

J000069-TA01b
December 2019

Land at Mold Road, Wrexham

Proposed Residential Development

Transport Assessment

Prepared on behalf of:



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1.0 INTRODUCTION

1.1 Overview

1.1.1 This Transport Assessment (TA) has been prepared by Focus Transport Planning (Focus TP) on behalf of Russell Homes Ltd. to consider highways and transport matters related to proposals for a new residential development on land to the east of the A541 Mold Road, Wrexham.

1.1.2 This TA forms part of the outline planning application submission documentation for the development of the site to deliver up to 455 residential dwellings, along with vehicular accesses from the A541 Mold Road and Stansty Chain Road. The application is being made in outline with all matters reserved, save for access. The purpose of this report is to appraise the Local Planning and Highway Authority Wrexham County Borough Council (WCBC), of the anticipated highway and transport related effects associated with the proposed residential development scheme.

1.1.3 The project would see the development of the residential scheme on land which lies to the east of the A541 Mold Road and to the north of the A483, and straddles the route of Stansty Chain Road. This report includes an assessment of the proposed site access strategy and an analysis of the impact of development related traffic over the immediate local highway network. In addition, the report considers the sustainability of the site, its accessibility to existing local services and the opportunity to encourage trips from the site to be undertaken by alternative travel modes to the private car. This TA has also been produced in line with current local and national planning policy, as outlined further below.

1.2 Transport Assessment Scope

1.2.1 This TA includes an assessment of the proposed residential development, and detailed analysis of the likely traffic related operational effects that could arise. This assessment has been undertaken in line with current best practice guidance on Transport Assessments, as outlined in Welsh Government (WG) Technical Advice Note 18 (TAN18) - Transport (2007).

1.2.2 The scope and nature of the assessment matters considered in this TA reflects the extent of highways and traffic issues considered to be of material interest to the Local Highway Authority (LHA), WCBC, based on extensive pre-application discussions that have taken place throughout 2019.

1.2.3 Pre-application discussions have also been held with the key highways stakeholder, the Welsh Government, in particular in relation to the Site's proximity to the strategic route of the A483, as well as to the currently ongoing study of the strategic network (see Section 4 of this TA).

1.3 TA Structure

1.3.1 This TA consists of eight sections including this introduction. The remainder of the document is summarised as follows:

- Section 2 provides an overview of the Site's location and existing local conditions, including surveyed traffic flows on the study area highway network, and details of local accident history;
- Section 3 considers the Site's accessibility and includes a review of local sustainable transport connections and accessibility to surrounding local amenities and facilities;
- Section 4 outlines both the Site's planning history, as well as details of the ongoing Welsh Government strategic highway network study of the A483;
- Section 5 provides a detailed description of the development proposals, including a review of the proposed site access arrangements, and sustainable transport infrastructure provision;
- Section 6 provides a review of the traffic levels anticipated to be generated by the development, and the distribution and assignment of this traffic over the local highway network;
- Section 7 identifies the key assessment parameters used to inform this TA, including consideration of assessment scenarios, consideration of background

network traffic growth, review of any committed development schemes to be considered and, traffic conditions forming the baseline for assessment;

- Section 8 considers the impact of the potential traffic loadings of the proposed development scheme on key local highway network links and junctions, as well as the need for any additional measures to mitigate the impact of development; and,
- Section 9 outlines a summary of the TA findings and provides Focus TP's conclusions.

2.0 SITE LOCATION & EXISTING CONDITIONS

2.1 Site Location

2.1.1 The strategic location of the proposed Mold Road site (hereafter referred to as the Site) is illustrated in **Figure TA1** to this report. This plan identifies the strategic location of the Site in relation to the town centre of Wrexham, the strategic trunk road route of the A483, as well as the primary routes of the A534, the A541, and the A525.

2.1.2 **Figure TA2** illustrates the site location in terms of its immediate context, and identifies the key areas of the local highway network including the A483 trunk road, the A541 Mold Road and Stansty Chain Road. **Figure TA2** also illustrates the context of the Site relative to Wrexham Town Centre and the surrounding residential areas of Gwersyllt, Rhosrobin, and Stansty.

2.2 Existing Site Conditions & Local Highway Network

2.2.1 The Site currently comprises two parcels of greenfield land, totalling c22ha, and located approximately 1km to the northwest of Wrexham town centre. The larger western land parcel is bounded to the west by the route of the A541 Mold Road, whilst to the southeast both land parcels are bounded by the trunk road route of the A483(T). To the north both parcels are bounded by open greenfield land, whilst the eastern parcel is bounded on its eastern frontage by the Borderland Rail line, beyond which lies Rhosddu Industrial Estate. The Site is separated by the local route of Stansty Chain Road, and a residential property which lies to the west of Stansty Chain Road.

A483 Trunk Road

2.2.2 The A483 trunk road serves as a key strategic route in the northeast of Wales, facilitating onward connections to key employment destinations such as Chester and Oswestry and more widely Liverpool. More locally, the route serves as a key bypass around the western side of the settlement of Wrexham, with grade-separated access at four locations. Junction 5 of the A483, with the A541 Mold Road and Summerhill Road, lies to the immediate southwestern corner of the Site.

The grade-separated roundabout junction operates partial signalisation and is linked with the adjacent B&Q roundabout (further details below).

A541 Mold Road

- 2.2.3 The A541 Mold Road provides a link between the local employment centres of Mold to the northwest and Wrexham to the southeast. More locally it also serves to link the local settlements of Summerhill and Gwersyllt, to the north, with Wrexham to the south. For approximately 1.3km to the north of its junction with the A483, the A541 Mold Road forms a dual carriageway route, with 2 lanes in each direction for approximately 800-900m to the north of the A483. On the remaining 500m the outer lanes in each direction are hatched out, reducing the carriageway to 1 lane in each direction.
- 2.2.4 Beyond its roundabout junction with the residential access road of St. Giles Park the A541 route forms a single carriageway with one lane in each direction. A shared footway/cycleway runs along the eastern boundary of the A541, providing a key sustainable transport link between the areas of Gwersyllt and Summerhill and Wrexham. To the south the footway/cycleway is signed towards Wrexham along Stansty Chain Road, as well as across the A541 along the route of the Old Mold Road. There is no footway or cycleway provision along the eastern side of the section of A541 Mold Road further to the south i.e. past the site's western frontage - this section simply incorporates a wide grassed verge, with a footway only recommencing on the immediate A541 approach to J5 of the A483.
- 2.2.5 Approximately 1.5km to the north of the Site, the A541 Mold Road forms a four-arm signalised junction with the local distributor route of Hope Street to the east, and the residential access side road of Alyn Road to the west. Hope Street provides onward access to the eastern extents of Gwersyllt, as well as Bradley and Rhosrobin.

Stansty Chain Road

- 2.2.6 Stansty Chain Road forms a minor access route between the Site and connects with the southbound carriageway of the A541 Mold Road via a restricted-movements priority-controlled give way junction c400m to the north of the Site. This junction

includes the route of the Old Mold Road which lies to the west of the A541 Mold Road. To the north of the Site the route of Stansty Chain Road is rural in nature, with no footway infrastructure or street-lighting. Moreover, to the north the route is of restricted width with limited opportunity for two vehicles to pass. The route opens up in width, becoming street-lit and with footway provision at the point where it passes between both frontages of the Site.

- 2.2.7 Further to the south along Stansty Chain Road the speed limit changes from the National Speed Limit to become a 20mph zone, with residential development to the northern side of the carriageway and Ysgol Plas Coch primary school to the southern side. Approximately 300m to the south of the site the route forms the minor approach of a priority-controlled T-junction with the route of the B5101 Plas Coch Road/Stansty Road.

B5101 Plas Coch Road / Berse Road

- 2.2.8 The B5101 Plas Coch Road serves as a local distributor route between Stansty Chain Road at its northern end, and the A541 Mold Road at its southern end - a total length of c580m. The route provides the sole means of access to the Plas Coch Retail Park to its north, as well as a means of access to the Wrexham Glyndwr University campus to its south, via a four-arm roundabout junction (Plas Coch Roundabout).
- 2.2.9 The route forms a further four-arm partially signalised roundabout junction with the A541 Mold Road, and B5101 Berse Road to the south, known as the B&Q Roundabout. This roundabout junction lies less than 100m to the southeast of the A483 J5 grade-separated junction, and operates with linked signal timings on a MOVA system. The B5101 Berse Road four lane approach is the only arm of the roundabout (including corresponding circulatory carriageway) which doesn't include for any signalisation.
- 2.2.10 The B5101 Berse Road continues to the south, providing access to both residential and commercial development. Approximately 315m to the south of the B&Q roundabout Berse Road forms a three-arm priority-controlled roundabout with the route of Rhyd Broughton Lane. Berse Road continues to the west, under the A483 and onwards towards Caego. Rhyd Broughton Lane provides onward access to the

A525 Ruthin Road and J4 of the A483. Crucially, the route also provides onward access to a number of key sites such as Wrexham Maelor Hospital, Bangor University Wrexham Campus, the Western Gateway Employment Site and the Ambulance and Fire Services Resource Centre.

B5425 New Road/Rhosddu Road

- 2.2.11 Approximately 350m to the east of its junction with Stansty Chain Road, Stansty Road passes beneath the Borderlands Rail Line, at a restricted width section of carriageway. No form of priority control is in place at this location - drivers are simply required to give-way to traffic already passing beneath the rail overbridge. A further 150m to the southeast Stansty Road forms the minor approach arm to a priority-controlled give-way T-junction with the route of the B5425 New Road/Rhosddu Road. The B5425 serves as a local distributor route between the area of Llay, to the north, and Wrexham town centre to the south. The junction includes for two lanes on the Stansty Road approach, along with a right-turn pocket for traffic turning in from New Road to the north.

2.3 Observed Background Traffic Conditions

- 2.3.1 As noted in Section 1 of this TA a number of pre-application discussions have been held with highway officers of WCBC, with the primary aim to date being to secure an agreed scope of the forthcoming Transport Assessment, including key matters such as the extent of the highway network to be considered.
- 2.3.2 These early discussions identified that the following highway network locations would require to be assessed in consideration of the likely operational effects that could arise from the development of the Proposal Site:
- A541 Mold Road/Hope Street signalised junction;
 - A483 J5 with A541 Mold Road, partially signalised roundabout junction;
 - A541 Mold Road/B5101 Plas Coch Road/B5101 Berse Road partially signalised “B & Q” roundabout junction;
 - B5101 Berse Road/Rhyd Broughton Lane roundabout;
 - B5101 Plas Coch Road/Stansty Road priority T-junction; and,

- B5425 New Road/Rhosddu Road/B5101 Stansty Road priority-controlled T-junction.
- 2.3.3 Video traffic surveys were undertaken at the above junction locations on Thursday 13th June 2019, over a 12-hour period (07:00-19:00) and including for queue surveys. Further queue surveys were undertaken on Thursday 18th July 2019 at three of the junctions (A483 J5, B&Q roundabout and Berse Road roundabout). In addition to the above surveys, Automatic Traffic Counter (ATC) surveys were also undertaken at the following locations commencing from Thursday 13th June and thereby tying in with the abovementioned junction surveys:
- A541 Mold Road (on site frontage);
 - Stansty Chain Road.
- 2.3.4 Due to issues with the ATC survey on Stansty Chain Road, which only recorded 4 days' worth of data (Thursday 13th June - Sunday 16th inclusive) a further 7-day video survey was undertaken from Thursday 18th July of the route. Whilst the four days of ATC survey were still considered representative, the additional 7-day survey was undertaken in order to ensure that a full week of available flow data was available for the route, if required.
- 2.3.5 **Figure TA3** illustrates the location of the above junctions, whilst **Figures TA4a-c** to this report summarise the recorded traffic flows on the immediate local highway network for the AM and PM network peak hour periods of 07:45-08:45 and 16:45-17:45 respectively, as well as the core daytime 12-hour period of 07:00-19:00 (see Section 6 of this TA for further information regarding peak hour assessment time periods).

A541 Mold Road

- 2.3.6 Reference to the recorded peak hour traffic data identifies that maximum prevailing traffic levels on the A541 Mold Road, past the Site frontage, stand at c1,800-1,900 two-way movements during the morning and evening peak hour periods. To the immediate south of the A483, recorded flows on the A541 increase to between c2,800-3,200 two-way movements. South of the B&Q roundabout flows

decrease again to c1,200-1,750, with notable volumes of traffic having turned between the A541 and the B5101 Berse Road/Plas Coch Road at the roundabout.

- 2.3.7 With regard to observed flows on the A541 Mold Road, it is clear that peak hour traffic appears to be tidal - in the AM peak period the predominant flow of traffic is towards Wrexham town centre (56-68%), with the reverse observed during the PM peak period (56-62%).
- 2.3.8 Further review of the traffic survey data for the Mold Road corridor has been undertaken in order to identify any locations where there may currently be some degree of queuing. Review of this data identifies that at the A483 J5 roundabout, there is notable queuing on the majority of approach arms, particularly during the PM period. It is also observed that on some approach arms the level of queuing is notably imbalanced between approach lanes, almost regardless of the relative proportion of turning movements e.g. queuing on the A483 (S) slip road approach occurs heavily in the nearside lane, despite turning movements being split almost 50:50 between the A541 (N) and A541 (S). This would suggest that the junction is not operating as efficiently as it could do.
- 2.3.9 Queuing at the A483 J5 currently is also observed to have a consequential impact on the nearby B&Q roundabout junction to the immediate south - queuing on the A541 (E) approach is observed as extending as far back as the Berse Road approach to the B&Q roundabout, thereby restricting movements from Berse Road. In turn, this has a consequential impact upon queuing along Berse Road and its other junctions. With regard to other queuing at the B&Q roundabout, whilst queues do build during each cycle of the traffic signals, they are also observed to clear relatively quickly e.g. queuing on the Plas Coch Road approach, during the busiest PM peak period, builds each cycle to extend approximately as far back as the Plas Coch retail park roundabout. However, with each cycle of the signals this queuing is observed to clear, before building up again.

Stansty Chain Road

- 2.3.10 Observed traffic flows along Stansty Chain Road, between the Site's two halves, stand at c200 two-way vehicle movements during the AM peak hour period, falling to just 77 two-way movements during the PM period. Of these movements a

notable majority (90-95%) occur in the southbound direction during both peak periods i.e. the flow is not tidal. This trend demonstrates that Stansty Chain Road serves as a key route during the both peak periods, but particularly the AM peak, for traffic travelling from the north on the A541, most likely towards other areas of Wrexham town centre and to the east.

2.3.11 Traffic levels on the route of Stansty Chain Road are noted as increasing further to the south at its junction with the B5101 Plas Coch Road/Stansty Road, most likely due to the frontage residential and Ysgol Plas Coch developments. Traffic levels at this junction during the AM peak have been observed at 369 two-way movements, 66% of which were travelling southbound, whilst during the PM peak levels stood at 148 two-way movements, 63% southbound.

2.3.12 Further review of the recorded survey data identifies that, during the AM and PM peak hour periods the junction of Stansty Chain Road/Plas Coch Road operates without any notable levels of queuing on any of the approach arms - maximum queuing of 7-8 vehicles occurs briefly on Stansty Chain Road during a 10 minute period towards the end of the AM peak, coinciding with the school drop-off period. During the PM peak, and remainder of the AM peak, queuing stands at a maximum of just 2-3 vehicles. It is noted, however, that some degree of queuing occurs during the school collection period in the mid-afternoon, with between 15-18 vehicles maximum recorded during a 10-minute period.

2.4 Review of Road Safety History

2.4.1 An appraisal of the operational safety of the immediate local network to the application site has been carried out through a review of historical Personal Injury Accident (PIA) data obtained from Crashmap.co.uk for the five-year period Q1 2014 to Q3 2018 inclusive. Crashmap provides PIA data collected by the police. This data is approved by the National Statistics Authority and reported on by the Department for Transport each year. This five-year search methodology accords with the search period criteria recommended in National Planning Policy Guidance (NPPG). Details of the extent of the search area and recorded individual accident events are illustrated in **Figure TA5** to this TA, with a full report of relevant accident causation factors attached in **Appendix TA1** to this report. The search area focusses on each of the key network junctions identified above, along with

the sections of A541 Mold Road and Stansty Chain Road past the Site frontages. The following sections provide a review of the incident history at each network location.

A541 Mold Road & Stansty Chain Road

2.4.2 Review of the recorded PIA data for the sections of the A541 Mold Road and Stansty Chain Road, past the Site's frontages, demonstrates that a total of just three injury accident events occurred within the search areas over the five-year study period. All of these recorded incidents occurred on the A541 Mold Road and were of slight classification. No serious or fatal injury accident events were recorded. Of key note is that no incidents have been recorded along Stansty Chain Road in the most recent five year period.

2.4.3 Review of the additional Crashmap data identifies that all three of the incidents on the Mold Road carriageway occurred when drivers were changing lanes at the point where the carriageway changes from one to two lanes. One of these incidents was a loss of control involving a single motorcycle, whilst the remaining two incidents involved two vehicles.

A483 J5 & B&Q Roundabout

2.4.4 Review of the recorded PIA data for the grade-separated roundabout of the A483 J5 and the B&Q Roundabout, identifies that a total of 16 injury accident events occurred within the search area over the five-year study period. All but one of these recorded incidents were of slight classification, with the remaining incident serious in severity. No fatal injury accident events were recorded.

2.4.5 A summary of the nature and distribution (by year) of the accident events identified in the search is set out in **Table TA2.1** below.

Table TA2.1 - Recorded Personal Injury Accidents (Q1 2014 - Q3 2018) - A483 J5 & B&Q Roundabout

Injury Accidents	2014	2015	2016	2017	2018	Total
Fatal	0	0	0	0	0	0
Serious	0	0	1	0	0	1
Slight	4	5	1	4	0	14
Total	4	5	2	4	0	15

- 2.4.6 Review of the more detailed Crashmap data identifies that half of the incidents (8) were of a shunt type nature, with vehicles either failing to stop in time, or setting off too early, and colliding with the vehicle in front. A further four incidents involved drivers failing to give way or failing to fully observe other vehicles in adjacent lanes and colliding with them. Of the remaining incidents, one involved a loss of control and two did not involve any impact, but with slight injuries sustained to either a passenger (in one incident) or motorcycle rider (in the other incident).
- 2.4.7 The single serious incident involved a driver failing to observe other vehicles in an adjacent lane - the incident in question involved a car driver failing to observe a motorcycle in the adjacent lane, before changing into that occupied lane. The seriously injured party was the motorcycle rider.

Berse Road Roundabout

- 2.4.8 Review of the recorded PIA data for the roundabout of the B5101 Berse Road with Rhyd Broughton Lane, identifies that just 1 injury accident event has occurred within the search area over the five-year study period. The recorded incident was of slight classification, with no serious or fatal injury accident recorded.
- 2.4.9 Review of the additional data for this incident identifies that the incident was a shunt with the rearmost vehicle setting off too early and colliding with the vehicle ahead of them that was waiting at the junction.

B5425 New Road/Rhosddu Road/Stansty Road T-Junction

- 2.4.10 Review of the recorded PIA data for the T-junction of the B5101 Stansty Road with the B5425 New Road/Rhosddu Road, identifies that just 1 injury accident event has occurred within the search area over the five-year study period. The recorded incident was of slight classification, with no serious or fatal injury accident recorded.
- 2.4.11 Review of the additional data for this incident identifies that it involved a vehicle turning left from Stansty Road, into the path of a pedestrian crossing the New Road carriageway.

A541 Mold Road/Hope Street/Alyn Way Signalised Junction

- 2.4.12 Review of the recorded PIA data for the signalised junction of the A541 Mold Road with the routes of Hope Street and Alyn Way, demonstrates that a total of just three injury accident events occurred within the search areas over the five-year study period. All of these recorded incidents were of slight classification. No serious or fatal injury accident events were recorded.
- 2.4.13 Review of the additional data for this incident identifies that all three involved conflicting movements between vehicles travelling straight ahead, and vehicles turning. It is therefore likely that all have occurred as a result of drivers failing to fully observe the signalised priority at the junction.

B5101 Plas Coch Road/Stansty Road/Stansty Chain Road

- 2.4.14 It is key to note that no injury accidents have been recorded within the vicinity of the Stansty Chain Road T-junction with the B5101 Plas Coch Road/Stansty Road within the last 5-year period.

Conclusion

- 2.4.15 Overall it is considered that, based upon the above review of road traffic incident data across the study area, the nature of the local accident history is typical of such a local network which includes both priority and signal-controlled junctions. It is therefore concluded that there are no prevailing material highway safety issues within the vicinity of the site which give rise to any demonstrable adverse safety record.

3.0 SITE ACCESSIBILITY AUDIT

3.1 Introduction

3.1.1 Both local and national planning policy and guidance identify a number of key transport related sustainability objectives, including:

- Reducing the need to travel, especially by private car;
- Ensuring accessibility to a range of sustainable travel options.

3.1.2 This chapter therefore considers the potential of the application site to deliver appropriate opportunities for sustainable travel. The nature of local sustainable transport connections available within the immediate catchment of the application site is therefore summarised in the paragraphs below.

3.2 Accessibility via Walking & Cycling Travel Modes

3.2.1 The Mold Road application site is located such that access to the Site can be achieved by both walking and cycling. As already noted, the Site enjoys a good standard of footway connection, by virtue of existing infrastructure along the immediate sections of Stansty Chain Road. The development of the site would provide opportunities to further enhance the existing local walking and cycling infrastructure, details of which are outlined further in Section 5 to this report.

3.2.2 National planning guidance notes that walking is the most important mode of travel at the local scale, offering the greatest potential to replace short distance car trips of under 2km. The Chartered Institute of Highways & Transportation (IHT) guidance 'Providing for Journeys on Foot' suggests that a 1.0km walk catchment represents an acceptable walk distance to a place of work for commuting purposes, whilst a maximum distance of 2.0km is preferred for commuting purposes or journeys to school.

3.2.3 **Figure TA6** to this report illustrates a maximum 2.0km walking iso-distance catchment measured from the Site and demonstrates that such a walking catchment crucially extends as far as the town centre of Wrexham, thereby demonstrating that the Site lies within an acceptable walking commute of the

major local employment centre, retail centre, public transport services, schools and hospital. The Site is therefore in a highly sustainable location and is well supported by a wide range of local services and facilities. Further review identifies that the following key destinations are available within an appropriate walking distance of the application site (see **Figure TA7** to this TA):

Education

- Glyndwr University Campus;
- Ysgol Bryn Alyn School (just on edge of 2km walk);
- Ysgol Plas Coch Primary School;
- Rhosddu Primary School;
- Wat's Dyke County Primary School;
- Gwersyllt Community Primary School;
- Ysgol Heulfan School;
- Playland Day Nursery;
- Little Scholars Pre-School; and,
- Garden Village Pre-School.

Selected Local Facilities

- Gwersyllt & Rhosddu Post Offices;
- Sainsbury's Supermarket & Service Station;
- Aldi & Lidl Supermarkets;
- Plas Coch Retail Park;
- GP Surgeries; and,
- Dental Surgeries.

3.2.4 In addition to walking opportunities, it is generally accepted that the pedal cycle represents a practical alternative travel option to the private car for journeys of up to 5km (particularly for commuting journeys). **Figure TA8** to this report illustrates a 5km cycle iso-distance catchment measured from the Site and demonstrates that such a cycle catchment extends as far as covering the entirety of Wrexham, as well as the outlying settlements to its northwest.

3.2.5 Details of available local cycling routes and connections are illustrated in **Figure TA9** to this report and demonstrate that a number of traffic free cycle routes are available within a short cycle ride of the Site.

3.3 Access to Public Transport

Access to Buses

3.3.1 **Figure TA10** to this report identifies the location of the Site relative to key local public transport infrastructure, including bus stops and rail stations within a 2km walking distance. A small number of existing local bus services operate within the vicinity of the Mold Road proposal site. The closest bus stops to the Site are located at Old Mold Road c700m to the northwest of the centre of the Site, or on Colliery Road c600m to the southeast of the Site, off Stansty Chain Road. Section 5 to this report, however, notes that the development proposals would include for the implementation of a new bus layby facility on southbound side of the A541 Mold Road, at the site frontage. Such a new stop could accommodate the Wrexham-bound route of the existing hourly No.27 service which is available from the abovementioned stop on Old Mold Road. Full timetable information for bus services serving the existing local stops are attached at **Appendix TA2** and summarised in **Table TA3.1** below. **Table TA3.1** demonstrates that regular connections are available to the key local destinations of Wrexham Town Centre and Bus Station.

Table TA3.1 - Bus Services Available at Local Bus Stops

Table 1A.1 - Bus Services Available at Local Bus Stops						
	Route	One-Way Hourly Frequency				
		Mon-Fri		Sat		Sun
		Day	Eve	Day	Eve	All Day
Old Mold Road						
27	Wrexham - Mold	1	0	1	0	0
Colliery Road						
17	Wrexham - Moss	3 services during the daytime		3 services during the daytime		0
Plas Coch Retail Park						
12A	Wrexham - Brymbo	1	0	1	0	1
13A	Wrexham - Brymbo	2 services during early morning		1 service during early morning		0
21	Wrexham - Summerhill - Wrexham	1	1	1	1	Every 2hrs
Total		3+	1+	3+	1+	1+

3.3.2 Review of **Table TA3.1** shows that on Monday to Saturday in the daytime there are at least 3 bus services an hour within a 1km walk of the site, whilst in the evening there is at least 1 bus per hour. On a Sunday, there is at least 1 bus service per hour accessible throughout the day. The number 27 service in particular provides

regular connectivity to both Wrexham town centre and the bus station, from which onward connections are available. Crucially, the bus station also lies within a short walking distance of both Wrexham Central and General rail stations, details of which are outlined further below.

Access to Rail Services

- 3.3.3 It should also be noted that the Site lies within a 2km walk of the existing rail stations of both Gwersyllt to the north, and Wrexham General Station to the south. Additionally, and as noted above, the No.27 bus service which operates past the Site frontage provides onward access to Wrexham bus station within a short journey time. The bus station in turn lies within a short walk of both Wrexham Central and General rail stations. All three aforementioned stations lie on the Borderlands Rail Line, and as such services from these stations provide regular (at least Hourly) services to key employment and leisure destinations such as Chester, Holyhead, Liverpool, Birmingham and Cardiff.

3.4 Accessibility Summary

- 3.4.1 Overall it is concluded that the Mold Road application site represents a highly appropriate location for a residential development, being located within an acceptable walk/cycle catchment of key everyday destinations such as local shopping facilities and schools, and accessible by bus and rail services to/from key local employment centres. Along with the additional sustainable transport infrastructure improvements proposed as part of the development, these services are anticipated to reduce the need for residents at the site to utilise the car for everyday journeys. Such positive locational characteristics should assist in meeting the key sustainable planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

4.0 SITE PLANNING & HIGHWAYS HISTORY

4.1 Site Overview

- 4.1.1 The proposal site extends to a total area of c21.5ha and comprises greenfield land that remains in semi-agricultural use. The Site is located within the currently designated Green Barrier which surrounds Wrexham and other local settlements. The Site also lies directly adjacent to the settlement boundary of Wrexham.

4.2 Emerging Wrexham Local Development Plan

- 4.2.1 The Wrexham Unitary Development Plan (UDP) was adopted in 2005 and related to the Borough's development plan policies over the period 1996-2011. As noted above, the Site is located within an area currently designated as Green Barrier under Policy EC1 of the UDP.
- 4.2.2 The Wrexham Local Development Plan (LDP) 2013-2028 is currently being prepared and, once adopted, would replace the UDP. Hearing Sessions for the LDP's Examination in Public (EIP) have been held in September/October 2019, and so it is clear that the emerging LDP is at an advanced stage and can be afforded due weight in the determination of the planning application for this scheme.
- 4.2.3 Policy H1 of the emerging LDP identifies housing allocations which would assist in the delivery of WCBC's identified housing requirement over the plan period. The Site is identified as a non-strategic housing allocation for around 375 dwellings "Site 1: Land Adjoining Mold Road/A483, Wrexham". The Site is located within the "Tier 1: Primary Key Settlement" of Wrexham, where the LDP directs the majority of new development. All relevant Highways and Transport related policies are discussed further in the Planning Statement submitted with this application.

4.3 A483 Strategic Highway Study

- 4.3.1 In June 2017 the Welsh Government held two public information exhibitions which outlined their proposals to undertake a detailed study of the strategic route of the A483 between junctions 3-6 at Wrexham. As already noted, the A483 serves as a key strategic corridor between North and South Wales, as well as with England,

and this immediate section local to Wrexham is subject to a number of prevailing constraints and issues. Indeed, this section of the route is a pinch point scheme in the Welsh Government's National Transport Finance Plan and the Moving North Wales Forward strategy.

- 4.3.2 The purpose of the WG study is to identify potential opportunities for improvement on this section of the corridor, with a view to improving safety, capacity and journey times, as well as reducing the impact of the route's junctions on east-west movements across the corridor. The study is understood to be cognisant of the emerging WCBC LDP proposals - indeed, discussion with WG representatives has identified that the study would include for all housing allocation sites identified in the LDP, including this Site.
- 4.3.3 The key outcomes of the study are proposed to be the identification of potential improvements at each junction of the A483 which would be WG funded, including the modelled effects of the options relative to baseline conditions. Other scheme objectives are understood to include supporting public transport and active travel provision. It is anticipated that potential improvement options will be identified during Autumn 2019, with further public consultation events to follow before the end of the year.
- 4.3.4 Following early discussions between Focus TP and WG representatives it was made clear by WG that, whilst the assessment of transport related effects arising from the proposed residential development should consider the A483 J5 and adjacent junctions (e.g. B&Q roundabout), submissions made in respect of the planning application did not need to be cognisant of any potential future outcomes from the WG study. Further, Focus TP identified that detailed assessment of the A483 J5 and neighbouring B&Q roundabout was proposed to be undertaken with JCT Consultancy, and that any potential opportunities for mitigation would be explored (see Section 8 of this TA). WG welcomed this suggested approach, which has therefore since been adopted in this Transport Assessment process.

5.0 DESCRIPTION OF THE DEVELOPMENT PROPOSALS

5.1 Overview

5.1.1 The Mold Road site is proposed to be developed to provide up to 455 residential dwellings, and associated public open space, along with a new main Site access connection to the A541 Mold Road, as well as secondary access via Stansty Chain Road. The planning application is made in outline, with all matters reserved save for the means of access.

5.1.2 An illustrative parameters plan of the development scheme is provided at **Drawing PP001 Rev F** to this report, along with an illustrative masterplan at **Drawing A106224 002 Rev J**. Given that the planning application for the residential development elements is made in outline, it should be noted that the attached parameters plan is purely illustrative (except for Site access) and could be subject to change as part of any future reserved matters planning submissions. Any detailed site masterplan/parameters plan produced to support a reserved matters application, will include for appropriate levels of car parking, turning facilities for service vehicles and sustainable transport infrastructure (footways and cycle access).

5.2 Highway Access Strategy

5.2.1 Early pre-application discussions identified that key local stakeholders had some concerns regarding the use of Stansty Chain Road by development traffic, in particular with regard to the increase in traffic that could result on the route, and the consequential impact that may have in terms of both operational highway safety and capacity. Review of recorded Personal Injury Accident (PIA) history along the route (see Section 2 to this report) has, however, identified that there is no prevailing highway safety record on the route of Stansty Chain Road, nor at its junction with the B5101 Plas Coch Road to the south. Moreover, the route is currently the subject of a 20mph zone past Ysgol Plas Coch, as well as at the junction itself, with traffic calming measures and off-carriageway layby parking for school drop-off and collection times.

- 5.2.2 In addition to the positive highway safety record and infrastructure of the route, review of the recorded survey data (see also Section 2 of this report) has identified that, during the AM and PM peak hour periods the priority-controlled junction of Stansty Chain Road/Plas Coch Road operates without any notable levels of queuing on any of the approach arms - maximum queuing of 7-8 vehicles occurs briefly on Stansty Chain Road during a 10 minute period towards the end of the AM peak, coinciding with the school drop-off period. During the PM peak, and remainder of the AM peak, queuing stands at a maximum of just 2-3 vehicles. It is noted, however, that some degree of queuing occurs during the school collection period in the mid-afternoon, with between 15-18 vehicles maximum recorded during a 10-minute period. It should be noted that peak site traffic generation would occur during the traditional AM and PM peak periods, and so would not coincide with the afternoon school collection peak period.
- 5.2.3 On the basis of the above reviews, it is therefore considered that the impact of any additional development related traffic utilising the route of Stansty Chain Road would be negligible, both in terms of operational highway safety and capacity.
- 5.2.4 With the above in mind the access strategy has been developed based on some degree of utilisation of Stansty Chain Road. Ultimately it is considered that the main site access should be taken from the route of the A541 Mold Road, via a new signalised junction - this provides direct access to the primary route network, as well as the strategic trunk road network within a short driving distance.
- 5.2.5 In addition, a secondary means of access has been developed which would see a priority-controlled crossroads junction between the two Site land parcels and Stansty Chain Road. Whilst some degree of traffic restriction was considered, it was concluded that such an approach would severely limit the operational flexibility of the local highway network to accommodate development related traffic e.g. if the junction onto Stansty Chain Road were to be restricted to the smaller parcel only, this would force all the traffic from this smaller parcel into using Stansty Chain Road at all times. In contrast - leaving the junction as an open crossroads provides the flexibility to enable some drivers to access the A541 Mold Road/the A483 via the larger development parcel. This approach enables the flows of traffic from the two development land parcels to be self-regulating, able to respond to any localised pressures in the network and identify the most suitable

route. This is considered the most appropriate access solution, as opposed to one which would artificially force traffic from the small parcel to use Stansty Chain Road, and thereby limit network flexibility during busy periods.

- 5.2.6 The Site access proposals are outlined in further detail in the following sub-sections.

A541 Mold Road Main Site Access

- 5.2.7 As outlined above, the primary means of access to the development site would be via a new signalised site access junction with the A541 Mold Road, which would lie to the west of the main development land parcels. The proposed main site access junction would be situated c80m to the south of the Jones Bros Farm Shop access, and c550m to the north of the A483 J5 roundabout. **Drawing J000069-GA001** illustrates the general arrangement of the proposed signalised main access junction.

- 5.2.8 The design of the signalised main access junction has been undertaken in accordance with current DMRB standards (CD123 - Geometric Design of At-Grade Junctions), and in such a way as to maximise the existing A541 Mold Road carriageway geometry at this location, and thereby minimise the impact of the junction's construction and implementation on the local highway network operation. Accordingly, the existing opening in the central reservation is proposed to be utilised and lengthened, pedestrian crossing facilities of the A541 Mold Road are proposed to be accommodated within the existing central reserve, and existing lane widths are retained where possible. Other key parameters are noted as follows:

- 3.35m lane widths on A541 southbound approach;
- 3.25m lane widths on A541 northbound approach, incl. right turn lane;
- 3.25m lane widths on site access approach;
- 55m right turn lane on A541 northbound approach;
- 12m junction bellmouth radii;
- Signalised pedestrian crossing of A541;
- 2.0m footway into site, with additional 0.5m verge.

Stansty Chain Road Secondary Site Access

- 5.2.9 Further to the access strategy outlined above, **Drawing J000069-GA002** illustrates the proposed Stansty Chain Road site access arrangements. Such an arrangement would ensure that development traffic from the smaller land parcel could route to and from the primary and strategic routes of the A541 Mold Road and A483, without needing to pass through the area of Plas Coch. Moreover, it would also ensure that traffic from the larger parcel could route to eastern areas of Wrexham and beyond, also without having to route via the A483 J5 and Plas Coch. The proposed arrangement essentially enables the most efficient, and least impactful, means of development traffic routing via the local highway network.
- 5.2.10 In addition to the site access proposals at Stansty Chain Road, it is also proposed to extend the existing 30mph speed limit which currently ceases just to the south of the A483 over-bridge, becoming National Speed Limit past the site frontage and up to its connection with the A541 Mold Road to the north. It is proposed to extend the 30mph speed limit along the full length of the Site's frontage with Stansty Chain Road, up to a point approximately at the Site's northernmost extents. Drawing J000069-GA004 illustrates this proposal in further detail. It is considered that extending the 30mph speed limit in this way, along with the implementation of the development and its proposed access points and infrastructure improvements, should serve to further enhance the already positive highway safety record along this section of Stansty Chain Road.

5.3 Sustainable Transport Infrastructure

- 5.3.1 In addition to the vehicular site access strategy outlined above, the development proposals also include for a number of new, as well as improved, sustainable transport related infrastructure measures within both the site and its immediate environs. All of these measures would accord with Active Travel Wales design guidance, and would ensure that the Site's development fully meets the key active travel objectives of the Active Travel Wales Act (2013). These measures are outlined in further detail below.

New Walking/Cycling Infrastructure

- 5.3.2 As identified above, the proposed signalised main site access junction with the A541 Mold Road would include for a new signalised pedestrian crossing facility, to link the Site with the existing footway which lies to the west of the A541 Mold Road carriageway (see **Drawing J000069-GA001**). The site access footways have been designed in accordance with Active Travel Wales guidance (ref. DE001 of ATW Design Guidance). Provision of this crossing facility is achievable with a staggered layout, thereby ensuring the safest possible means of crossing the primary route corridor of the A541 Mold Road. The proposals would provide a significantly safer and more convenient means of crossing the A541 Mold Road, especially when compared to the current uncontrolled crossing locations of the dual carriageway. As a result, the signalised crossing would enable connectivity between the site and those areas of Gwersllyt and Summerhill to the north, as well as significantly enhancing the existing connectivity between those areas and the main settlement of Wrexham and its associated facilities to the south.
- 5.3.3 **Drawing J000069-GA002** also illustrates that the proposed site access junctions with Stansty Chain Road would incorporate appropriate walking/cycling infrastructure. Connectivity is proposed to be enhanced to the south of the site, with a shared-use path ultimately tying into the existing infrastructure beneath the A483 over-bridge, as well as a new footway facility on the western side of the carriageway. These sections of new walking/cycling infrastructure would ensure that both the site land parcels have the benefit of high standard pedestrian/cyclist connectivity with the existing connections to the south on Stansty Chain Road.

A541 Mold Road Bus Layby

- 5.3.4 In addition to the main proposed new walking and cycling infrastructure noted above, the development proposals would also include for the implementation of a bus layby on the southbound site-side of the A541 Mold Road, approximately 200m to the south of the main site access from the A541 Mold Road. **Drawing J000069-GA003** to this TA illustrates the proposed bus layby, the geometry of which accords fully with the recently published DMRB document CD169 “The design of lay-bys...”.

5.3.5 Connectivity with the bus layby is proposed to be entirely via the development site, with no connectivity along the A541 Mold Road itself. Internal Site connectivity would include for shared-use path connections to the layby from within the site. Whilst the geometry of the layby itself is proposed as detailed in the abovementioned drawing, the details of the bus stop “platform” area and internal Site connectivity are proposed to be dealt with as part of future detailed Site planning submissions.

5.3.6 Provision of the bus layby and internal Site connectivity would significantly enhance the sustainable transport opportunities for residents of the site, providing access to the existing No. 27 hourly bus service between Mold and Wrexham town centre, as well as any potential future bus services along this mainline route. As outlined in Section 3 of this report, this hourly service not only enables access to Wrexham town centre but also the Bus Station, from which further onward services are available, as well as access to the nearby Wrexham General and Central rail stations and their onward connections.

5.4 Vehicle Servicing

5.4.1 It is proposed that any future detailed site layout would include for turning heads to the terminations of the various culs-de-sac within the development, which would enable the turning of large Refuse Collection Vehicles (RCVs). These turning heads would be designed in accordance with the relevant guidance in order to ensure that the site can be fully serviced by emergency and refuse collection vehicles.

5.5 Car Parking

5.5.1 As with vehicle servicing of the site, it is proposed that any future detailed layout would include for the appropriate levels of car parking to adhere with adopted WCBC standards.

6.0 KEY ASSESSMENT PARAMETERS

6.1 Assessment Time Periods

6.1.1 As identified in Section 3 of this report, review of background daily traffic patterns derived from the June and July 2019 traffic surveys suggests that maximum background traffic levels over the local highway network are experienced during the following time periods:

- Network AM peak hour: **07:45-08:45**
- Network PM peak hour: **16:45-17:45**

6.1.2 In practice these AM & PM peak periods are also likely to represent the maximum traffic demand periods associated with traffic to and from the proposed Mold Road residential development and therefore these time periods have been utilised for the network capacity appraisals included in this TA report. In addition to the network peak hours, this TA also considers the effects of development over the core weekday daytime 12-hour period of 07:00-19:00.

6.2 Future Year Traffic Growth Assumptions

6.2.1 It is anticipated that, based upon current market conditions, the development of the residential site could be completed and fully occupied by the end of 2027, however, for robustness this has been extended to 2030. Accordingly, a 2030 future year date has been utilised for core traffic demand assessments within this TA. This TA also considers the effects of development during an earlier interim year, 5 years post-submission of the outlined planning application (2024). For this earlier period a lower quantum of development has been considered, in order to reflect the anticipated level of development that is likely to be operation at that stage of the site's delivery.

6.2.2 Guidance published by the DfT identifies that future estimates of traffic should be made through the application of regional growth factors derived from the National Transport Model (NTM). NTM forecasts give traffic growth by region, road type and whether the area is built up or not. These forecasts are then adjusted by local TEMPro factors to reflect local traffic trends. **Appendix TA3** provides the TEMPro

growth factor outputs for the Wrexham area for the above future year periods, whilst **Table TA6.1** summarises the results.

Table TA6.1: TEMPro Adjusted NTM Growth Factors

	2019-2024	2019-2030
Weekday AM Peak	1.0589	1.1212
Weekday PM Peak	1.0591	1.1228
Average Weekday	1.0612	1.1258

- 6.2.3 The TEMPro adjusted NTM growth factors have been applied to the 2019 surveyed traffic flows presented in **Figures TA4a-c** to produce the 2024 interim year and 2030 future year background traffic flows illustrated respectively at **Figures TA11a-c** and **TA12a-c**.

6.3 Committed Development Traffic

- 6.3.1 In addition to the TEMPro growth identified above, two committed local development schemes were identified by WCBC Highways officers during discussions:

- 410 PRS Apartments on land formerly occupied by student accommodation at the main Glyndwr University campus, Plas Coch Road; and,
- Costa Coffee Drive-Thru, Plas Coch Retail Park.

- 6.3.2 Traffic anticipated to arise as a result of the above developments has been determined through reference to the Transport Assessment submissions made for each planning application. The following sections outline the information available for each scheme in further detail.

Glyndwr University Campus Apartments

- 6.3.3 In August 2018 a number of planning applications were submitted to WCBC by Glyndwr University in relation to comprehensive proposals for the redevelopment of the University's main campus, situated to the east of the A541 Mold Road and south of the B5101 Plas Coch Road. The applications included for the following key elements:

- *Demolition of the student union, refectory and other redundant buildings*
- *Redevelopment of academic campus to provide new learning gateway building, engineering building, new sports hall extension*
- *Construction of 107 bed student accommodation facility;*
- *Demolition of redundant student halls and outline planning application for up to 410 apartments with access from B5101 incl. car parking;*
- *Outline application for student accommodation facility of up to 197 beds.*

- 6.3.4 In particular, the above development scheme included for the redevelopment of the existing student accommodation buildings to deliver up to 410 apartments which are understood to be for Private, Rented & Social use. In addition to the applications on the main campus site, the submissions also included for two further applications for residential development at two off-site locations, the purpose of which was to fund/enable the main campus development - these were at Gatewen Road and Holt Road/Dean Road.
- 6.3.5 All applications relating to the main campus site were granted permission at planning committee and so represent committed development. The two off-site residential scheme applications were refused.
- 6.3.6 Transport submissions relating to the University planning applications were undertaken by Integrated Transport Planning Ltd. (ITP). Review of the ITP TA, and subsequent TA Addendum, has enabled the identification of the anticipated trip generation associated with the approved main Plas Coch campus development proposals. The TA includes an assessment of the likely trip generation of the main development elements - the 410 PRS apartments and the new student accommodation facilities - as well as the trip redistribution effects that would occur as a result of the other campus redevelopment aspects.
- 6.3.7 Existing University trip generation, derived from traffic surveys undertaken to inform their TA, was uplifted by ITP by a nominal 10% growth to account for the planned growth in the university across both staff and students. Traffic relating to the redevelopment scheme was distributed by ITP on the basis of 2011 Census Journey to Work data for Wrexham.
- 6.3.8 The anticipated additional traffic associated with the University's Plas Coch campus redevelopment proposals, including for the 10% growth in staff/student numbers, has been reproduced from the information contained with Appendix D of

the ITP TA. Accordingly, **Figures TA13a-c** of this TA illustrate these forecast University traffic flows.

