6.9      Total Delay Over All Lanes(pcuHr):      7.19 |                                      |           |            |             |            |                 |                 |                   |                   |                |             |                       |                              |                             |                     |                           |                      |

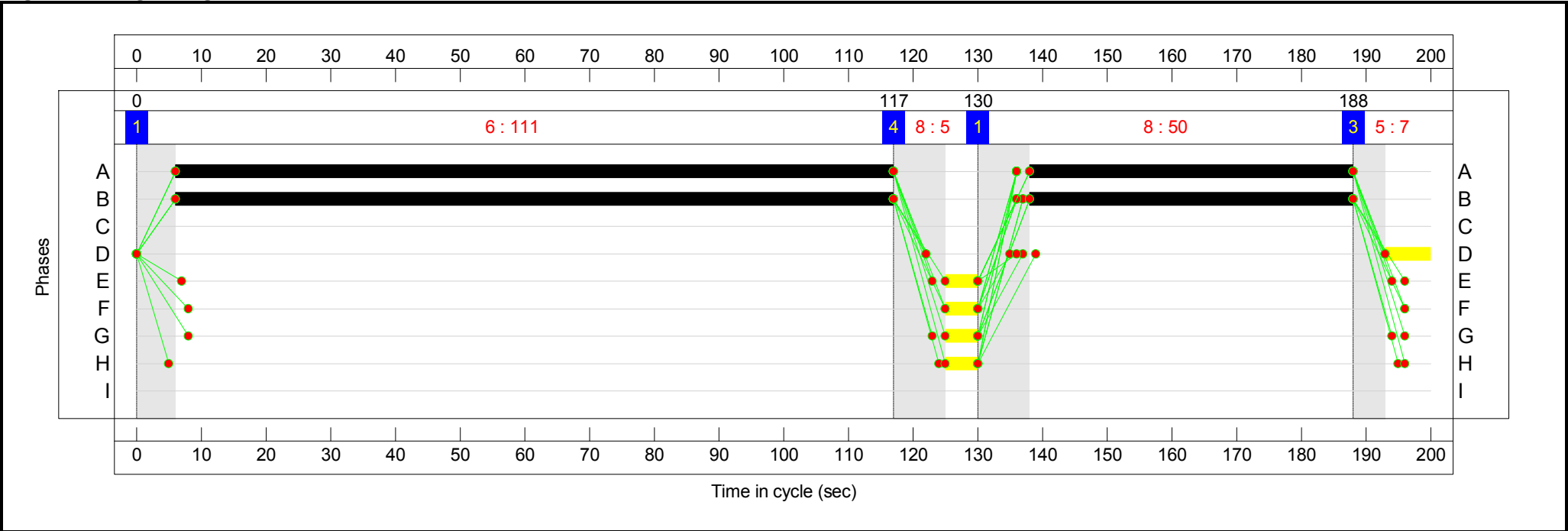
Full Input Data And Results  
Scenario 3: '2020 PM Do Something TOVW' (FG3: '2020 PM Do Something TOVW', Plan 2: '1,4,1,3')

Stage Sequence Diagram

Stage Stream: 1



Signal Timings Diagram



## Full Input Data And Results

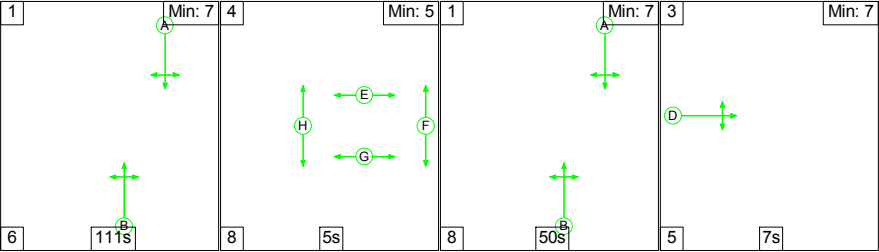
## Network Results

| Item                                                                                                                                                                                                                                   | Lane Description                     | Lane Type | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Mean Max Queue (pcu) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|-----------------------|------------------------------|-----------------------------|---------------------|---------------------------|----------------------|
| Network                                                                                                                                                                                                                                | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 69.7%       | 301                   | 0                            | 0                           | 5.6                 | -                         | -                    |
| Unnamed Junction                                                                                                                                                                                                                       | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 69.7%       | 301                   | 0                            | 0                           | 5.6                 | -                         | -                    |
| 1/1                                                                                                                                                                                                                                    | Printing House Lane Right Ahead Left | O         | A          |             | 2          | 161             | -               | 535               | 1859              | 1515           | 35.3%       | 1                     | 0                            | 0                           | 0.6                 | 4.3                       | 4.4                  |
| 2/1                                                                                                                                                                                                                                    | Clayton Road (W) Left Right Ahead    | U         | D          |             | 1          | 7               | -               | 50                | 1856              | 74             | 67.3%       | -                     | -                            | -                           | 2.3                 | 163.6                     | 3.7                  |
| 3/1                                                                                                                                                                                                                                    | Trevor Road Ahead Left Right         | O         | B          | C           | 2          | 161             | 0               | 1021              | 1892              | 1465           | 69.7%       | 300                   | 0                            | 0                           | 2.7                 | 9.4                       | 16.2                 |
| C1      Stream: 1    PRC for Signalled Lanes (%):      29.1      Total Delay for Signalled Lanes (pcuHr):      5.58      Cycle Time (s):    200<br>PRC Over All Lanes (%):      29.1      Total Delay Over All Lanes(pcuHr):      5.58 |                                      |           |            |             |            |                 |                 |                   |                   |                |             |                       |                              |                             |                     |                           |                      |

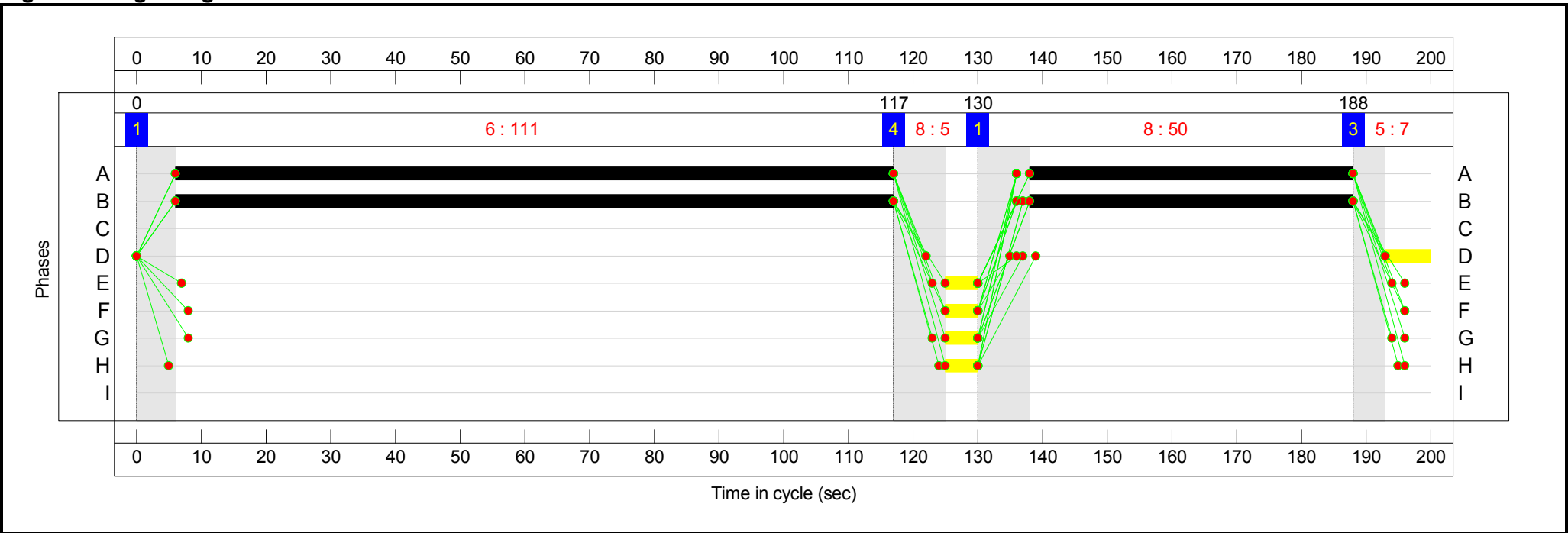
Full Input Data And Results  
**Scenario 4: '2020 PM DS TOVW with UTC'** (FG4: '2020 PM Do Something TOVW with UTC', Plan 2: '1,4,1,3')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Signal Timings Diagram**