Costa-Coffee Drive-Thru

- 6.3.9 A planning application for the Costa Coffee development was submitted to WCBC in May 2018, with a Transport Statement produced by TTHC Ltd. Planning permission for the development, which was proposed on land within the Plas Coch Retail Park, was granted in April 2019.
- 6.3.10 Review of the transport submissions identifies that estimates of the facility's likely trip generation were made via reference to the TRICS database for fast food - drive through outlets. As there are no drive through cafes listed within TRICS, the selection of fast food drive through sites represents the closest comparator - indeed, it's arguable that the selection of this land use to estimate trip rates is likely to provide robust forecasts as the use is typically a higher trip generator.
- 6.3.11 Of key note is that the TTHC submissions focussed on the likely busiest periods of operation of the drive through café, which tend to occur during the weekend lunchtime periods. As this TA is focussed upon the weekday peak hour periods, Focus TP has undertaken a review of the TRICS fast food drive through outlets, and their likely trip generation, for the weekday peak hour periods. **Table TA6.2** below summarises the TRICS derived peak hour trip rates for the proposed facility which are attached to this report at **Appendix TA4**:

Table TA6.2: TRICS Derived Fast Food - Drive Through Trip Rates

	Private Housing - Trip Rate (<i>per dwelling</i>)		
	Arr	Dep	Total
AM Peak (08:00-09:00)	10.607	10.016	20.623
PM Peak (17:00-18:00)	12.603	12.628	25.231
12-Hour (07:00-19:00)	131.975	129.119	261.094

- 6.3.12 Traffic associated with the facility has been assumed to be wholly additional to the highway network - in reality the majority of traffic to and from this facility, which is located at the very rear of the retail park, is likely to comprise linked trips associated with visits to other retail/leisure related trips to and from the retail park. Accordingly, it is likely that very few entirely new trips would be created on

the local highway network, nor would there be many diverted trips. As such, the above approach represents a robust assessment of likely traffic conditions. **Figures TA14a-c** illustrate the anticipated assignment of traffic associated with the new Costa drive through store.

Total Committed Development Traffic

- 6.3.13 Total committed development traffic forecasts are illustrated at **Figures TA15a-c**. This total committed development traffic has been added to the 2024 and 2030 background traffic in order to derive network traffic flows for the 2024 and 2030 Baseline “Do Nothing” (i.e. without the proposed development) scenarios, as illustrated at **Figures TA16a-c and TA17a-c respectively**.

7.0 ANTICIPATED TRIP GENERATION AND DISTRIBUTION

7.1 Anticipated Trip Generation

- 7.1.1 Estimates of the trip generation likely to be associated with the proposed development have been derived from trip rates provided by WCBC Highways. The WCBC trip rates are based on traffic surveys undertaken at an existing residential development within Wrexham and are considered by WCBC to be representative of local residential trip generation trends within the conurbation. With the above in mind, the trip rate data utilised in the consideration of the proposed residential development has been reproduced and is attached as **Appendix TA5** to this report.
- 7.1.2 It should be noted that WCBC trip rate data is based on survey data outputs in hourly intervals (e.g. 16:00-17:00) and not for intervening hourly periods such as that being considered for the AM and PM peaks in this assessment i.e. 07:45-08:45 (see section 4 to this TA). For the purposes of this assessment the “whole hour” WCBC trip rate information has been applied to the assessed peak hours regardless, in order to ensure the most robust assessment i.e. the WCBC forecasts of trip generation for 08:00-09:00 have been applied to the assessed AM period of 07:45-08:45, and the same approach adopted for the PM period.
- 7.1.3 Review of the WCBC data attached at **Appendix TA5** suggests the following trip rates, for both the peak hour and core daytime 12-hour periods, as outlined in **Tables TA7.1** and **TA7.2** respectively below:

Table TA7.1: WCBC Derived Residential Trip Rates

	Private Housing - Trip Rate (<i>per dwelling</i>)		
	Arr	Dep	Total
AM Peak (08:00-09:00)	0.124	0.476	0.600
PM Peak (17:00-18:00)	0.482	0.259	0.741
12-Hour (07:00-19:00)	2.971	3.200	6.171

- 7.1.4 As outlined in Section 6, this TA considers the assessment of development effects at both 5 years post-submission of this planning application (2024) as well as the anticipated future year once development is completed (2030). During 2024 it is anticipated that c165 dwellings would likely have been completed and occupied at the Site. Application, therefore, of the above trip rates to the proposed

development size of 165 dwellings in 2024, and 455 dwellings in 2030, would suggest the following estimates of trip demand.

Table TA7.2: Predicted Development Trips - 2024 - 165 Dwellings

	Private Housing - Trips		
	Arr	Dep	Total
AM Peak (08:00-09:00)	20	79	99
PM Peak (17:00-18:00)	80	43	122
12-Hour (07:00-19:00)	490	528	1,018

Table TA7.3: Predicted Development Trips - 2030 - 455 Dwellings

	Private Housing - Trips		
	Arr	Dep	Total
AM Peak (08:00-09:00)	56	217	273
PM Peak (17:00-18:00)	219	118	337
12-Hour (07:00-19:00)	1,352	1,456	2,808

7.1.5 Review of the average trip rate assessment identifies that, by the end of 2024, the Site is likely to typically generate of the order of between 100-120 two-way peak hour vehicle movements, and approximately 1,000 two-way movements over the course of the core daytime 12-hour period. Such levels of traffic are the equivalent of between 1-2 additional vehicle movements per minute and are unlikely to result in any noticeable impact upon local network operating conditions.

7.1.6 During 2030, following completion of all 455 proposed dwellings, the Site is anticipated to generate 270-340 two-way peak hour vehicle movements, and approximately 2,800 two-way movements over the 12-hour daytime period. Such traffic levels would equate to an increase of 4-6 vehicle movements per minute across the local highway network. It should be noted that the above traffic estimates represent the total number of anticipated trips from the whole site, i.e. both the main site predominantly served from the Mold Road, and the smaller site served from Stansty Chain Road. Accordingly, the anticipated traffic levels noted above would be distributed between the various site access locations, thereby reducing the maximum levels of impact at each access location.

7.2 Predicted Development Traffic Distribution and Assignment

7.2.1 The distribution of development related traffic to and from the Site has been undertaken on the basis of a gravity model derived from the 2011 Census Journey

to Work data, which provides employment destination information for all wards within the UK.

- 7.2.2 The 2011 Census data was analysed with regard to all employment trips made from the Wrexham merged authority district, including its individual Super Output Areas and, in particular those made by car - see **Figure TA18** to this report. Trips relating to the employment destination ward data were distributed on the basis of the most likely route choices that drivers would make, based on local knowledge of the area along with proprietary traffic routing software. **Table TA7.4** below illustrates the calculated anticipated proportional distribution of traffic along the key local route corridors which comprise the extents of the study area considered in this TA:

Table TA7.4: Anticipated Distribution of Development Traffic

Route	Proportion of Development Traffic
A541 Mold Road (North of Site)	11.2%
Hope Street	0.6%
Old Mold Road	1.8%
A483 (N)	24.8%
A483 (S)	22.8%
A541 Mold Road (South of Berse Rd)	5.0%
B5101 Berse Road	0.8%
Rhyd Broughton Lane	6.0%
A534/A525(E) via B5425 New Road	17.7%
B5425 Rhosddu Road	9.3%

- 7.2.3 The above development turning proportions are illustrated in **Figures TA19a-b and TA20a-b** to this report, for the Site's larger and smaller parcels respectively. It should be noted that the distribution of traffic differs marginally between the larger and smaller Site parcels, albeit only on a more immediately local level. This difference relates to the likely marginally different routing choices that may be made depending on whether traffic originates from the larger site or the smaller one. Assignment of the anticipated development trip totals to these distribution proportions, for both the 2024 and 2030 year scenarios is illustrated in **Figures TA21a-c and TA22a-c** to this report respectively.

7.3 Predicted Future Year Traffic Flows

- 7.3.1 The anticipated assignment of development trips illustrated in **Figures TA21a-c and TA22a-c** has been added to the projected 2024 interim and 2030 future year baseline network traffic movements identified at **Figures TA16a-c and TA17a-c** in Section 6 of this TA. The resulting 2024 interim and 2030 future year “Do Something” (i.e. including proposed development) network traffic flows used for the assessment of development impact are illustrated in **Figures TA23a-c and TA24a-c**.

8.0 ASSESSMENT OF ANTICIPATED DEVELOPMENT TRAFFIC IMPACT

8.1 Introduction

8.1.1 This section of the report considers the operation of the immediate highway network to the development site and the ability of this network to accommodate the predicted future development traffic flow conditions identified in Section 7 of this report. Assessment of the impact of the development proposals has been carried out through the consideration of both link flow impact and junction operational capacity across the study area as summarised below:

- A541 Mold Road/Hope Street signalised junction;
- A483 J5 with A541 Mold Road, partially signalised roundabout junction;
- A541 Mold Road/B5101 Plas Coch Road/B5101 Berse Road partially signalised “B & Q” roundabout junction;
- B5101 Berse Road/Rhyd Broughton Lane roundabout;
- B5101 Plas Coch Road/Stansty Road priority T-junction;
- B5425 New Road/Rhosddu Road/B5101 Stansty Road priority-controlled T-junction and,
- Proposed Main Site Access/A541 Mold Road signalised junction.

8.1.2 The assessment of development impact has been undertaken for each of the above network locations on the basis of the following traffic flow scenarios, save for the proposed main site access junction which has only been modelled for the “Do Something” scenario:

- 2019 Surveyed AM and PM peak hour periods;
- 2024 Baseline “Do Nothing” AM and PM peak hour periods;
- 2030 Baseline “Do Nothing” AM and PM peak hour periods;
- 2024 Baseline “Do Something” AM and PM peak hour periods; and,
- 2030 Baseline “Do Something” AM and PM peak hour periods.

8.1.3 The “Do Nothing” scenarios represent anticipated future baseline traffic flows that would occur on the highway network, based on anticipated general traffic growth as well as those committed developments identified in Section 6 of this TA (i.e. those developments which have planning permission and can reasonably be

assumed to be developed). The “Do Something” scenarios assume that the proposed development is granted planning permission and go ahead, so comprise both the “Do Nothing” baseline flows, with the anticipated residential development traffic flows added.

- 8.1.4 The 2030 future year scenarios should ensure that this TA considers both the maximum proportional impact of the development proposals, as well as the worst-case operational capacity assessment conditions for the local highway network.
- 8.1.5 The operational performance of these junctions has been assessed using the following industry standard software:
- TRL analysis software Junctions9 (PICADY module) - for all priority-controlled T-junctions;
 - TRL analysis software Junctions9 (ARCADY module) - for all priority-controlled roundabout junctions;
 - JCT Consultancy software LinSig V3 - for all signalised junctions.
- 8.1.6 Given the complexity and potential sensitivities regarding the operation of the A483 J5 and neighbouring B&Q roundabout, it should be noted that modelling of these junctions has been undertaken by JCT Consultancy themselves. It is considered that this approach has provided the most robust method of ensuring that the model for these junctions is as accurate as possible in representing the observed operational effects.
- 8.1.7 The LinSig models of the existing network locations have been constructed with reference to the signal timing specification (provided by Telent), as well as the queue survey data recorded in June and July 2019. Crucially, however, JCT has also reviewed the video surveys for the A483 J5 and B&Q roundabout locations, in order to ensure that timings within the model reflect the average timings in operation on the ground - as the junctions operate on MOVA, with timings constantly varying, average cycle times have been recorded from the video surveys. Driver behaviour, including lane discipline and weaving has also been closely observed by JCT from the video surveys, further informing the LinSig model for these two junctions.

8.2 Interpretation of Results

Junctions 9 (PICADY & ARCADY)

8.2.1 With regard to the TRL analysis software Junctions9 (both ARCADY and PICADY modules), traffic flows are split into 15-minute time segments within the model inputs. The results generated in the model indicate the peak Ratio of Flow to Capacity (RFC) in any individual peak and likely traffic queues. RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions, whilst values between 0.85 and 1.00 represent variable operation but still within theoretical capacity i.e. possible queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction. RFC values in excess of 1.00 represent overloaded conditions i.e. congested conditions.

8.2.2 The Design manual for Roads and Bridges (DMRB) is currently undergoing a programme of updates to the various guidance documents which it comprises. Recently CD123 “Geometric Design of At-Grade Priority and Signal-Controlled Junctions” recently replaced a number of outgoing design documents, in particular document TD42/95 “Geometric Design of Major / Minor Priority Junctions”. Annex A of TD42/95 states the following with respect to the design of new junction schemes and operating capacity thresholds:

“Due to site to site entry variation, there may be a standard error of prediction of the entry capacity by the formulae of + or - 15% for any site. Thus, queuing should not occur in the various turning movements in the chosen design year peak hour in 5 out of 6 peak periods or sites, if a maximum RFC of about 85% (0.85) is used. Similarly, if a maximum RFC of 75% is used, queuing will theoretically be avoided in 39 out of 40 peak hour periods or sites.

The general use of designs with an RFC of about 85% is likely to result in a level of provision which will be economically justified....”

8.2.3 Whilst Annex A of TD42/95 has not been carried over to CD123, however, the possibility remains that as part of the DMRB harmonisation process it may be incorporated in another replacement document in future. Regardless, Focus TP considers that the above clarification provided in TD42/95 Annex A continues to remain entirely valid.

- 8.2.4 The above guidance clearly identifies that it is possible for a junction to operate with individual RFC levels of above 0.85 without unacceptable congestion and delay taking place. The 0.85 threshold identifies the optimum position at which operational capacity is maximised when viewed against the likely frequency of queuing and delay events. RFC values of above 0.85 simply demonstrate a greater potential for congestion and delay to occur, which must be viewed in the context of the extent of future year horizon under assessment and general network wide conditions.

LinSig

- 8.2.5 LinSig software presents network modelling results in terms of a percentage Degree of Saturation (DoS) value and corresponding predicted traffic queues for each modelled link. For traffic signal-controlled junctions, it is generally accepted that degrees of saturation of 90% or less on individual links represent satisfactory link operation, with values above this threshold (but below 100%) representing variable operation and therefore increasing the potential for regular congestion and delay.
- 8.2.6 LinSig also provides a further reference value, Practical Reserve Capacity (PRC), which provides an overall indicative measure of the general operation of a junction within the network. PRC values of 0% or above are generally considered to represent acceptable junction operating conditions, with values of less than 0% (negative PRC) indicating a propensity for more variable junction operation and the potential for some congestion and queue build up. It should be noted that negative junction PRC values can be obtained when a number of individual junction arms are operating at less than 100% degree of saturation i.e. the point where theoretical operating capacity is reached on an approach arm. The PRC value provides only a general guide to overall junction performance.

8.3 Assessment of Operational Development Link Flow Impact

- 8.3.1 Reference to the Chartered Institution of Highways and Transportation (CIHT) 'Guidelines for Traffic Impact Assessment' suggests that more detailed analysis of highway impact and/or capacity improvements is only likely to be required where either:

- Traffic to/from the development exceeds 10% of existing two-way traffic on the adjoining highway; or,
- Where development traffic exceeds 5% of the existing two-way traffic flow on the adjoining highway, and where traffic congestion exists within the assessment period or in other sensitive locations.

8.3.2 March 2007 Welsh Government Guidance TAN18 Annex E (para E4) provides further advice regarding likely material increases in traffic levels, specifically occasions under which additional analysis might be required for developments affecting the Welsh Strategic Road Network. In this case TAN18 guidance states:

“When assessing whether or not to consult the Assembly...local planning authorities must give full consideration to the effects a development’s traffic would have at a junction, particularly in respect of the additional turning movements created. As a broad guide the Assembly Government would regard an increase in turning movements in the order of 5% as material in most cases, that is, a 5% increase of traffic using any link of the junction. Where the capacity of the junction is, or is near to, being exceeded, a smaller percentage increase on a link would normally be material.”

8.3.3 It is therefore considered that a 5% threshold represents a reasonable initial contextual guide as to the extent of development traffic operational impact on the local highway network. It must also be recognised, however, that a simple percentage impact test can be quite a crude tool, specifically in the context of routes which currently operate with relatively low levels background flow levels (e.g. Stansty Chain Road). In such cases a relatively small level of predicted development traffic can give rise to the calculation of a potentially significant percentage change value, even though the combined baseline + development traffic levels would still be substantially below link capacity thresholds.

8.3.4 **Figures TA25a-c and TA26a-c** to this report illustrate the predicted changes in two-way background link flows on the local highway network associated with the “Do Something” scenario, during both the 2024 interim and 2030 future assessment years, as compared to the respective baseline “Do Nothing” forecast traffic flows. **Table TA8.1** below summarises the predicted changes in link flow demand for each assessment year:

Table TA8.1: Predicted 2024 Interim Year Link Impact

Two-way Link Flow	Proportional Impact (%)		
	AM Peak Period (07:45-08:45)	PM Peak Period (16:45-17:45)	12 Hour Period (07:00-19:00)
A541 Mold Road/Hope Street			
A541 Mold Rd (N)	0.6%	0.8%	0.8%
Hope St	0.1%	0.1%	0.1%
A541 Mold Rd (S)	0.5%	0.6%	0.6%
A541 Mold Road/Site Access			
A541 Mold Rd (N)	0.6%	0.5%	0.5%
A541 Mold Rd (S)	2.2%	2.6%	2.4%
A483 J5			
A541 Mold Rd (N)	2.3%	2.6%	2.4%
A483 (N)	1.5%	1.9%	1.7%
A541 Mold Rd (S)	0.4%	0.5%	0.4%
A483 (S)	0.3%	0.9%	0.7%
Summerhill Rd	0.0%	0.0%	0.0%
B&Q Roundabout			
A541 Mold Rd (N)	0.4%	0.5%	0.4%
B5101 Plas Coch Rd	1.0%	0.9%	0.7%
A541 Mold Rd (S)	0.4%	0.3%	0.3%
B5101 Berse Rd	0.3%	0.5%	0.4%
B5101 Berse Road/Rhyd Broughton Lane			
B5101 Berse Rd (E)	0.5%	0.4%	0.4%
Rhyd Broughton La	0.3%	0.7%	0.4%
B5101 Berse Rd (W)	0.1%	0.1%	0.1%
Stansty Chain Road/Site Access			
Stansty Chain Rd (N)	0.8%	8.3%	4.3%
Stansty Chain Rd (S)	19.0%	65.7%	45.1%
B5101 Plas Coch Road/Stansty Chain Road			
B5101 Plas Coch Rd	1.7%	2.0%	1.7%
Stansty Chain Rd	10.4%	34.2%	18.3%
B5101 Stansty Rd	3.1%	3.1%	2.8%
B5425 New Road/B5101 Stansty Rd			
B5425 Rhosddu Rd	0.9%	0.9%	0.8%
B5101 Stansty Rd	3.0%	2.9%	2.6%
B5425 New Rd	1.4%	1.4%	1.3%

Two-way traffic flows

Table TA8.2: Predicted 2030 Future Year Link Impact

Two-way Link Flow	Proportional Impact (%)		
	AM Peak Period (07:45-08:45)	PM Peak Period (16:45-17:45)	12 Hour Period (07:00-19:00)
A541 Mold Road/Hope Street			
A541 Mold Rd (N)	1.6%	2.1%	2.0%
Hope St	0.3%	0.2%	0.2%

A541 Mold Rd (S)	1.4%	1.6%	1.5%
A541 Mold Road/Site Access			
A541 Mold Rd (N)	1.6%	1.5%	1.5%
A541 Mold Rd (S)	6.6%	7.9%	7.3%
A483 J5			
A541 Mold Rd (N)	6.9%	7.9%	7.2%
A483 (N)	4.0%	4.9%	4.3%
A541 Mold Rd (S)	0.9%	1.1%	0.9%
A483 (S)	0.7%	2.4%	1.8%
Summerhill Rd	0.0%	0.0%	0.0%
B&Q Roundabout			
A541 Mold Rd (N)	0.9%	1.1%	0.9%
B5101 Plas Coch Rd	1.5%	1.3%	1.1%
A541 Mold Rd (S)	1.0%	0.8%	0.8%
B5101 Berse Rd	0.9%	1.4%	1.0%
B5101 Berse Road/Rhyd Broughton Lane			
B5101 Berse Rd (E)	1.3%	1.0%	1.1%
Rhyd Broughton La	0.9%	1.8%	1.2%
B5101 Berse Rd (W)	0.2%	0.2%	0.2%
B5101 Plas Coch Road/Stansty Chain Road			
Stansty Chain Rd (N)	1.5%	15.1%	7.9%
Stansty Chain Rd (S)	42.0%	141.2%	97.9%
B5101 Plas Coch Road/Stansty Chain Road			
B5101 Plas Coch Rd	2.6%	2.9%	2.5%
Stansty Chain Rd	23.0%	73.5%	39.6%
B5101 Stansty Rd	8.2%	8.2%	7.4%
B5425 New Road/B5101 Stansty Rd			
B5425 Rhosddu Rd	2.4%	2.4%	2.2%
B5101 Stansty Rd	7.8%	7.7%	6.9%
B5425 New Rd	3.5%	3.7%	3.4%

Two-way traffic flows

8.3.5 Review of the illustrated changes in link flows identifies that across the majority of the local highway network the proposed development scheme is unlikely to give rise to any material increases in traffic. During the 2024 interim year scenarios the majority of the network would see increases well below the 5% threshold - indeed much of the network would experience increases of less than 1%.

8.3.6 The only link which is anticipated to experience increases exceeding 5% is Stansty Chain Road between the Site and the B5101 Plas Coch Road/Stansty Road to the north of the B5101 Plas Coch Road, this section of route is forecast to experience an increase of c10% during the AM peak (41vehs), c34% during the PM peak (54 vehs), and c18% across the core 12-hour daytime period (435 vehs). Development related increases in traffic on Stansty Chain Road during the 2024 PM peak period

are forecast at 54 vehicles (37 northbound / 17 southbound), set against a forecast baseline of 156 two-way movements on the route. It is therefore clear that the large proportional increase in flows is directly due to prevailing/baseline flows on the route being relatively low. This effect is further enhanced to the immediate south of the site with an anticipated increase of 65.7%, despite development related traffic remaining the same (54 vehs) - baseline traffic at this location is lower still at just 81 two-way movements. The total combined (baseline + development) flows would still remain relatively low for a route of the standard of this section of Stansty Chain Road. Moreover, the level of increase that is anticipated to arise from development equates to less than 1 additional vehicle movement per minute on the route, which is unlikely to result in any material operational effects.

8.3.7 Review of anticipated changes in traffic during the 2030 period identifies that the majority of the highway network would still only experience traffic flow increases of notably less than 5%. However, as the Site is anticipated to be completed and fully occupied by 2030, other areas of the network are forecast to experience increases in excess of 5%. Stansty Chain Road is again forecast to see the largest proportional increases, again as a direct result of its low baseline flows. However, the A541 Mold Road between the Site and A483, as well as the B5101 Stansty Road, are both anticipated to see increases of c8% during the peak hour periods. Whilst such levels exceed the 5% threshold identified above, the respective traffic flow increases would actually still be relatively limited:

- A541 AM period - 141 two-way movements = just over 2 extra movements/min;
- A541 PM period - 169 two-way movements = just under 3 extra movements/min;
- B5101 Stansty Rd AM period = 73 two-way movements = just over 1 extra movement/min; and,
- B5101 Stansty Rd PM period = 91 two-way movements = c1.5 extra movements/min.

8.3.8 It is considered that such forecast increases are unlikely to give rise to material operational effects on local highway network links and junctions.

8.4 Overview of Junction Operation Assessments

8.4.1 Notwithstanding the results of the proportional link flow impact exercise above, junction capacity modelling has been undertaken of all junctions within the study area. These assessments should provide further clarification as to whether the proposed development would give rise to any measurable effects on the local highway network.

8.4.2 The following sections summarise the results of the junction capacity assessments, summarising the 2030 future year assessments in particular, as this period would represent the worst-case assessment conditions for the local highway network when compared to the 2024 interim year conditions. The results of the 2019 Survey conditions scenario are also included for reference purposes. All Junctions9 PICADY, Junctions9 ARCADY and LinSig capacity model outputs are attached to this TA as **Appendices TA6, TA7 and TA8** respectively.

A541 Mold Road/Hope Street

8.4.3 **Tables TA8.3a & TA8.3b** below summarise the results of the LinSig capacity assessments of the signalised junction of the A541 Mold Road with Hope Street and Alyn Way, for each of the assessment scenarios.

Table TA8.3a: A541 Mold Rd/Hope St Signalised Junction - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue	DoS	Mean Max Queue (PCU)
A541 Mold Rd (S) Left Ahead	34.0%	5.0	39.0%	6.0	40.1%	6.3
A541 Mold Rd (S) Ahead Right	58.5%	5.9	70.2%	8.2	70.8%	8.3
Alyn Way	30.5%	1.3	34.4%	1.5	34.4%	1.5
A541 Mold Rd (N)	53.1%	6.9	61.9%	8.6	62.4%	8.7
Hope St	47.7%	4.2	53.2%	4.6	53.2%	4.6
PRC	54.0%		28.3%		27.1%	
Cycle Time	90s		90s		90s	

Table TA8.3b: A541 Mold Rd/Hope St Signalised Junction - PM Peak

PM Peak	2019 Survey		2030 Baseline		2030 Baseline + Development	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue	DoS	Mean Max Queue (PCU)
A541 Mold Rd (S) Left Ahead	33.3%	4.8	38.0%	5.8	38.5%	5.9
A541 Mold Rd (S) Ahead Right	47.6%	5.8	55.7%	7.7	55.7%	7.6
Alyn Way	31.7%	1.4	35.6%	1.6	35.6%	1.6
A541 Mold Rd (N)	51.4%	6.7	58.7%	8.2	61.5%	8.6
Hope St	66.0%	9.4	75.3%	11.6	75.3%	11.4
PRC	36.3%		19.5%		19.5%	
Cycle Time	90s		90s		90s	

- 8.4.4 Review of the above results identifies that the junction currently operates with notable levels of PRC (>36%) during both AM and PM peak periods. Whilst the 2030 “Do Nothing” scenario identifies increases in maximum Degrees of Saturation to c75% (from c66% in 2019), the junction is still forecast to operate with reasonable levels of PRC (>c20%). Moreover, the addition of development traffic is not anticipated to have any notable bearing on operational capacity at the junction, with no further increases forecast in maximum DoS, and no notable reduction in forecast PRC values - PM values remain the same whilst AM PRC is anticipated to reduce by just 1%.

A483 J5 with A541 Mold Road

- 8.4.5 Tables TA8.4a & TA8.4b below summarise the results of the LinSig capacity assessments of the partially signalised Junction 5 of the A483 for each of the assessment scenarios.

Table TA8.4a: A483 J5 Signalised Roundabout Junction - AM Peak

AM Peak	2019 Survey		2030 Baseline “Do Nothing”		2030 Baseline + Development “Do Something”	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue	DoS	Mean Max Queue (PCU)
A483 (N)	87.1%	10.3	105.9%	29.6	95.1%	15.0
North Circ	84.5%	14.7	88.1%	16.9	85.7%	14.9

A541 Mold Rd (E)	47.5%	2.8	55.6%	3.3	56.1%	3.3
East Circ	n/a	n/a	n/a	n/a	n/a	n/a
A483 (S)	69.6%	7.4	77.7%	9.0	79.3%	9.4
South Circ	64.4%	6.7	75.2%	8.8	78.0%	9.3
Summerhill Rd	40.6%	1.5	54.7%	2.0	56.0%	2.1
West Circs	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (N)	105.3%	31.8	133.6%	101.4	154.6%	148.1
Northwest Circ	88.0%	8.9	87.9%	7.9	89.7%	9.5
PRC	-17.0%		-48.5%		-71.8%	
Cycle Time	55/62s		55/62s		55/62s	

Table TA8.4b: A483 J5 Signalised Roundabout Junction - PM Peak

PM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue	DoS	Mean Max Queue (PCU)
A483 (N)	80.1%	7.9	89.8%	11.8	100.4%	20.6
North Circ	76.9%	10.2	89.5%	14.4	88.6%	14.6
A541 Mold Rd (E)	85.8%	14.1	102.3%	54.1	114.1%	88.3
East Circ	n/a	n/a	n/a	n/a	n/a	n/a
A483 (S)	103.8%	25.3	143.2%	99.0	144.3%	109.1
South Circ	89.7%	18.2	89.3%	18.9	89.4%	18.5
Summerhill Rd	50.9%	2.1	60.3%	2.7	60.3%	2.6
West Circs	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (N)	80.4%	8.8	90.0%	11.9	95.1%	15.0
Northwest Circ	77.0%	7.6	87.0%	11.2	87.4%	10.9
PRC	-15.3%		-59.1%		-60.4%	
Cycle Time	63/55s		63/55s		63/55s	

8.4.6 Review of the above results identifies that J5 of the A483 currently experiences capacity issues in both the surveyed AM and PM peak hours on the A541 Mold Road (N) (DoS - 105.3%) and A483 (S) (DoS - 103.8%) approaches respectively. PRC at the

junction under existing operational traffic flow conditions stands at -17.0% and -15.3% during each peak respectively. It should be noted that these results fairly closely reflect the operation of the junction as observed from the video survey information.

- 8.4.7 As a consequence of forecast traffic growth to 2030, and the committed developments accounted for in this TN, conditions are forecast to worsen, with PRC during each peak falling to -48.5% and -59.1 respectively.
- 8.4.8 Whilst the addition of development related traffic is anticipated to further worsen operational issues at this location, the proportional effect is actually relatively limited. During the AM peak hour PRC decreases from -48.5% to -71.8% with maximum DoS increasing from 133.6% on the A541 (N) to 154.6%. During the PM peak hour PRC is only noted to decrease marginally from -59.1% to -60.4%, with maximum DoS increasing from 143.2% on the A483 (S) approach to 144.3%.
- 8.4.9 In summary, it is clear that the A483 J5 suffers from operational capacity issues at present, and these are anticipated to worsen in time even without development. However, it is also clear that the effects of development traffic upon this junction's operation are strictly limited.

A541 Mold Road/B5101 Plas Coch Road/B5101 Berse Road "B & Q" roundabout

- 8.4.10 **Tables TA8.5a & TA8.5b** below summarise the results of the LinSig capacity assessments of the partially signalised roundabout junction of the A541 Mold Road with the B5101 Plas Coch Road/Berse Road, for each of the assessment scenarios.

Table TA8.5a: A541 Mold Rd/B5101 Plas Coch Rd/Berse Rd Signalised "B&Q" Roundabout Junction - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue	DoS	Mean Max Queue (PCU)
B5101 Plas Coch Rd	70.5%	4.9	84.4%	8.0	81.2%	7.6
North Circ	69.0%	1.5	81.5%	2.2	83.2%	2.0
A541 Mold Rd (E)	63.4%	4.6	65.2%	5.1	65.5%	5.1

East Circ	44.9%	6.0	54.8%	7.2	56.1%	7.6
B5101 Berse Rd	35.8%	1.4	44.4%	2.2	45.0%	2.3
South Circ	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (W)	71.7%	10.1	84.0%	15.7	81.8%	14.6
West Circs	41.0%	3.4	47.0%	4.4	44.7%	4.4
PRC	25.5%		6.6%		8.2%	
Cycle Time	64s		64s		64s	

Table TA8.5b: A541 Mold Rd/B5101 Plas Coch Rd/Berse Rd Signalised “B&Q” Roundabout Junction - PM Peak

PM Peak	2019 Survey		2030 Baseline “Do Nothing”		2030 Baseline + Development “Do Something”	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue	DoS	Mean Max Queue (PCU)
B5101 Plas Coch Rd	100.7%	22.0	118.8%	71.5	119.3%	72.9
North Circ	54.6%	0.5	64.7%	0.7	62.6%	0.7
A541 Mold Rd (E)	102.3%	32.4	116.4%	94.7	117.5%	99.6
East Circ	44.8%	3.0	53.5%	3.3	54.0%	3.8
B5101 Berse Rd	53.3%	2.6	62.6%	5.3	63.7%	5.4
South Circ	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (W)	77.5%	9.0	95.6%	19.0	98.9%	25.7
West Circs	26.1%	2.8	33.0%	3.5	33.3%	3.6
PRC	-13.7%		-32.1%		-32.6%	
Cycle Time	59s		59s		59s	

- 8.4.11 Review of Tables TA8.5a & TA8.5b identifies that the “B&Q” roundabout junction currently operates with mixed results. During the AM peak hour PRC currently stands at 25.5% with a maximum DoS of c72% on the A541 Mold Road (W) approach. During the PM peak period, however, the PRC of the junction falls to -13.7% with both the B5101 Plas Coch Road and A541 Mold Road (E) experiencing DoS values of just over 100% (100.7% & 102.3% respectively). As with the A483 J5 it should be noted that these results fairly closely reflect the operation of the junction as observed from the video survey information.

8.4.12 As would be anticipated, conditions worsen under future year conditions, albeit the junction continues to operate with positive PRC during the AM peak (6.6%). During the PM peak PRC falls to -32.1% with a corresponding increase in maximum DoS values. The addition of anticipated development related traffic, however, is only anticipated to have a marginal effect on the junction's operation during both AM and PM peak periods - during the AM PRC actually increases to 8.2% (as a result spreading of overall impact across the junction), whilst during the PM PRC is only forecast to decrease by 0.5% to -32.6%.

8.4.13 In summary, whilst it is clear that the B&Q roundabout operates with reasonable levels of spare capacity during the AM peak period, even under "Do Something" conditions, it is also clear that the junction suffers from operational capacity issues at present during the PM peak period. However, whilst PM peak conditions are anticipated to worsen over time even in "Do Nothing" conditions, it is also clear that the effects of development traffic during this period would be strictly limited.

B5101 Berse Road/Rhyd Broughton Lane

8.4.14 Tables TA8.6a & TA8.6b below summarise the results of the Junctions9 capacity assessments of the roundabout junction of the B5101 Berse Road with Rhyd Broughton Lane, for each of the assessment scenarios.

Table TA8.6a: B5101 Berse Road/Rhyd Broughton Lane Roundabout Junction - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
B5101 Berse Rd (E)	0.68	2.1	0.80	4.0	0.82	4.4
Rhyd Broughton La	0.20	0.3	0.22	0.3	0.23	0.3
B5101 Berse Rd (W)	0.78	3.5	0.89	7.3	0.89	7.6

Table TA8.6b: B5101 Berse Road/Rhyd Broughton Lane Roundabout Junction - PM Peak

PM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
B5101 Berse Rd (E)	0.45	0.8	0.51	1.1	0.52	1.1
Rhyd Broughton La	0.44	0.8	0.53	1.1	0.54	1.2
B5101 Berse Rd (W)	0.26	0.4	0.31	0.4	0.31	0.5

8.4.15 Review of the above results for the Berse Road roundabout junction with Rhyd Broughton Lane identifies that the junction currently operates with reasonable levels of spare capacity. RFC values are noted at less than 0.80 on all approach arms, with minimal queuing. This trend is largely anticipated to remain during the future year "Do Nothing" and "Do Something" scenarios, with the PM peak in particular continuing to operate with notable levels of spare capacity. During the AM peak the Berse Road western approach is anticipated to exceed 0.85, albeit at just 0.89, and with queuing at c7 PCUs.

8.4.16 It should be noted that the addition of development related traffic does not have any notable effect upon forecast junction operation. During the future year AM peak period maximum RFCs remain the same, whilst queuing is only forecast to increase by 0.3PCU.

B5101 Plas Coch Road/Stansty Road

8.4.17 Tables TA8.7a & TA8.7b below summarise the results of the Junctions9 capacity assessments of the priority-controlled T-junction of the B5101 Plas Coch Road with Stansty Road, for each of the assessment scenarios.

Table TA8.7a: B5101 Plas Coch Road/Stansty Road T-Junction - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
Stansty Rd (W)	0.43	0.7	0.51	1.0	0.65	1.8
B5101 Stansty Rd (E)	0.16	0.3	0.19	0.4	0.23	0.5

TA8.7b: B5101 Plas Coch Road/Stansty Road T-Junction - PM Peak

PM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
Stansty Rd (W)	0.18	0.2	0.22	0.3	0.31	0.4
B5101 Stansty Rd (E)	0.09	0.2	0.12	0.3	0.32	1.0

- 8.4.18 Review of **Tables TA8.7a & TA8.7b** identifies that the priority-controlled T-junction of the B5101 Plas Coch Road/Stansty Road with Stansty Road currently operates with significant levels of spare capacity, and is anticipated to continue to do so during both future year "Do Nothing" and "Do Something" conditions. Development related traffic has only a negligible impact upon junction operation, with a maximum RFC recorded of 0.65 during the "Do Something" AM peak.

B5425 New Road/Rhosddu Road/B5101 Stansty Road

- 8.4.19 **Tables TA8.8a & TA8.8b** below summarise the results of the Junctions9 capacity assessments of the priority-controlled T-junction of the B5425 New Road/Rhosddu Road with the B5101 Stansty Road, for each of the assessment scenarios.

Table TA8.8a: B5425 New Road/Rhosddu Road/Stansty Road T-Junction - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Development "Do Something"	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
B5101 Stansty Rd Left	0.51	1.1	0.66	1.9	0.76	3.0
B5101 Stansty Rd Right	0.42	0.7	0.66	1.8	0.74	2.6
B5425 New Rd Right	0.39	0.7	0.46	0.9	0.48	1.0

Table TA8.8b: B5425 New Road/Rhosddu Road/Stansty Road T-Junction - PM Peak

PM Peak	2019 Survey		2030 Baseline “Do Nothing”		2030 Baseline + Development “Do Something”	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
B5101 Stansty Rd Left	0.70	2.2	0.90	6.8	0.99	13.8
B5101 Stansty Rd Right	0.42	0.7	0.65	1.8	0.77	2.9
B5425 New Rd Right	0.52	1.2	0.66	2.3	0.75	3.6

8.4.20 Review of the above results for the New Road T-junction with Stansty Road identifies that the junction currently operates with reasonable levels of spare capacity. RFC values are noted at a maximum of 0.70 on one arm, and less than 0.6 on all other approach arms, with minimal queuing. This trend is largely anticipated to remain during the future year “Do Nothing” and “Do Something” scenarios, with the majority of approach arms continuing to operate with reasonable levels of spare capacity. However, during the 2030 “Do Nothing” PM peak the Stansty Road left turn approach is anticipated to exceed 0.85, at 0.90, and with queuing at c7 PCUs. Whilst this exceeds the 0.85 RFC threshold, this does not mean that this approach arm is anticipated to be over capacity - rather conditions on this arm could be variable during this peak period.

8.4.21 It should be noted that the addition of development related traffic is not forecast to give rise to a material effect upon forecast junction operation. During the future year “Do Something” PM peak period maximum RFCs remain within junction capacity, at 0.99, whilst queuing is forecast to increase to c14 PCUs. All other approach arms would continue to operate with reasonable levels of spare capacity, with no RFCs exceeding 0.8, and queuing levels remaining low.

Proposed Main Site Access/A541 Mold Road

8.4.22 **Table TA8.9** below summarises the results of the LinSig capacity assessments of the proposed main signalised site access junction with the A541 Mold Road, for each of the assessment scenarios.

Table TA8.9: Proposed Site Access/A541 Mold Rd Signalised Junction - 2030 “Do Something” Scenario

2030 Baseline + Development “Do Something”	AM Peak		PM Peak	
	DoS	Mean Max Queue (PCU)	DoS	Mean Max Queue (PCU)
A541 Mold Rd (N) Left Ahead	70.7%	10.8	52.1%	7.0
Site Access	64.5%	3.3	34.8%	1.5
A541 Mold Rd (S) Ahead	41.5%	6.0	56.6%	9.4
A541 Mold Rd (S) Ahead Right	44.2%	6.8	62.0%	10.1
PRC	27.2%		45.2%	
Cycle Time	80s		80s	

- 8.4.23 Review of the above results identifies that the proposed signalised main site access junction with the A541 Mold Road is anticipated to operate with notable levels of PRC (>25%) during both AM and PM peak periods under 2030 “Do Something” conditions. Maximum Degrees of Saturation stand at just 70.7% during the AM peak period on the A541 Mold Road (N) approach, with associated queuing of 11PCUs.

8.5 Impact Summary

- 8.5.1 The above results demonstrate that, for the majority of the study area that has been considered, the highway network currently operates with reasonable levels of spare capacity and would continue to do so during future year “Do Nothing” and “Do Something” conditions. In some instances, the forecast growth in traffic to 2030 is anticipated to increase degrees of saturation on some junction approach arms above the thresholds beyond which some degree of variable operation may occur. However, during such periods any issues of increased queuing would likely be short-lived, with the junctions not operating with any material deficiencies. Moreover, it is key to note that traffic associated with the proposed residential development is anticipated to have only a negligible effect, when comparing “Do Something” to “Do Nothing” conditions.
- 8.5.2 Certain sections of the study area have, however, been demonstrated as currently operating over capacity on some approach arms, with future year conditions only exacerbating such issues. These existing adverse operational conditions appear to be limited to the roundabout J5 of the A483, and the B&Q roundabout of the A541

Mold road with Plas Coch Road. Nevertheless, as with the remainder of the network noted above, comparison of “Do Something” results against the “Do Nothing” baseline position identifies that the proposed residential development is unlikely to have any material impact on the operation of these junctions.

8.6 Mitigation

- 8.6.1 On the basis of the above review of anticipated development impact, it has been concluded that the development proposals would not give rise to a material impact on the local highway network. Indeed, it has been demonstrated that the level of impact of development related traffic would be negligible. Accordingly, Focus TP considers that there is no justification for the provision of any additional mitigation, beyond that which is inherent within the development proposals as submitted.
- 8.6.2 In spite of the above considerations, mitigation measures have been explored, with a view to providing operational improvements to the local highway network, particularly around the adjacent junctions of the A483 J5 and the B&Q roundabout. Focus TP instructed JCT Consultancy to investigate the potential for improvements to be made at the A483 J5 and B&Q roundabouts. Whilst the A483 J5 is currently the subject of a strategic review by WG, as outlined in Section 4 of this TA, it is nonetheless considered that such measures should be investigated as part of the assessment of traffic-related effects associated with the proposed residential development - in the event that the WG study and any resulting proposals take a long period to come to a conclusion, or that the study ceases in entirety, it is key to understand whether any measures may be available to mitigate the anticipated impact of the development proposals at these network locations.
- 8.6.3 With the above in mind, JCT Consultancy has investigated the potential for improvement measures (outside the scope of WG’s junction improvement study) to be funded/delivered by the developer. On this basis, JCT has identified two stages of potential mitigation measures, as outlined below:

Stage 1

A483 J5

- Provision of two exit lanes from circulatory carriageway to A541 Mold Road (N); and,
- Nearside circulating lane, past A541 Mold Road (N) approach, to be marked for exit to A483 (N) only, with offside lane for all other traffic.

B&Q Roundabout

- Offside lane of A541 Mold Road (E) approach to be made ahead and right (currently marked as right only);
- Central lane on western circulatory carriageway to be ahead only, with right turns in offside lane only; and,
- Nearside lane on B5101 Plas Coch Road approach to be made ahead and left (currently marked as left only).

Stage 2

A483 J5

- A541 Mold Road (E) approach, and eastern circulatory carriageway, to be signalised.

8.6.4 With regard to the Stage 1 mitigation, JCT's observations of the operation of the two junctions was that directional lane markings could be limiting their operational capacity, as a result of the underuse of carriageway lane space. Indeed, this observation is also made in Section 2 of this TA, following review of the queue survey data at this location. In particular JCT noted that traffic flows at J5 tended to be concentrated within the nearside lane of the circulatory carriageway, under-utilising capacity reserves within the outside lane of the circulatory carriageway. Other measures proposed include two exit lanes from the circulatory carriageway to the northbound A541 Mold Road exit. At the B&Q roundabout changes are a little more limited, but centre again on the under-utilisation of certain circulatory lanes of the roundabout.

8.6.5 Stage 2 mitigation is focussed more directly at the specific southeastern corner of the A483 J5, at the A541 Mold Road (E) approach. Currently the A541 (E) is the only non-signalised main route approach to the J5 roundabout (Summerhill Road being considered a minor route). JCT observed, from the video survey information,

that queuing on this priority-controlled approach extended back as far as the B&Q roundabout, thereby resulting in knock-on queuing impact on the Berse Road entry to that junction and beyond. With this in mind, the Stage 2 mitigation proposals centre around the signalisation of this node of the A483 J5 roundabout.

8.6.6 **Drawings J000069-SK006, SK007 & SK008** to this report respectively illustrate the Stage 1 and Stage 2 mitigations measures described above. Both mitigation stage measures have been modelled by JCT, the results of which are summarised below (see **Appendix TA9** for full LinSig output data). For reference the following tables also include for the modelled results of the unmitigated junctions, as outlined in the preceding section:

Table TA8.10a: A483 J5 Signalised Roundabout Junction Mitigation - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Dev't "Do Something"		2030 Baseline + Dev't "Do Something"		2030 Baseline + Dev't "Do Something"	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)
	No Mitigation						Stage 1 Mitigation		Stage 2 Mitigation	
A483 (N)	87.1%	10.3	105.9%	29.6	95.1%	15.0	103.3%	24.9	103.3%	24.9
North Circ	84.5%	14.7	88.1%	16.9	85.7%	14.9	88.5%	8.4	89.1%	8.7
A541 Mold Rd (E)	47.5%	2.8	55.6%	3.3	56.1%	3.3	61.9%	4.3	64.6%	9.2
East Circ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	44.5%	4.2
A483 (S)	69.6%	7.4	77.7%	9.0	79.3%	9.4	72.3%	8.6	72.3%	8.6
South Circ	64.4%	6.7	75.2%	8.8	78.0%	9.3	72.4%	10.1	73.2%	3.2
S'hill Rd	40.6%	1.5	54.7%	2.0	56.0%	2.1	48.0%	2.0	53.0%	2.2
West Circs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (N)	105.3%	31.8	133.6%	101.4	154.6%	148.1	124.3%	88.5	124.1%	87.9
Northwest Circ	88.0%	8.9	87.9%	7.9	89.7%	9.5	70.2%	10.4	70.0%	10.4
PRC	-17.0%		-48.5%		-71.8%		-38.1%		-37.9%	
Cycle Time	55/62s		55/62s		55/62s		60s		60s	

Table TA8.10b: A483 J5 Signalised Roundabout Junction Mitigation - PM Peak

PM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Dev't "Do Something"		2030 Baseline + Dev't "Do Something"		2030 Baseline + Dev't "Do Something"	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)
	No Mitigation						Stage 1 Mitigation		Stage 2 Mitigation	
A483 (N)	80.1%	7.9	89.8%	11.8	100.4%	20.6	98.3%	18.5	98.1%	18.3
North Circ	76.9%	10.2	89.5%	14.4	88.6%	14.6	88.8%	9.0	87.7%	8.4
A541 Mold Rd (E)	85.8%	14.1	102.3%	54.1	114.1%	88.3	102.5%	47.0	87.3%	15.2
East Circ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	65.3%	5.7
A483 (S)	103.8%	25.3	143.2%	99.0	144.3%	109.1	98.0%	17.4	104.1%	26.4
South Circ	89.7%	18.2	89.3%	18.9	89.4%	18.5	88.9%	16.2	87.9%	5.8
S'hill Rd	50.9%	2.1	60.3%	2.7	60.3%	2.6	54.2%	2.1	48.3%	2.0
West Circs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (N)	80.4%	8.8	90.0%	11.9	95.1%	15.0	91.5%	12.6	91.6%	12.7
Northwest Circ	77.0%	7.6	87.0%	11.2	87.4%	10.9	68.5%	9.8	70.2%	9.0
PRC	-15.3%		-59.1%		-60.4%		-13.9%		-15.7%	
Cycle Time	63/55s		63/55s		63/55s		60s		60s	

Table TA8.11a: A541 Mold Rd/B5101 Plas Coch Rd/Berse Rd Signalised "B&Q" Roundabout Junction Mitigation - AM Peak

AM Peak	2019 Survey		2030 Baseline "Do Nothing"		2030 Baseline + Dev't "Do Something"		2030 Baseline + Dev't "Do Something"		2030 Baseline + Dev't "Do Something"	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)
	No Mitigation						Stage 1 Mitigation		Stage 2 Mitigation	
B5101 Plas Coch Rd	70.5%	4.9	84.4%	8.0	81.2%	7.6	82.4%	6.0	83.6%	6.2
North Circ	69.0%	1.5	81.5%	2.2	83.2%	2.0	73.6%	1.7	74.2%	1.7

A541 Mold Rd (E)	63.4%	4.6	65.2%	5.1	65.5%	5.1	55.3%	3.5	56.1%	3.6
East Circ	44.9%	6.0	54.8%	7.2	56.1%	7.6	19.4%	5.2	50.5%	5.7
B5101 Berse Rd	35.8%	1.4	44.4%	2.2	45.0%	2.3	40.6%	1.7	41.2%	1.7
South Circ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (W)	71.7%	10.1	84.0%	15.7	81.8%	14.6	83.2%	9.8	82.8%	9.7
West Circs	41.0%	3.4	47.0%	4.4	44.7%	4.4	40.5%	3.1	40.5%	3.1
PRC	25.5%		6.6%		8.2%		8.1%		7.7%	
Cycle Time	64s		64s		64s		60s		60s	

Table TA8.11b: A541 Mold Rd/B5101 Plas Coch Rd/Berse Rd Signalised “B&Q” Roundabout Junction Mitigation - PM Peak

PM Peak	2019 Survey		2030 Baseline “Do Nothing”		2030 Baseline + Dev’t “Do Something”		2030 Baseline + Dev’t “Do Something”		2030 Baseline + Dev’t “Do Something”	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)
	No Mitigation						Stage 1 Mitigation		Stage 2 Mitigation	
B5101 Plas Coch Rd	100.7%	22.0	118.8%	71.5	119.3%	72.9	98.6%	19.5	98.3%	18.9
North Circ	54.6%	0.5	64.7%	0.7	62.6%	0.7	62.8%	0.7	61.9%	0.6
A541 Mold Rd (E)	102.3%	32.4	116.4%	94.7	117.5%	99.6	88.6%	11.7	88.3%	11.4
East Circ	44.8%	3.0	53.5%	3.3	54.0%	3.8	54.6%	3.7	52.8%	4.1
B5101 Berse Rd	53.3%	2.6	62.6%	5.3	63.7%	5.4	60.7%	3.1	60.6%	3.1
South Circ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A541 Mold Rd (W)	77.5%	9.0	95.6%	19.0	98.9%	25.7	97.5%	21.3	97.5%	20.2
West Circs	26.1%	2.8	33.0%	3.5	33.3%	3.6	31.6%	3.4	31.6%	3.4
PRC	-13.7%		-32.1%		-32.6%		-9.6%		-9.2%	
Cycle Time	60s		60s		60s		60s		60s	

- 8.6.7 Review of the above results identifies that the proposed mitigation measures could have a notably positive impact on the operation of both the A483 J5 and also the B&Q roundabout. During the AM peak hour the Stage 1 mitigation package would result in an increase in PRC from -71.8% to -38.1% under “Do Something” conditions. Most notably, this increased level of PRC would actually also represent betterment over the “Do Nothing” scenario, where PRC is predicted to stand at -48.5%. At the B&Q roundabout junction PRC is forecast to change only marginally to 8.1% during the AM peak period, albeit still representing betterment when compared with the “Do Nothing” scenario at this location (6.6%).
- 8.6.8 During the PM peak hour the effects of the Stage 1 mitigation package would be even more pronounced. PRC at J5 is anticipated to increase from c-59-60% in both “Do Nothing” and “Do Something” scenarios to -13.9%. Indeed, such is the effect of the mitigation measures that the “Do Something” scenario results with mitigation even represent betterment when compared with current 2019 surveyed conditions, -15.3% in 2019 vs. -13.9% under “Do Something” conditions. Corresponding levels of queuing would also be significantly reduced with the mitigation measures in place.
- 8.6.9 At the B&Q roundabout similar effects could be expected, with an increase in PRC from c-32% in both “Do Nothing” and “Do Something” scenarios to -9.6%. Again, the mitigation measures are even anticipated to increase PRC to levels in excess of those modelled for current 2019 survey conditions (-13.7%). In particular, it should be noted that queuing on the A541 Mold Road (E) approach would reduce from 32.4 PCUs in 2019 conditions to 11.7 PCUs in the “Do Something” scenario - a reduction of c33%.
- 8.6.10 With regard to the effects of the Stage 2 mitigation, which comprises the signalisation of the A541 Mold Road (E) approach to the A483 J5, the results are far less pronounced. AM peak operation remains largely similar to the Stage 1 Mitigation scenario. During the PM peak hour, however, some benefits are noted to both the A483 J5 and the B&Q roundabout - the A541 Mold Road (E) approach to J5 would see a notable reduction in both the maximum Degree of Saturation (102.5% down to 87.3%) and also queuing (47.0 PCUs down to 15.2 PCUs) when comparing to the Stage 1 Mitigation scenario. Queuing would also reduce on the southern section of circulating carriageway, from 16.2 PCUs down to 5.8 PCUs. As

a consequence, the B&Q roundabout would see marginally improved operation, with PRC increasing from -9.6% in the Stage 1 mitigation scenario to -9.2% with Stage 2 in place.

- 8.6.11 In summary, it is clear from the above results that the potential mitigation measures identified within this TA would have a notable bearing on prevailing highway network capacity. Whilst the measures would not fully resolve all operational issues on the local highway network, they would undoubtedly have a significant positive effect. Indeed, it is clear that the development proposals (including for the proposed mitigation measures), would result in a net position of betterment when compared to the anticipated future baseline conditions. In the PM peak period this effect is so pronounced that there would even be betterment when compared to current operational conditions in 2019.
- 8.6.12 With the above in mind, the mitigation measures identified above are proposed to be delivered as part of this application.

9.0 SUMMARY & CONCLUSIONS

9.1 Introduction

9.1.1 This Transport Assessment has been prepared by Focus Transport Planning on behalf of Russell Homes Ltd. to consider highways and transport matters related to proposals for the development of up to 455 residential dwellings on land off the A541 Mold Road, Wrexham.

9.1.2 The project would see the development of the Site to provide up to 455 residential dwellings served directly via new vehicular accesses with both the A541 Mold Road and Stansty Chain Road. This report includes a review of existing local conditions, consideration of the development scheme, review of the proposed Site access strategy and an analysis of the impact of development related traffic over the immediate local highway network. In addition, the report considers the sustainability of the Site, its accessibility to existing local services and the opportunity to encourage trips from the Site to be undertaken by alternative travel modes to the private car.

9.1.3 This assessment has been undertaken in line with current best practice guidance on Transport Assessments, as outlined in Welsh Government (WG) Technical Advice Note 18 (TAN18) - Transport (2007). The scope and nature of the assessment matters considered in this TA reflects the extent of highways and traffic issues considered to be of material interest to both the Local Highway Authority (LHA), WCBC, and strategic stakeholder the Welsh Government, based on extensive pre-application discussions that have taken place throughout 2019.

9.2 Site Location & Existing Conditions

9.2.1 The proposal site currently comprises two parcels of greenfield land, totalling c22 hectares. The Site is bounded to the west by the route of the A541 Mold Road, whilst to the southeast both land parcels are bounded by the trunk road route of the A483(T). To the north both parcels are bounded by open greenfield land, whilst the eastern parcel is bounded on its eastern frontage by the Borderland Rail line, beyond which lies Rhosddu Industrial Estate. The Site is separated by the local

route of Stansty Chain Road, and a residential property which lies to the west of Stansty Chain Road.

- 9.2.2 The existing local highway network which forms the study area comprises the immediate routes of the A483 Trunk Road to the south, the A541 Mold Road to the west and south, Stansty Chain Road between the sites and to the north and south. In addition, the routes of the B5101 Stansty Road/Plas Coch Road/Berse Road and the B5425 New Road/Rhosddu Road are also considered within the study area of this assessment.

Existing Observed Traffic Demand

- 9.2.3 Base traffic flow patterns for the local highway network have been established through the undertaking of traffic surveys in both June and July 2019. The following junction and link surveys were undertaken following discussion with WCBC Highway officers:

Junction Surveys

- A541 Mold Road/Hope Street signalised junction;
- A483 J5 with A541 Mold Road, partially signalised roundabout junction;
- A541 Mold Road/B5101 Plas Coch Road/B5101 Berse Road partially signalised “B & Q” roundabout junction;
- B5101 Berse Road/Rhyd Broughton Lane roundabout;
- B5101 Plas Coch Road/Stansty Road priority T-junction; and,
- B5425 New Road/Rhosddu Road/B5101 Stansty Road priority-controlled T-junction.

Link Surveys

- A541 Mold Road (on site frontage); and,
- Stansty Chain Road.

- 9.2.4 Using the recorded traffic flows on the immediate local highway network, the AM and PM network peak rush hour periods were determined to be between 07:45-08:45 and 16:45-17:45 respectively.

- 9.2.5 Reference to the recorded peak hour traffic data identifies that maximum prevailing traffic levels on the A541 Mold Road, past the Site frontage, stand at c1,800-1,900 two-way movements during the morning and evening peak hour periods. With regard to observed flows on the A541 Mold Road, it is clear that peak hour traffic appears to be tidal - in the AM peak period the predominant flow of traffic is towards Wrexham town centre (56-68%), with the reverse observed during the PM peak period (56-62%).
- 9.2.6 Observed traffic flows along Stansty Chain Road, between the Site's two halves, stand at c200 two-way vehicle movements during the AM peak hour period, falling to just 77 two-way movements during the PM period. Of these movements a notable majority (90-95%) occur in the southbound direction during both peak periods i.e. the flow is not tidal. Traffic levels on the route of Stansty Chain Road are noted as increasing further to the south at its junction with the B5101 Plas Coch Road/Stansty Road, most likely due to the frontage residential and Ysgol Plas Coch developments.
- 9.2.7 Queuing has been observed on a number of key local highway routes, in particular the A483 and A541 approaches to the J5 and B&Q roundabouts. Review of the queuing has identified that, in some instances, this could be occurring as a result of the inefficient use of existing carriageway capacity. Very little queuing is observed at the junction of Stansty Chain Road/Plas Coch Road, save for approximately 10 minutes during the mid-afternoon school collection period.

Personal Injury Accident Records

- 9.2.8 Personal Injury Accident (PIA) data for the immediate local highway network has been obtained from Crashmap.co.uk for the five-year period Q1 2014 to Q3 2018 inclusive. Overall, review of the data considers that the nature of the local accident history is typical of such a local network which includes both priority and signal-controlled junctions. Of key note is that no incidents have been recorded along Stansty Chain Road, or at its junction with Plas Coch Road, in the most recent five year period. It is therefore concluded that there are no prevailing material highway safety issues within the vicinity of the site which give rise to any demonstrable adverse safety record.

9.3 Site Accessibility Audit

- 9.3.1 The location of the proposal site is anticipated to allow for a range of everyday journeys to be undertaken by sustainable transport modes including walking, cycling and public transport. Along with the additional sustainable transport infrastructure improvements proposed as part of the development, these services are anticipated to reduce the need for residents at the site to utilise the car for everyday journeys. Such positive locational characteristics should assist in meeting the key sustainable planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

9.4 Site Planning & Highways History

Emerging Wrexham Local Development Plan

- 9.4.1 The Wrexham Local Development Plan (LDP) 2013-2028 is currently being prepared and, once adopted, would replace the Wrexham Unitary Development Plan which covered the period 1996-2011. The Site is identified as a non-strategic housing allocation for around 375 dwellings “Site 1: Land Adjoining Mold Road/A483, Wrexham” within Policy H1 of the emerging LDP. The Site is located within the “Tier 1: Primary Key Settlement” of Wrexham, where the LDP directs the majority of new development.

A483 Strategic Highway Study

- 9.4.2 In June 2017 the Welsh Government held two public information exhibitions which outlined their proposals to undertake a detailed study of the strategic route of the A483 between junctions 3-6 at Wrexham. The purpose of the WG study is to identify potential opportunities for improvement on this section of the corridor, with a view to improving safety, capacity and journey times, as well as reducing the impact of the route’s junctions on east-west movements across the corridor.
- 9.4.3 The study is understood to be cognisant of the emerging WCBC LDP proposals - indeed, discussion with WG representatives has identified that the study would include for all identified housing sites under Policy H1 of the LDP, including this

Site. Following early discussions between Focus TP and WG representatives it was made clear by WG that, whilst the assessment of transport related effects arising from the proposed residential development should consider the A483 J5 and adjacent junctions (e.g. B&Q roundabout), submissions made in respect of the planning application did not need to be cognisant of any potential future outcomes from the WG study.

9.5 Description of the Development Proposals

- 9.5.1 The Mold Road site is proposed to be redeveloped for up to 455 residential units and associated public open space, along with new site access connections to both the A541 Mold Road and Stansty Chain Road. The planning application is made in outline, with all matters reserved save for the means of access.
- 9.5.2 Access to the development site would be taken via both the A541 Mold Road, and Stansty Chain Road. Access with the A541 Mold Road is proposed to be signalised, including a staggered pedestrian crossing of the mainline carriageway to connect with the existing footway on the western side. Access via Stansty Chain Road would take the form of a priority-controlled crossroads junction, and the proposals would also include for the extension of the existing 30mph speed limit along the full length of the site frontage with Stansty Chain Road. The proposed access strategy is considered to enable the most efficient, and least impactful, means of development traffic routing via the local highway network, whilst the 30mph speed limit extension would further augment the already positive highway safety record of the route.
- 9.5.3 The development proposals also include for a number of new, as well as improved, sustainable transport related infrastructure measures within both the site and its immediate environs. These include new walking/cycling infrastructure at both the A541 Mold Road and Stansty Chain Road site access junctions, connections to existing onward infrastructure, connectivity through the site and, lastly, the implementation of a bus layby on the southbound, site-side, of the A541 Mold Road. Connectivity with the bus layby is proposed to be entirely via the residential development site, by way of shared-use path connections, with no connectivity along the A541 Mold Road itself.

9.6 Key Assessment Parameters

Assessment Time Periods

- 9.6.1 Based on the review of background daily traffic demand patterns derived from the 2019 traffic surveys, maximum background traffic levels across the local highway network are experienced for the AM and PM peak hours of 07:45-08:45 and 16:45-17:45 respectively. Given that these AM & PM peak periods are also likely to represent the maximum traffic demand periods associated with traffic to and from the proposed Mold Road residential development, these time periods have been utilised for the network capacity appraisals included in this TA report, along with the core weekday daytime 12 hour period of 07:00-19:00.

Future Year Traffic Growth Assumptions

- 9.6.2 It is anticipated that, based upon current market conditions, the development of the residential site could be completed and fully occupied by the end of 2027, however, for robustness this has been extended to 2030. Accordingly, a 2030 future year date has been utilised for core traffic demand assessments. This TA also considers the effects of development during an earlier year, 5 years post-submission of the outlined planning application (2024). For this earlier interim period a lower quantum of development has been considered, in order to reflect the anticipated level of development that is likely to be operation at that stage of the site's delivery.
- 9.6.3 Background traffic data has been factored up to these future years on the basis of DfT NTM TEMPro forecasts for the Wrexham District, to create interim and opening year background traffic flows.

Committed Development Traffic

9.6.4 In addition to the TEMPro growth identified above, two committed local development schemes were identified by WCBC Highways officers during pre-application discussions:

- 410 PRS Apartments on land formerly occupied by student accommodation at the main Glyndwr University campus, Plas Coch Road; and,
- Costa Coffee Drive-Thru, Plas Coch Retail Park.

9.6.5 Traffic associated with the above developments has been identified via reference to the respective supporting transport submissions made for each application. Total committed development traffic flow estimates have been added to the background traffic flow forecasts to derive 2024 interim and 2030 future year baseline traffic flows, against which the effects of development related traffic have been considered.

9.7 Anticipated Trip Generation and Distribution

9.7.1 Estimates of the trip generation likely to be associated with the proposed development, along with an appraisal of development traffic distribution, have been derived from residential trip rates provided by WCBC Highways. The WCBC trip rates are based on traffic surveys undertaken at an existing residential development within Wrexham and are considered by WCBC to be representative of local residential trip generation trends within the conurbation

9.7.2 Based on this approach, it has been identified that the site could generate a maximum of 273 two-way vehicle movements during the 2030 future year AM peak hour period and 337 two-way vehicle movements during the 2030 PM peak hour period. The above trip generation would equate to between 4-6 vehicles per minute during each peak hour - a level of additional traffic that is unlikely to give rise to any material issues on the local highway network

9.7.3 With regard to the anticipated distribution of development related traffic, this has been undertaken on the basis of a gravity model derived from the 2011 Census Journey to Work data, which provides employment destination information for all wards within the UK - in this assessment the data was analysed with regard to all car-based employment trips made from the Wrexham merged authority district,

including its individual Super Output Areas. Trips relating to the employment destination ward data were distributed on the basis of the most likely route choices that drivers would make, based on local knowledge of the area along with proprietary traffic routing software.

9.8 Assessment of Anticipated Development Traffic Impact

- 9.8.1 Assessment of the impact of the development proposals has been carried out through the consideration of both link flow impact and junction operational capacity across the local highway network that forms the study area.

Link Flow Impact on Immediate Local Network

- 9.8.2 A review of the predicted changes in local network link flows has identified that, across the majority of the local highway network, the proposed development scheme is unlikely to give rise to any material increases in traffic. During the 2024 interim year scenarios the majority of the network would see increases well below the 5% threshold - indeed much of the network would experience increases of less than 1%. During the 2030 period the majority of the highway network would still only experience traffic flow increases of notably less than 5%.
- 9.8.3 Some areas of the highway network are, however, anticipated to experience increases in excess of 5%. These areas are more immediate to the Site and comprise both the A541 Mold Road and Stansty Chain Road. A more detailed review of the proportional impact identifies that maximum increases on the A541 would represent just under 3 additional movements per minute, whilst on Stansty Chain Road maximum increases would equate to approximately 1.5 additional vehicle movements per minute. It is concluded that such increases are unlikely to give rise to any material operational effects on local highway network links and junctions.

Junction Operational Impact

- 9.8.4 Notwithstanding the results of the proportional link flow impact exercise, junction capacity modelling has been undertaken for the AM and PM peak hour future year periods (07:45-08:45 & 16:45-17:45, 2030) for the following junctions:

- A541 Mold Road/Hope Street signalised junction;
- A483 J5 with A541 Mold Road, partially signalised roundabout junction;
- A541 Mold Road/B5101 Plas Coch Road/B5101 Berse Road partially signalised “B & Q” roundabout junction;
- B5101 Berse Road/Rhyd Broughton Lane roundabout;
- B5101 Plas Coch Road/Stansty Road priority T-junction;
- B5425 New Road/Rhosddu Road/B5101 Stansty Road priority-controlled T-junction and,
- Proposed Main Site Access/A541 Mold Road signalised junction.

9.8.5 Assessments have considered both “Do Nothing” and “Do Something” scenarios, in order to provide a comparison against future year baseline conditions without any residential development. It has been concluded that, for the majority of the study area that has been considered, the highway network currently operates with reasonable levels of spare capacity and would continue to do so during future year “Do Nothing” and “Do Something” conditions. In some instances, the forecast growth in traffic to 2030 is anticipated to increase degrees of saturation on some junction approach arms above the thresholds beyond which some degree of variable operation may occur. However, during such periods any issues of increased queuing would likely be short-lived, with the junctions not operating with any material deficiencies. Crucially, traffic associated with the proposed residential development is anticipated to have only a negligible effect, when comparing “Do Something” to “Do Nothing” conditions.

9.8.6 Certain sections of the study area have, however, been demonstrated as currently operating over capacity on some approach arms, with future year conditions only exacerbating such issues. These existing adverse operational conditions appear to be limited to the roundabout J5 of the A483, and the B&Q roundabout of the A541 Mold road with Plas Coch Road. Nevertheless, as with the remainder of the network noted above, comparison of “Do Something” results against the “Do Nothing” baseline position has identified that the proposed residential development is unlikely to have any material impact on the operation of these junctions.

Mitigation

9.8.7 Whilst it has been concluded that the development proposals would not give rise to a material impact on the local highway network, the potential to implement mitigation measures as part of the development has nonetheless been explored. Two stages of potential mitigation were considered at the junctions of both the A483 J5, and the B&Q roundabout; the first stage comprising a series of changes to the circulatory carriageways at both junction; and, the second stage comprising the signalisation of the A541 Mold Road (E) approach to the A483 J5, along with the adjacent circulatory carriageway.

9.8.8 The findings of the review of potential mitigation measures has identified that they could have a significant positive impact on the operation of both junctions. Indeed, it has been demonstrated that in some scenarios the proposed mitigation measures would actually result in a net betterment at both locations i.e. in some scenarios the operation of each junction would be improved to a level which exceeds that which could be anticipated if the development was not to proceed. Whilst the measures would not fully resolve all operational issues on the local highway network, they would undoubtedly have a significant positive effect.

9.9 Summary

9.9.1 Given the above review of issues, it is considered that the proposed residential scheme represents an appropriate and sustainable development. The Site is located adjacent to established residential areas, is accessible via a range of travel modes and has the potential to accommodate further sustainable travel modes in the future.

9.9.2 Crucially, it has been demonstrated in this TA that the development scheme would not result in a detrimental impact on the local highway network, either in operational or highway safety terms. Indeed, it has been demonstrated that the proposed development, including its local highway network mitigation measures, would give rise to significant positive impacts upon highway safety and capacity, and that traffic associated with the residential development could be safely accommodated without any further highway network infrastructure improvements. It is therefore considered that there are no reasonable highways and transport related grounds for objection to the development scheme.



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- | | |
|---|--|
|  | Application Boundary |
|  | Residential Use (C3) including Green Space, Landscape and SUDS |
|  | Vehicular Access |
|  | Acoustic Mitigation Bunds/Fences |
|  | Enhanced Green Buffer |
|  | Existing Public Right Of Way. Potential To Be Diverted at Reserved Matters Stage |
|  | Existing Mature Trees and Root Protection Areas to Be Protected. |
|  | Pedestrian Links |
| | Up to 455 Dwellings |



DRAWING

Parameters Plan

SCALE	DATE	AUTHOR	CHK'D
1:1000 @ A0	13/12/19	EF	AC
JOB NO.	DRAWING NO.	REV	
A106224	PP001	F	





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REV	DESCRIPTION	DATE	AUTHOR	CHKD

KEY	
Residential	
Private Garden	
Road	
Private Drive	
Path	
Public Open Space	
Play Space	
Ecology Pond/Swale	
Vegetation	

- 1 Noise Bund with planted vegetation.
- 2 Retained Mature Trees.
- 3 Central Green Pocket within Development.
- 4 Tree Lined Avenue into Development.
- 5 Swale Features along Roads.
- 6 Locally Equipped Area of Children's Play Space.
- 7 Green Ecological Corridor with SUDS Features.
- 8 Frontage onto Open Space.
- 9 Large Areas of Public Open Space.
- 10 Proposed New Bus Stop
- 11 Site Access



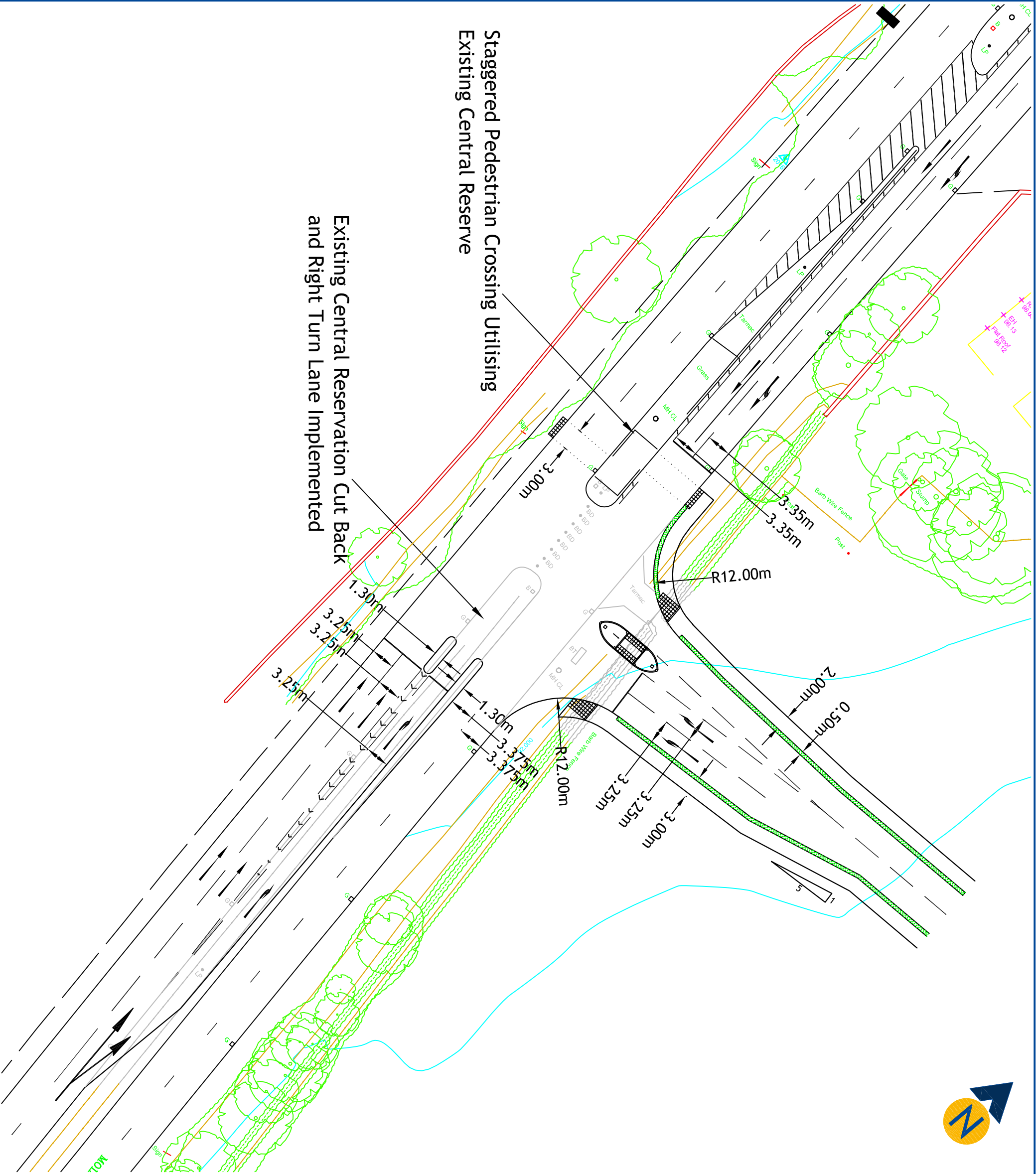
Manchester Office
Quay West at MediaCityUK, Trafford Wharf Road, Trafford Park, Manchester, M17 2JH
T: 0161 696 7215 W: www.wyg.com

PROJECT
Stansty Green
Wrexham
Russell Homes

DRAWING
Illustrative Masterplan

SCALE	DATE	AUTHOR	CHKD
1:1000 @ A0	09/12/19	EF	AC
JOB NO.	DRAWING NO.	REV	
A106224	002	J	





Staggered Pedestrian Crossing Utilising
Existing Central Reserve

Existing Central Reservation Cut Back
and Right Turn Lane Implemented



Revision:

Client:
Russell Homes UK Ltd.

Project:
Proposed Residential Development
Stansty Chain Road, Wrexham

Drawing Title:
Proposed Signalised Main Site Access
Junction with A541 Mold Road

Drawing Number:
J000069-GA001

Date:
17.10.19

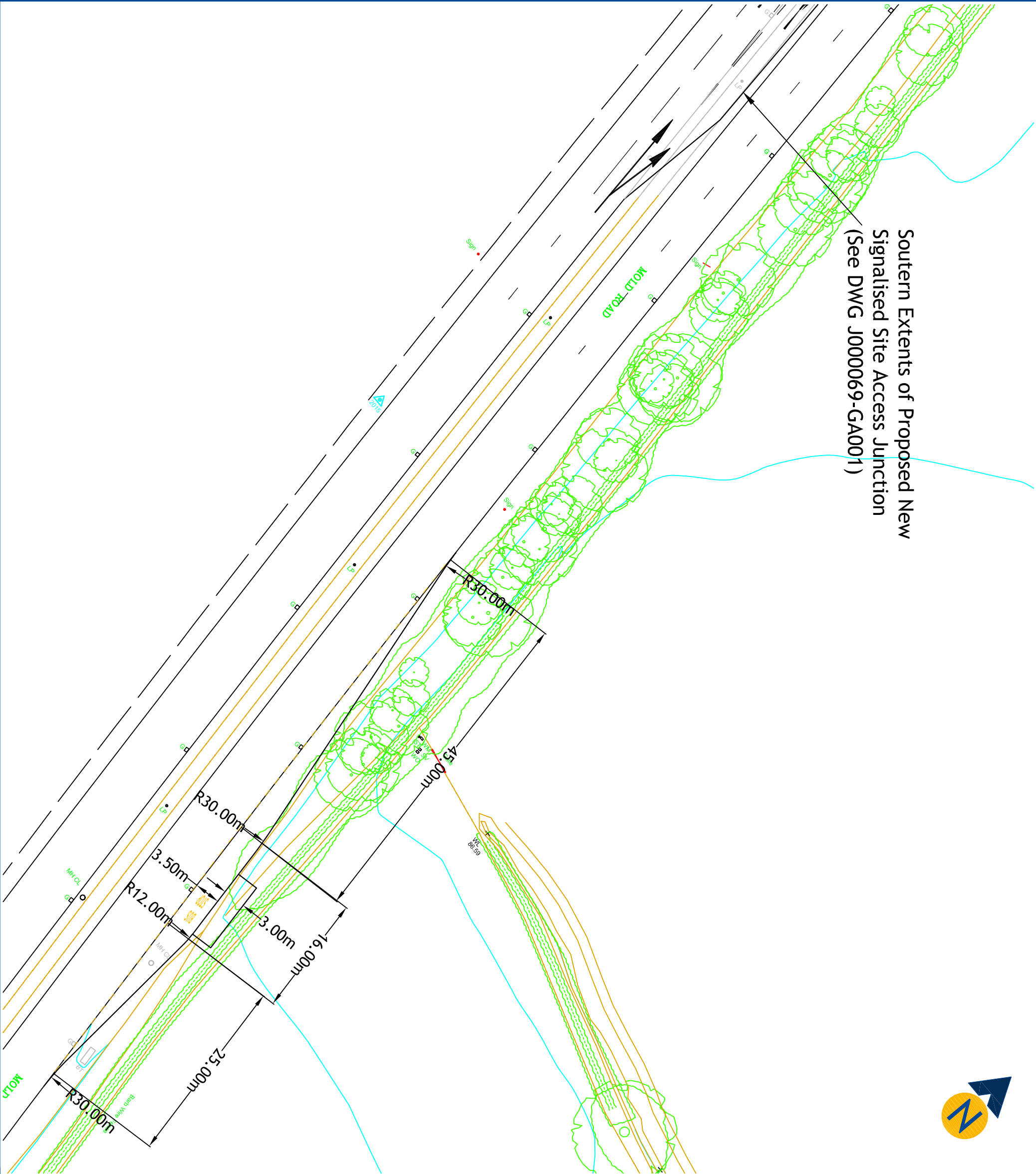
Drawn By:
MH

Status:
Planning

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Southern Extents of Proposed New
Signalised Site Access Junction
(See DWG J000069-GA001)



Revision:

Client: Russell Homes UK Ltd.

Project: Proposed Residential Development
Stansty Chain Road, Wrexham

Drawing Title: Proposed Bus Layby on Southbound
Site Side of A541 Mold Road

Drawing Number: J000069-GA003
Revision: -

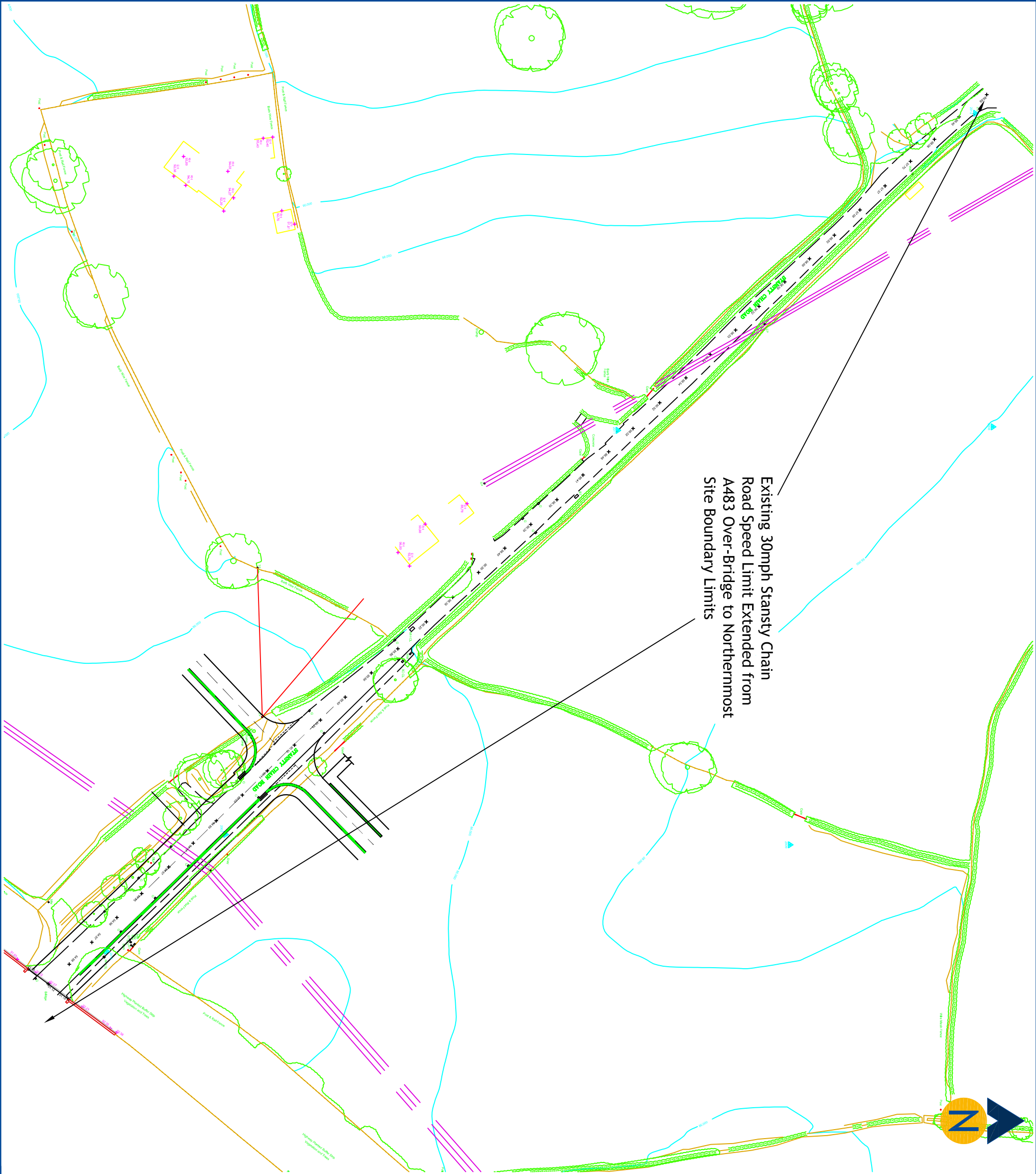
Date: 17.10.19
Scale: 1:500 @ A3

Drawn By: MH
Checked By: MH

Status: Planning

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Revision:

Client: Russell Homes UK Ltd.

Project: Proposed Residential Development
Stansty Chain Road, Wrexham

Drawing Title: Proposed Extension of Existing Stansty
Chain Road 30mph Speed limit to a Point
North of Site Boundary

Drawing Number: J000069-GA004 Revision: -

Date: 10.12.19 Scale: 1:1,000 @ A3

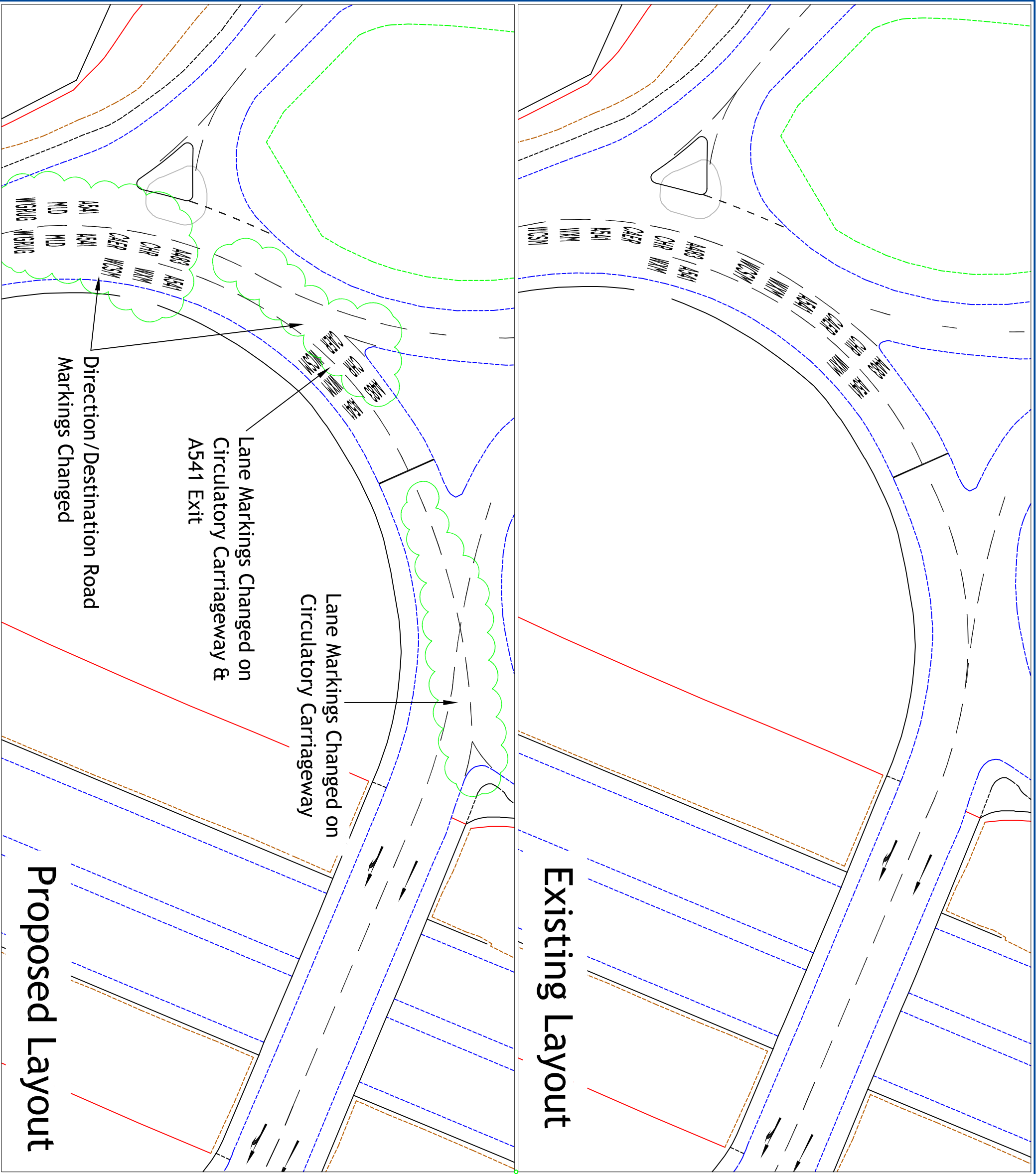
Drawn By: MH Checked By: MH

Status: Planning

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Revision: A -

NOTES:

Lane markings changed as follows:

- Two exit lanes enabled from circulatory carriageway to A541 Mold Rd (N) northbound exit
- Nearside circulating lane past A541 Mold Rd (N) changed to restrict exit to A483 northbound only, with offside lane for all other destinations
- Carriageway directional/destination text changed to reflect above changes to lane markings

Client: Russell Homes Ltd.