## Full Input Data And Results

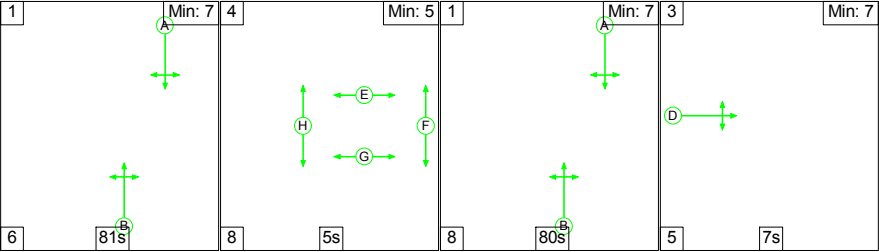
## Network Results

| Item                                                                                                                                                                                                                                   | Lane Description                     | Lane Type | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Mean Max Queue (pcu) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|-----------------------|------------------------------|-----------------------------|---------------------|---------------------------|----------------------|
| Network                                                                                                                                                                                                                                | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 72.7%       | 334                   | 0                            | 0                           | 6.0                 | -                         | -                    |
| Unnamed Junction                                                                                                                                                                                                                       | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 72.7%       | 334                   | 0                            | 0                           | 6.0                 | -                         | -                    |
| 1/1                                                                                                                                                                                                                                    | Printing House Lane Right Ahead Left | O         | A          |             | 2          | 161             | -               | 544               | 1851              | 1509           | 36.1%       | 1                     | 0                            | 0                           | 0.7                 | 4.3                       | 4.5                  |
| 2/1                                                                                                                                                                                                                                    | Clayton Road (W) Left Right Ahead    | U         | D          |             | 1          | 7               | -               | 50                | 1856              | 74             | 67.3%       | -                     | -                            | -                           | 2.3                 | 163.6                     | 3.7                  |
| 3/1                                                                                                                                                                                                                                    | Trevor Road Ahead Left Right         | O         | B          | C           | 2          | 161             | 0               | 1054              | 1886              | 1450           | 72.7%       | 333                   | 0                            | 0                           | 3.1                 | 10.4                      | 17.7                 |
| C1      Stream: 1    PRC for Signalled Lanes (%):      23.9      Total Delay for Signalled Lanes (pcuHr):      5.98      Cycle Time (s):    200<br>PRC Over All Lanes (%):      23.9      Total Delay Over All Lanes(pcuHr):      5.98 |                                      |           |            |             |            |                 |                 |                   |                   |                |             |                       |                              |                             |                     |                           |                      |

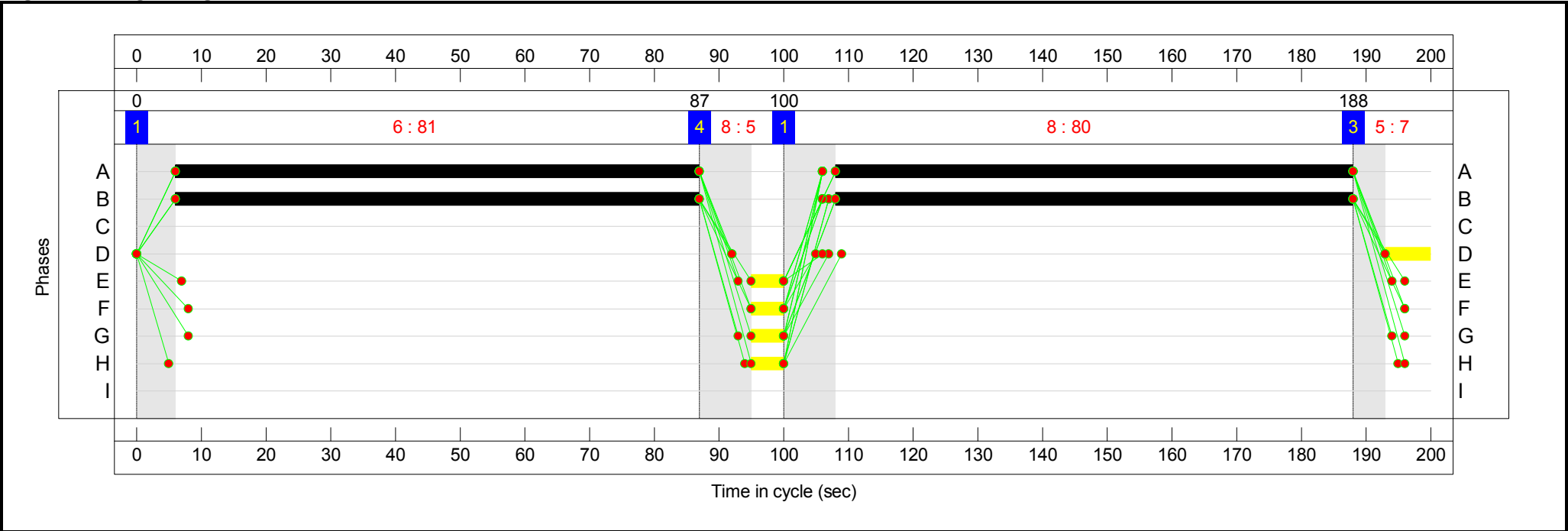
Full Input Data And Results  
**Scenario 5: '2020 AM DS TOVW with UTC sensitivity'** (FG5: '2020 AM Do Something TOVW with UTC sensitivity', Plan 2: '1,4,1,3')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Signal Timings Diagram**