Project: Proposed Residential Development
Mold Rd /Stansty Chain Rd, Wrexham

Drawing Title: Proposed Stage 1 Mitigation Works at A483 J5
Comprising Changes to Carriageway Markings
Sheet 1 of 2

Drawing Number: J000069-SK006-1
Revision: -

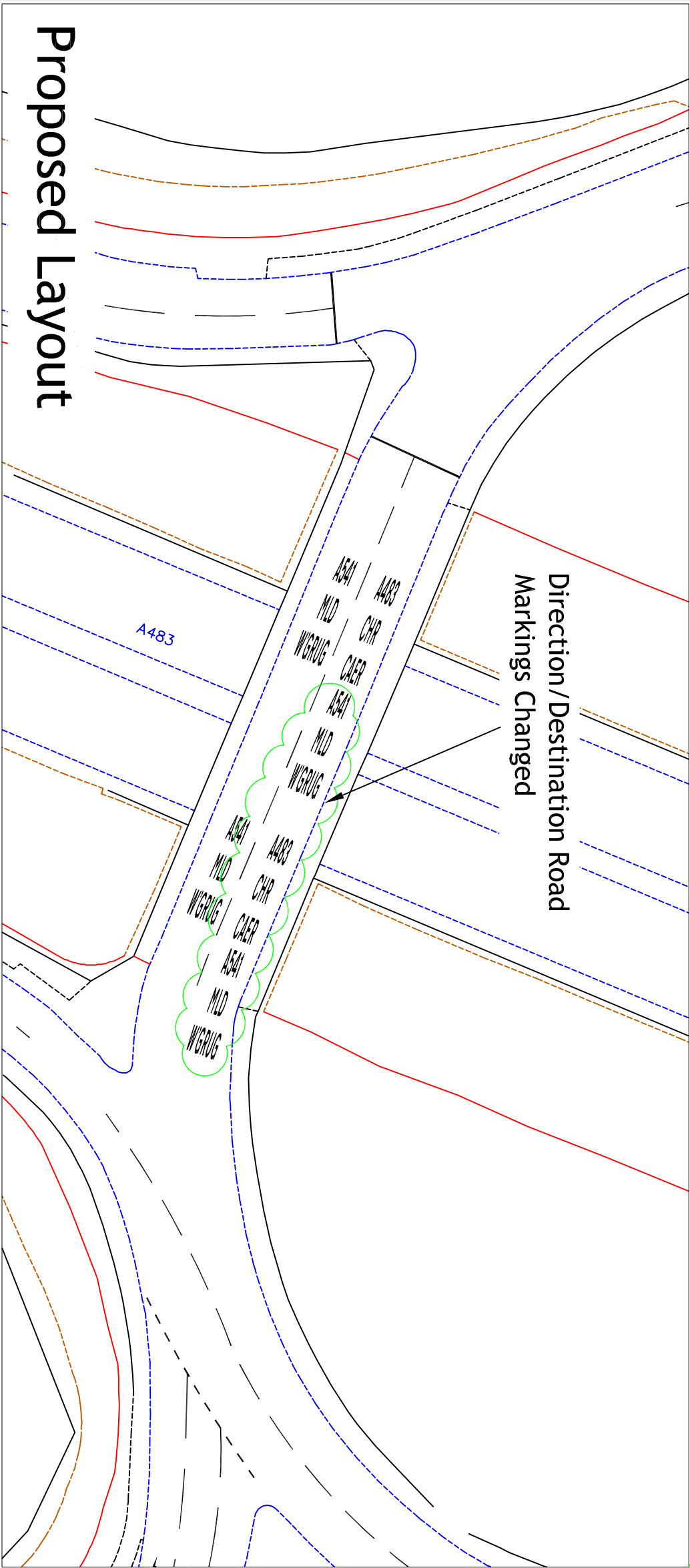
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Drawn By: MH
Checked By: MH

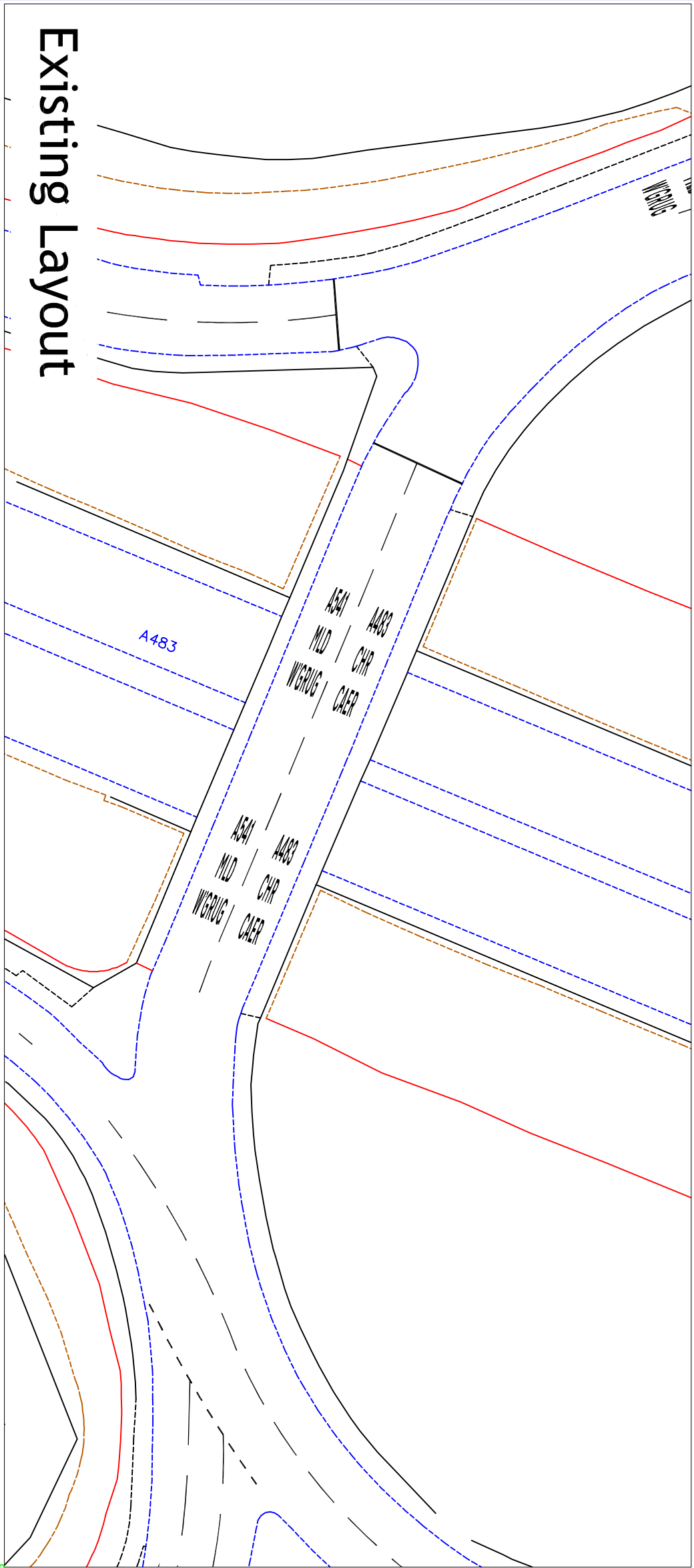
Status: Information

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Proposed Layout



Existing Layout



Revision:
A -

NOTES:

Lane markings changed as follows:

- Two exit lanes enabled from circulatory carriageway to A541 Mold Rd (N) northbound exit
- Nearside circulating lane past A541 Mold Rd (N) changed to restrict exit to A483 northbound only, with offside lane for all other destinations
- Carriageway directional/destination text changed to reflect above changes to lane markings

Client:
Russell Homes Ltd.

Project:
Proposed Residential Development
Mold Rd/Stansly Chain Rd, Wrexham

Drawing Title:
Proposed Stage 1 Mitigation Works at A483 J5
Comprising Changes to Carriageway Markings
Sheet 2 of 2

Drawing Number:
J000069-SK006-2

Revision:
-

Date:
19.08.19

Scale:
1:500 @ A3

Drawn By:
MH

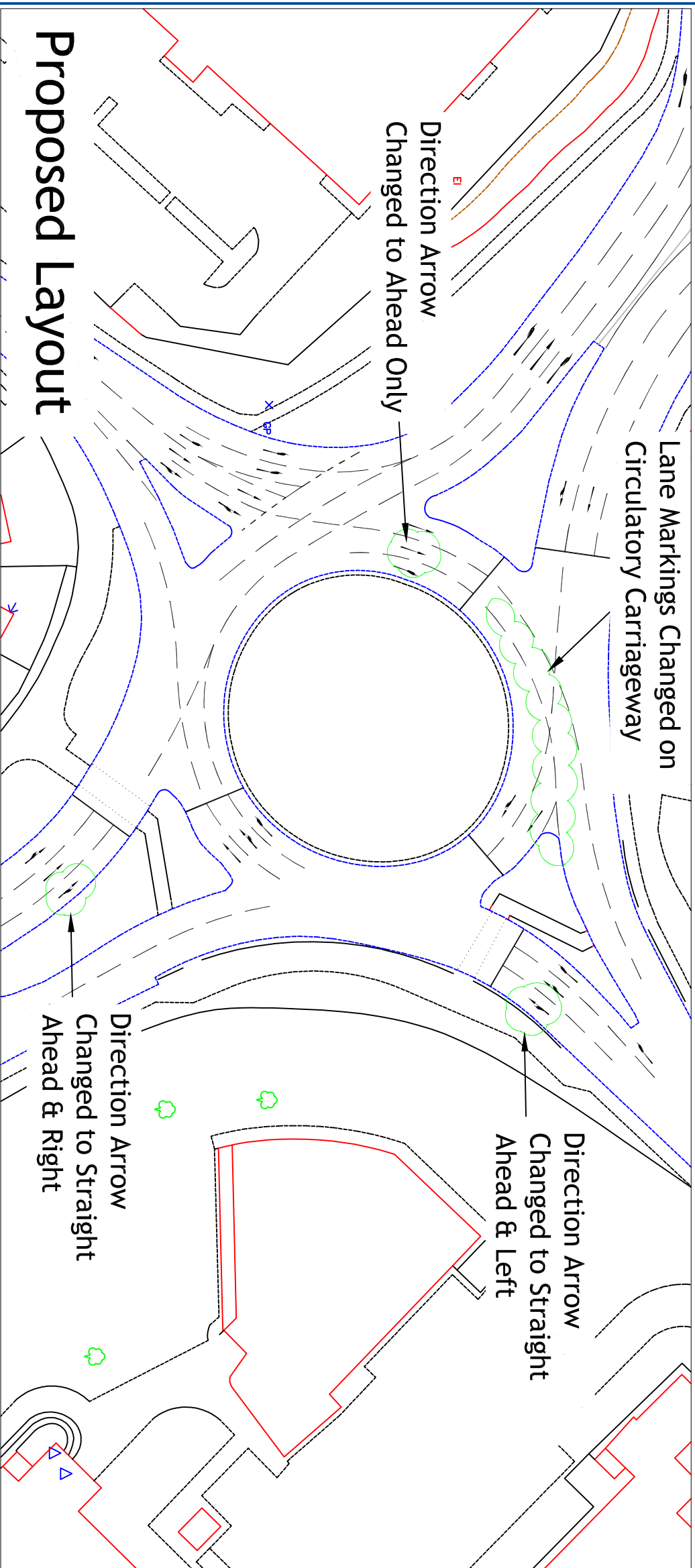
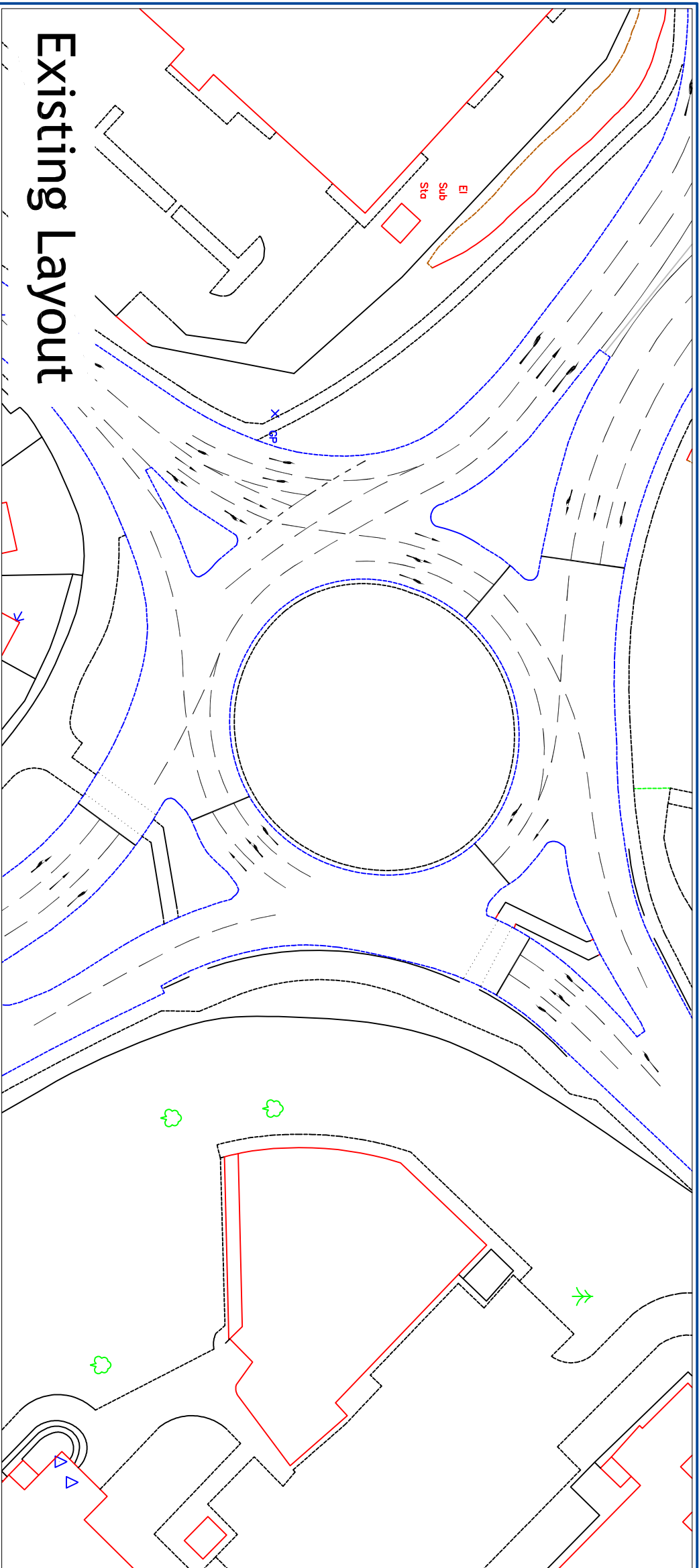
Checked By:
MH

Status:
Information

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Revision: A -

NOTES:

Lane markings changed as follows:

- Offside approach lane from A541 Mold Rd (E) re-marked to permit ahead traffic as well as current right turning traffic
- Central lane on western circulatory carriageway re-marked to remove right turn, with all right turns to use offside lane only
- Nearside lane on B5101 Plas Coch Rd approach to be re-marked to permit ahead traffic as well as current left turning traffic

Client: Russell Homes Ltd.

Project: Proposed Residential Development
Mold Rd/Stansby Chain Rd, Wrexham

Drawing Title:
Proposed Stage 1 Mitigation Works at A541
Mold Rd/B5101 Plas Coch Road "B&Q" Rbt
Comprising Changes to Carriageway Markings

Drawing Number: J000069-SK007

Revision:

Date: 19.08.19 Scale: 1:750 @ A3

Drawn By: MH

Checked By: MH

Status:

Information

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Revision:
A -

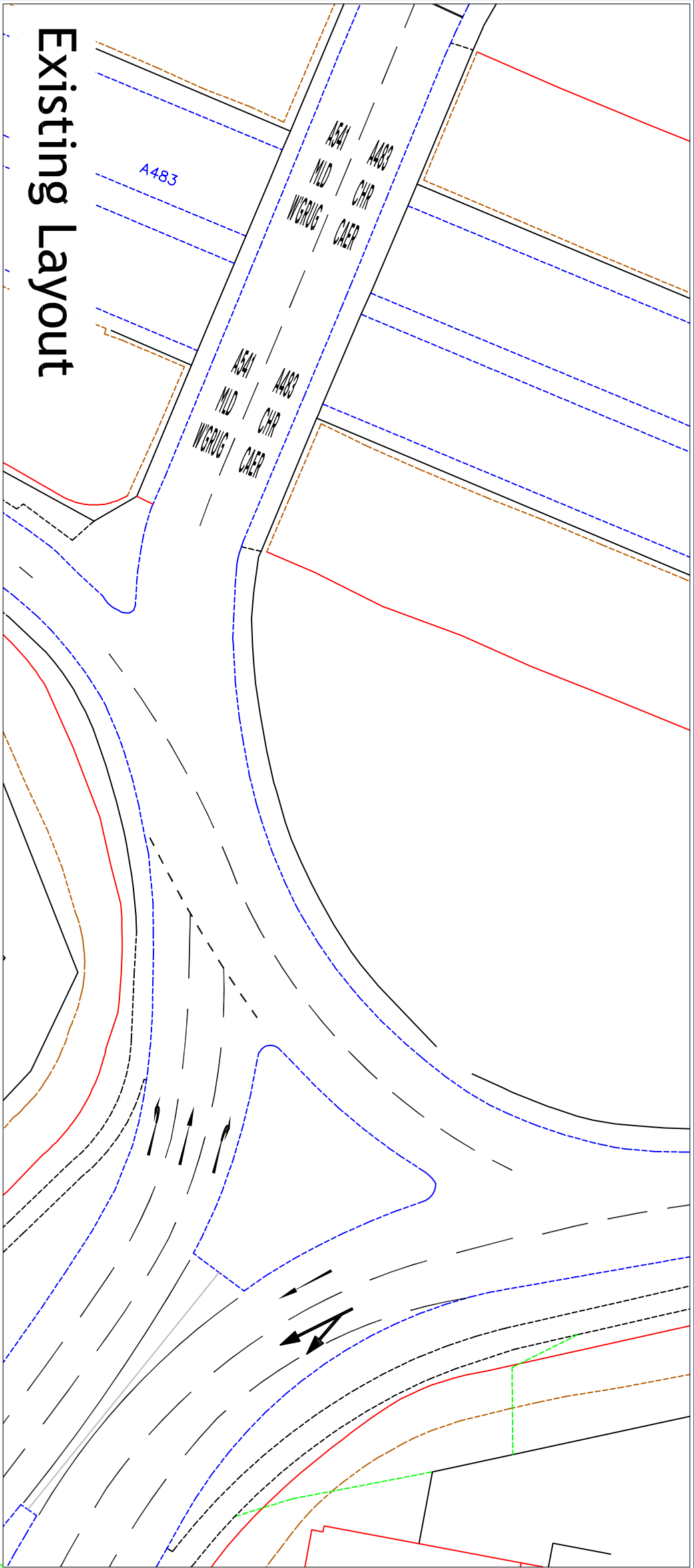
NOTES:

Further mitigation option represents:

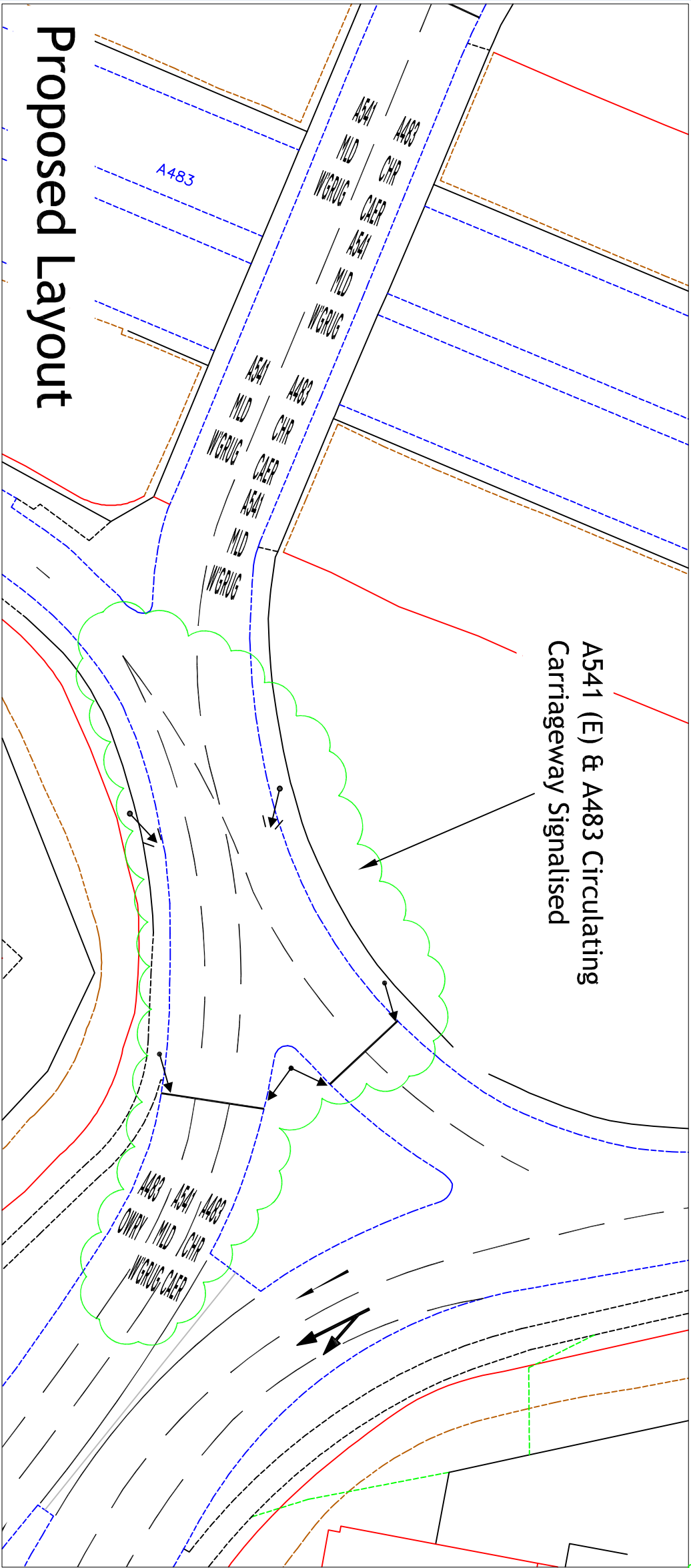
- All mitigation works identified on Drawings J000069-SK006 & SK007 and,
- Signalisation of the A541(E) Mold Road approach and circulating carriageway at the A483 J5, including re-marking of carriageways

This location on the A483 J5 roundabout is currently unsignalised.

It is assumed that no new traffic signal controller would be required (the junction currently has two - understood to be 1 for west and 1 for east sides).
New primary and secondary traffic signal heads are identified.



Existing Layout



Proposed Layout

A541 (E) & A483 Circulating
Carriageway Signalised

Client:	Russell Homes Ltd.		
Project:	Proposed Residential Development Mold Rd /Stansty Chain Rd, Wrexham		
Drawing Title:	Proposed Stage 2 Mitigation Works at A483 J5 Comprising Signalisation of A541 (E) / A483 Node of A483 J5 Roundabout		
Drawing Number:	J000069-SK008	Revision:	-
Date:	19.08.19	Scale:	1:500 @ A3
Drawn By:	MH	Checked By:	MH
Status:	Information		

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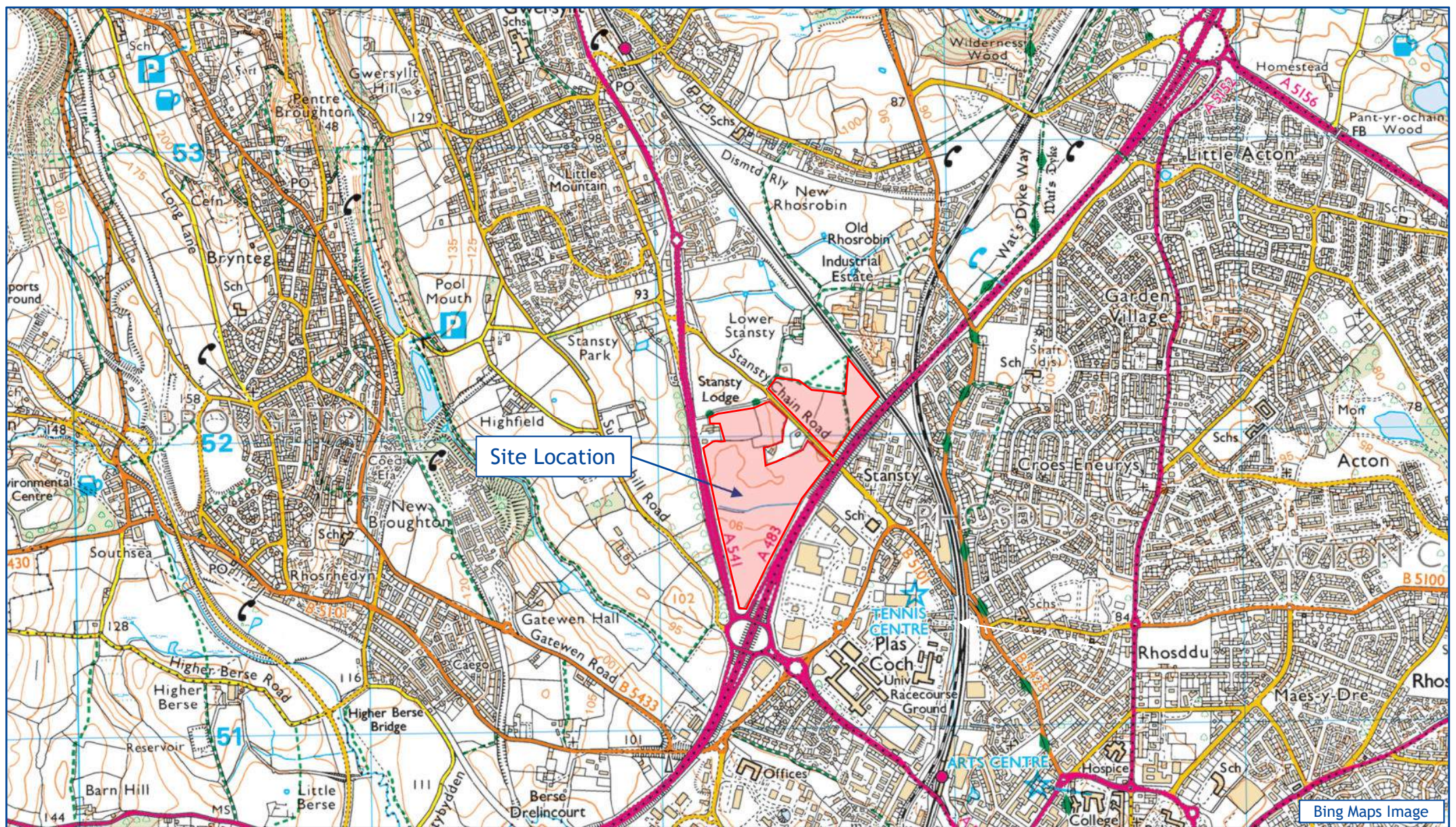
Figure TA1

Site Location - Strategic Context

J000069

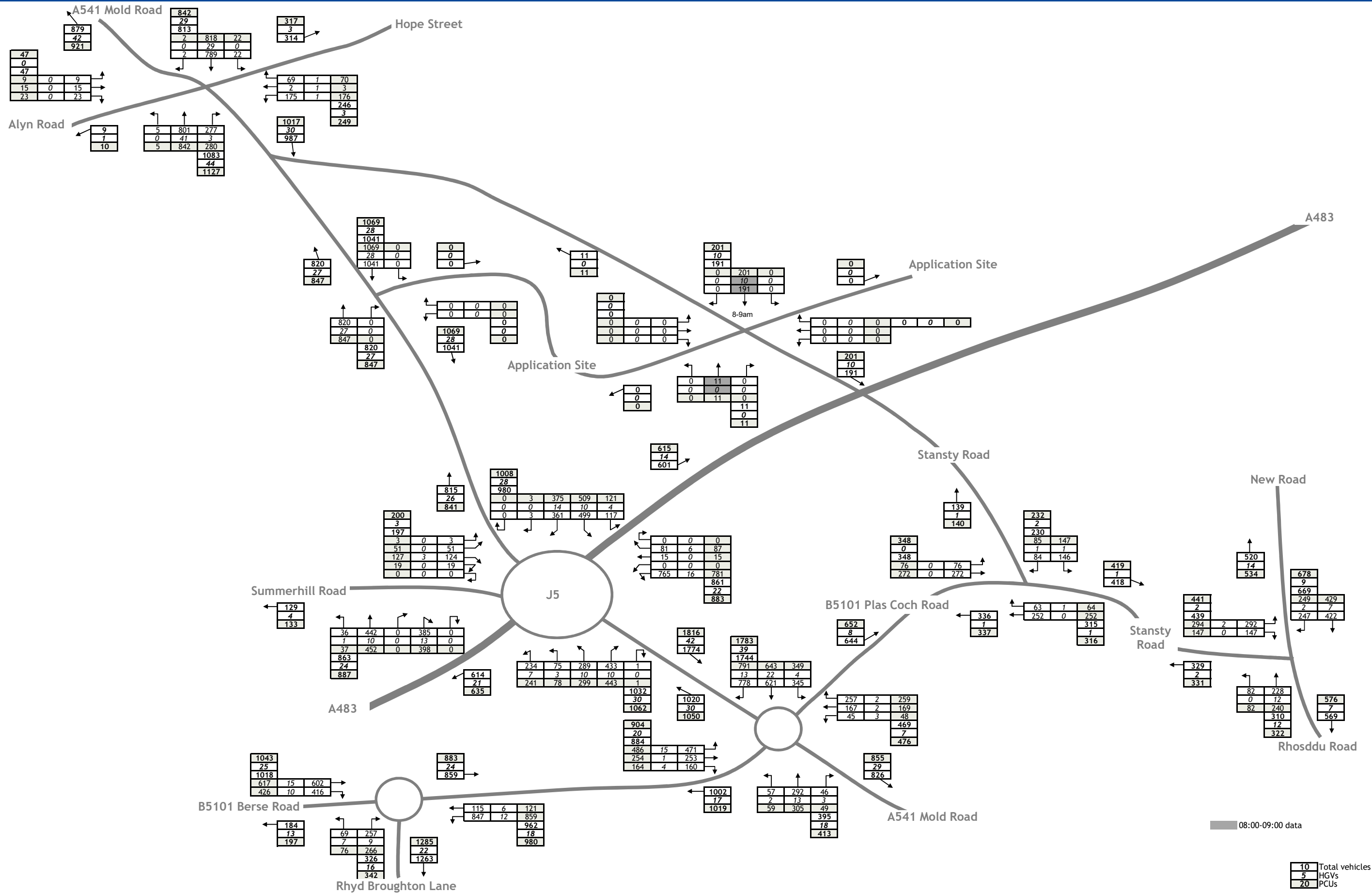
Land at Mold Road, Wrexham

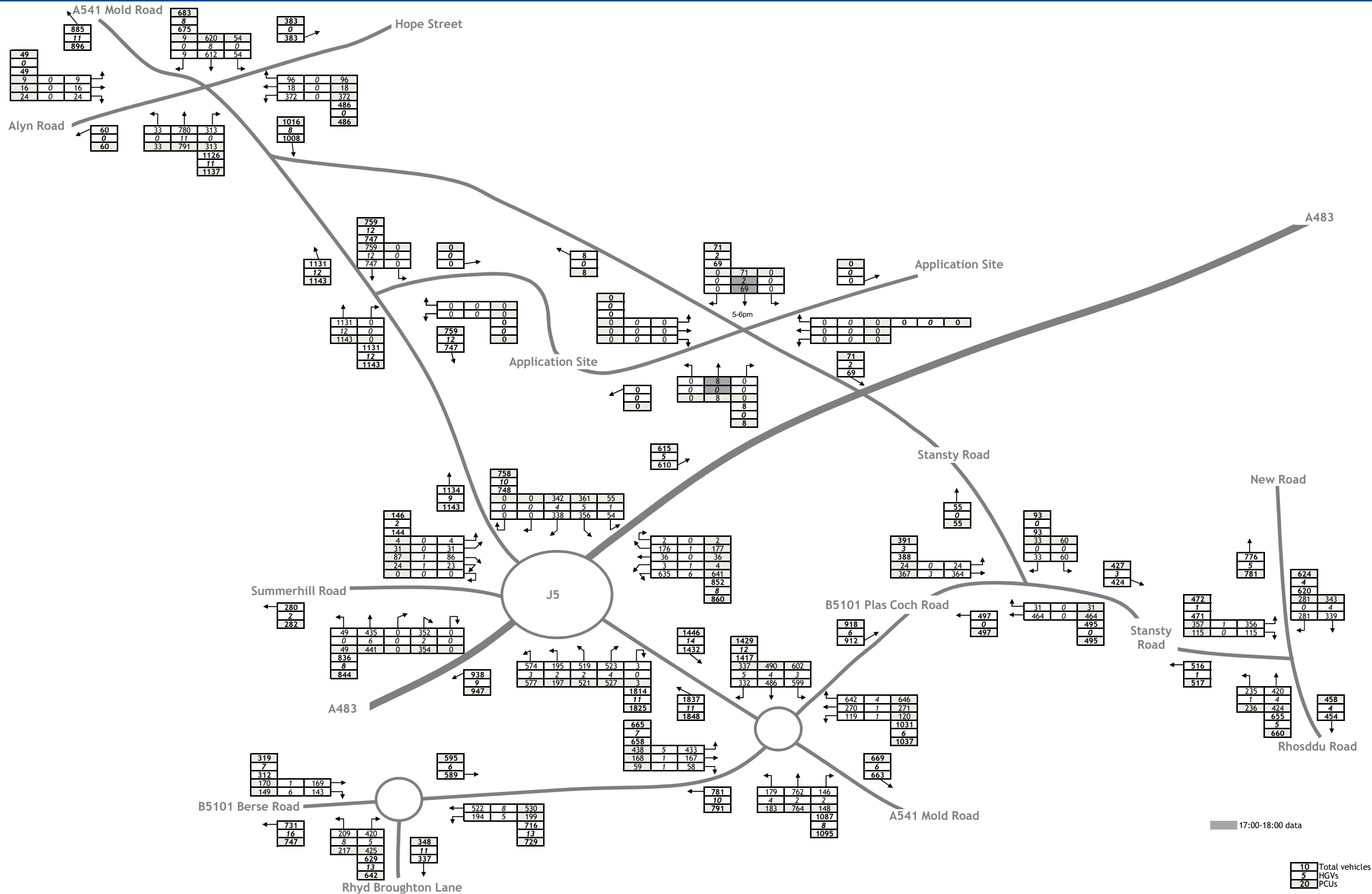
October 2019



Bing Maps Image







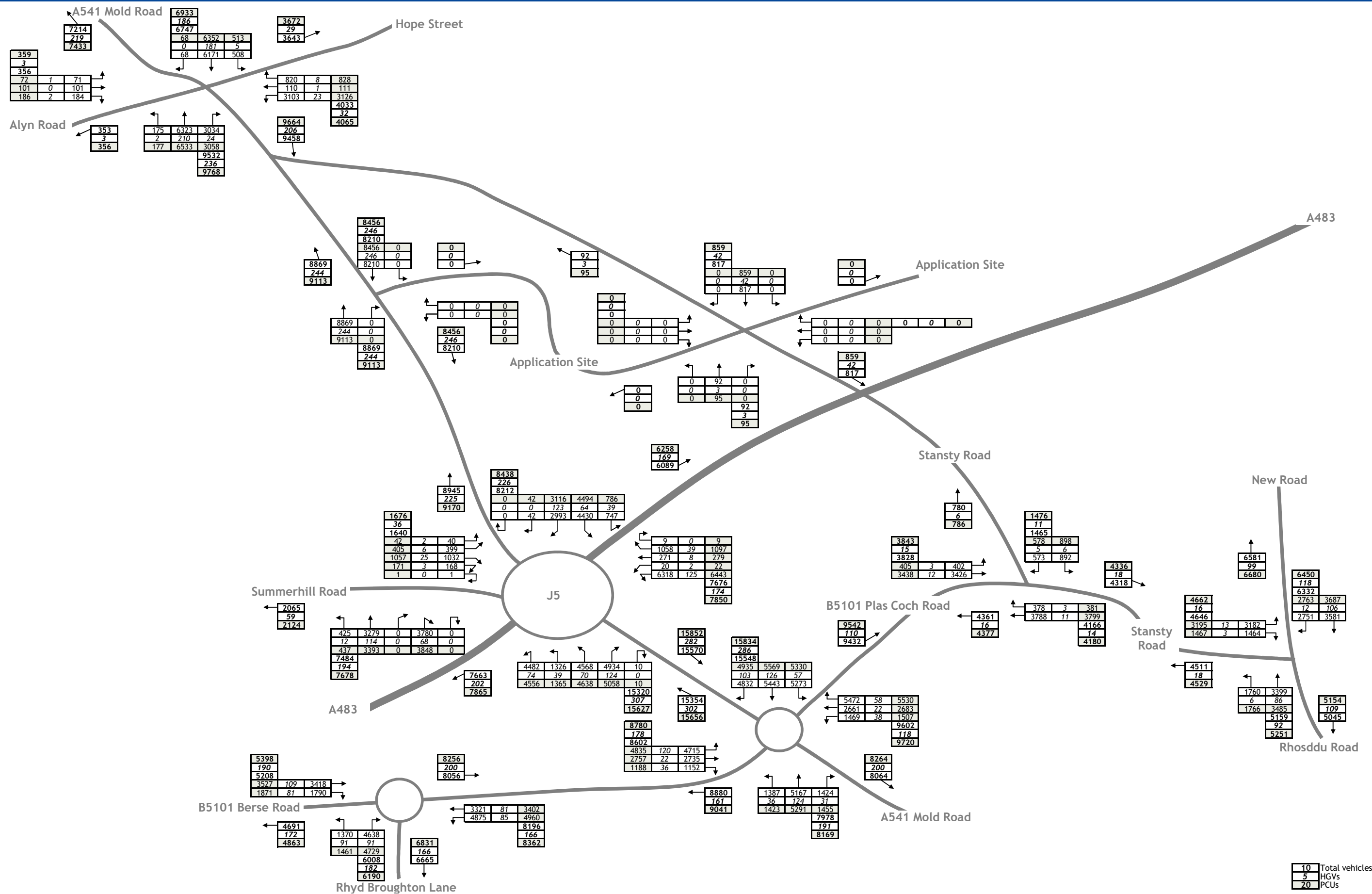
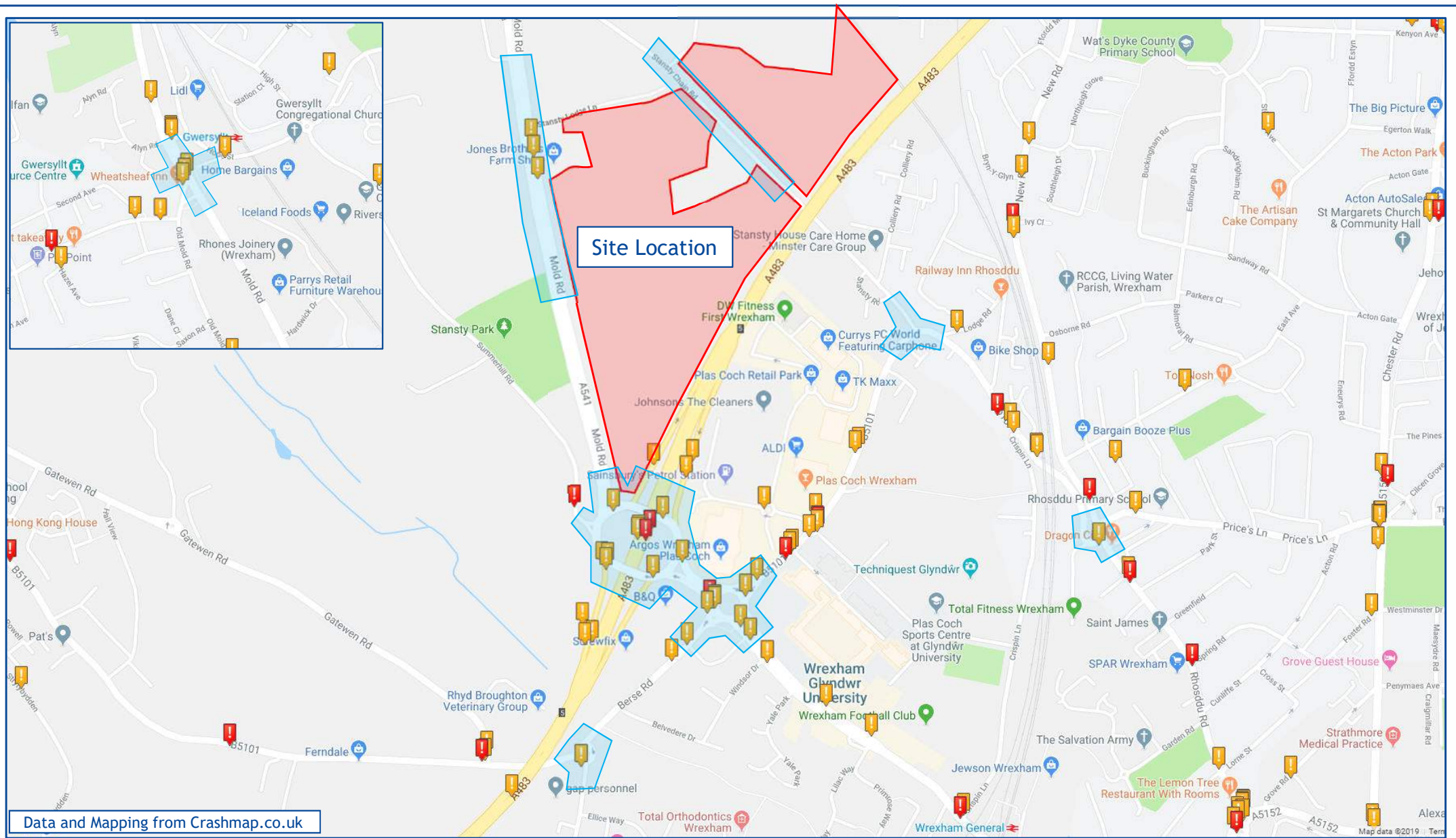
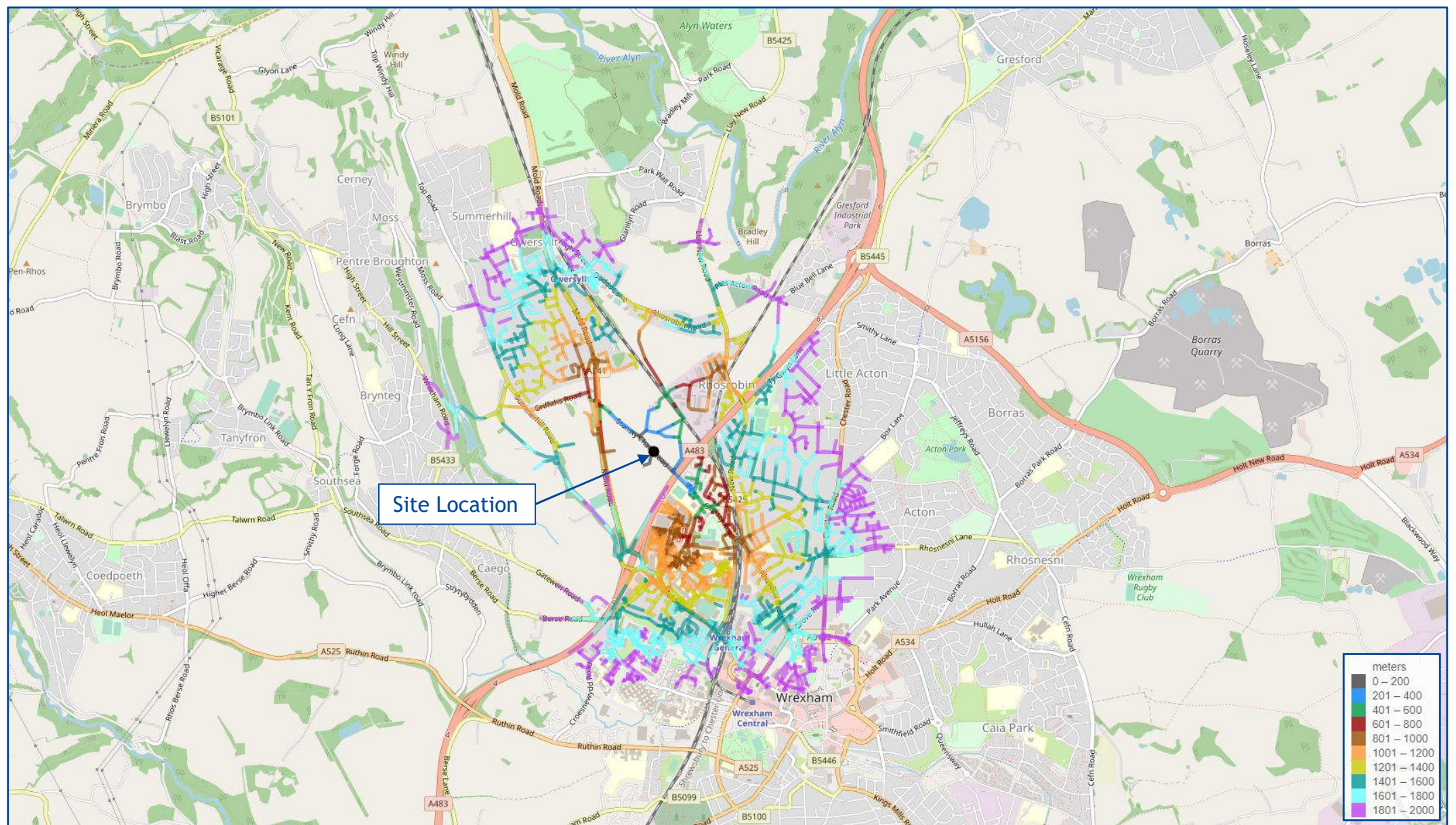
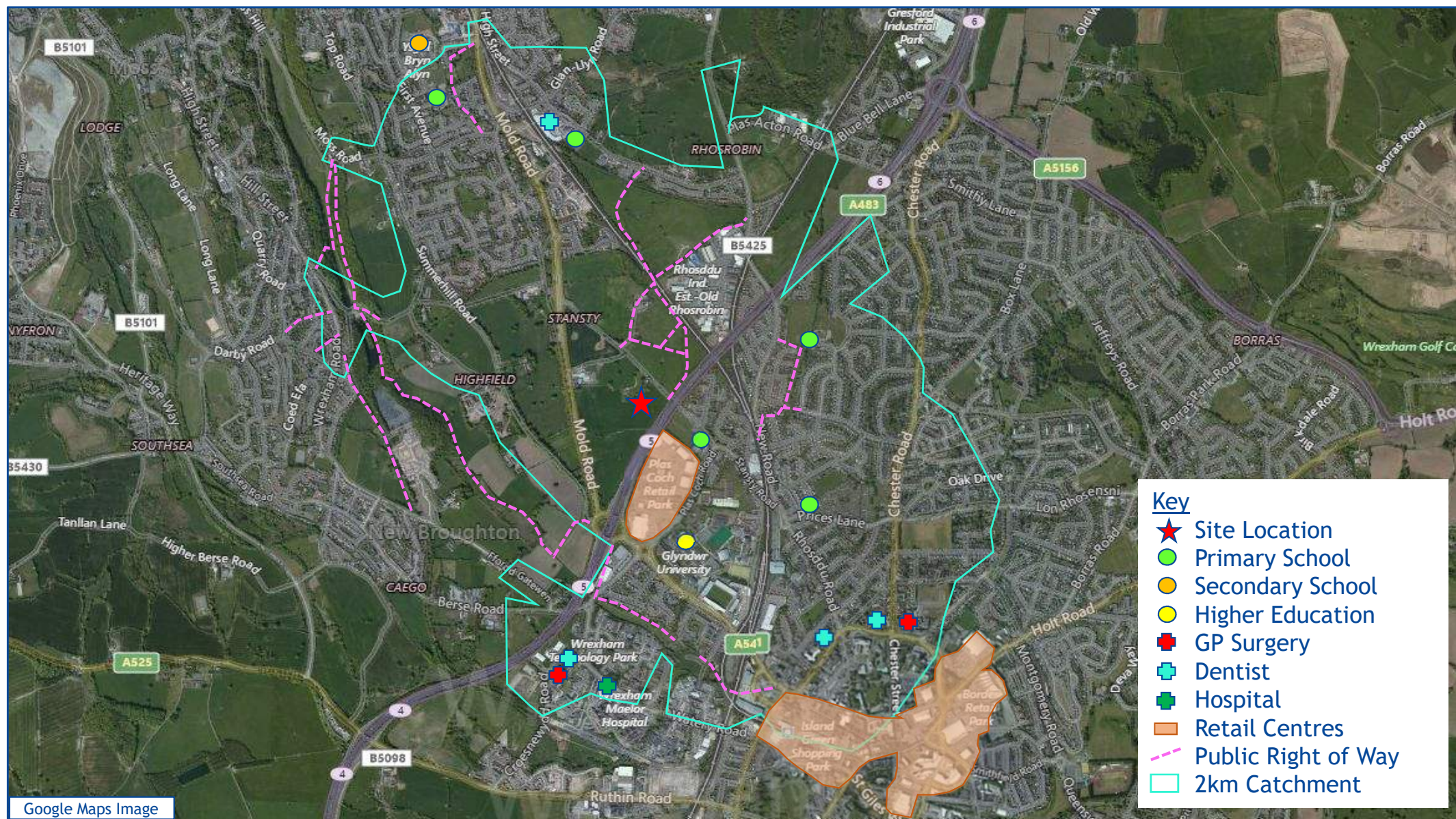


Figure TA4c 2019 Surveyed Traffic Flows - 12 Hour (07:00-19:00)

J000069 Land at Mold Road, Wrexham October 2019







Google Maps Image



5km Local Cycle Catchment

October 2019

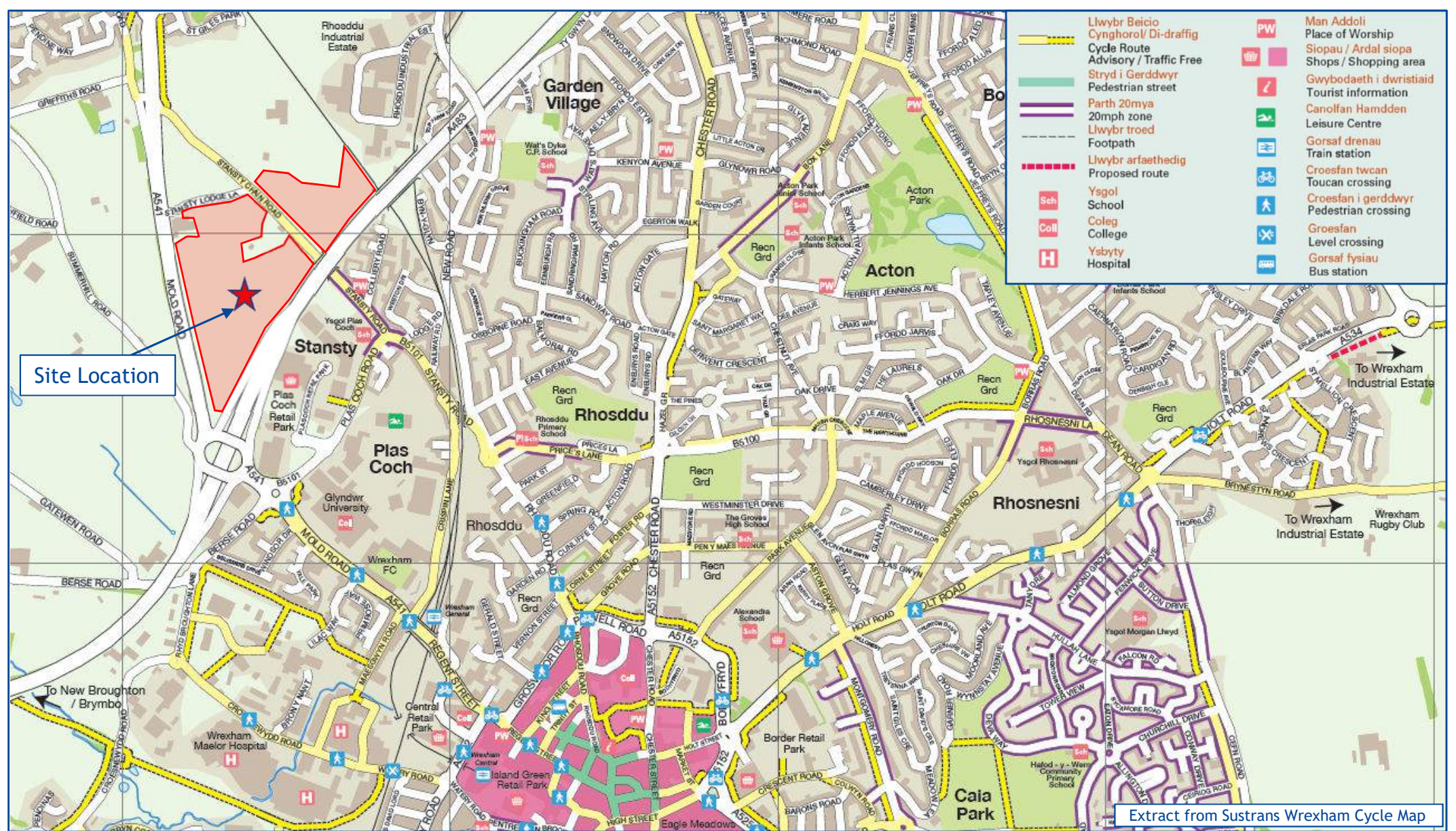
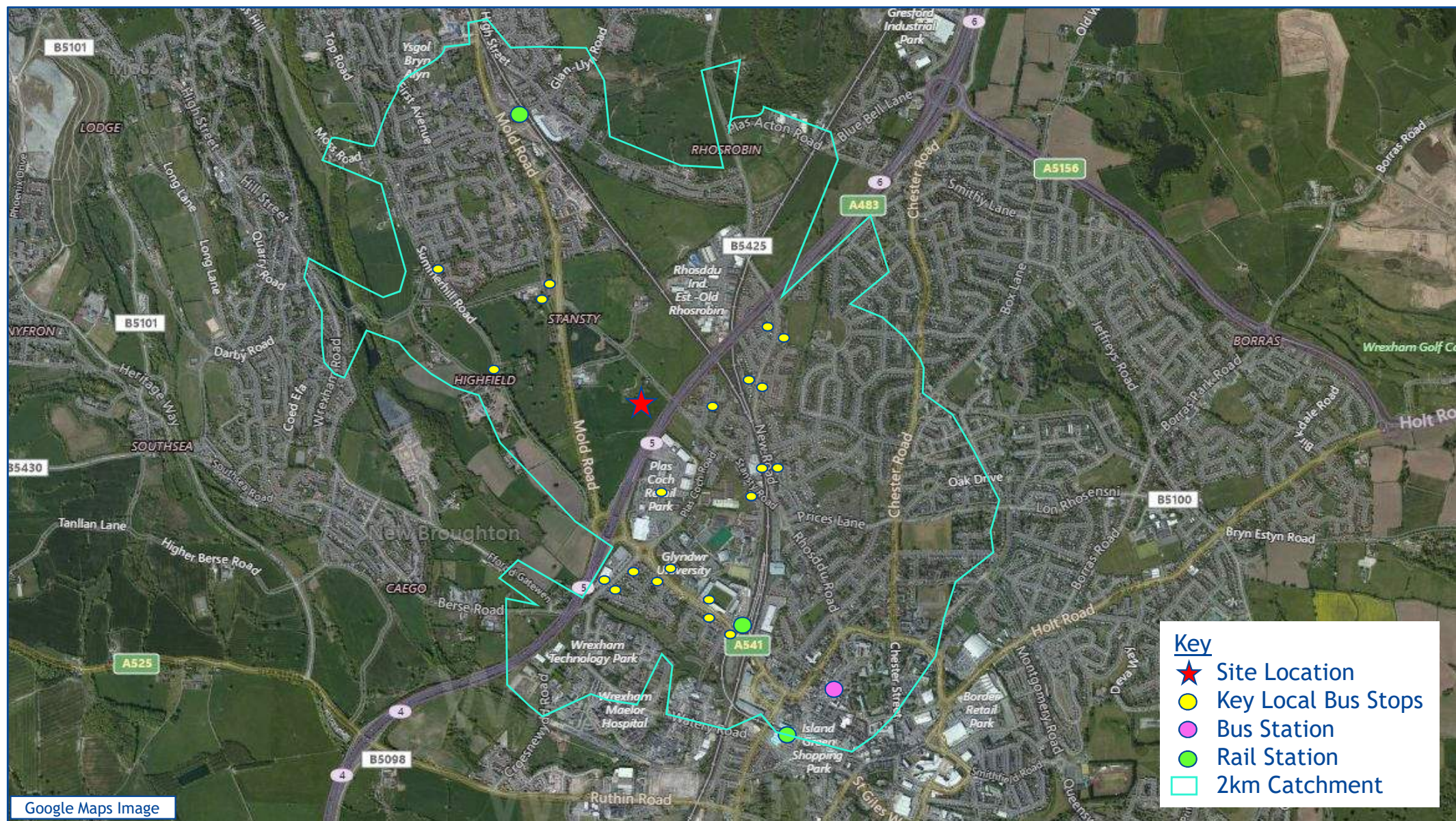


Figure TA9

Local Cycle Infrastructure to the Site



Google Maps Image

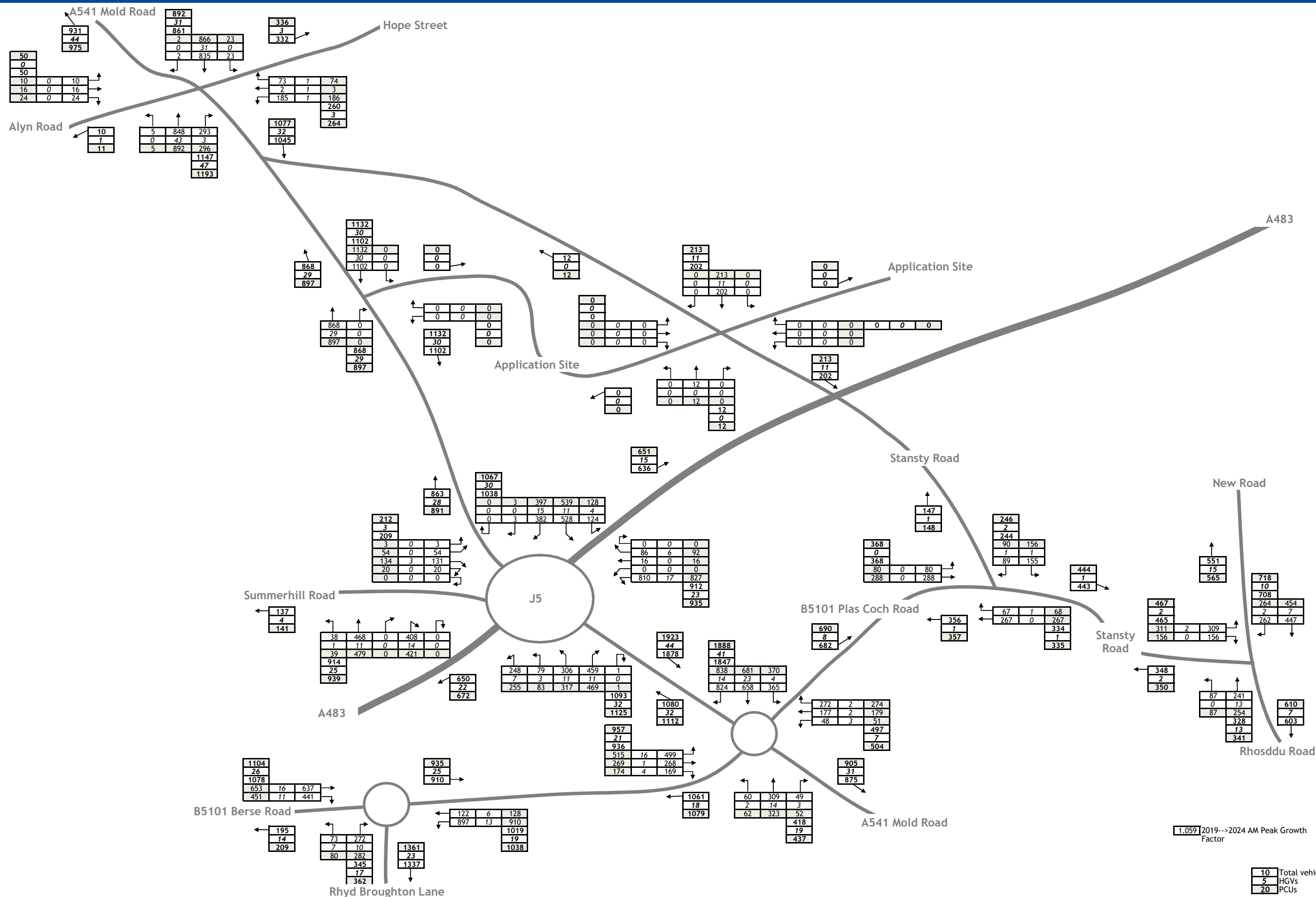
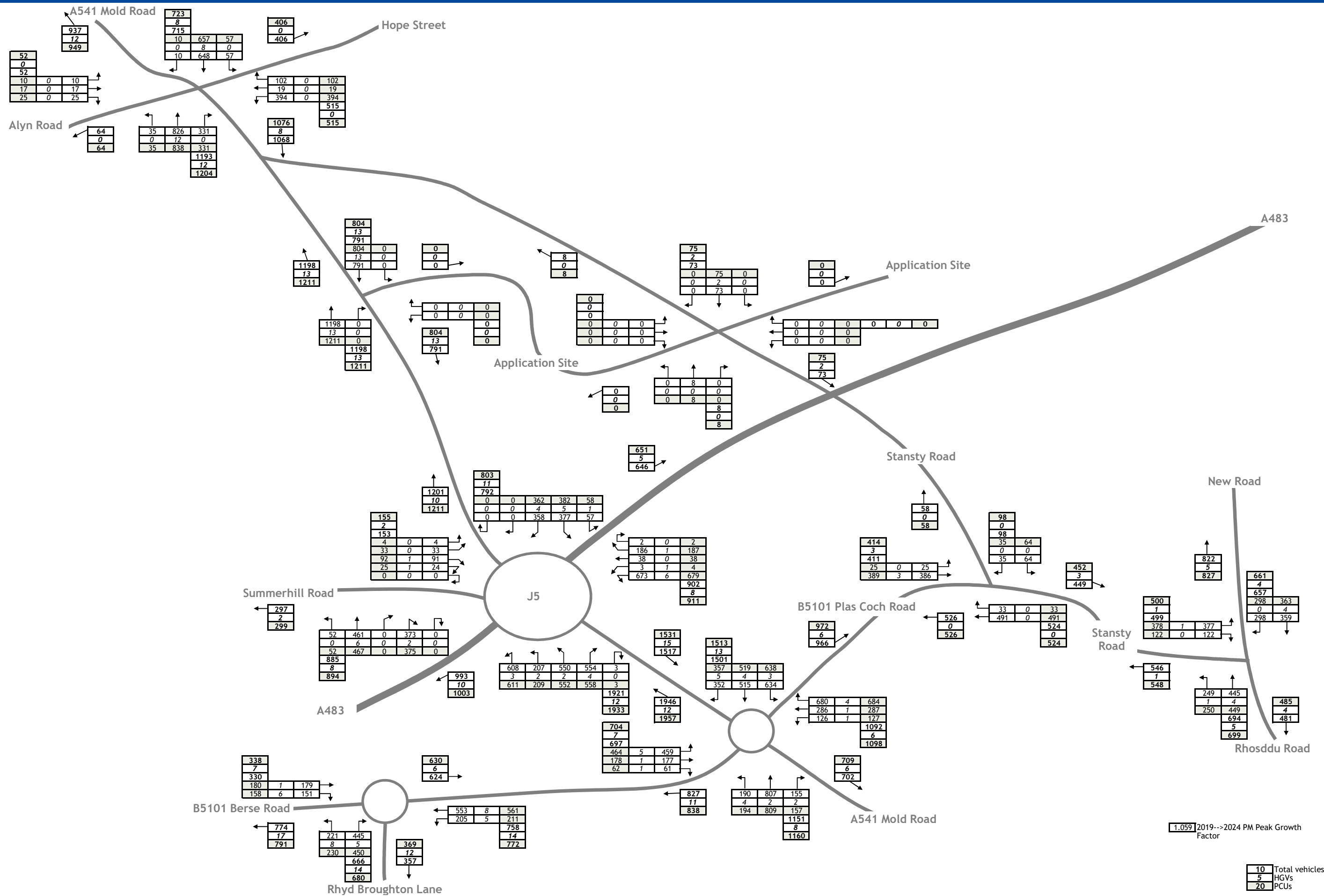


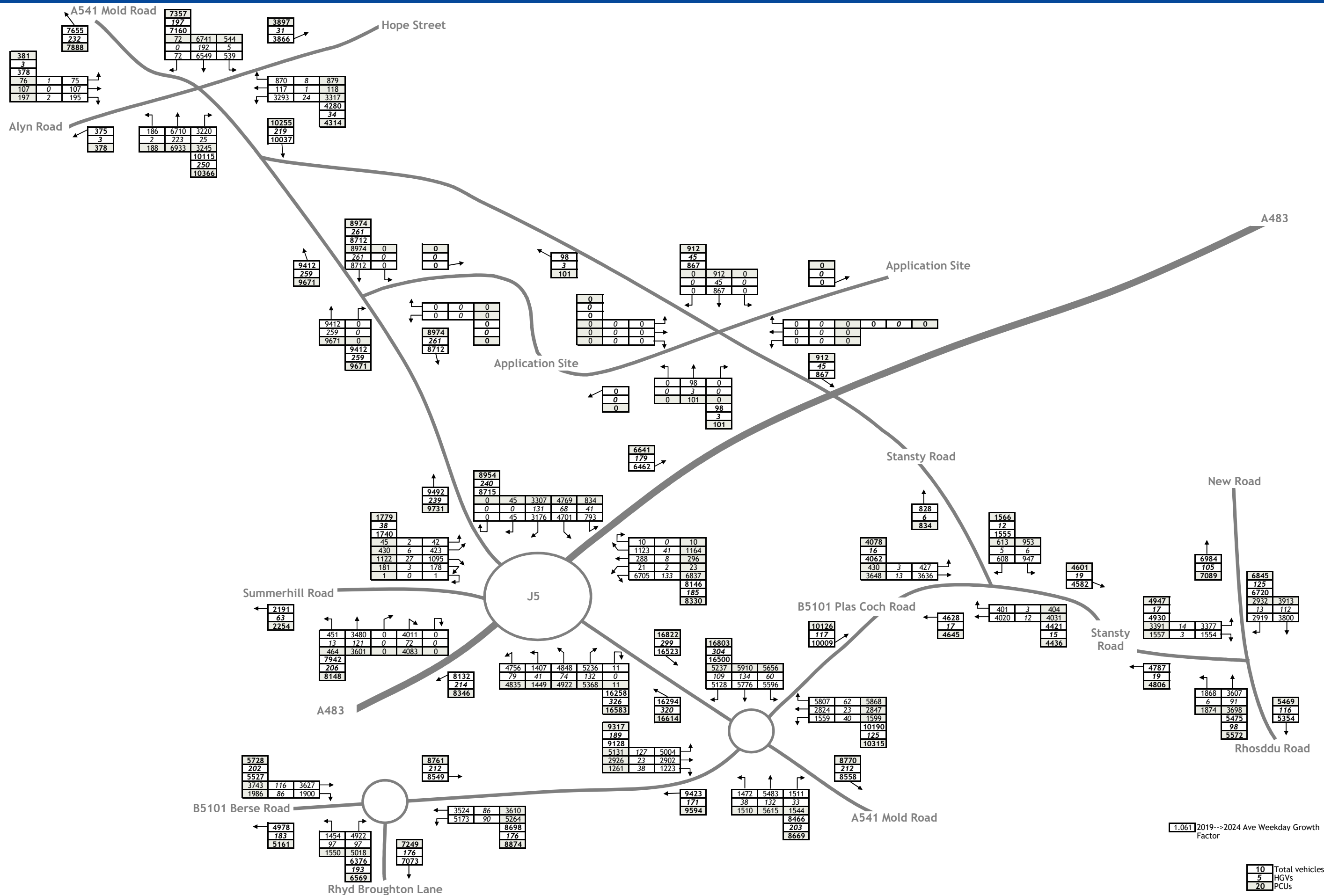
Figure TA11a 2024 Background Traffic Flows - AM Peak (07:45-08:45)

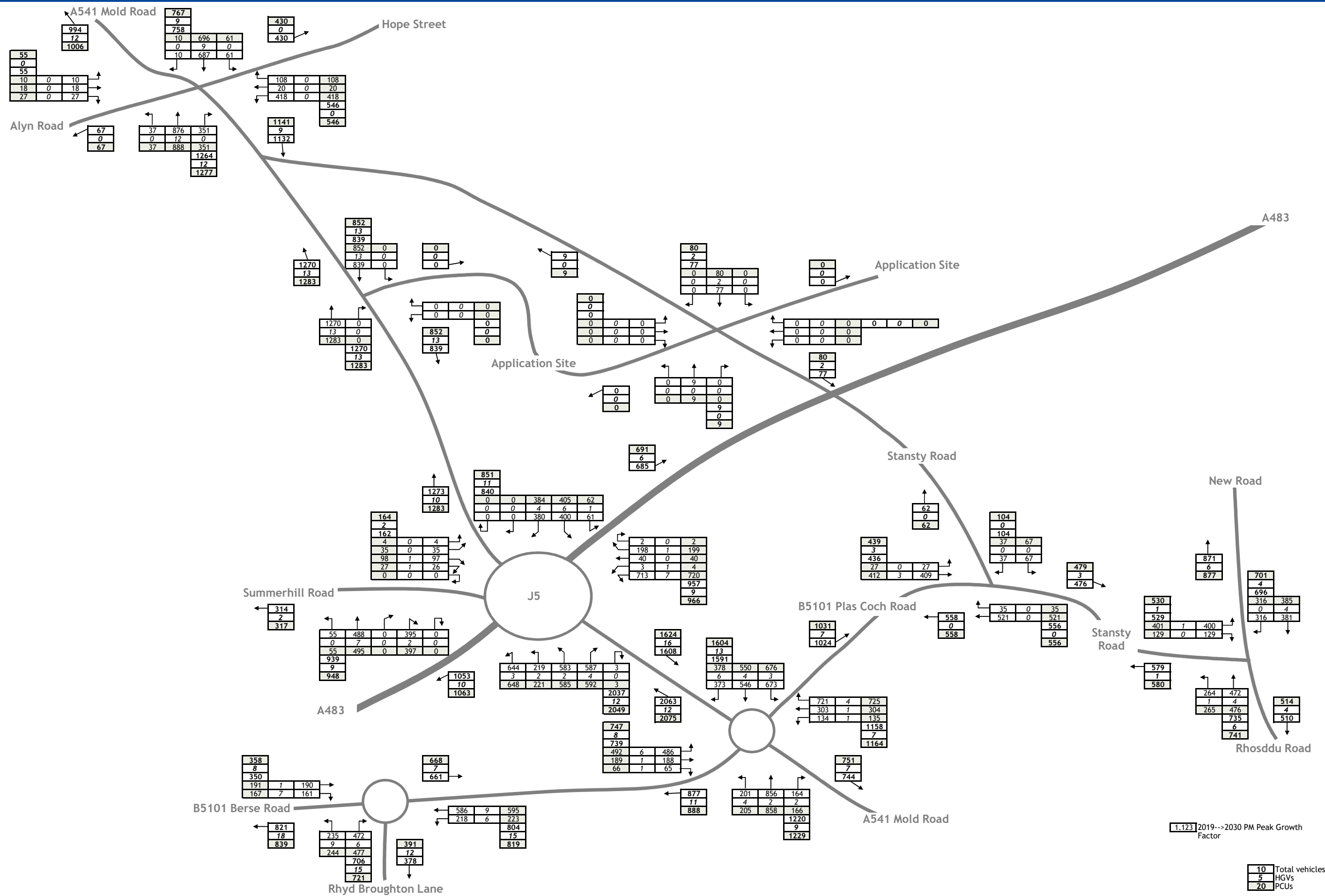
J000069

Land at Mold Road, Wrexham

October 2019







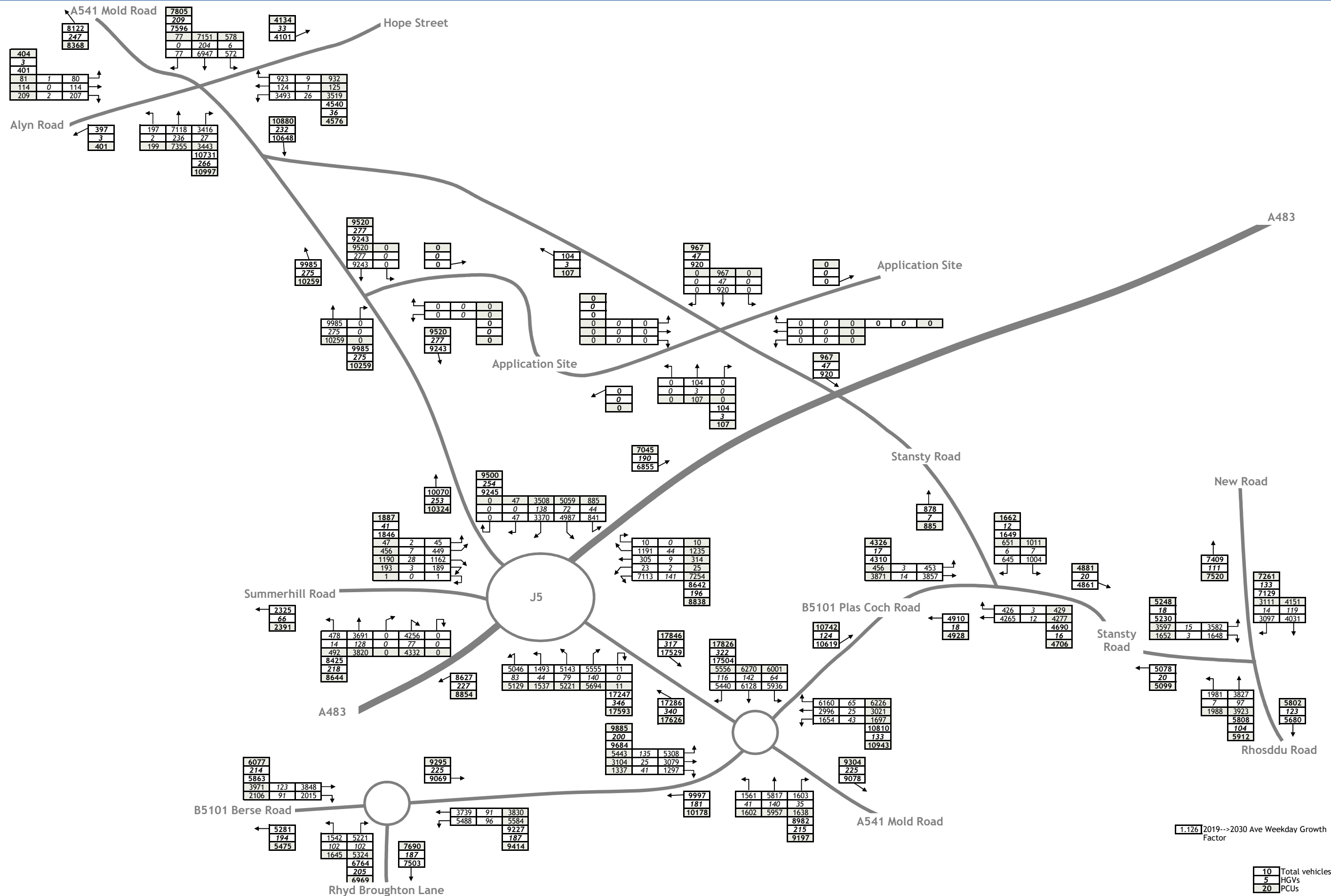


Figure TA12c 2030 Background Traffic Flows - 12 Hour (07:00-19:00)

J000069

Land at Mold Road, Wrexham

October 2019

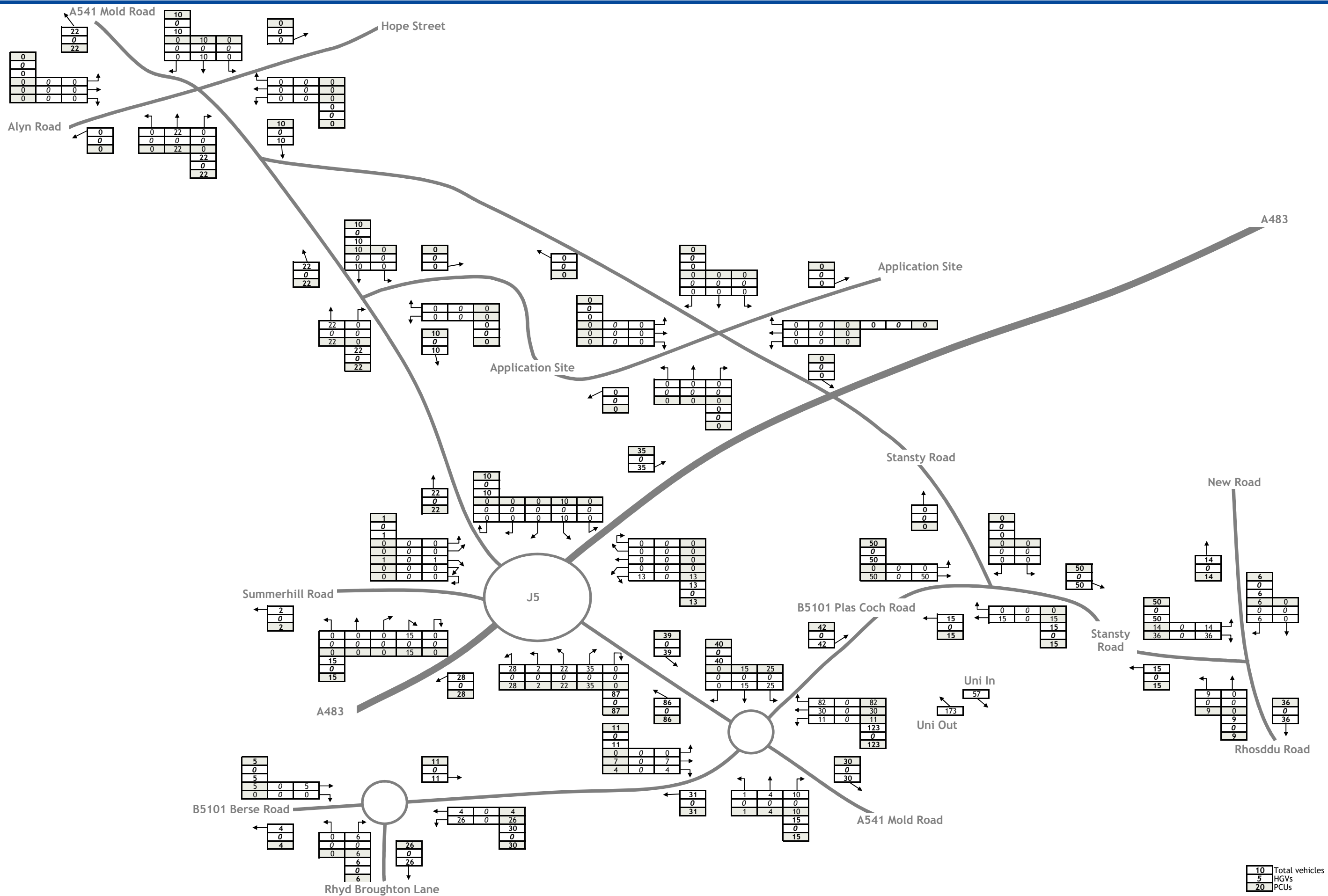


Figure TA13a Total University Redevelopment Traffic (Growth + PRS) - AM Peak

J000069

Land at Mold Road, Wrexham

October 2019

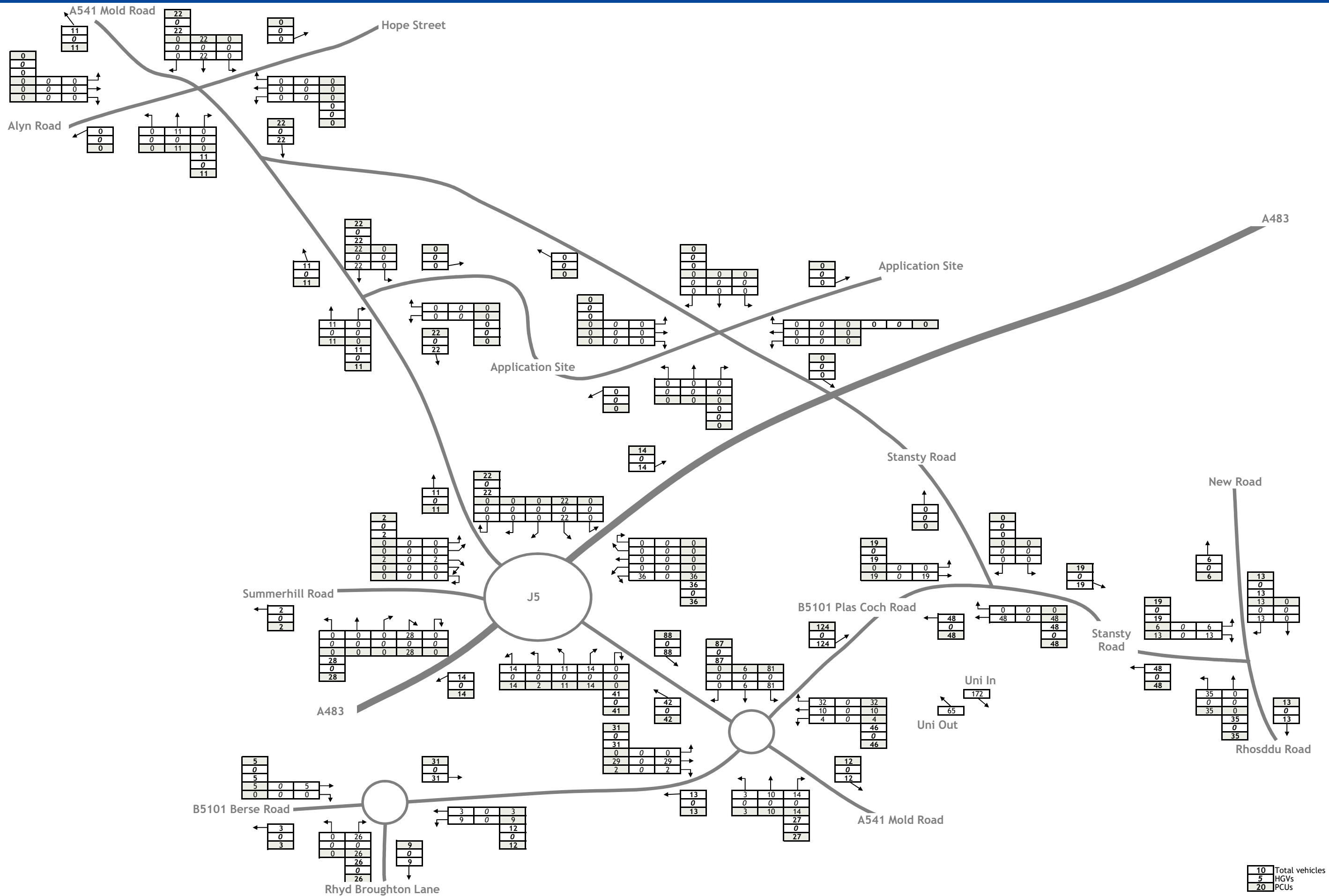
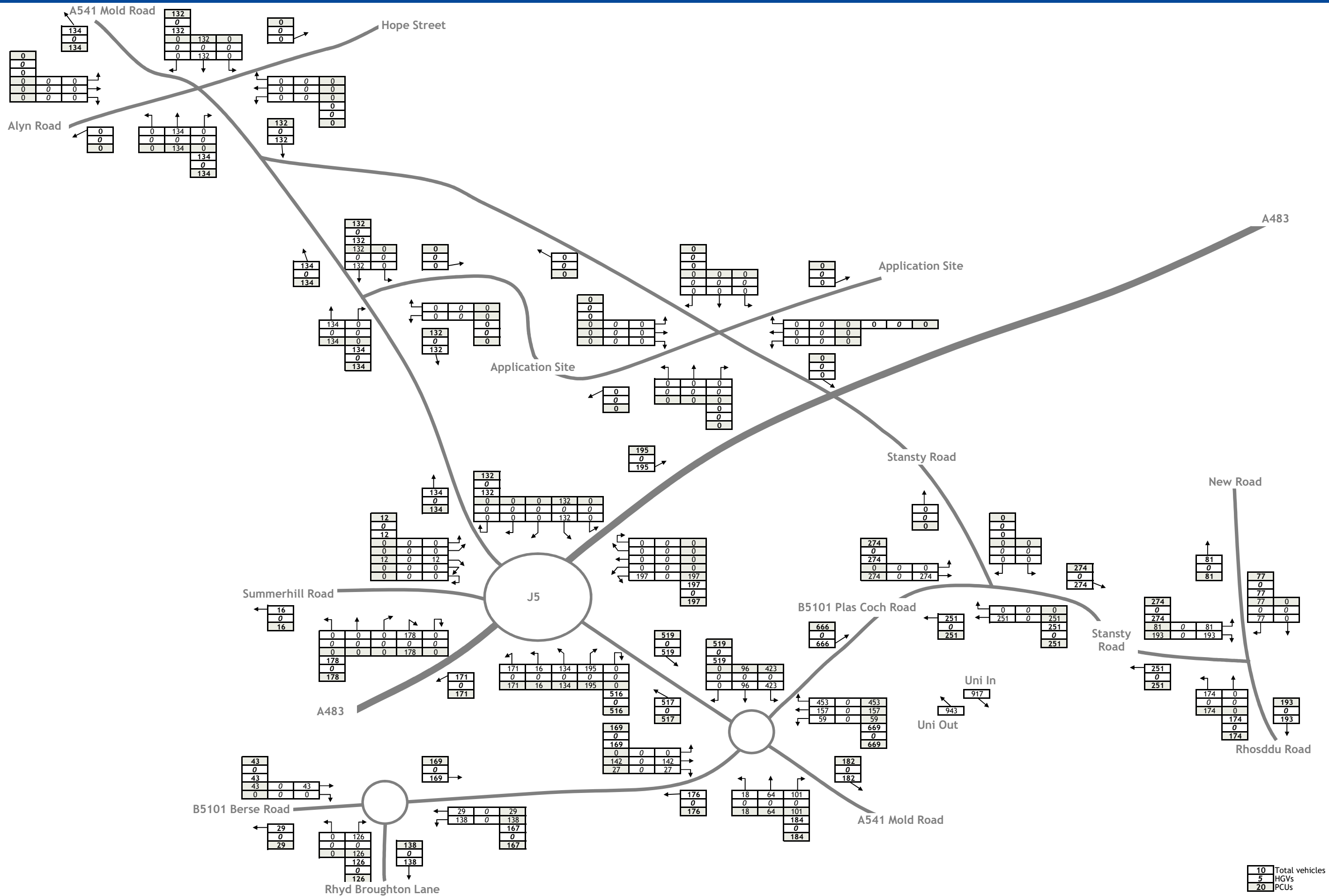