## Full Input Data And Results

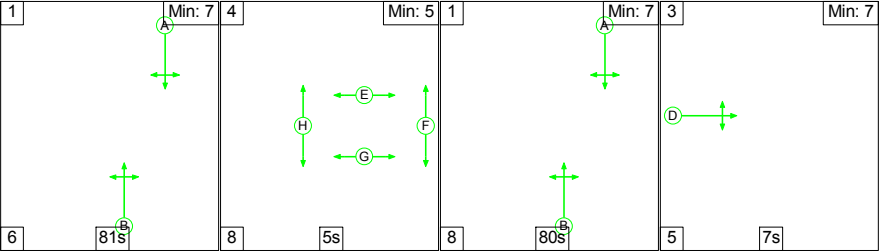
## Network Results

| Item                                                                                                                                                                                                                               | Lane Description                     | Lane Type | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Mean Max Queue (pcu) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|-----------------------|------------------------------|-----------------------------|---------------------|---------------------------|----------------------|
| Network                                                                                                                                                                                                                            | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 99.6%       | 303                   | 0                            | 23                          | 20.1                | -                         | -                    |
| Unnamed Junction                                                                                                                                                                                                                   | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 99.6%       | 303                   | 0                            | 23                          | 20.1                | -                         | -                    |
| 1/1                                                                                                                                                                                                                                | Printing House Lane Right Ahead Left | O         | A          |             | 2          | 161             | -               | 920               | 1855              | 1512           | 60.9%       | 17                    | 0                            | 0                           | 1.6                 | 6.5                       | 10.7                 |
| 2/1                                                                                                                                                                                                                                | Clayton Road (W) Left Right Ahead    | U         | D          |             | 1          | 7               | -               | 11                | 1840              | 74             | 14.9%       | -                     | -                            | -                           | 0.4                 | 121.4                     | 0.7                  |
| 3/1                                                                                                                                                                                                                                | Trevor Road Ahead Left Right         | O         | B          | C           | 2          | 161             | 0               | 836               | 1866              | 839            | 99.6%       | 286                   | 0                            | 23                          | 18.1                | 77.8                      | 37.2                 |
| C1      Stream: 1    PRC for Signalled Lanes (%):    -10.7      Total Delay for Signalled Lanes (pcuHr):    20.10      Cycle Time (s):    200<br>PRC Over All Lanes (%):    -10.7      Total Delay Over All Lanes(pcuHr):    20.10 |                                      |           |            |             |            |                 |                 |                   |                   |                |             |                       |                              |                             |                     |                           |                      |

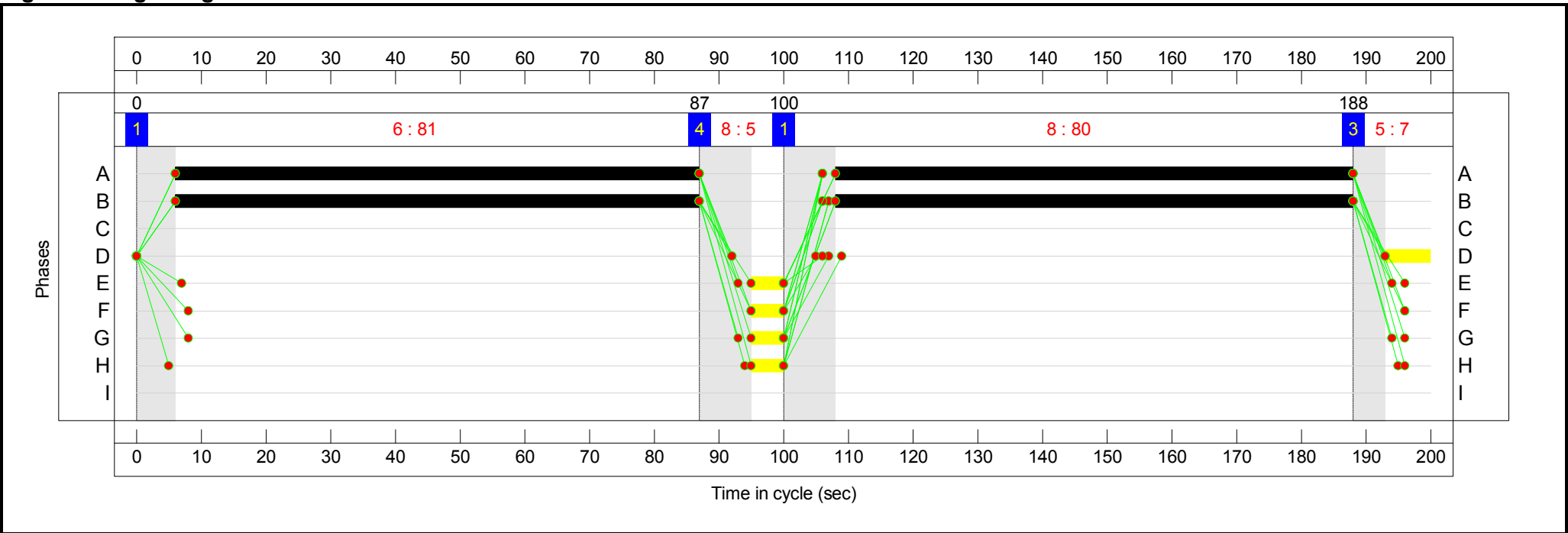
Full Input Data And Results  
**Scenario 6: '2020 PM DS TOVW with UTC sensitivity'** (FG6: '2020 AM Do Something TOVW with UTC sensitivity', Plan 2: '1,4,1,3')

**Stage Sequence Diagram**

**Stage Stream: 1**



**Signal Timings Diagram**



## Full Input Data And Results

## Network Results

| Item                                                                                                                                                                                                                           | Lane Description                     | Lane Type | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Mean Max Queue (pcu) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|-----------------------|------------------------------|-----------------------------|---------------------|---------------------------|----------------------|
| Network                                                                                                                                                                                                                        | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 77.4%       | 362                   | 0                            | 0                           | 6.8                 | -                         | -                    |
| Unnamed Junction                                                                                                                                                                                                               | -                                    | -         | -          |             | -          | -               | -               | -                 | -                 | -              | 77.4%       | 362                   | 0                            | 0                           | 6.8                 | -                         | -                    |
| 1/1                                                                                                                                                                                                                            | Printing House Lane Right Ahead Left | O         | A          |             | 2          | 161             | -               | 578               | 1851              | 1509           | 38.3%       | 1                     | 0                            | 0                           | 0.7                 | 4.4                       | 5.0                  |
| 2/1                                                                                                                                                                                                                            | Clayton Road (W) Left Right Ahead    | U         | D          |             | 1          | 7               | -               | 50                | 1856              | 74             | 67.3%       | -                     | -                            | -                           | 2.3                 | 163.6                     | 3.7                  |
| 3/1                                                                                                                                                                                                                            | Trevor Road Ahead Left Right         | O         | B          | C           | 2          | 161             | 0               | 1104              | 1883              | 1427           | 77.4%       | 361                   | 0                            | 0                           | 3.8                 | 12.5                      | 21.0                 |
| C1      Stream: 1    PRC for Signalled Lanes (%):    16.3      Total Delay for Signalled Lanes (pcuHr):    6.81      Cycle Time (s):    200<br>PRC Over All Lanes (%):    16.3      Total Delay Over All Lanes(pcuHr):    6.81 |                                      |           |            |             |            |                 |                 |                   |                   |                |             |                       |                              |                             |                     |                           |                      |

| Junctions 8                                                                                                                                                                 |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| PICADY 8 - Priority Intersection Module                                                                                                                                     |  |
| Version: 8.0.4.487 [15039,24/03/2014]<br>© Copyright TRL Limited, 2015                                                                                                      |  |
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| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |

**Filename:** Blyth Road sensitivity.arc8

**Path:** I:\Documents\12000-12249\12024 - Global Academy UTC\CR Docs\Reports\Transport\Arcady

**Report generation date:** 13/05/2015 11:44:29

- 
- » (Default Analysis Set) - TOVF improvements, AM
  - » (Default Analysis Set) - TOVF improvements, PM
  - » (Default Analysis Set) - TOVF improvements with UTC, AM
  - » (Default Analysis Set) - TOVF improvements with UTC, PM
  - » (Default Analysis Set) - TOVF with UTC sensitivity, AM
  - » (Default Analysis Set) - TOVF with UTC sensitivity, PM

## Summary of junction performance

|                                 | AM          |           |      |     | PM          |           |      |     |
|---------------------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                                 | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| A1 - TOVF improvements          |             |           |      |     |             |           |      |     |
| Stream B-C                      | 0.50        | 12.50     | 0.33 | B   | 0.59        | 14.12     | 0.37 | B   |
| Stream B-A                      | 1.17        | 19.51     | 0.54 | C   | 4.67        | 50.05     | 0.83 | F   |
| Stream C-A                      | -           | -         | -    | -   | -           | -         | -    | -   |
| Stream C-B                      | 0.00        | 0.00      | 0.00 | A   | 0.00        | 0.00      | 0.00 | A   |
| Stream A-B                      | -           | -         | -    | -   | -           | -         | -    | -   |
| Stream A-C                      | -           | -         | -    | -   | -           | -         | -    | -   |
| A1 - TOVF improvements with UTC |             |           |      |     |             |           |      |     |
| Stream B-C                      | 0.84        | 15.84     | 0.46 | C   | 0.85        | 16.88     | 0.46 | C   |
| Stream B-A                      | 1.63        | 24.01     | 0.62 | C   | 7.17        | 73.14     | 0.89 | F   |
| Stream C-A                      | -           | -         | -    | -   | -           | -         | -    | -   |
| Stream C-B                      | 0.00        | 0.00      | 0.00 | A   | 0.00        | 0.00      | 0.00 | A   |
| Stream A-B                      | -           | -         | -    | -   | -           | -         | -    | -   |
| Stream A-C                      | -           | -         | -    | -   | -           | -         | -    | -   |
| A1 - TOVF with UTC sensitivity  |             |           |      |     |             |           |      |     |
| Stream B-C                      | 1.22        | 19.50     | 0.55 | C   | 1.12        | 19.59     | 0.53 | C   |
| Stream B-A                      | 2.14        | 28.94     | 0.69 | D   | 11.26       | 110.29    | 0.94 | F   |
| Stream C-A                      | -           | -         | -    | -   | -           | -         | -    | -   |
| Stream C-B                      | 0.00        | 0.00      | 0.00 | A   | 0.00        | 0.00      | 0.00 | A   |
| Stream A-B                      | -           | -         | -    | -   | -           | -         | -    | -   |
| Stream A-C                      | -           | -         | -    | -   | -           | -         | -    | -   |

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

"D1 - TOVF improvements, AM" model duration: 07:45 - 09:15

"D2 - TOVF improvements, PM" model duration: 16:45 - 18:15

"D3 - TOVF improvements with UTC, AM" model duration: 07:45 - 09:15

"D4 - TOVF improvements with UTC, PM" model duration: 16:45 - 18:15

"D5 - TOVF with UTC sensitivity, AM" model duration: 07:45 - 09:15

"D6 - TOVF with UTC sensitivity, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 13/05/2015 11:44:27

## File summary

|             |            |
|-------------|------------|
| Title       | (untitled) |
| Location    |            |
| Site Number |            |
| Date        | 23/04/2015 |
| Version     |            |
| Status      | (new file) |
| Identifier  |            |
| Client      |            |
| Jobnumber   |            |
| Enumerator  | nealm      |
| Description |            |

## Analysis Options

| Vehicle Length (m) | Do Queue Variations | Calculate Residual Capacity | Residual Capacity Criteria Type | RFC Threshold | Average Delay Threshold (s) | Queue Threshold (PCU) |
|--------------------|---------------------|-----------------------------|---------------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                     |                             | N/A                             | 0.85          | 36.00                       | 20.00                 |

## 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         | Veh                 | Veh                   | perHour    | s                   | -Min              | perMin              |

## (Default Analysis Set) - TOVF improvements, AM

### Data Errors and Warnings

No errors or warnings

### Analysis Set Details

| Name                   | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| (Default Analysis Set) | N/A                       |             |        | 100.000                         |                            |

### Demand Set Details

| Name                  | Scenario Name     | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-----------------------|-------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| TOVF improvements, AM | TOVF improvements | AM               |             | FLAT                 | 07:45                    | 09:15                     | 90                             | 15                        |                          |        |

## Junction Network

### Junctions

| Junction | Name       | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|----------|------------|---------------|----------------------|-----------|--------------------|--------------|
| 1        | (untitled) | T-Junction    | Two-way              | A,B,C     | 16.71              | C            |

### Junction Network Options

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

## Arms

### Arms

| Arm | Arm | Name               | Description | Arm Type |
|-----|-----|--------------------|-------------|----------|
| A   | A   | Trevor Road        |             | Major    |
| B   | B   | Blyth Road one way |             | Minor    |
| C   | C   | Blyth Road         |             | 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                     |                            | 0.00                                |                    | 2.20                     | 250.00                        |         |                      |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | 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   | Two lanes      |                | 2.50                  | 3.25                   |                       |                 |                  |                  |                  |                       |                    | 250                    | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (Veh/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 583.215            | 0.097         | 0.245         | 0.154         | 0.350         |
| 1        | B-C    | 605.860            | 0.085         | 0.214         | -             | -             |
| 1        | C-B    | 718.741            | 0.254         | 0.254         | -             | -             |

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 Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
|                     |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| A   | FLAT         | ✓                  | 354.00                       | 100.000                 |
| B   | FLAT         | ✓                  | 361.00                       | 100.000                 |
| C   | FLAT         | ✓                  | 436.00                       | 100.000                 |

## Turning Proportions

### Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      | To |         |       |         |
|------|----|---------|-------|---------|
|      |    | A       | B     | C       |
| From | A  | 0.000   | 0.000 | 354.000 |
|      | B  | 217.000 | 0.000 | 144.000 |
|      | C  | 436.000 | 0.000 | 0.000   |

### Turning Proportions (Veh) - Junction 1 (for whole period)

|      | To |      |      |      |
|------|----|------|------|------|
|      |    | A    | B    | C    |
| From | A  | 0.00 | 0.00 | 1.00 |
|      | B  | 0.60 | 0.00 | 0.40 |
|      | C  | 1.00 | 0.00 | 0.00 |

## Vehicle Mix

### Average PCU Per Vehicle - Junction 1 (for whole period)

|      | To |       |       |       |
|------|----|-------|-------|-------|
|      |    | A     | B     | C     |
| From | A  | 1.000 | 1.050 | 1.050 |
|      | B  | 1.050 | 1.000 | 1.050 |
|      | C  | 1.050 | 1.050 | 1.000 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |     |     |     |
|------|----|-----|-----|-----|
|      |    | A   | B   | C   |
| From | A  | 0.0 | 5.0 | 5.0 |
|      | B  | 5.0 | 0.0 | 5.0 |
|      | C  | 5.0 | 5.0 | 0.0 |

## Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-C    | 0.33    | 12.50         | 0.50            | B       |
| B-A    | 0.54    | 19.51         | 1.17            | C       |
| C-A    | -       | -             | -               | -       |
| C-B    | 0.00    | 0.00          | 0.00            | A       |
| A-B    | -       | -             | -               | -       |
| A-C    | -       | -             | -               | -       |

### Main Results for each time segment

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 144.00                | 142.05              | 0.00                       | 433.42            | 0.332 | 0.49            | 12.277    | B   |
| B-A    | 217.00                | 212.50              | 0.00                       | 401.43            | 0.541 | 1.12            | 18.649    | C   |
| C-A    | 436.00                | 436.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 594.51            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 354.00                | 354.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 144.00                | 143.97              | 0.00                       | 432.01            | 0.333 | 0.49            | 12.496    | B   |
| B-A    | 217.00                | 216.90              | 0.00                       | 401.43            | 0.541 | 1.15            | 19.479    | C   |
| C-A    | 436.00                | 436.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 594.51            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 354.00                | 354.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 144.00                | 143.99              | 0.00                       | 431.98            | 0.333 | 0.50            | 12.500    | B   |
| B-A    | 217.00                | 216.96              | 0.00                       | 401.43            | 0.541 | 1.16            | 19.500    | C   |
| C-A    | 436.00                | 436.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 594.51            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 354.00                | 354.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 144.00                | 144.00              | 0.00                       | 431.97            | 0.333 | 0.50            | 12.500    | B   |
| B-A    | 217.00                | 216.98              | 0.00                       | 401.43            | 0.541 | 1.16            | 19.506    | C   |
| C-A    | 436.00                | 436.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 594.51            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 354.00                | 354.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 144.00                | 144.00              | 0.00                       | 431.96            | 0.333 | 0.50            | 12.500    | B   |
| B-A    | 217.00                | 216.99              | 0.00                       | 401.43            | 0.541 | 1.17            | 19.509    | C   |
| C-A    | 436.00                | 436.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 594.51            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 354.00                | 354.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 144.00                | 144.00              | 0.00                       | 431.96            | 0.333 | 0.50            | 12.501    | B   |
| B-A    | 217.00                | 216.99              | 0.00                       | 401.43            | 0.541 | 1.17            | 19.511    | C   |
| C-A    | 436.00                | 436.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 594.51            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 354.00                | 354.00              | 0.00                       | -                 | -     | -               | -         | -   |

# (Default Analysis Set) - TOVF improvements, PM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                   | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| (Default Analysis Set) | N/A                       |             |        | 100.000                         |                            |

## Demand Set Details

| Name                  | Scenario Name     | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-----------------------|-------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| TOVF improvements, PM | TOVF improvements | PM               |             | FLAT                 | 16:45                    | 18:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name       | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|----------|------------|---------------|----------------------|-----------|--------------------|--------------|
| 1        | (untitled) | T-Junction    | Two-way              | A,B,C     | 39.11              | E            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name               | Description | Arm Type |
|-----|-----|--------------------|-------------|----------|
| A   | A   | Trevor Road        |             | Major    |
| B   | B   | Blyth Road one way |             | Minor    |
| C   | C   | Blyth Road         |             | 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                     |                            | 0.00                                |                    | 2.20                     | 250.00                        |         |                      |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | 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   | Two lanes      |                | 2.50                  | 3.25                   |                       |                 |                  |                  |                  |                       |                    | 250                    | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (Veh/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 583.215            | 0.097         | 0.245         | 0.154         | 0.350         |
| 1        | B-C    | 605.860            | 0.085         | 0.214         | -             | -             |
| 1        | C-B    | 718.741            | 0.254         | 0.254         | -             | -             |

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 Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
|                     |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| A   | FLAT         | ✓                  | 262.00                       | 100.000                 |
| B   | FLAT         | ✓                  | 499.00                       | 100.000                 |
| C   | FLAT         | ✓                  | 478.00                       | 100.000                 |

## Turning Proportions

### Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      | To |         |       |         |
|------|----|---------|-------|---------|
|      |    | A       | B     | C       |
| From | A  | 0.000   | 0.000 | 262.000 |
|      | B  | 347.000 | 0.000 | 152.000 |
|      | C  | 478.000 | 0.000 | 0.000   |

### Turning Proportions (Veh) - Junction 1 (for whole period)

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

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|  | To |       |       |       |
|--|----|-------|-------|-------|
|  |    | A     | B     | C     |
|  | A  | 1.050 | 1.050 | 1.050 |
|  | B  | 1.050 | 1.050 | 1.050 |
|  | C  | 1.050 | 1.050 | 1.050 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|  | To |     |     |     |
|--|----|-----|-----|-----|
|  |    | A   | B   | C   |
|  | A  | 5.0 | 5.0 | 5.0 |
|  | B  | 5.0 | 5.0 | 5.0 |
|  | C  | 5.0 | 5.0 | 5.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-C    | 0.37    | 14.12         | 0.59            | B       |
| B-A    | 0.83    | 50.05         | 4.67            | F       |
| C-A    | -       | -             | -               | -       |
| C-B    | 0.00    | 0.00          | 0.00            | A       |
| A-B    | -       | -             | -               | -       |
| A-C    | -       | -             | -               | -       |

## Main Results for each time segment

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 152.00                | 149.72              | 0.00                       | 412.63            | 0.368 | 0.57            | 13.578    | B   |
| B-A    | 347.00                | 331.57              | 0.00                       | 417.50            | 0.831 | 3.86            | 37.131    | E   |
| C-A    | 478.00                | 478.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 152.00                | 151.94              | 0.00                       | 407.82            | 0.373 | 0.58            | 14.063    | B   |
| B-A    | 347.00                | 345.31              | 0.00                       | 417.50            | 0.831 | 4.28            | 47.533    | E   |
| C-A    | 478.00                | 478.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 152.00                | 151.98              | 0.00                       | 407.29            | 0.373 | 0.59            | 14.097    | B   |
| B-A    | 347.00                | 346.28              | 0.00                       | 417.50            | 0.831 | 4.46            | 48.897    | E   |
| C-A    | 478.00                | 478.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 152.00                | 151.99              | 0.00                       | 407.07            | 0.373 | 0.59            | 14.110    | B   |
| B-A    | 347.00                | 346.60              | 0.00                       | 417.50            | 0.831 | 4.56            | 49.495    | E   |
| C-A    | 478.00                | 478.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 152.00                | 152.00              | 0.00                       | 406.94            | 0.374 | 0.59            | 14.120    | B   |
| B-A    | 347.00                | 346.74              | 0.00                       | 417.50            | 0.831 | 4.63            | 49.832    | E   |
| C-A    | 478.00                | 478.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 152.00                | 152.00              | 0.00                       | 406.86            | 0.374 | 0.59            | 14.124    | B   |
| B-A    | 347.00                | 346.82              | 0.00                       | 417.50            | 0.831 | 4.67            | 50.051    | F   |
| C-A    | 478.00                | 478.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

# (Default Analysis Set) - TOVF improvements with UTC, AM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                   | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| (Default Analysis Set) | N/A                       |             |        | 100.000                         |                            |

## Demand Set Details

| Name                           | Scenario Name              | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|--------------------------------|----------------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| TOVF improvements with UTC, AM | TOVF improvements with UTC | AM               |             | FLAT                 | 07:45                    | 09:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name       | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|----------|------------|---------------|----------------------|-----------|--------------------|--------------|
| 1        | (untitled) | T-Junction    | Two-way              | A,B,C     | 20.43              | C            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name               | Description | Arm Type |
|-----|-----|--------------------|-------------|----------|
| A   | A   | Trevor Road        |             | Major    |
| B   | B   | Blyth Road one way |             | Minor    |
| C   | C   | Blyth Road         |             | 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                     |                            | 0.00                                |                    | 2.20                     | 250.00                        |         |                      |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | 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   | Two lanes      |                | 2.50                  | 3.25                   |                       |                 |                  |                  |                  |                       |                    | 250                    | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (Veh/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 583.215            | 0.097         | 0.245         | 0.154         | 0.350         |
| 1        | B-C    | 605.860            | 0.085         | 0.214         | -             | -             |
| 1        | C-B    | 718.741            | 0.254         | 0.254         | -             | -             |

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 Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
|                     |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| A   | FLAT         | ✓                  | 359.00                       | 100.000                 |
| B   | FLAT         | ✓                  | 440.00                       | 100.000                 |
| C   | FLAT         | ✓                  | 458.00                       | 100.000                 |

## Turning Proportions

### Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      | To |         |       |         |
|------|----|---------|-------|---------|
|      |    | A       | B     | C       |
| From | A  | 0.000   | 0.000 | 359.000 |
|      | B  | 247.000 | 0.000 | 193.000 |
|      | C  | 458.000 | 0.000 | 0.000   |
|      |    |         |       |         |

### Turning Proportions (Veh) - Junction 1 (for whole period)

|      | To |      |      |      |
|------|----|------|------|------|
|      |    | A    | B    | C    |
| From | A  | 0.00 | 0.00 | 1.00 |
|      | B  | 0.56 | 0.00 | 0.44 |
|      | C  | 1.00 | 0.00 | 0.00 |
|      |    |      |      |      |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      | To |       |       |       |
|------|----|-------|-------|-------|
|      |    | A     | B     | C     |
| From | A  | 1.000 | 1.050 | 1.050 |
|      | B  | 1.050 | 1.000 | 1.050 |
|      | C  | 1.050 | 1.050 | 1.000 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |     |     |     |
|------|----|-----|-----|-----|
|      |    | A   | B   | C   |
| From | A  | 0.0 | 5.0 | 5.0 |
|      | B  | 5.0 | 0.0 | 5.0 |
|      | C  | 5.0 | 5.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-C    | 0.46    | 15.84         | 0.84            | C       |
| B-A    | 0.62    | 24.01         | 1.63            | C       |
| C-A    | -       | -             | -               | -       |
| C-B    | 0.00    | 0.00          | 0.00            | A       |
| A-B    | -       | -             | -               | -       |
| A-C    | -       | -             | -               | -       |

## Main Results for each time segment

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 193.00                | 189.74              | 0.00                       | 422.25            | 0.457 | 0.82            | 15.281    | C   |
| B-A    | 247.00                | 240.82              | 0.00                       | 396.81            | 0.622 | 1.54            | 22.295    | C   |
| C-A    | 458.00                | 458.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 593.24            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 359.00                | 359.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 193.00                | 192.93              | 0.00                       | 420.30            | 0.459 | 0.83            | 15.820    | C   |
| B-A    | 247.00                | 246.80              | 0.00                       | 396.81            | 0.622 | 1.59            | 23.911    | C   |
| C-A    | 458.00                | 458.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 593.24            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 359.00                | 359.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 193.00                | 192.98              | 0.00                       | 420.24            | 0.459 | 0.84            | 15.834    | C   |
| B-A    | 247.00                | 246.93              | 0.00                       | 396.81            | 0.622 | 1.61            | 23.969    | C   |
| C-A    | 458.00                | 458.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 593.24            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 359.00                | 359.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 193.00                | 192.99              | 0.00                       | 420.22            | 0.459 | 0.84            | 15.838    | C   |
| B-A    | 247.00                | 246.96              | 0.00                       | 396.81            | 0.622 | 1.62            | 23.991    | C   |
| C-A    | 458.00                | 458.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 593.24            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 359.00                | 359.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 193.00                | 192.99              | 0.00                       | 420.21            | 0.459 | 0.84            | 15.841    | C   |
| B-A    | 247.00                | 246.98              | 0.00                       | 396.81            | 0.622 | 1.63            | 23.999    | C   |
| C-A    | 458.00                | 458.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 593.24            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 359.00                | 359.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 193.00                | 193.00              | 0.00                       | 420.20            | 0.459 | 0.84            | 15.843    | C   |
| B-A    | 247.00                | 246.98              | 0.00                       | 396.81            | 0.622 | 1.63            | 24.006    | C   |
| C-A    | 458.00                | 458.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 593.24            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 359.00                | 359.00              | 0.00                       | -                 | -     | -               | -         | -   |

# (Default Analysis Set) - TOVF improvements with UTC, PM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                   | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| (Default Analysis Set) | N/A                       |             |        | 100.000                         |                            |

## Demand Set Details

| Name                           | Scenario Name              | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|--------------------------------|----------------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| TOVF improvements with UTC, PM | TOVF improvements with UTC | PM               |             | FLAT                 | 16:45                    | 18:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name       | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|----------|------------|---------------|----------------------|-----------|--------------------|--------------|
| 1        | (untitled) | T-Junction    | Two-way              | A,B,C     | 54.49              | F            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name               | Description | Arm Type |
|-----|-----|--------------------|-------------|----------|
| A   | A   | Trevor Road        |             | Major    |
| B   | B   | Blyth Road one way |             | Minor    |
| C   | C   | Blyth Road         |             | 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                     |                            | 0.00                                |                    | 2.20                     | 250.00                        |         |                      |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | 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   | Two lanes      |                | 2.50                  | 3.25                   |                       |                 |                  |                  |                  |                       |                    | 250                    | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (Veh/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 583.215            | 0.097         | 0.245         | 0.154         | 0.350         |
| 1        | B-C    | 605.860            | 0.085         | 0.214         | -             | -             |
| 1        | C-B    | 718.741            | 0.254         | 0.254         | -             | -             |

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 Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
|                     |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| A   | FLAT         | ✓                  | 262.00                       | 100.000                 |
| B   | FLAT         | ✓                  | 552.00                       | 100.000                 |
| C   | FLAT         | ✓                  | 494.00                       | 100.000                 |

## Turning Proportions

### Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|  | To |         |       |         |
|--|----|---------|-------|---------|
|  |    | A       | B     | C       |
|  | A  | 0.000   | 0.000 | 262.000 |
|  | B  | 369.000 | 0.000 | 183.000 |
|  | C  | 494.000 | 0.000 | 0.000   |