Figure TA13b Total University Redevelopment Traffic (Growth + PRS) - PM Peak

J000069

Land at Mold Road, Wrexham

October 2019



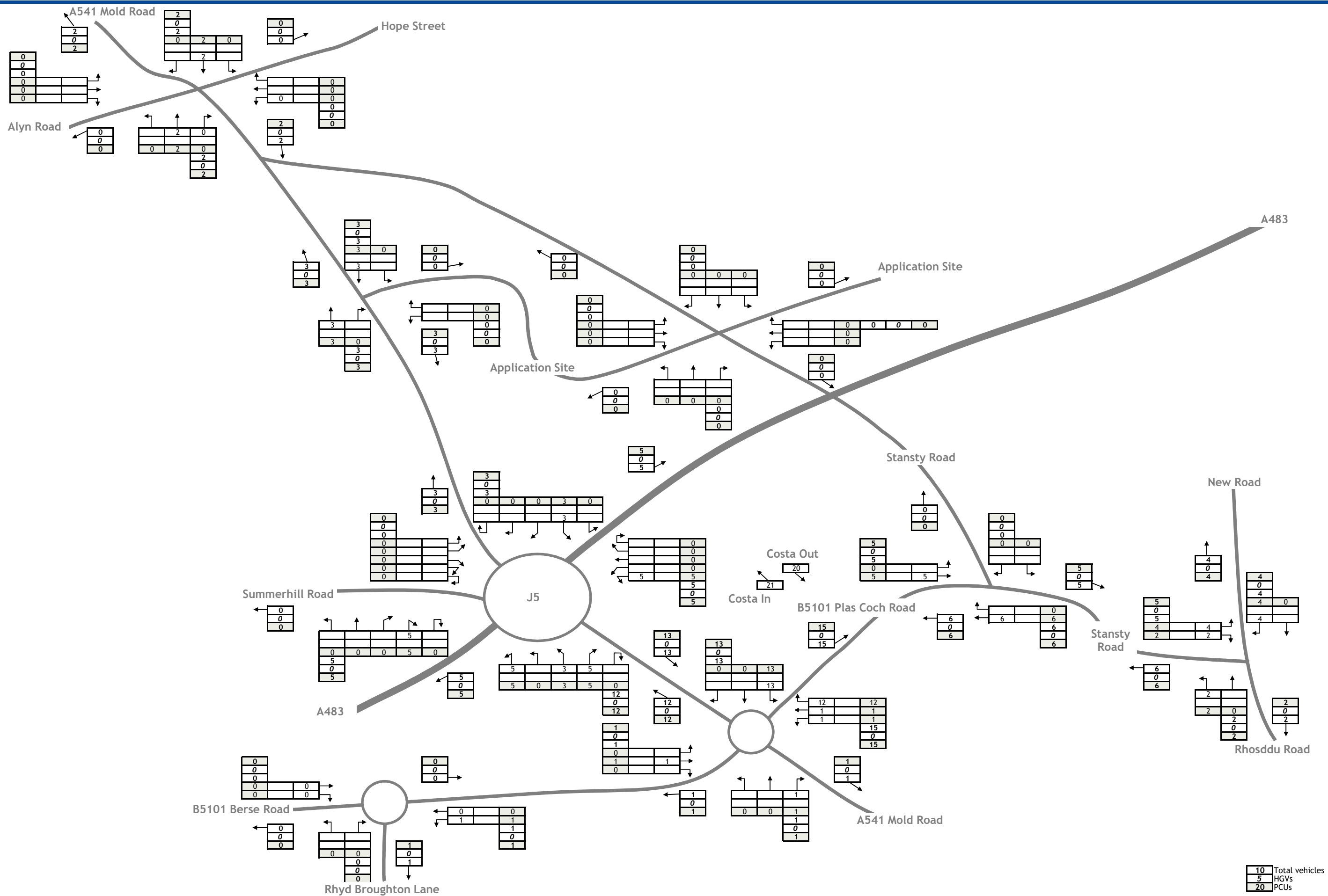
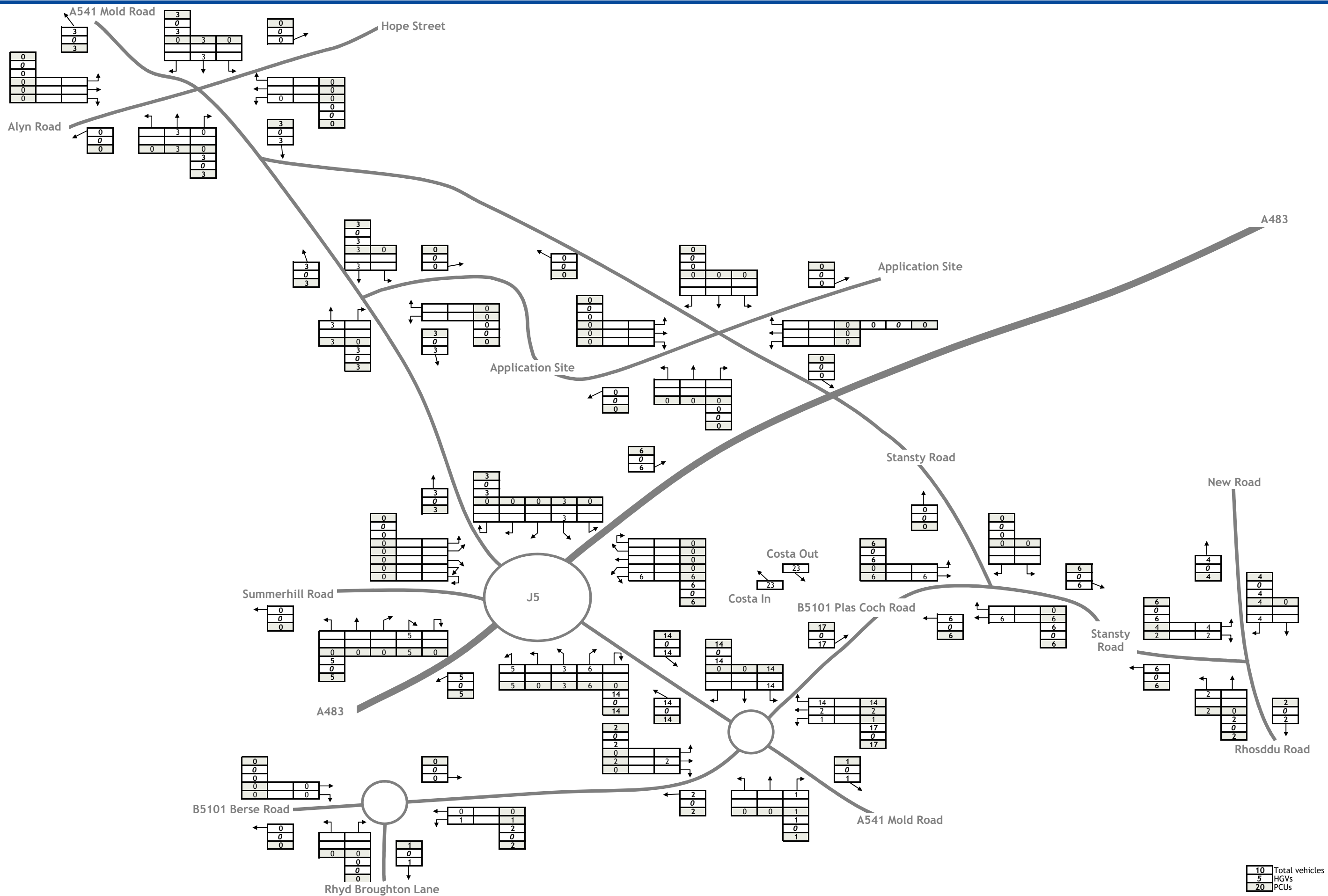


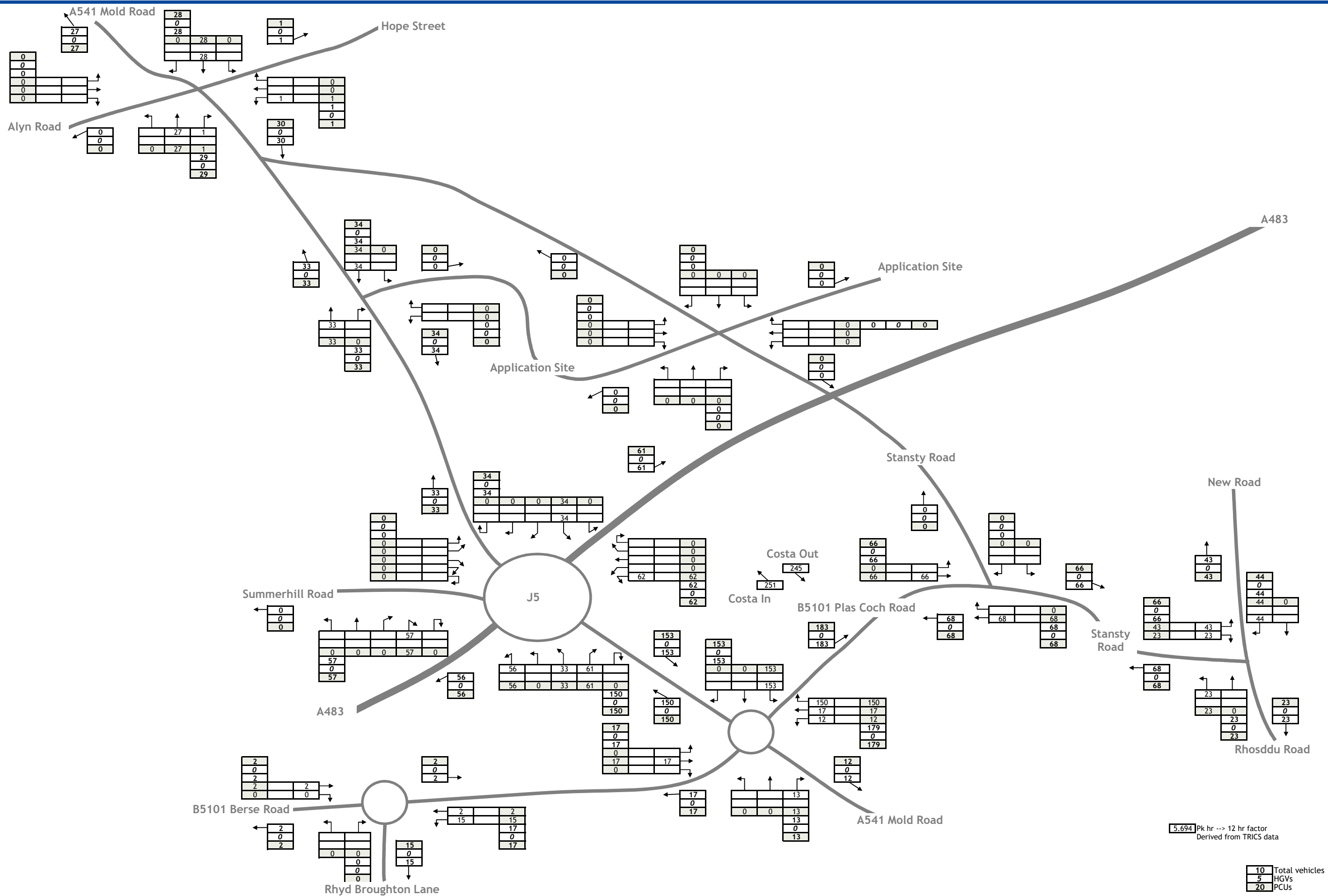
Figure TA14a Drive Through Costa Coffee Development Traffic - AM Peak

J000069

Land at Mold Road, Wrexham

October 2019





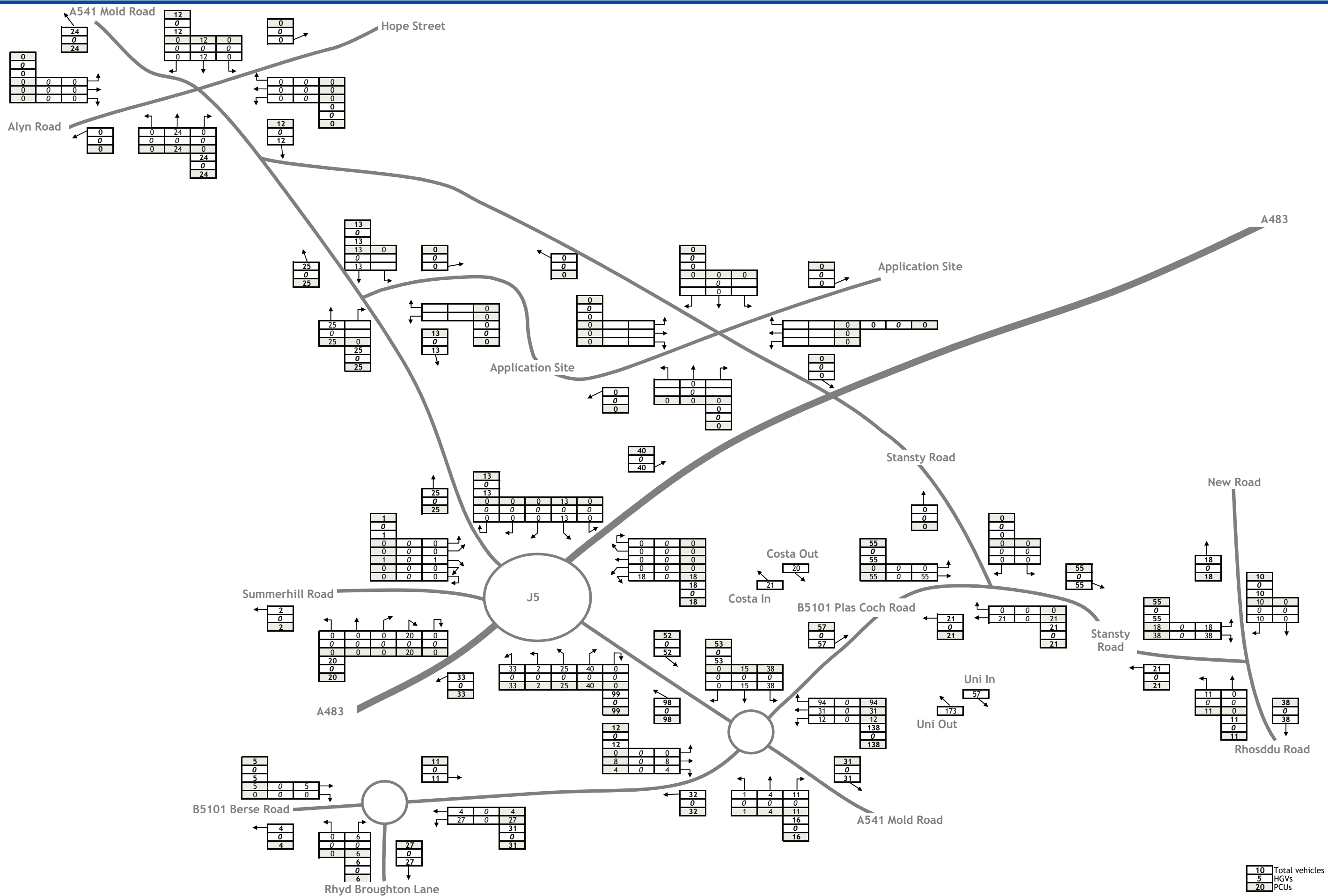


Figure TA15a Total Committed Development Traffic
(University + Costa) - AM Peak

J000069

Land at Mold Road, Wrexham

October 2019

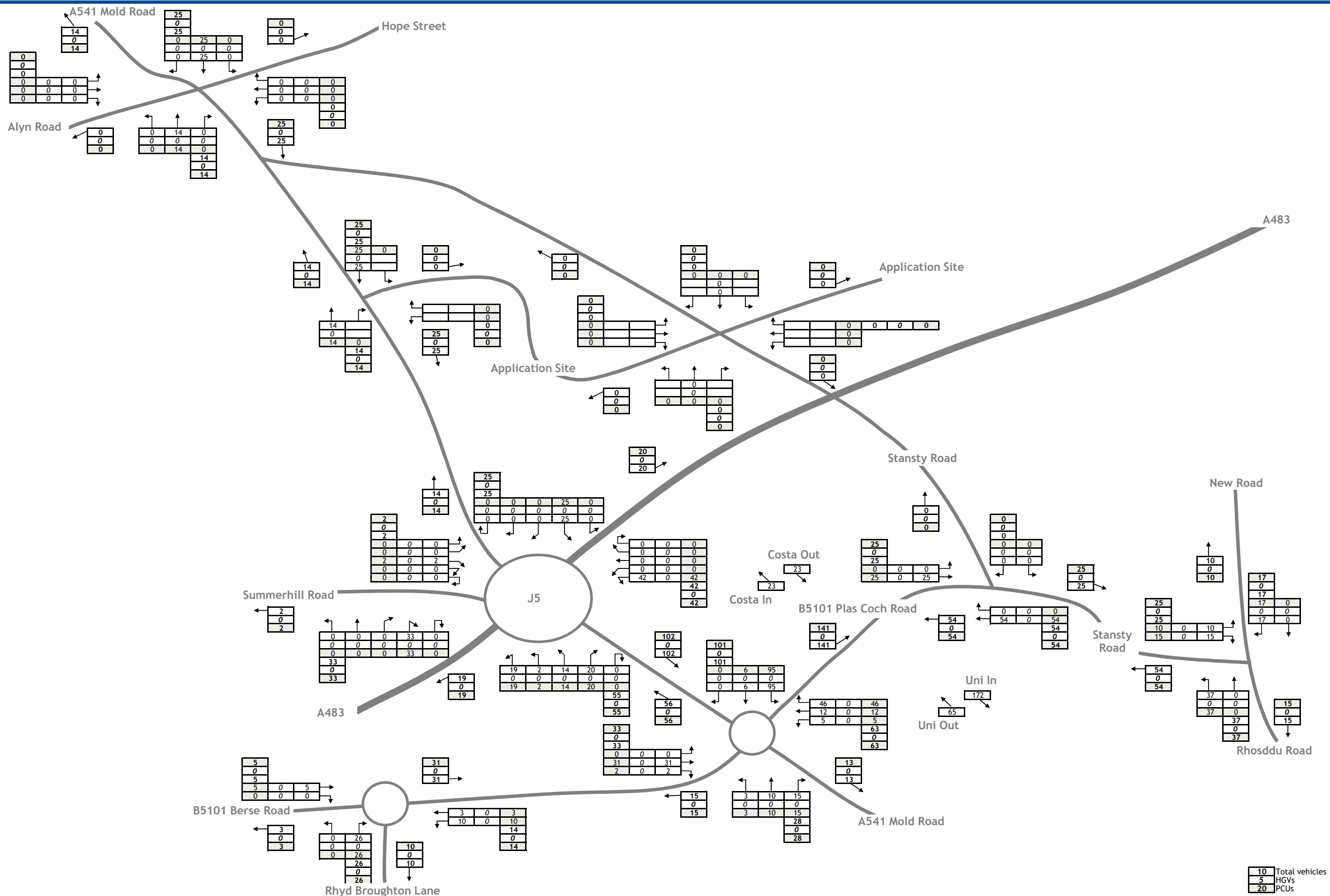


Figure TA15b Total Committed Development Traffic
(University + Costa) - PM Peak

J000069

Land at Mold Road, Wrexham

October 2019

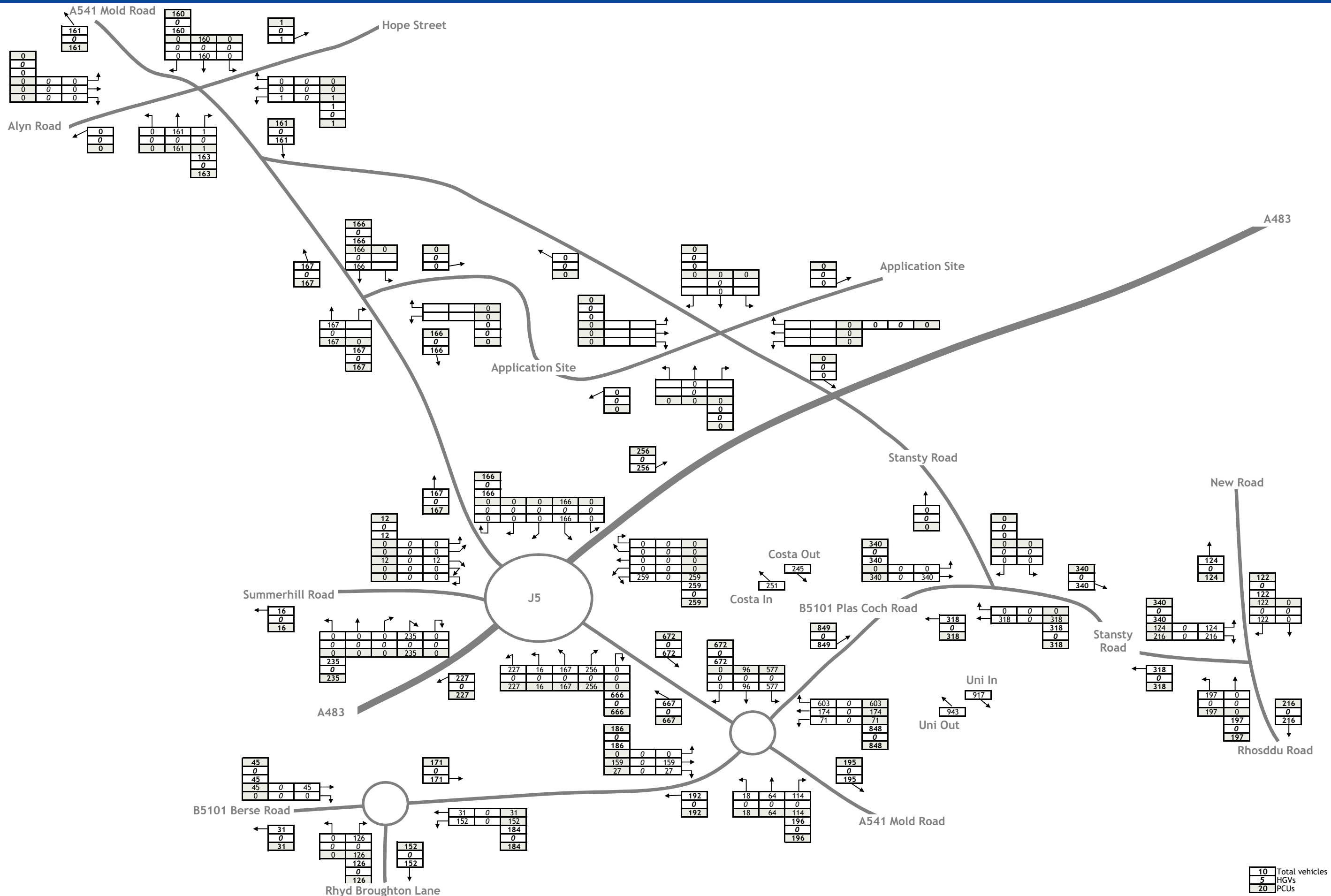


Figure TA15c Total Committed Development Traffic
(University + Costa) - 12 Hour

J000069

Land at Mold Road, Wrexham

October 2019

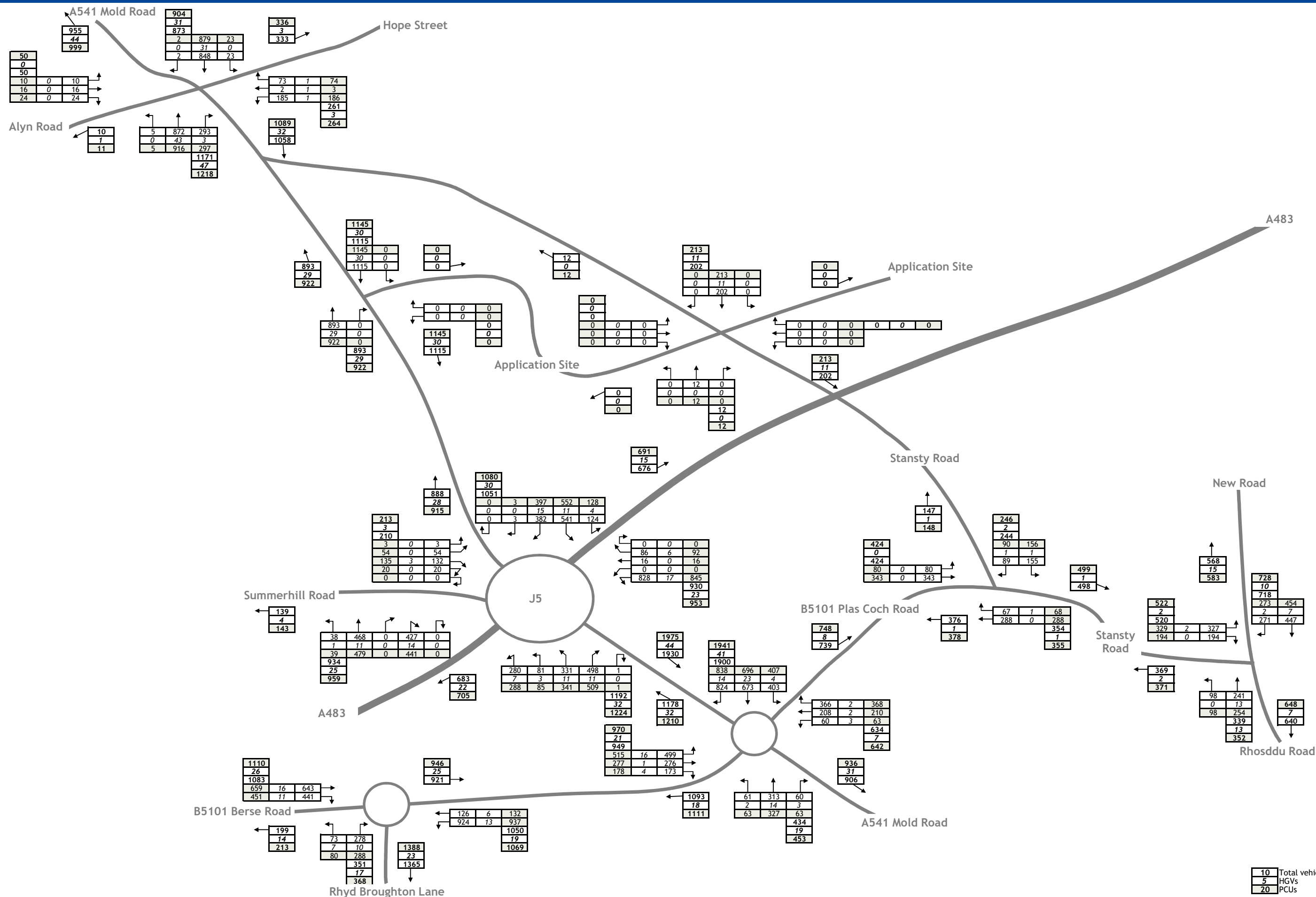


Figure TA16a 2024 Baseline Traffic Flows - AM Peak (07:45-08:45)

J000069

Land at Mold Road, Wrexham

October 2019

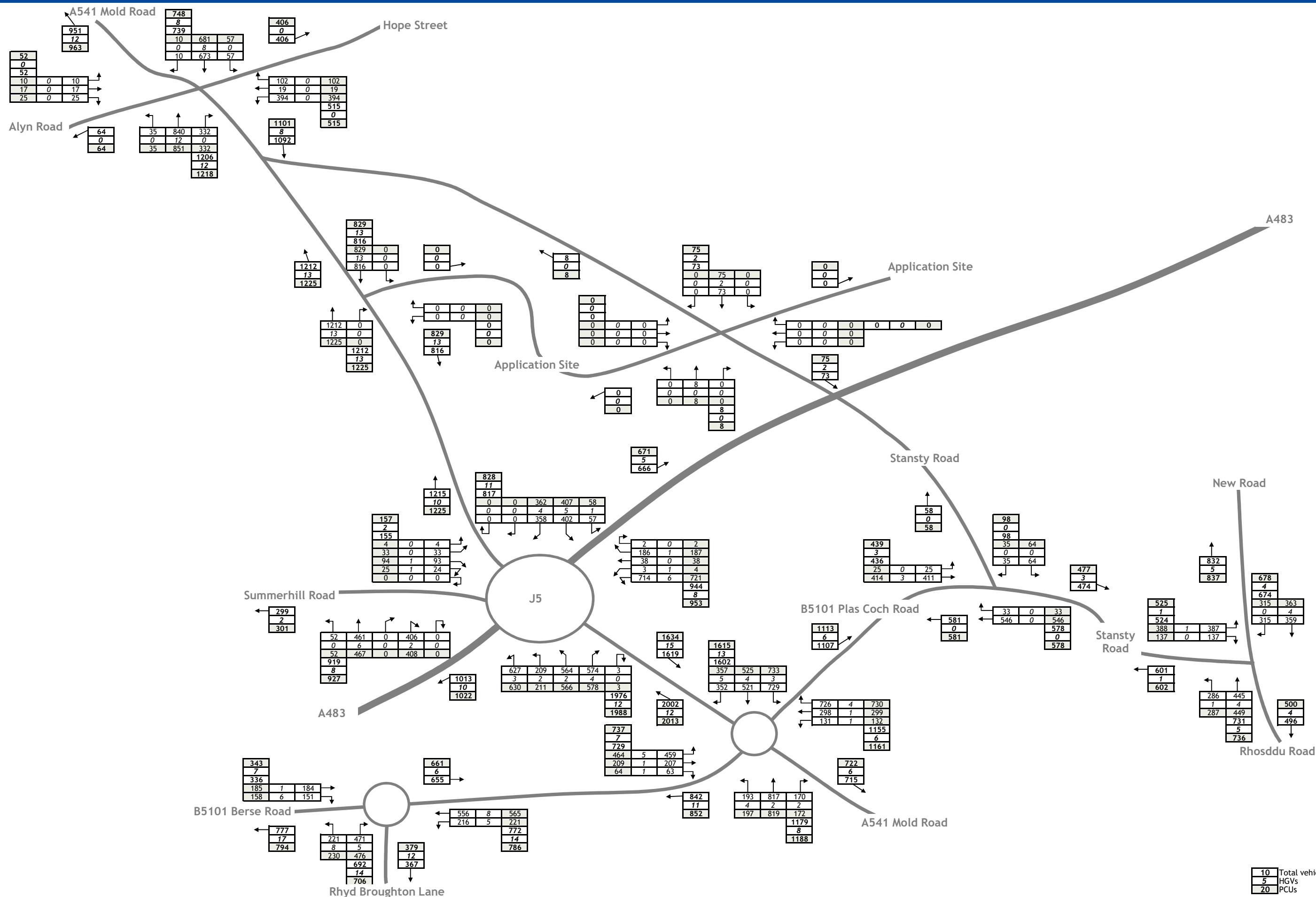


Figure TA16b 2024 Baseline Traffic Flows - PM Peak (16:45 - 17:45)

J000069 Land at Mold Road, Wrexham October 2019

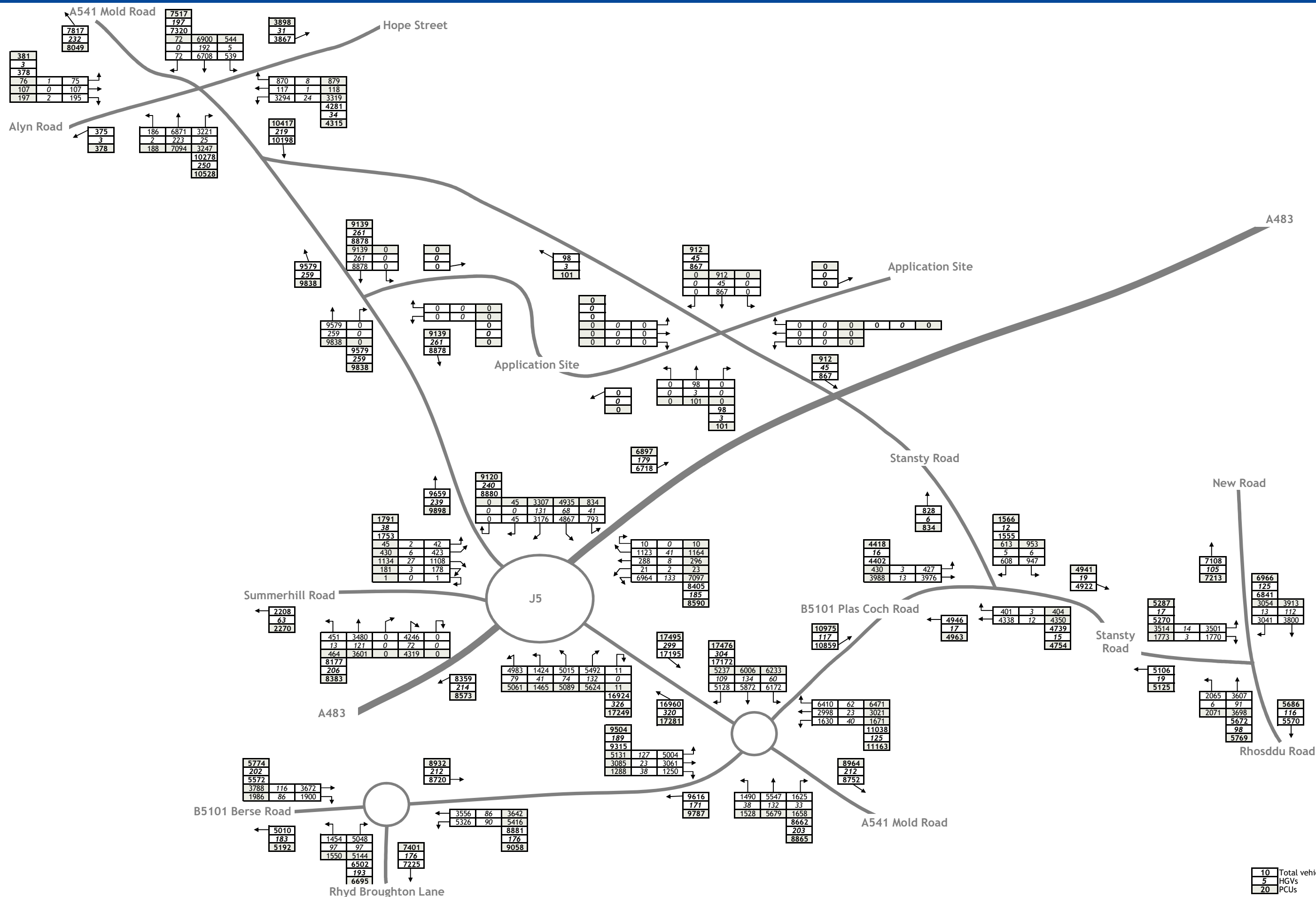
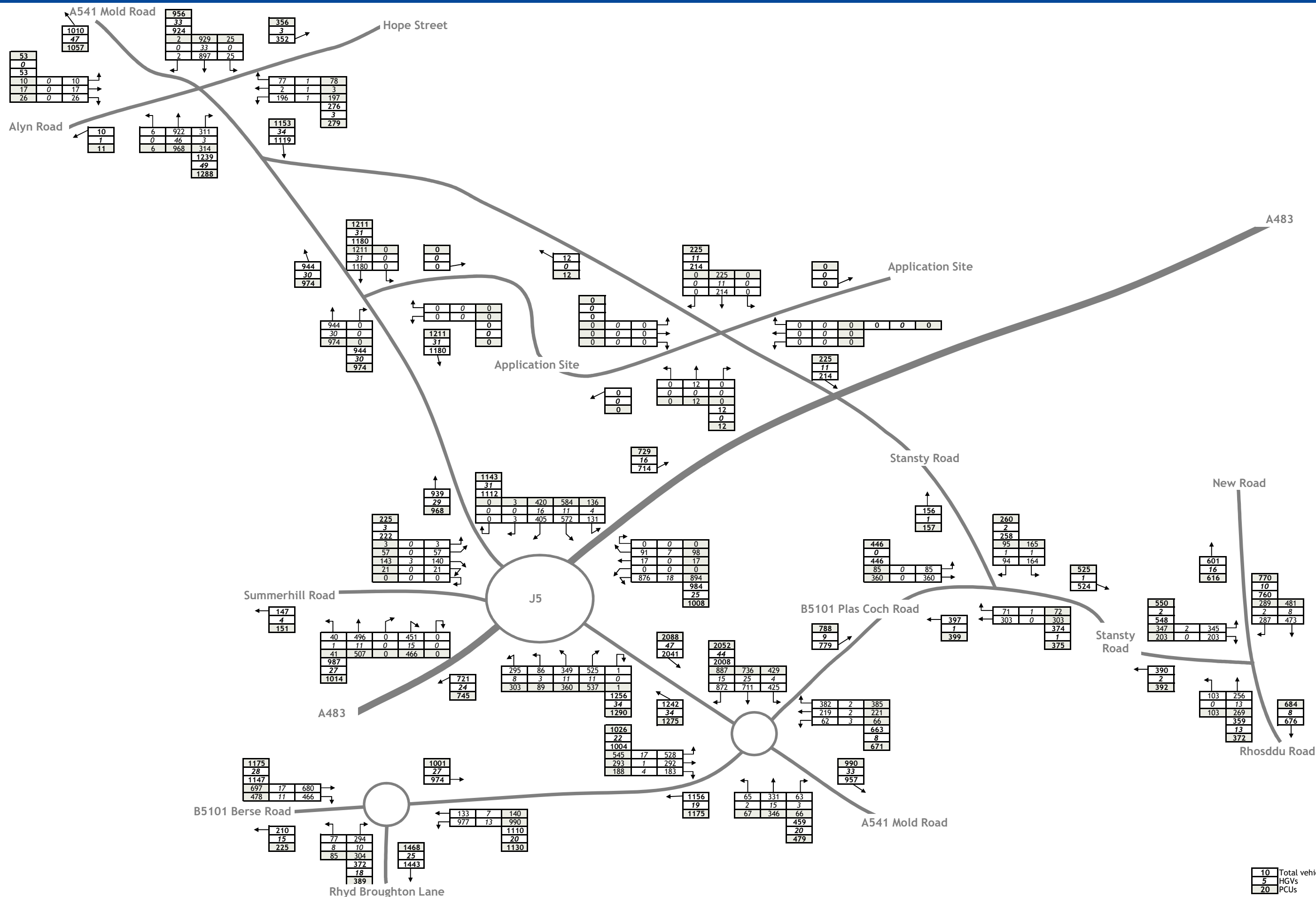


Figure TA16c 2024 Baseline Traffic Flows - 12 Hour (07:00-19:00)

J000069 Land at Mold Road, Wrexham October 2019



10 Total vehicles
5 HGVs
20 PCUs

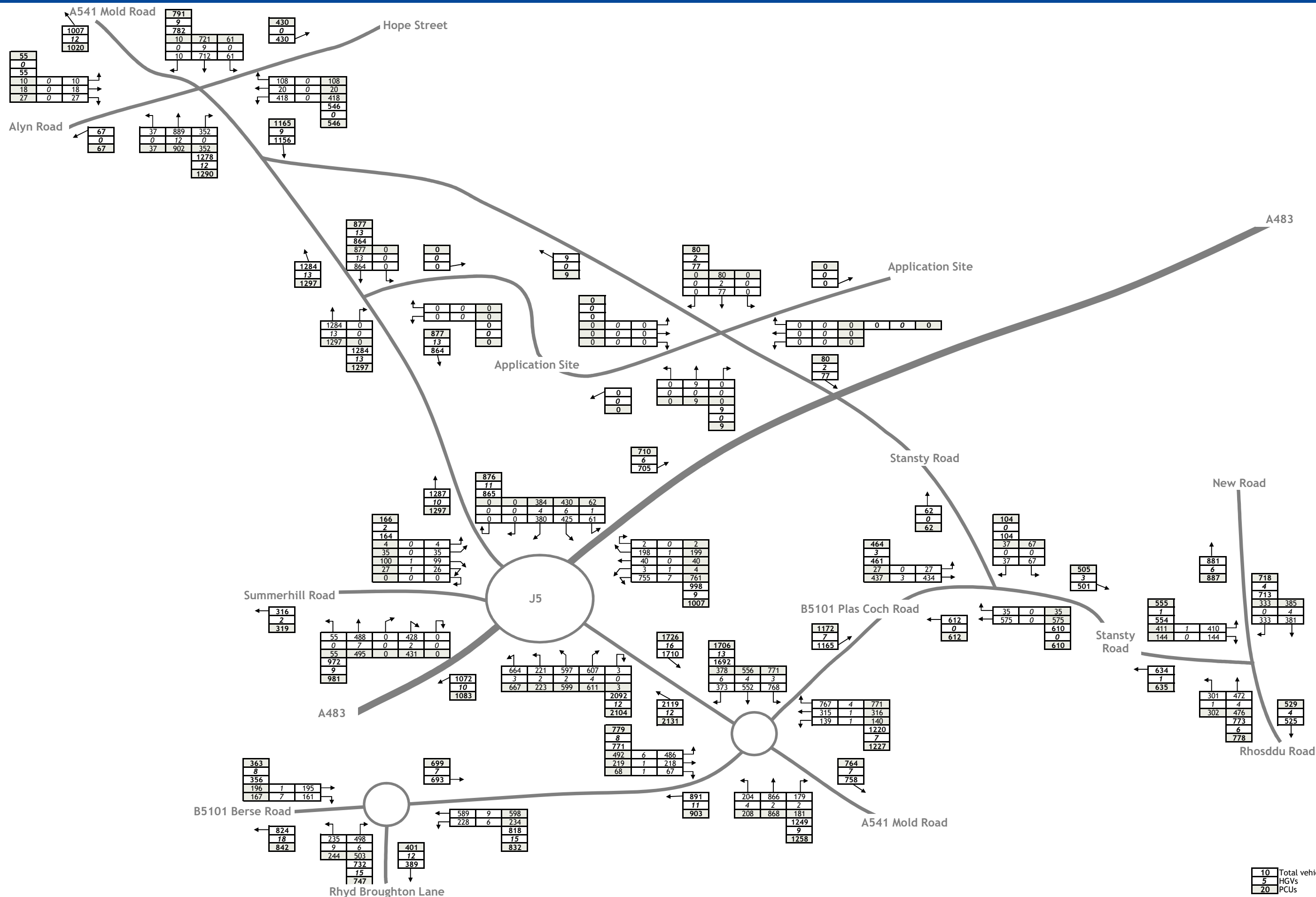


Figure TA17b 2030 Baseline Traffic Flows - PM Peak (16:45-17:45)