### Turning Proportions (Veh) - Junction 1 (for whole period)

|  | To |      |      |      |
|--|----|------|------|------|
|  |    | A    | B    | C    |
|  | A  | 0.00 | 0.00 | 1.00 |
|  | B  | 0.67 | 0.00 | 0.33 |
|  | C  | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

| From | To |       |       |       |
|------|----|-------|-------|-------|
|      |    | A     | B     | C     |
|      | A  | 1.050 | 1.050 | 1.050 |
|      | B  | 1.050 | 1.050 | 1.050 |
|      | C  | 1.050 | 1.050 | 1.050 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

| From | To |     |     |     |
|------|----|-----|-----|-----|
|      |    | A   | B   | C   |
|      | A  | 5.0 | 5.0 | 5.0 |
|      | B  | 5.0 | 5.0 | 5.0 |
|      | C  | 5.0 | 5.0 | 5.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-C    | 0.46    | 16.88         | 0.85            | C       |
| B-A    | 0.89    | 73.14         | 7.17            | F       |
| C-A    | -       | -             | -               | -       |
| C-B    | 0.00    | 0.00          | 0.00            | A       |
| A-B    | -       | -             | -               | -       |
| A-C    | -       | -             | -               | -       |

## Main Results for each time segment

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 183.00                | 179.81              | 0.00                       | 405.09            | 0.452 | 0.80            | 15.771    | C   |
| B-A    | 369.00                | 348.17              | 0.00                       | 415.03            | 0.889 | 5.21            | 45.172    | E   |
| C-A    | 494.00                | 494.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 183.00                | 182.87              | 0.00                       | 398.55            | 0.459 | 0.83            | 16.670    | C   |
| B-A    | 369.00                | 365.34              | 0.00                       | 415.03            | 0.889 | 6.12            | 64.472    | F   |
| C-A    | 494.00                | 494.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 183.00                | 182.96              | 0.00                       | 397.40            | 0.460 | 0.84            | 16.777    | C   |
| B-A    | 369.00                | 367.19              | 0.00                       | 415.03            | 0.889 | 6.57            | 68.687    | F   |
| C-A    | 494.00                | 494.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 183.00                | 182.98              | 0.00                       | 396.84            | 0.461 | 0.85            | 16.826    | C   |
| B-A    | 369.00                | 367.90              | 0.00                       | 415.03            | 0.889 | 6.85            | 70.863    | F   |
| C-A    | 494.00                | 494.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 183.00                | 182.99              | 0.00                       | 396.49            | 0.462 | 0.85            | 16.853    | C   |
| B-A    | 369.00                | 368.26              | 0.00                       | 415.03            | 0.889 | 7.03            | 72.213    | F   |
| C-A    | 494.00                | 494.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 183.00                | 182.99              | 0.00                       | 396.26            | 0.462 | 0.85            | 16.875    | C   |
| B-A    | 369.00                | 368.46              | 0.00                       | 415.03            | 0.889 | 7.17            | 73.139    | F   |
| C-A    | 494.00                | 494.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

# (Default Analysis Set) - TOVF with UTC sensitivity, AM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                   | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| (Default Analysis Set) | N/A                       |             |        | 100.000                         |                            |

## Demand Set Details

| Name                          | Scenario Name             | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-------------------------------|---------------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| TOVF with UTC sensitivity, AM | TOVF with UTC sensitivity | AM               |             | FLAT                 | 07:45                    | 09:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name       | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|----------|------------|---------------|----------------------|-----------|--------------------|--------------|
| 1        | (untitled) | T-Junction    | Two-way              | A,B,C     | 24.63              | C            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name               | Description | Arm Type |
|-----|-----|--------------------|-------------|----------|
| A   | A   | Trevor Road        |             | Major    |
| B   | B   | Blyth Road one way |             | Minor    |
| C   | C   | Blyth Road         |             | 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                     |                            | 0.00                                |                    | 2.20                     | 250.00                        |         |                      |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | 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   | Two lanes      |                | 2.50                  | 3.25                   |                       |                 |                  |                  |                  |                       |                    | 250                    | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (Veh/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 583.215            | 0.097         | 0.245         | 0.154         | 0.350         |
| 1        | B-C    | 605.860            | 0.085         | 0.214         | -             | -             |
| 1        | C-B    | 718.741            | 0.254         | 0.254         | -             | -             |

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 Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
|                     |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| A   | FLAT         | ✓                  | 360.00                       | 100.000                 |
| B   | FLAT         | ✓                  | 497.00                       | 100.000                 |
| C   | FLAT         | ✓                  | 474.00                       | 100.000                 |

## Turning Proportions

### Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      | To |         |       |         |
|------|----|---------|-------|---------|
|      |    | A       | B     | C       |
| From | A  | 0.000   | 0.000 | 360.000 |
|      | B  | 270.000 | 0.000 | 227.000 |
|      | C  | 474.000 | 0.000 | 0.000   |

### Turning Proportions (Veh) - Junction 1 (for whole period)

|      | To |      |      |      |
|------|----|------|------|------|
|      |    | A    | B    | C    |
| From | A  | 0.00 | 0.00 | 1.00 |
|      | B  | 0.54 | 0.00 | 0.46 |
|      | C  | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|  | To |       |       |       |
|--|----|-------|-------|-------|
|  |    | A     | B     | C     |
|  | A  | 1.000 | 1.050 | 1.050 |
|  | B  | 1.050 | 1.000 | 1.050 |
|  | C  | 1.050 | 1.050 | 1.000 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|  | To |     |     |     |
|--|----|-----|-----|-----|
|  |    | A   | B   | C   |
|  | A  | 0.0 | 5.0 | 5.0 |
|  | B  | 5.0 | 0.0 | 5.0 |
|  | C  | 5.0 | 5.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-C    | 0.55    | 19.50         | 1.22            | C       |
| B-A    | 0.69    | 28.94         | 2.14            | D       |
| C-A    | -       | -             | -               | -       |
| C-B    | 0.00    | 0.00          | 0.00            | A       |
| A-B    | -       | -             | -               | -       |
| A-C    | -       | -             | -               | -       |

## Main Results for each time segment

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 227.00                | 222.36              | 0.00                       | 414.24            | 0.548 | 1.16            | 18.354    | C   |
| B-A    | 270.00                | 262.06              | 0.00                       | 394.10            | 0.685 | 1.98            | 25.935    | D   |
| C-A    | 474.00                | 474.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 592.99            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 360.00                | 360.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 227.00                | 226.85              | 0.00                       | 411.72            | 0.551 | 1.20            | 19.434    | C   |
| B-A    | 270.00                | 269.65              | 0.00                       | 394.10            | 0.685 | 2.07            | 28.717    | D   |
| C-A    | 474.00                | 474.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 592.99            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 360.00                | 360.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 227.00                | 226.95              | 0.00                       | 411.61            | 0.551 | 1.21            | 19.475    | C   |
| B-A    | 270.00                | 269.87              | 0.00                       | 394.10            | 0.685 | 2.11            | 28.840    | D   |
| C-A    | 474.00                | 474.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 592.99            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 360.00                | 360.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 227.00                | 226.98              | 0.00                       | 411.57            | 0.552 | 1.21            | 19.489    | C   |
| B-A    | 270.00                | 269.93              | 0.00                       | 394.10            | 0.685 | 2.12            | 28.901    | D   |
| C-A    | 474.00                | 474.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 592.99            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 360.00                | 360.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 227.00                | 226.99              | 0.00                       | 411.55            | 0.552 | 1.22            | 19.495    | C   |
| B-A    | 270.00                | 269.96              | 0.00                       | 394.10            | 0.685 | 2.13            | 28.926    | D   |
| C-A    | 474.00                | 474.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 592.99            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 360.00                | 360.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 227.00                | 226.99              | 0.00                       | 411.54            | 0.552 | 1.22            | 19.498    | C   |
| B-A    | 270.00                | 269.97              | 0.00                       | 394.10            | 0.685 | 2.14            | 28.943    | D   |
| C-A    | 474.00                | 474.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 592.99            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 360.00                | 360.00              | 0.00                       | -                 | -     | -               | -         | -   |