J000069 Land at Mold Road, Wrexham October 2019

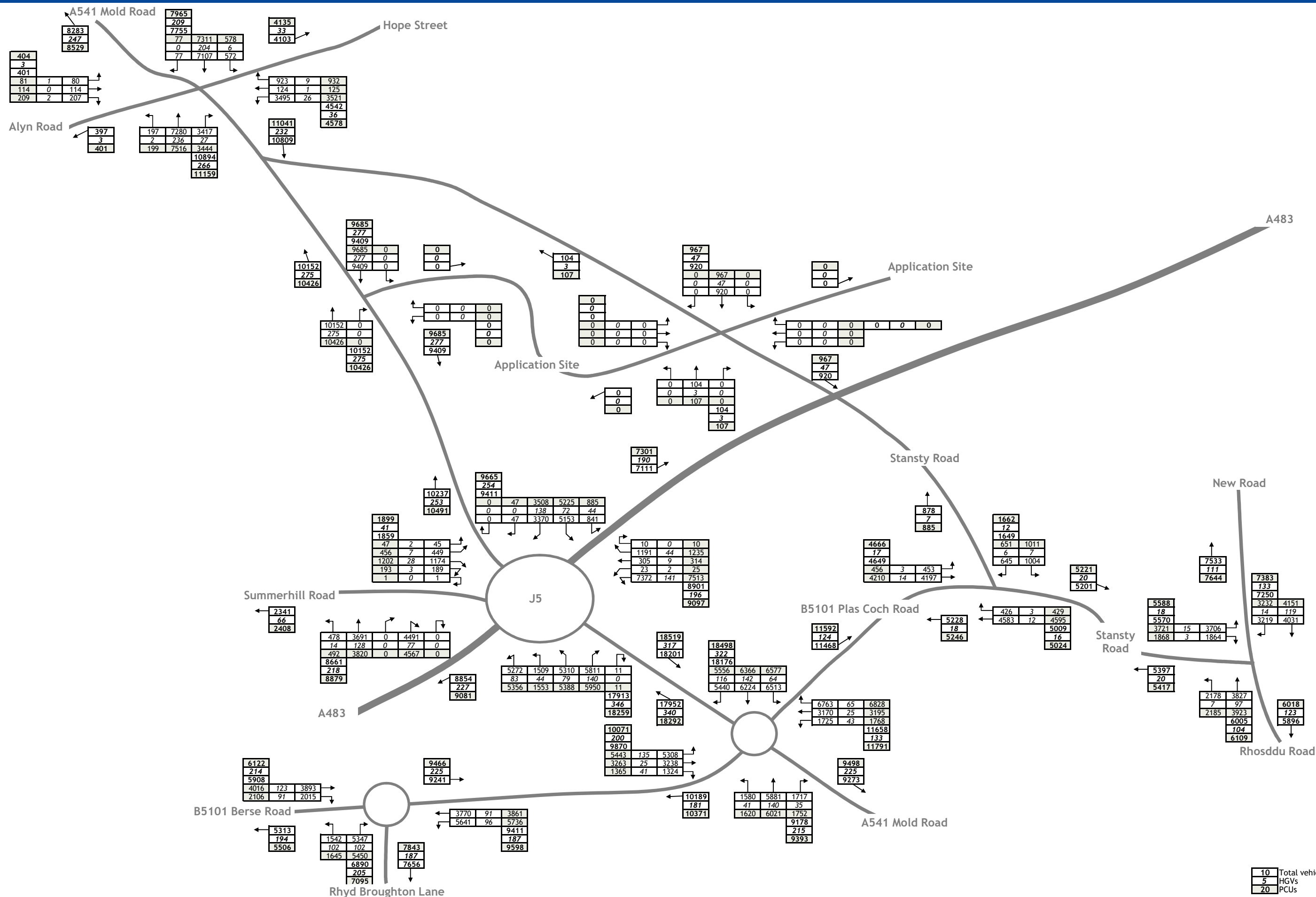
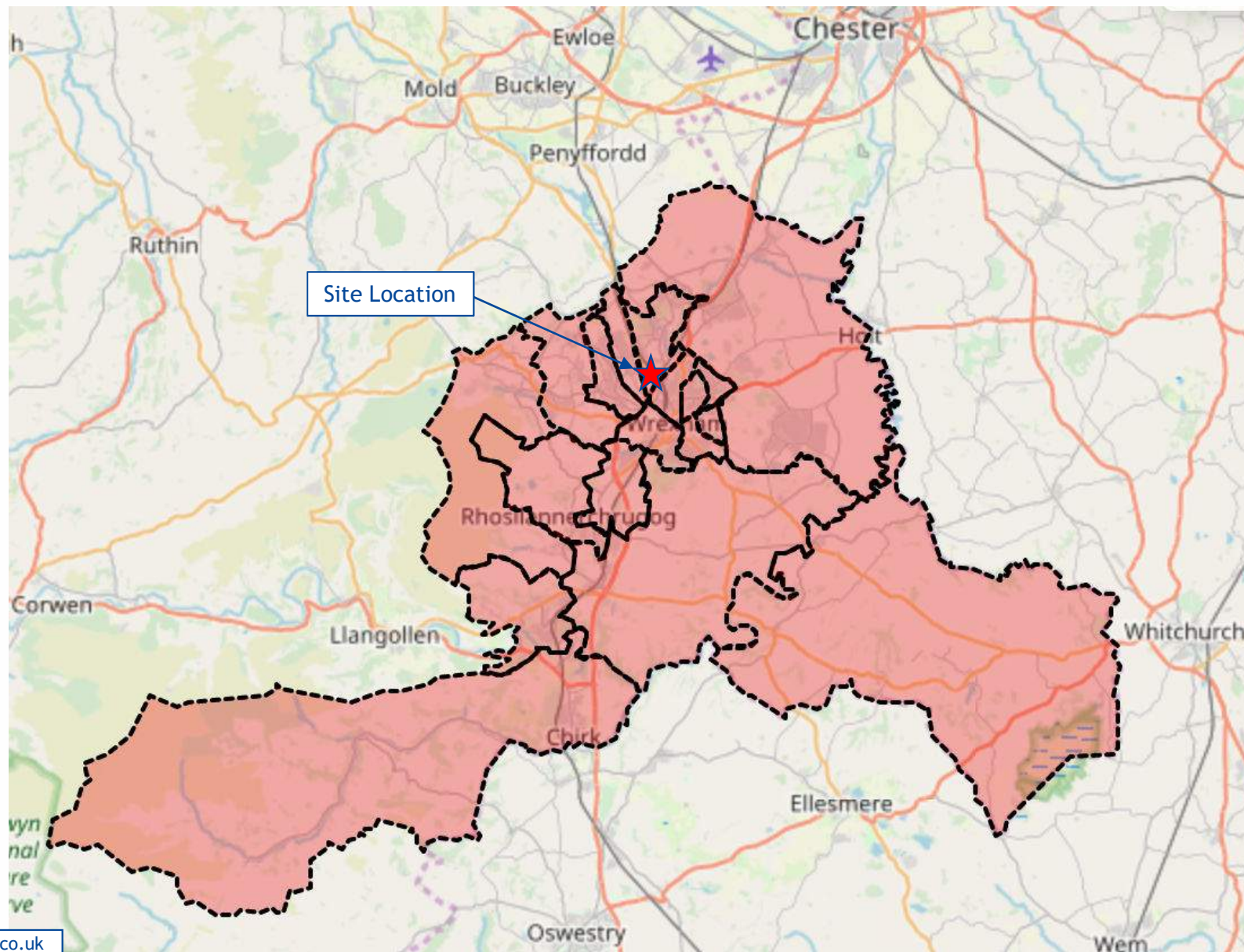


Figure TA17c 2030 Baseline Traffic Flows - 12 Hour (07:00-19:00)

J000069 Land at Mold Road, Wrexham October 2019



Extract from Nomisweb.co.uk

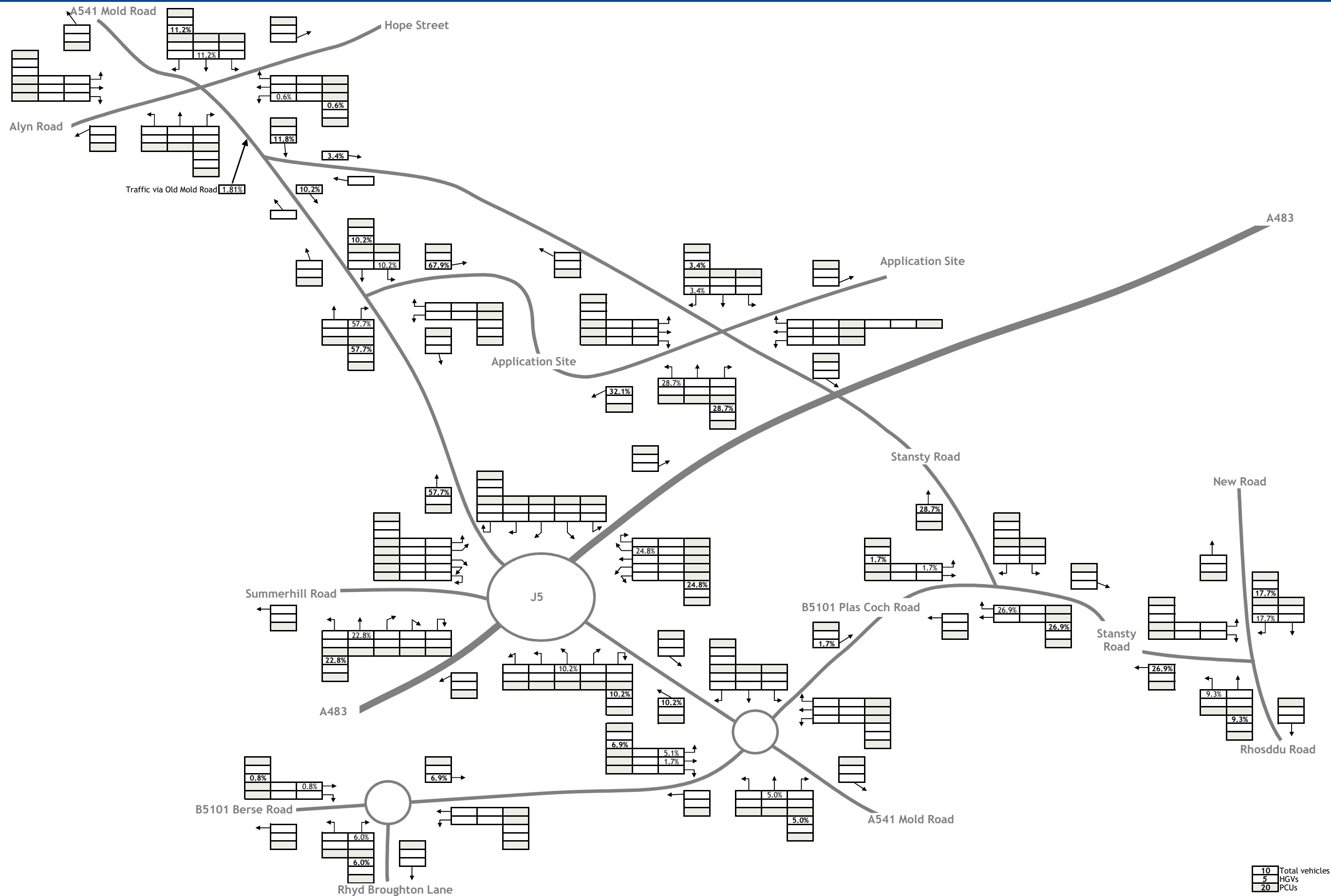
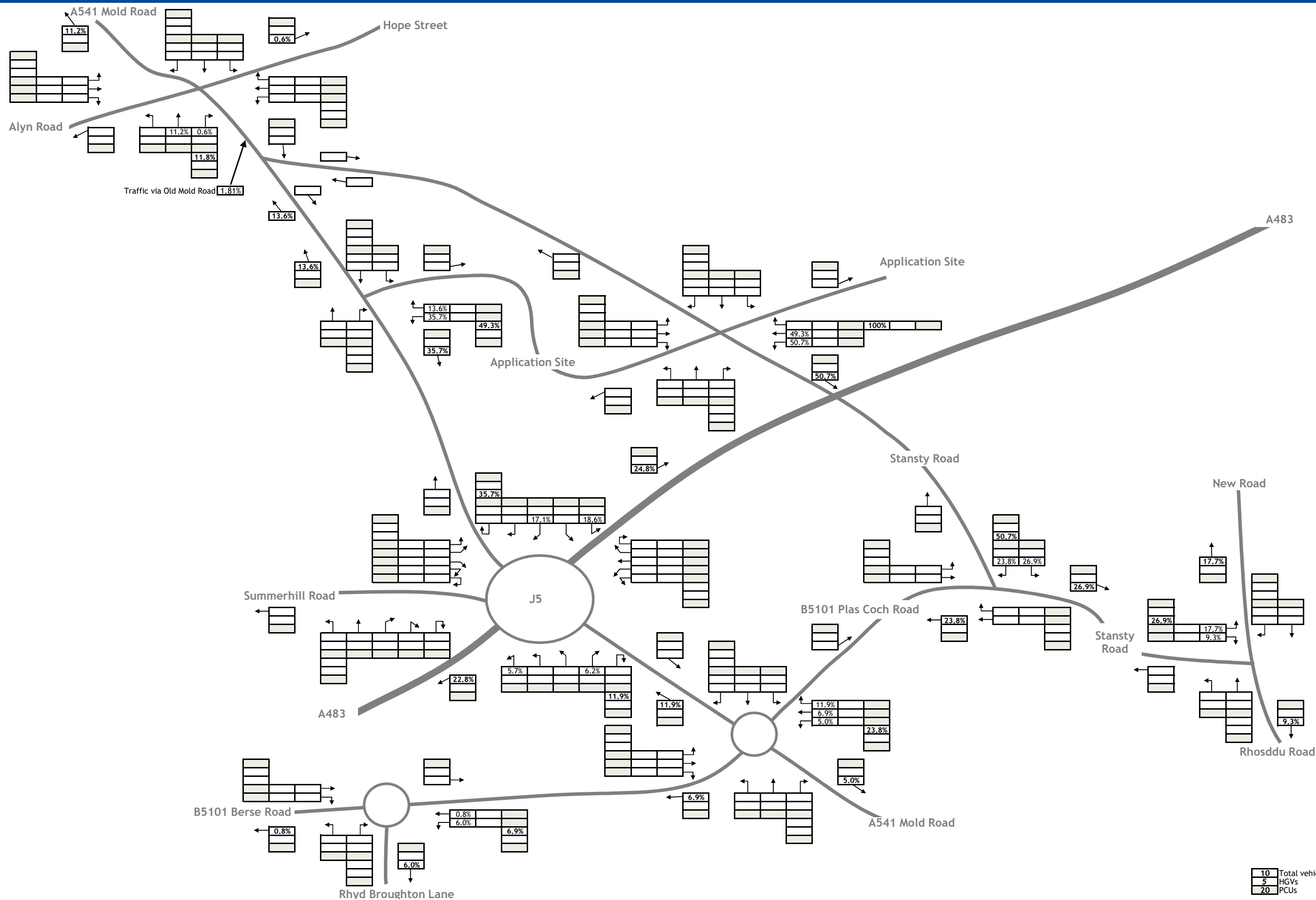


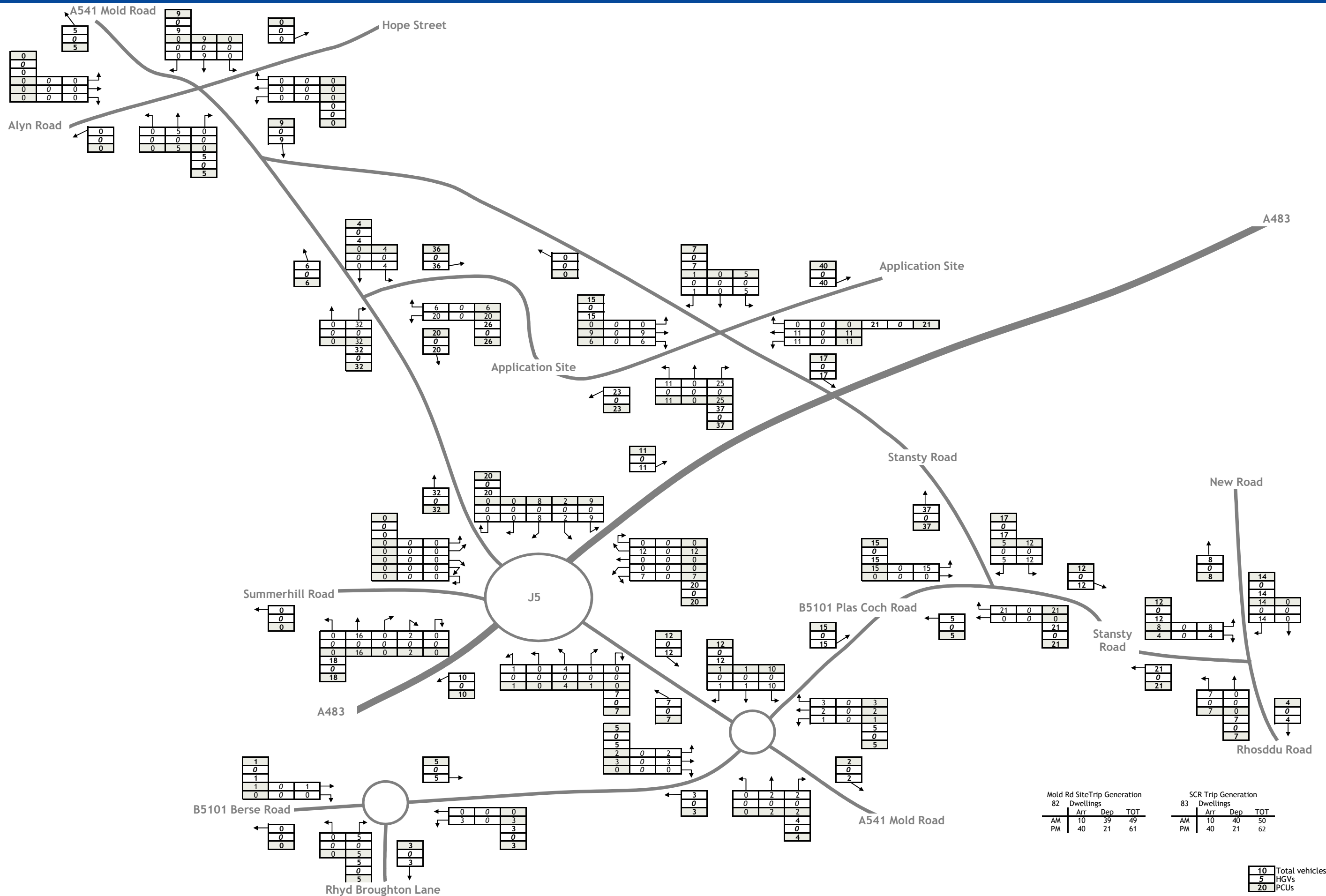
Figure TA19a Anticipated Distribution of Development Traffic Arriving at Mold Rd Site

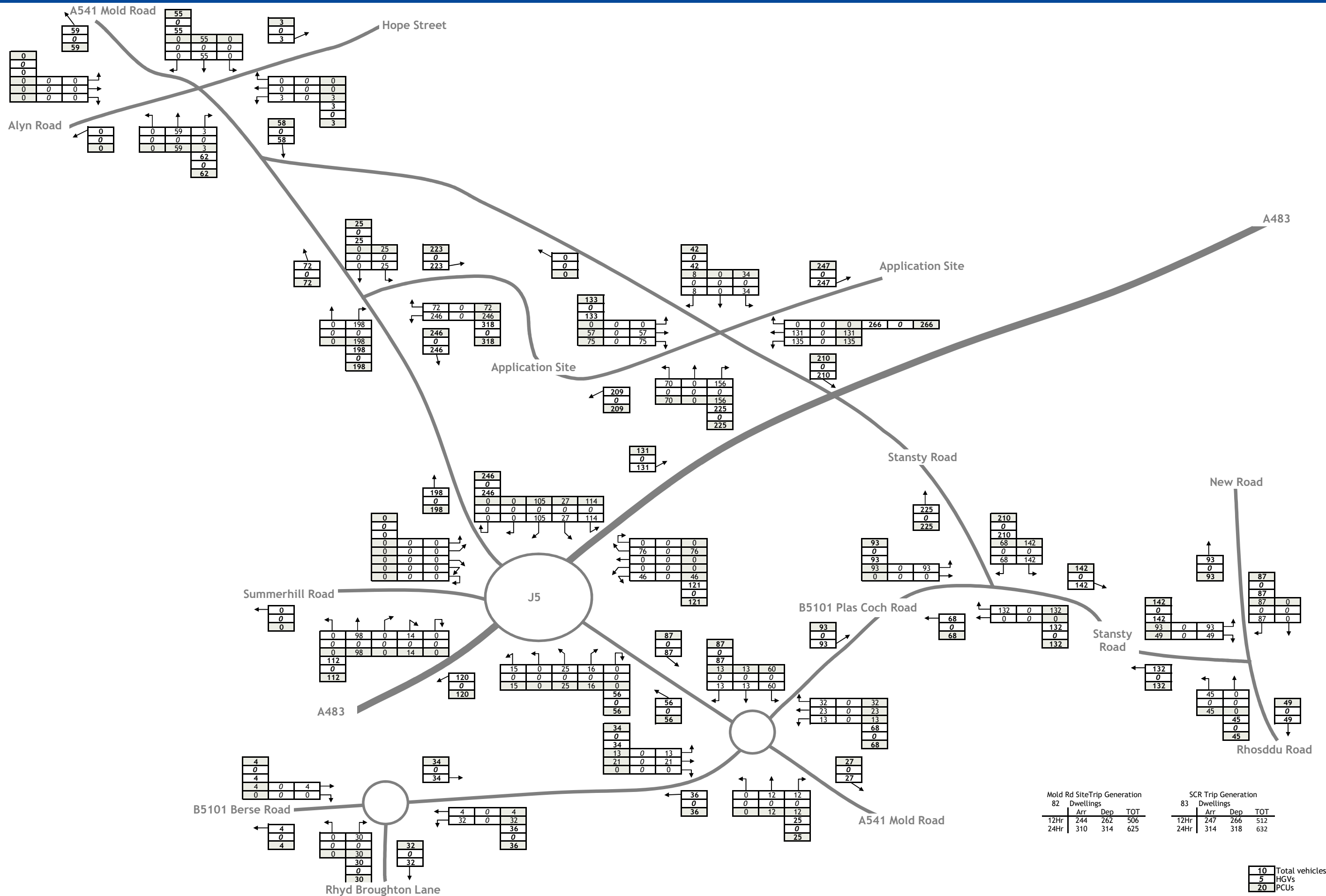
J000069

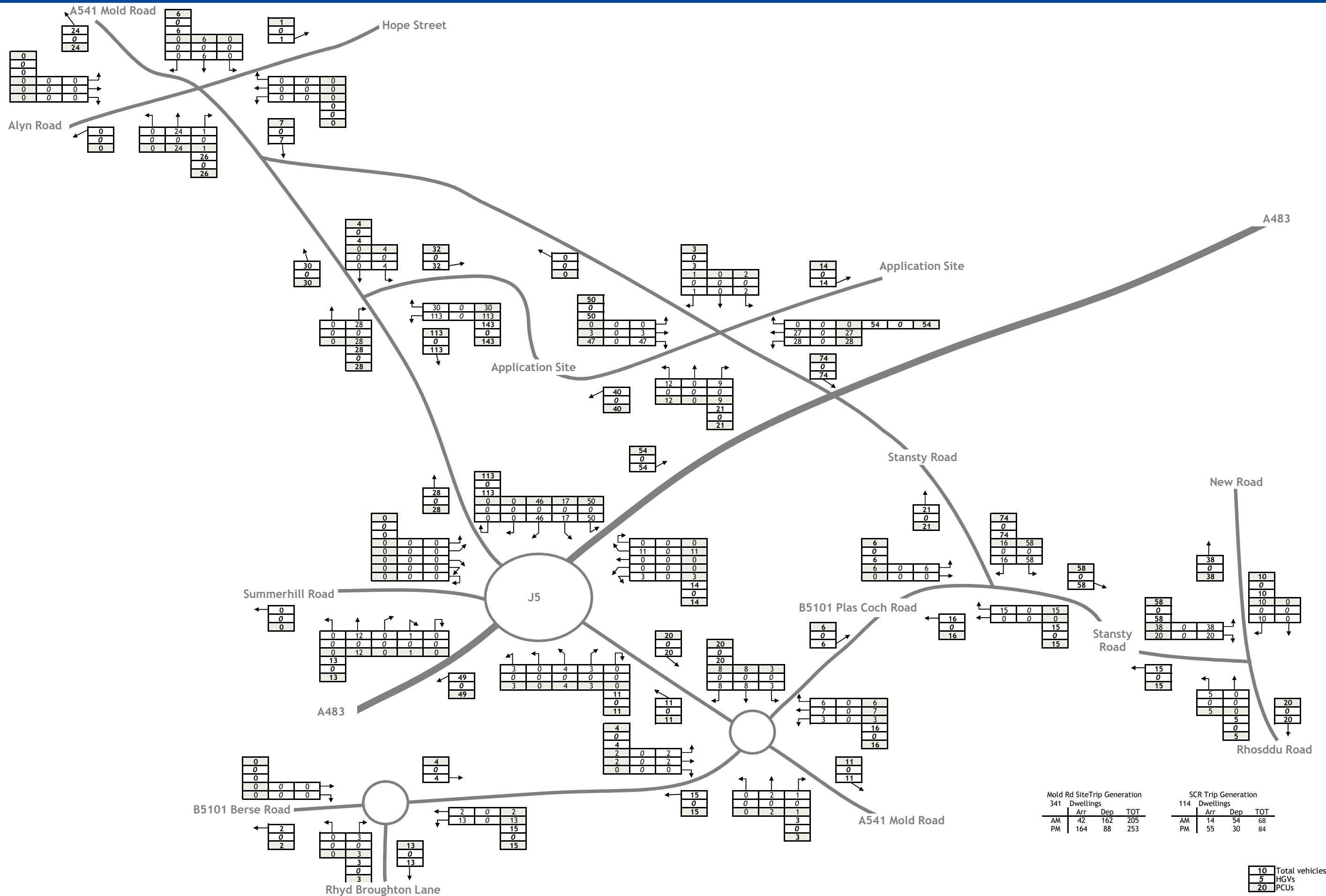
Land at Mold Road, Wrexham

October 2019









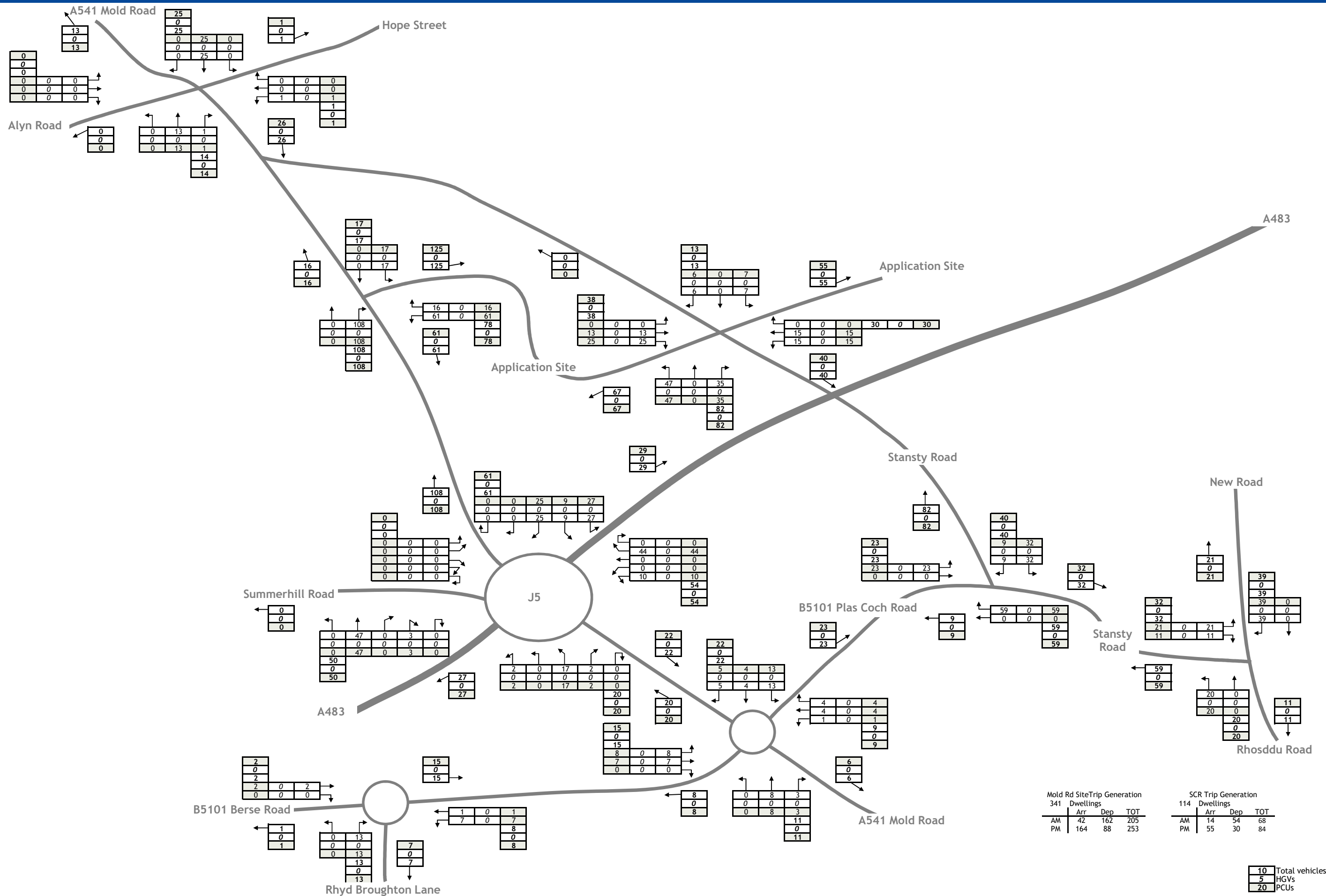
Mold Rd Site Trip Generation					SCR Trip Generation				
341	Dwellings				114	Dwellings			
	Arr	Dep	TOT			Arr	Dep	TOT	
AM	42	162	205		AM	14	54	68	
PM	164	88	253		PM	55	30	84	

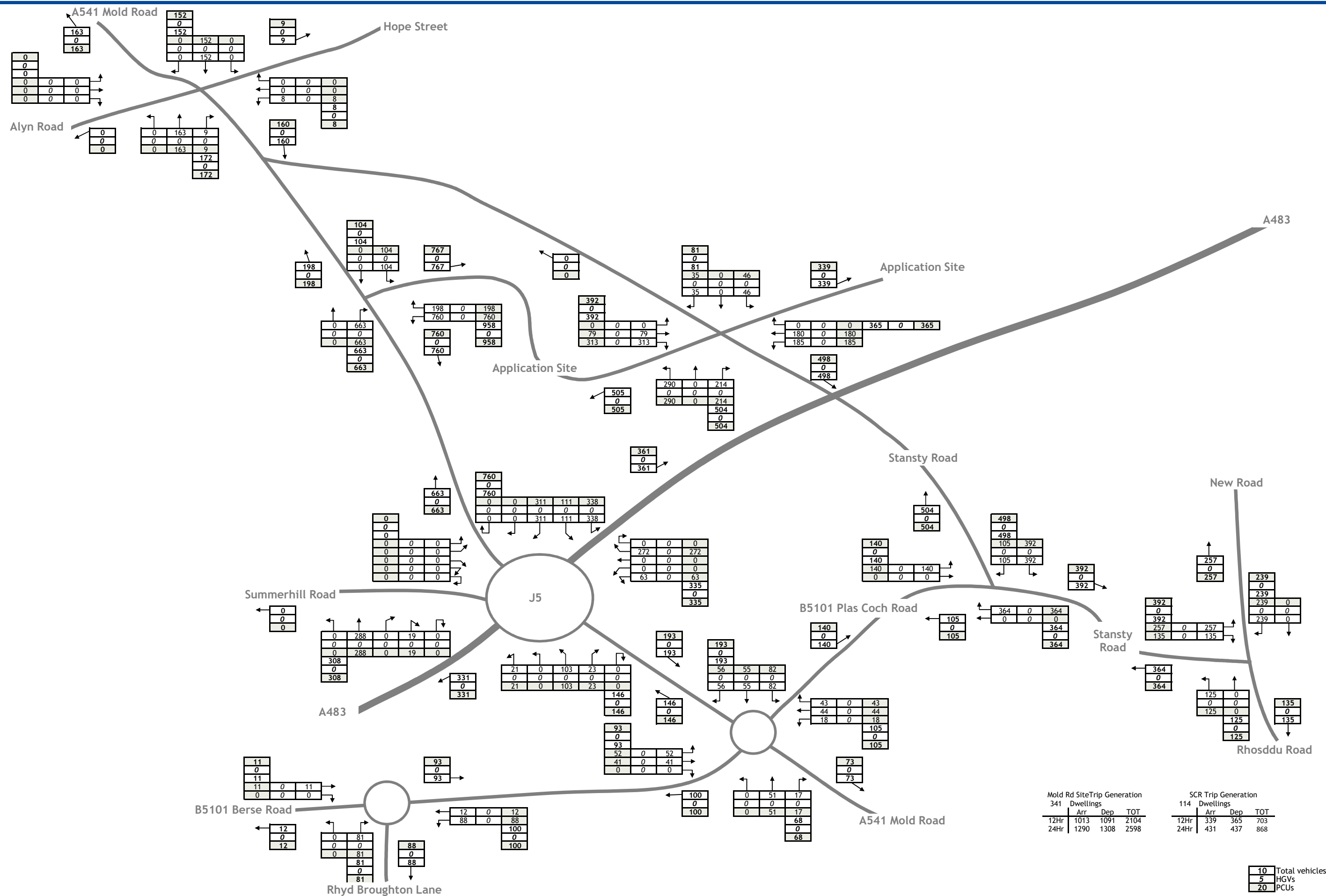
Figure TA22a Assignment of Development Traffic - 2030 AM Peak (455 Dwellings)

J000069

Land at Mold Road, Wrexham

October 2019





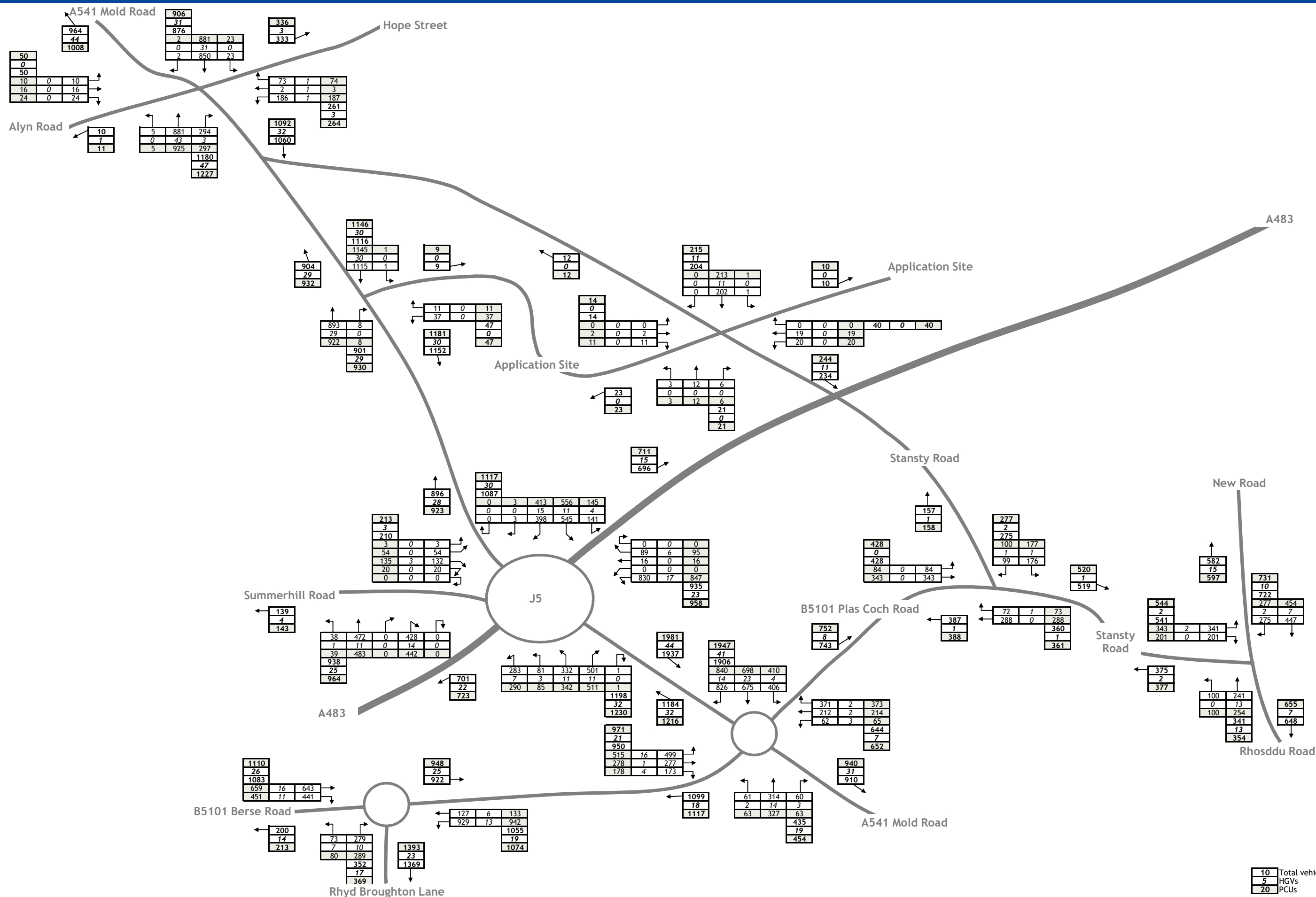


Figure TA23a 2024 Baseline + Development Traffic Flows - AM Peak (07:45-08:45)

J000069

Land at Mold Road, Wrexham

October 2019

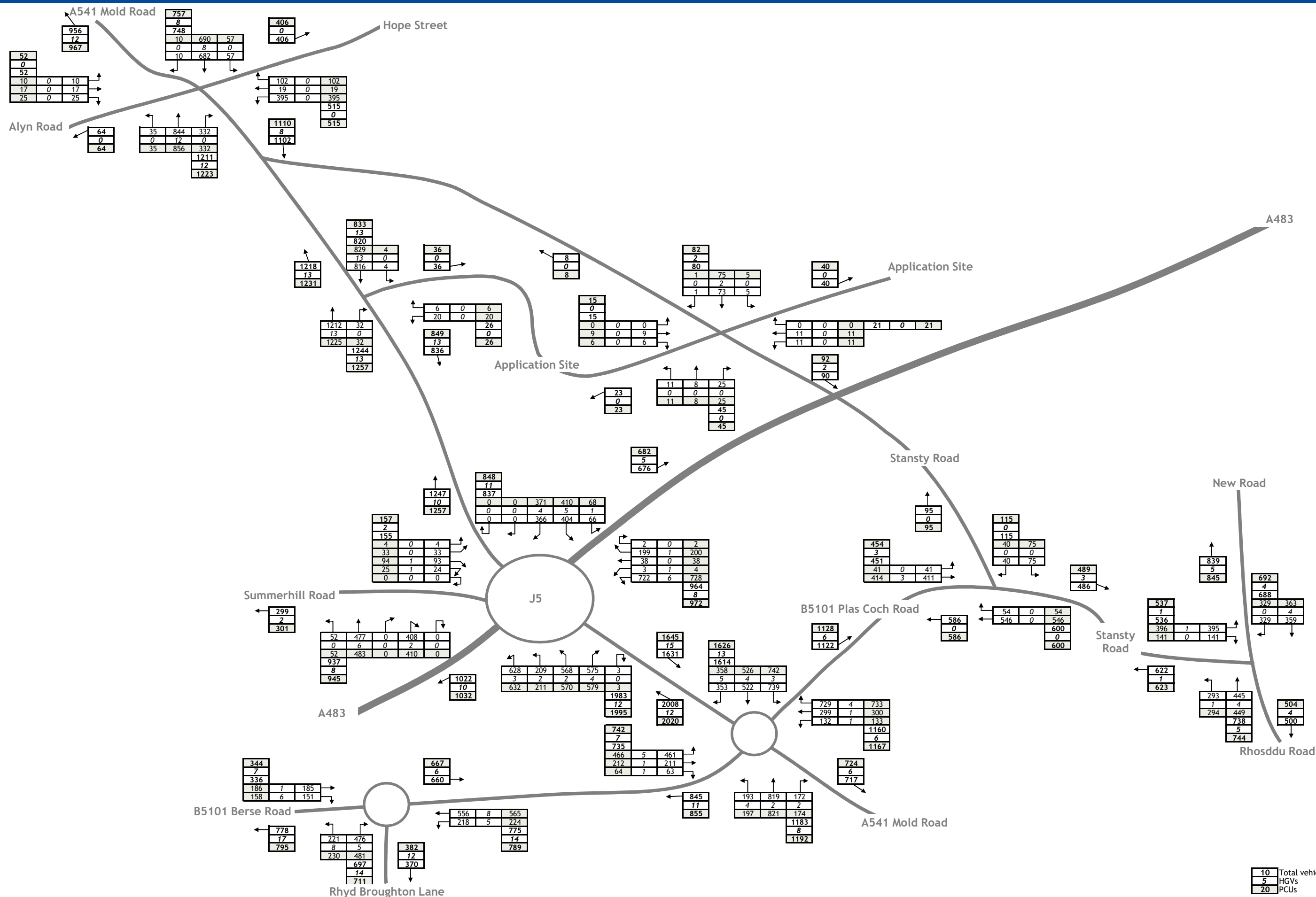
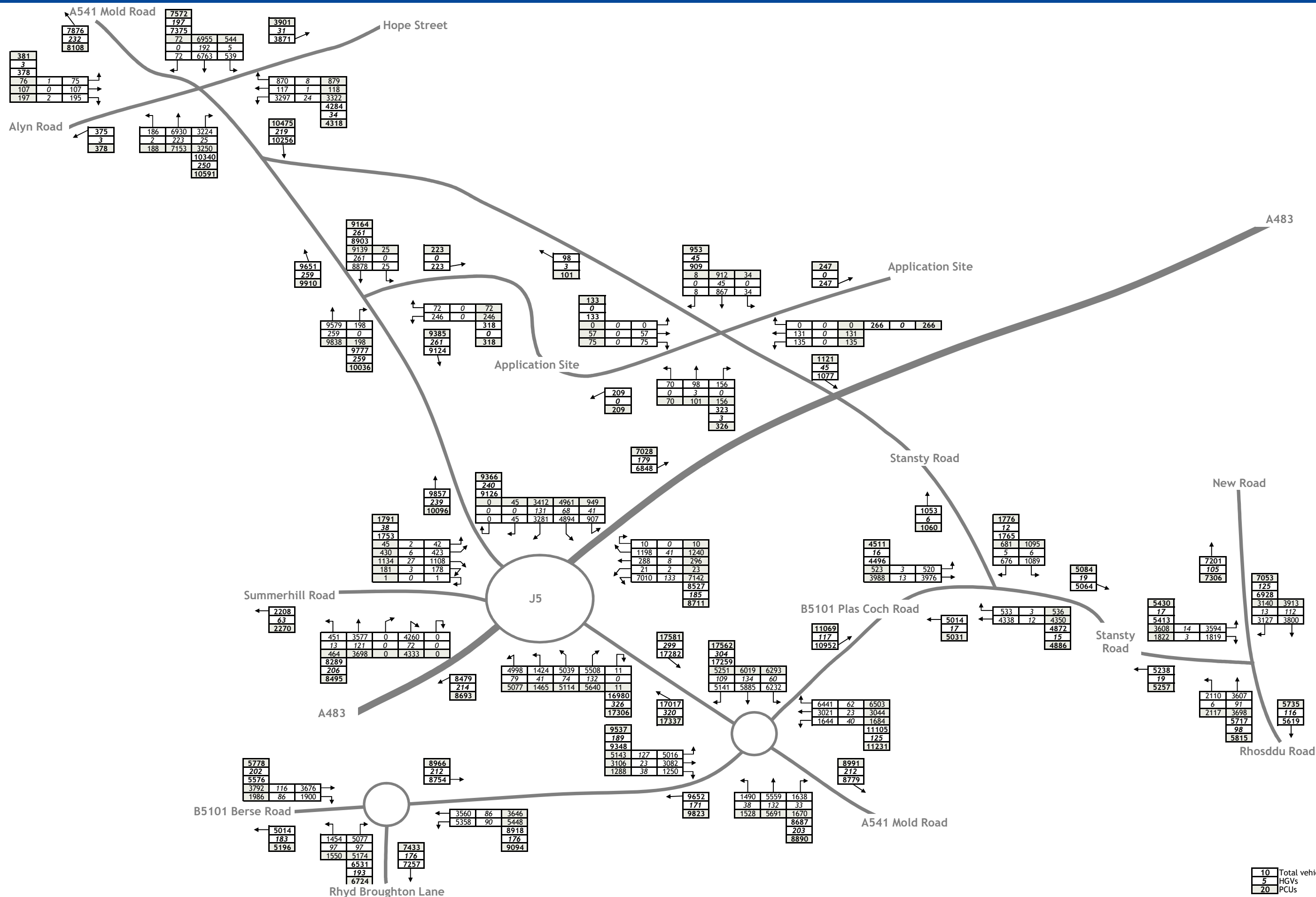