# (Default Analysis Set) - TOVF with UTC sensitivity, PM

## Data Errors and Warnings

No errors or warnings

## Analysis Set Details

| Name                   | Roundabout Capacity Model | Description | Locked | Network Flow Scaling Factor (%) | Reason For Scaling Factors |
|------------------------|---------------------------|-------------|--------|---------------------------------|----------------------------|
| (Default Analysis Set) | N/A                       |             |        | 100.000                         |                            |

## Demand Set Details

| Name                          | Scenario Name             | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Single Time Segment Only | Locked |
|-------------------------------|---------------------------|------------------|-------------|----------------------|--------------------------|---------------------------|--------------------------------|---------------------------|--------------------------|--------|
| TOVF with UTC sensitivity, PM | TOVF with UTC sensitivity | PM               |             | FLAT                 | 16:45                    | 18:15                     | 90                             | 15                        |                          |        |

# Junction Network

## Junctions

| Junction | Name       | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|----------|------------|---------------|----------------------|-----------|--------------------|--------------|
| 1        | (untitled) | T-Junction    | Two-way              | A,B,C     | 78.68              | F            |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name               | Description | Arm Type |
|-----|-----|--------------------|-------------|----------|
| A   | A   | Trevor Road        |             | Major    |
| B   | B   | Blyth Road one way |             | Minor    |
| C   | C   | Blyth Road         |             | 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                     |                            | 0.00                                |                    | 2.20                     | 250.00                        |         |                      |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | 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   | Two lanes      |                | 2.50                  | 3.25                   |                       |                 |                  |                  |                  |                       |                    | 250                    | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (Veh/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 583.215            | 0.097         | 0.245         | 0.154         | 0.350         |
| 1        | B-C    | 605.860            | 0.085         | 0.214         | -             | -             |
| 1        | C-B    | 718.741            | 0.254         | 0.254         | -             | -             |

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 Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---------------------|------------------------------|------------------------------|-------------------------------|--------------------|---------------------------|-----------------------------|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|
|                     |                              | ✓                            | ✓                             | HV Percentages     | 2.00                      |                             |                                 |                                    | ✓                                  | ✓                                   |

## Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|-----|--------------|--------------------|------------------------------|-------------------------|
| A   | FLAT         | ✓                  | 262.00                       | 100.000                 |
| B   | FLAT         | ✓                  | 594.00                       | 100.000                 |
| C   | FLAT         | ✓                  | 506.00                       | 100.000                 |

## Turning Proportions

### Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

|      | To |         |       |         |
|------|----|---------|-------|---------|
|      |    | A       | B     | C       |
| From | A  | 0.000   | 0.000 | 262.000 |
|      | B  | 387.000 | 0.000 | 207.000 |
|      | C  | 506.000 | 0.000 | 0.000   |

### Turning Proportions (Veh) - Junction 1 (for whole period)

|      | To |      |      |      |
|------|----|------|------|------|
|      |    | A    | B    | C    |
| From | A  | 0.00 | 0.00 | 1.00 |
|      | B  | 0.65 | 0.00 | 0.35 |
|      | C  | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

|      | To |       |       |       |
|------|----|-------|-------|-------|
|      |    | A     | B     | C     |
| From | A  | 1.000 | 1.050 | 1.050 |
|      | B  | 1.050 | 1.000 | 1.050 |
|      | C  | 1.050 | 1.050 | 1.000 |

## Heavy Vehicle Percentages - Junction 1 (for whole period)

|      | To |     |     |     |
|------|----|-----|-----|-----|
|      |    | A   | B   | C   |
| From | A  | 0.0 | 5.0 | 5.0 |
|      | B  | 5.0 | 0.0 | 5.0 |
|      | C  | 5.0 | 5.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-C    | 0.53    | 19.59         | 1.12            | C       |
| B-A    | 0.94    | 110.29        | 11.26           | F       |
| C-A    | -       | -             | -               | -       |
| C-B    | 0.00    | 0.00          | 0.00            | A       |
| A-B    | -       | -             | -               | -       |
| A-C    | -       | -             | -               | -       |

## Main Results for each time segment

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 207.00                | 202.86              | 0.00                       | 398.90            | 0.519 | 1.03            | 18.012    | C   |
| B-A    | 387.00                | 359.95              | 0.00                       | 413.18            | 0.937 | 6.76            | 53.385    | F   |
| C-A    | 506.00                | 506.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 207.00                | 206.76              | 0.00                       | 390.64            | 0.530 | 1.09            | 19.531    | C   |
| B-A    | 387.00                | 379.86              | 0.00                       | 413.18            | 0.937 | 8.55            | 85.155    | F   |
| C-A    | 506.00                | 506.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 207.00                | 206.95              | 0.00                       | 390.64            | 0.530 | 1.11            | 19.577    | C   |
| B-A    | 387.00                | 382.79              | 0.00                       | 413.18            | 0.937 | 9.60            | 95.655    | F   |
| C-A    | 506.00                | 506.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 207.00                | 206.98              | 0.00                       | 390.64            | 0.530 | 1.11            | 19.587    | C   |
| B-A    | 387.00                | 384.12              | 0.00                       | 413.18            | 0.937 | 10.32           | 102.196   | F   |
| C-A    | 506.00                | 506.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 207.00                | 206.99              | 0.00                       | 390.64            | 0.530 | 1.12            | 19.594    | C   |
| B-A    | 387.00                | 384.87              | 0.00                       | 413.18            | 0.937 | 10.85           | 106.811   | F   |
| C-A    | 506.00                | 506.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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

| Stream | Total Demand (Veh/hr) | Entry Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | RFC   | End Queue (Veh) | Delay (s) | LOS |
|--------|-----------------------|---------------------|----------------------------|-------------------|-------|-----------------|-----------|-----|
| B-C    | 207.00                | 206.99              | 0.00                       | 390.64            | 0.530 | 1.12            | 19.595    | C   |
| B-A    | 387.00                | 385.35              | 0.00                       | 413.18            | 0.937 | 11.26           | 110.288   | F   |
| C-A    | 506.00                | 506.00              | 0.00                       | -                 | -     | -               | -         | -   |
| C-B    | 0.00                  | 0.00                | 0.00                       | 617.90            | 0.000 | 0.00            | 0.000     | A   |
| A-B    | 0.00                  | 0.00                | 0.00                       | -                 | -     | -               | -         | -   |
| A-C    | 262.00                | 262.00              | 0.00                       | -                 | -     | -               | -         | -   |

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