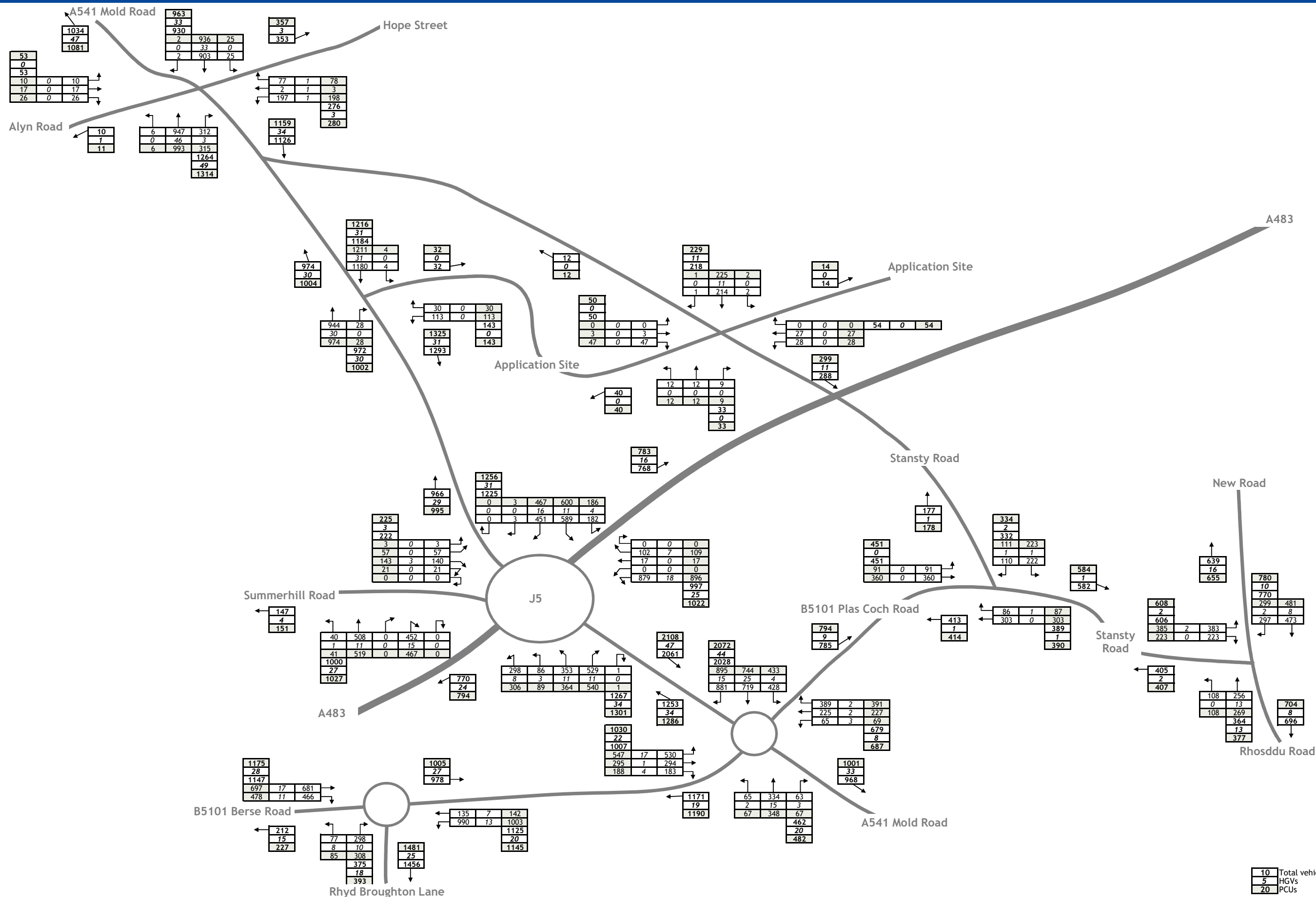
Figure TA23b 2024 Baseline + Development Traffic Flows - PM Peak (16:45-17:45)

J000069

Land at Mold Road, Wrexham

October 2019





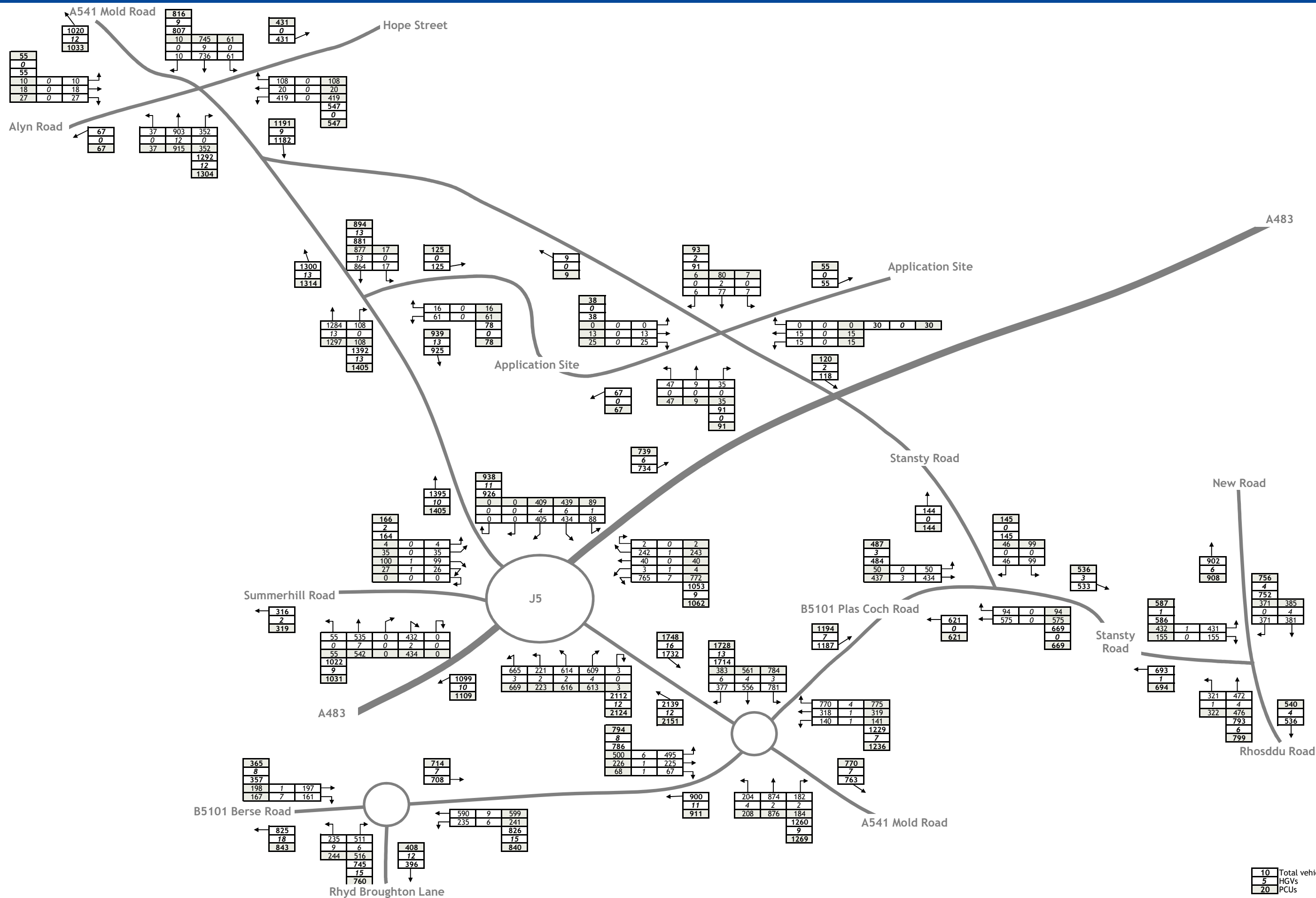


Figure TA24b 2030 Baseline + Development Traffic Flows - PM Peak (16:45-17:45)

J000069

Land at Mold Road, Wrexham

October 2019

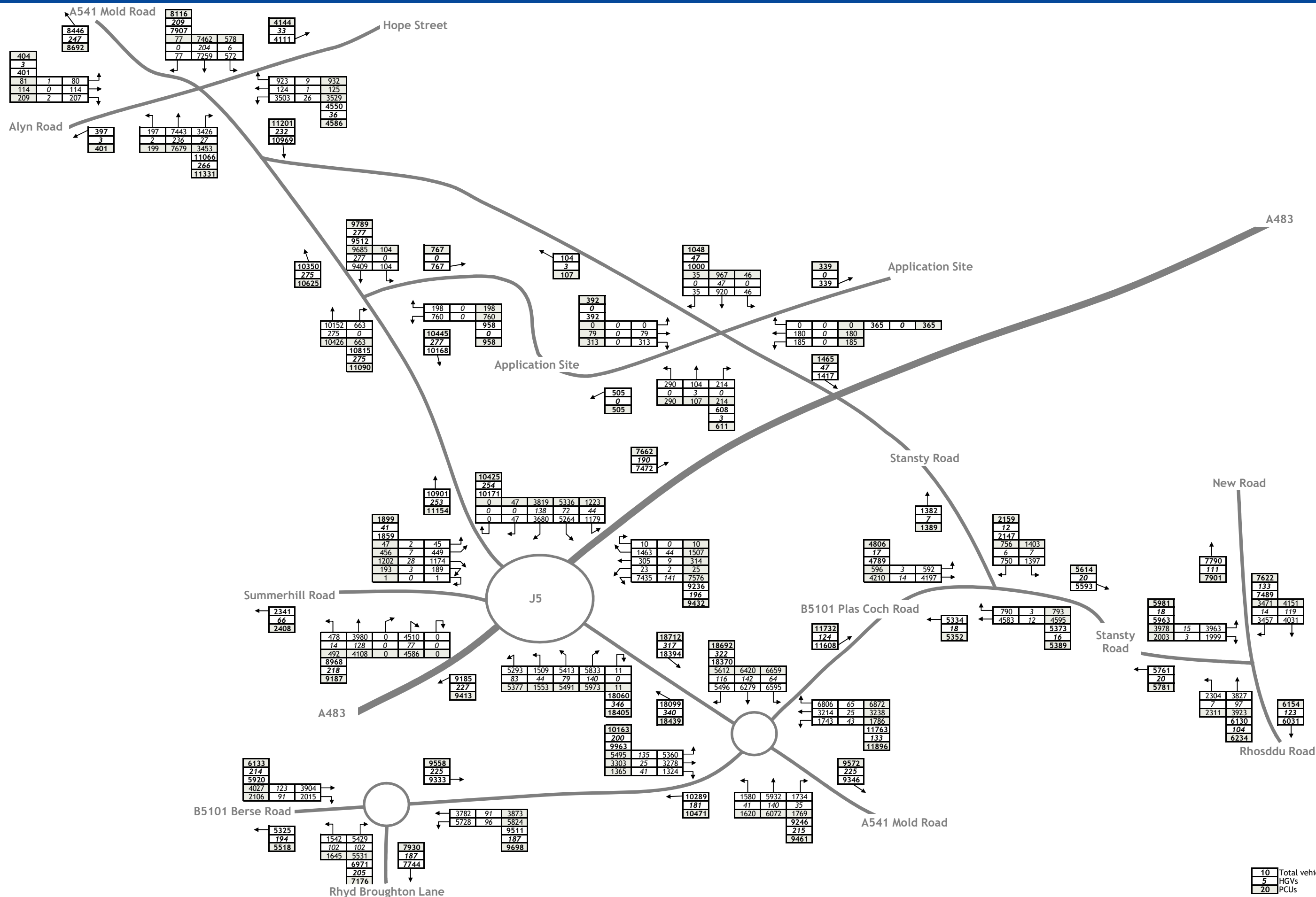
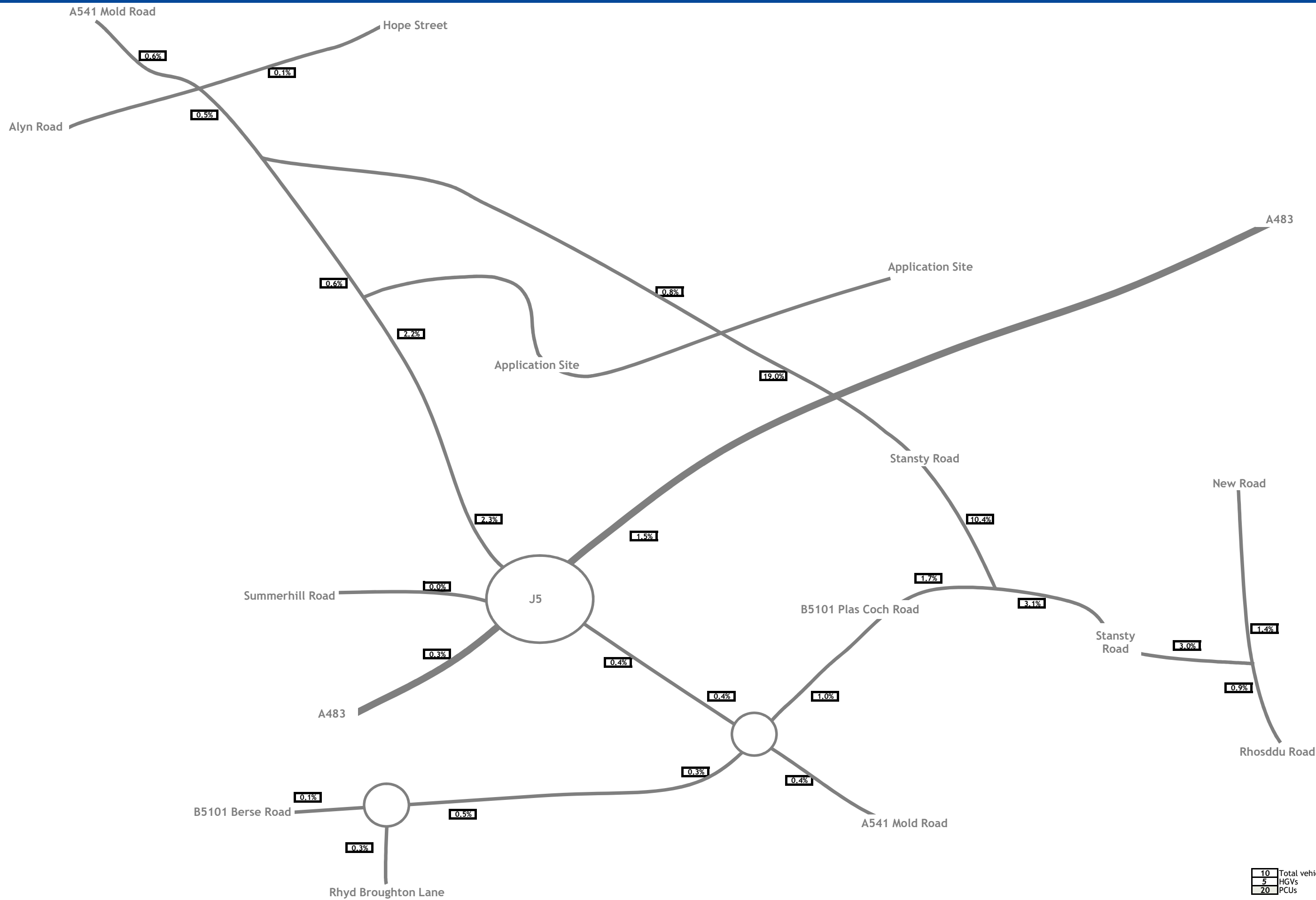


Figure TA24c 2030 Baseline + Development Traffic Flows - 12 Hour (07:00-19:00)

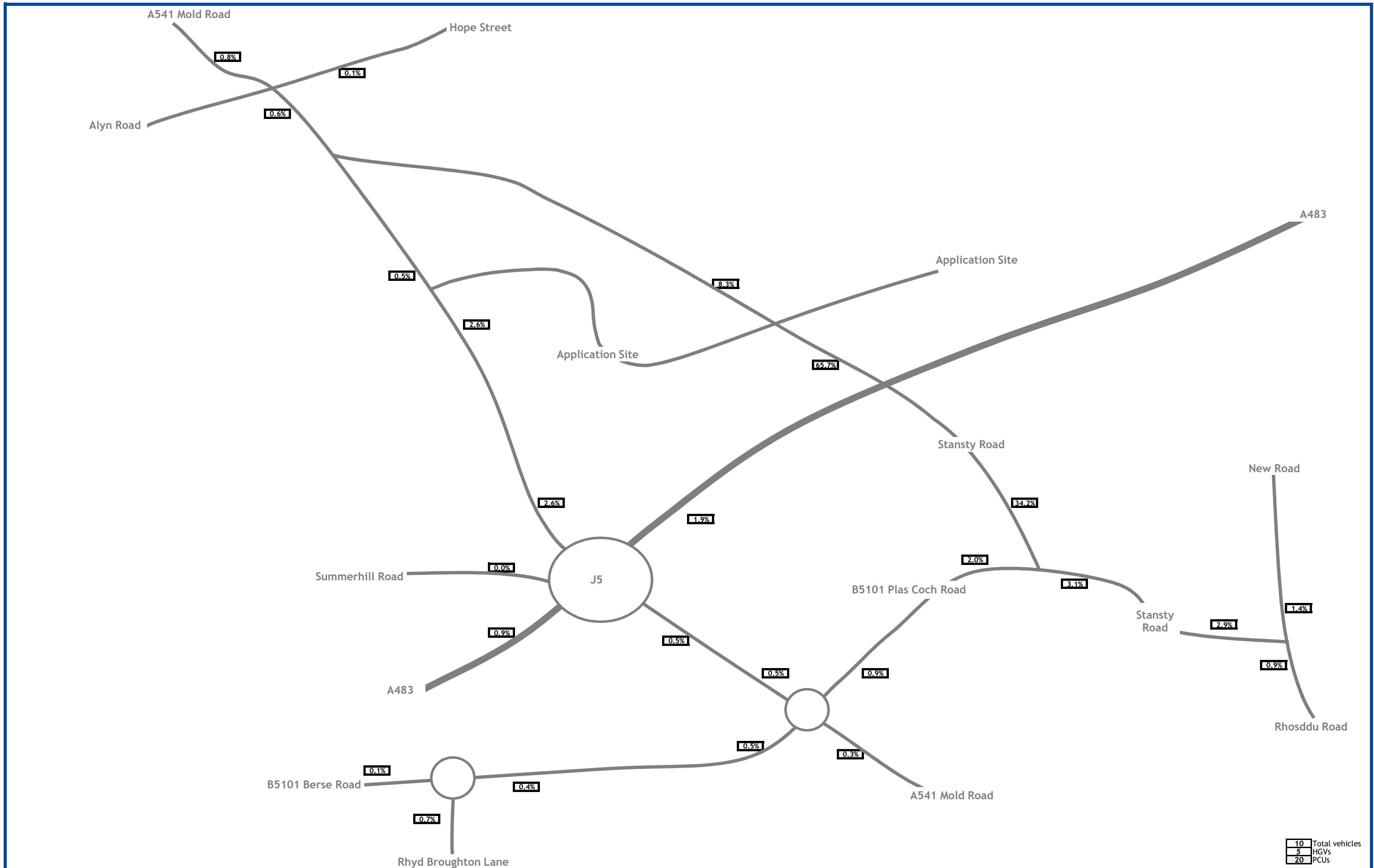
J000069

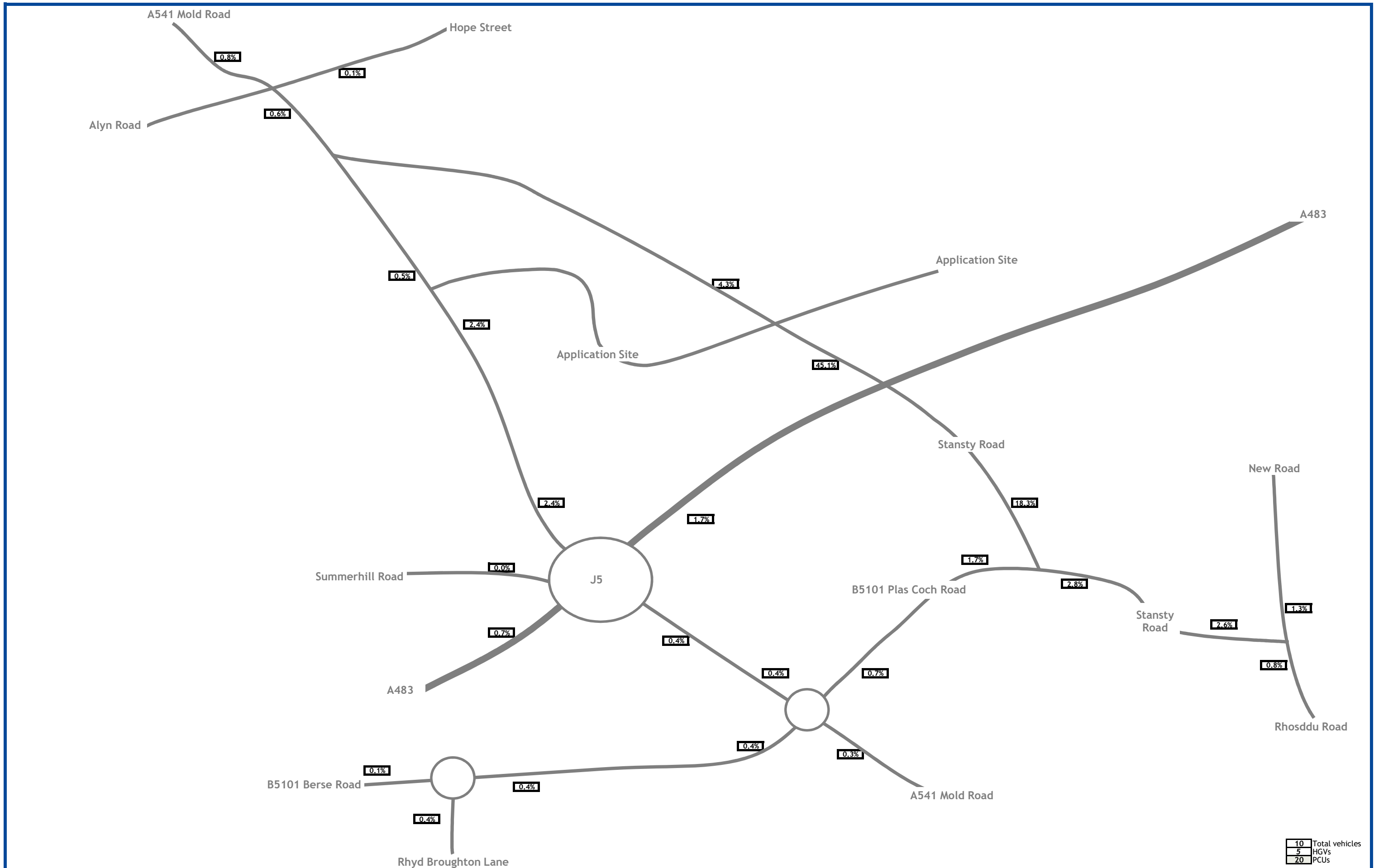
Land at Mold Road, Wrexham

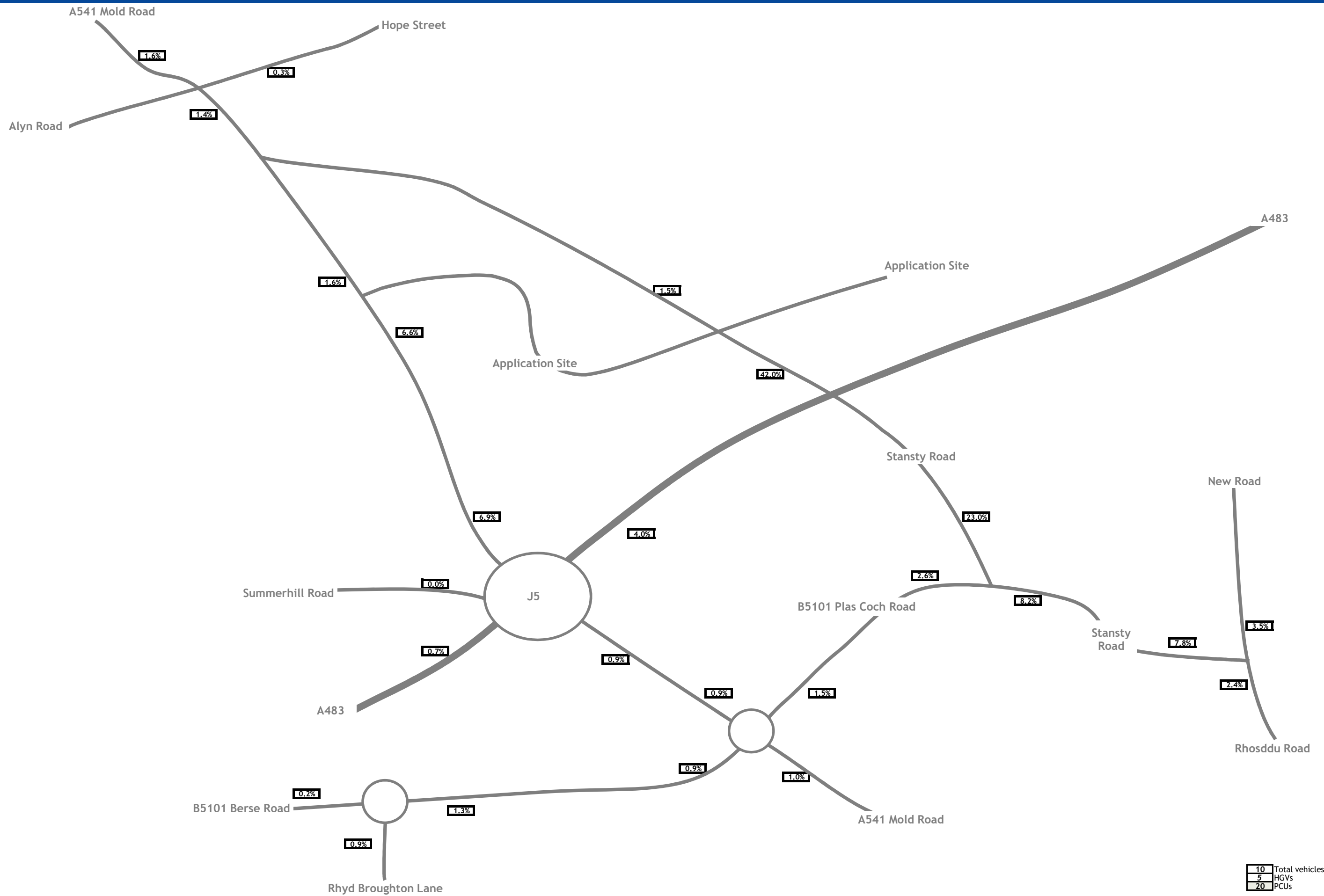
October 2019



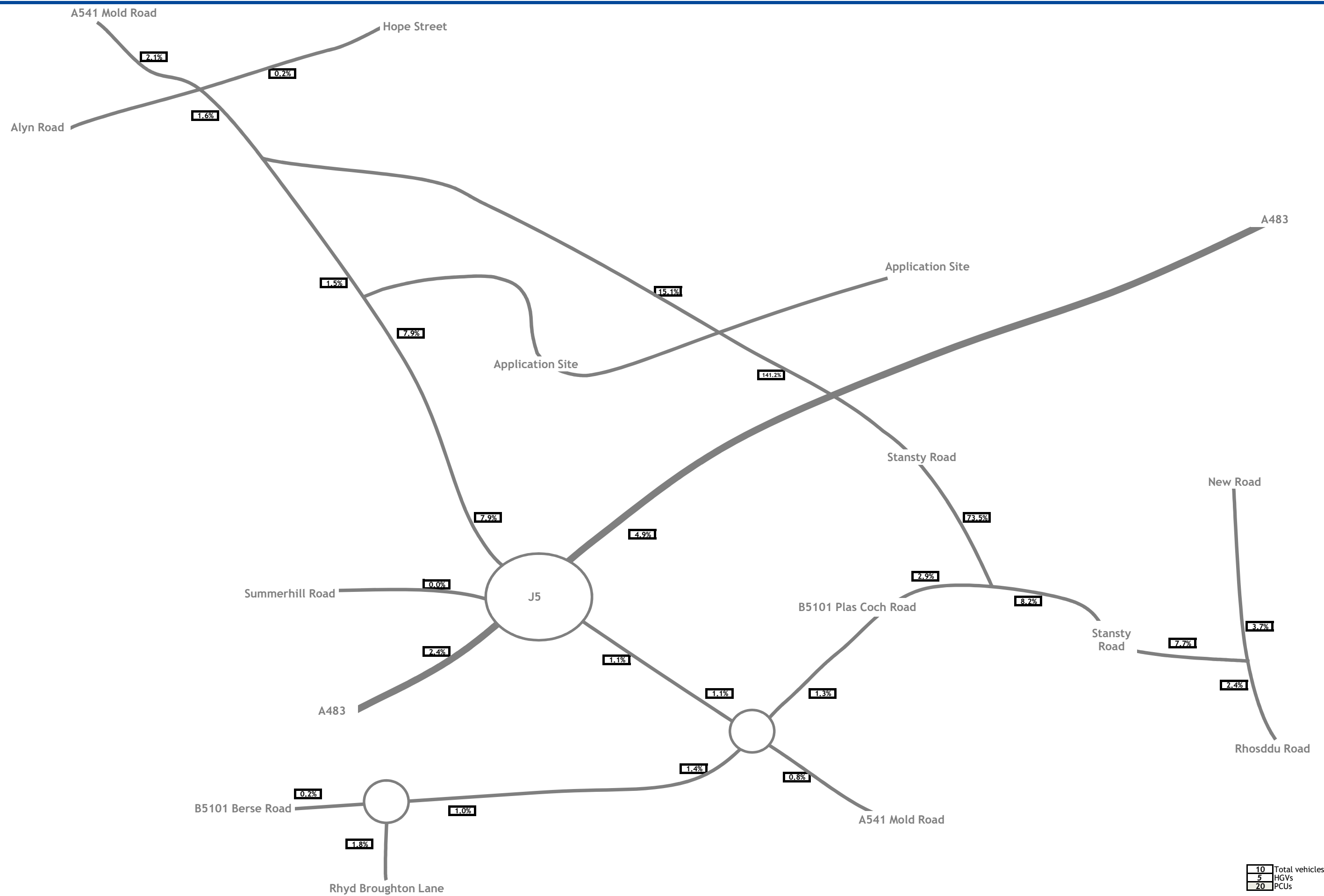
10	Total vehicles
5	HGVs
20	PCUs

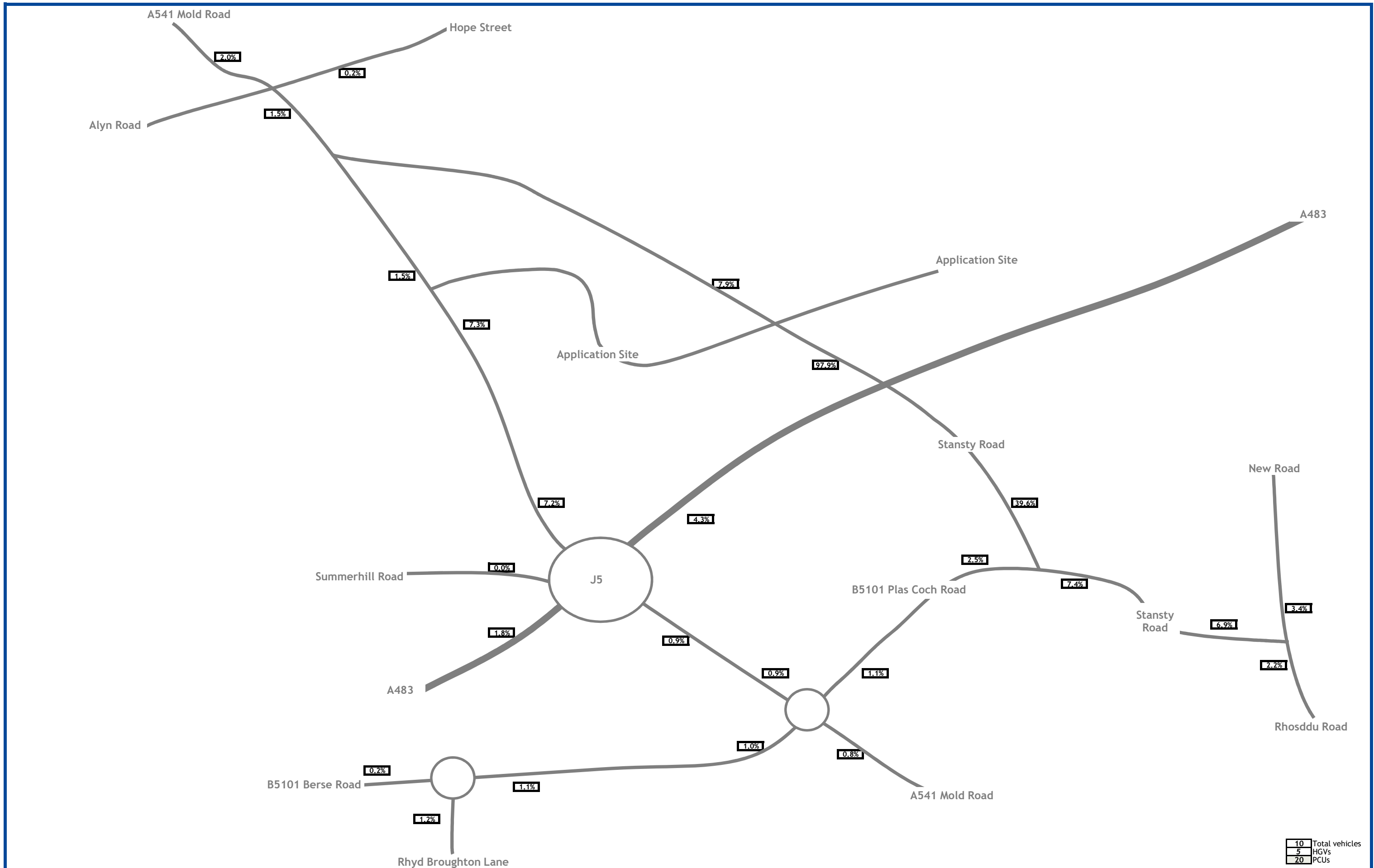






10	Total vehicles
5	HGVs
20	PCUs





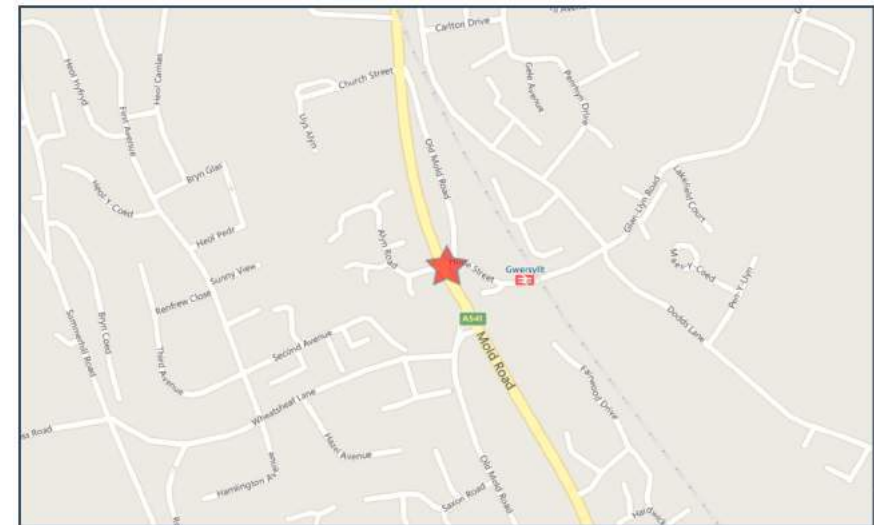






crashmap.co.uk

Crash Date:	Monday, January 11, 2016	Time of Crash:	2:00:00 PM	Crash Reference:	201660U005289
Highest Injury Severity:	Slight	Road Number:	A541	Number of Casualties:	2
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	331797 353316
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Auto traffic signal				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Taxi/Private hire car	-1	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
1	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is in the act of turning right	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	Over 75	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date: Saturday, December 03, 2016 **Time of Crash:** 5:02:00 PM **Crash Reference:** 201660U182244

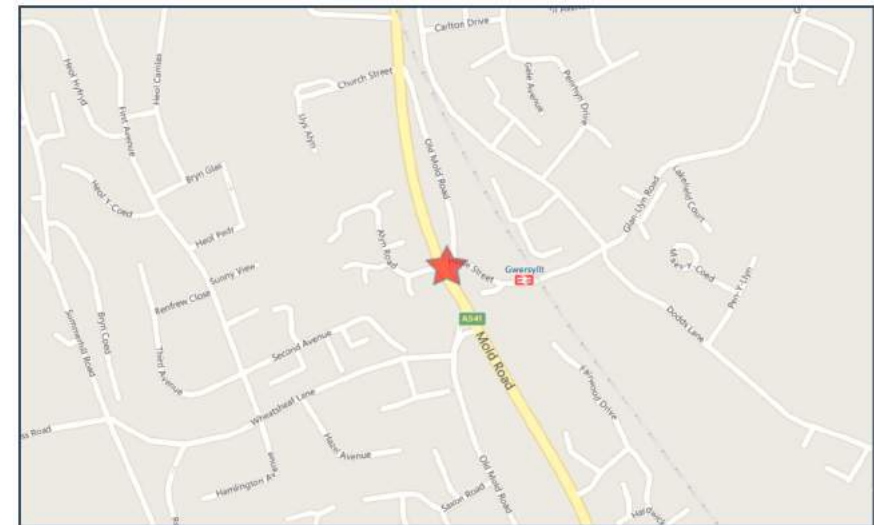
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Darkness: street lights present and lit
Carriageway Hazards: None
Junction Detail: Other junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Auto traffic signal

Road Number: A541

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 331798 353313



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	56 - 65	Vehicle is moving off	Front	Other	None	None
1	Car (excluding private hire)	-1	Male	21 - 25	Vehicle is in the act of turning right	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Vehicle or pillion passenger	Male	16 - 20	Unknown or other	Unknown or other

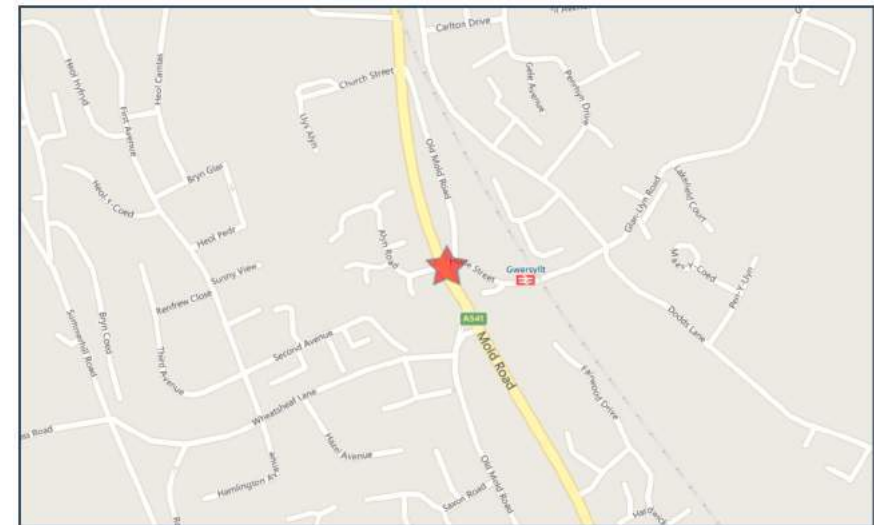
For more information about the data please visit: www.crashmap.co.uk/home/Faq

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crashmap.co.uk

Crash Date:	Wednesday, September 20, 2017	Time of Crash:	8:35:00 PM	Crash Reference:	201760V143857
Highest Injury Severity:	Slight	Road Number:	A541	Number of Casualties:	2
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	331796 353318
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Crossroads				
Junction Pedestrian Crossing:	Pelican, puffin, toucan or similar non-junction pedestrian light crossing				
Road Type:	Dual carriageway				
Junction Control:	Auto traffic signal				



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Car (excluding private hire)	-1	Male	16 - 20	Vehicle is in the act of turning right	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Male	16 - 20	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date: Monday, September 21, 2015 **Time of Crash:** 2:40:00 PM **Crash Reference:** 201560S144762

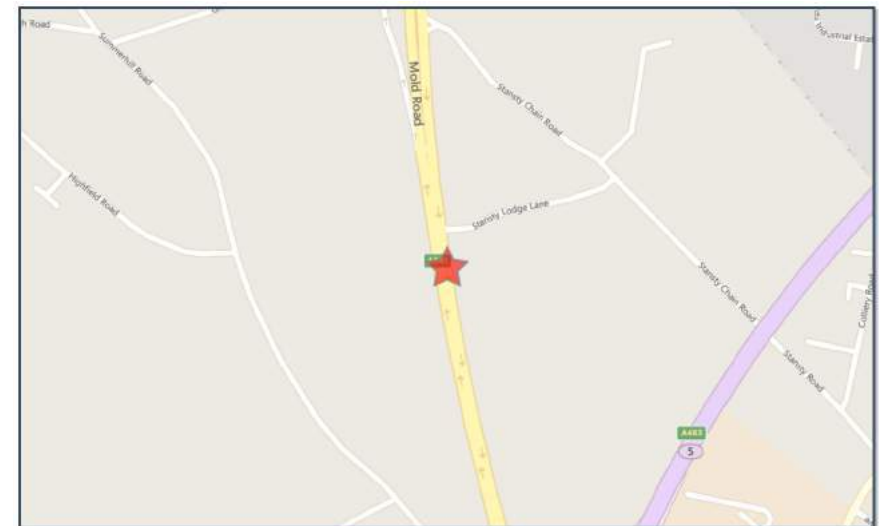
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Other junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Dual carriageway
Junction Control: Give way or uncontrolled

Road Number: A541

Number of Casualties: 2

Number of Vehicles: 3

OS Grid Reference: 332132 352011



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
3	Car (excluding private hire)	-1	Female	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is slowing down or stopping	Did not impact	Other	None	None
1	Car (excluding private hire)	-1	Female	36 - 45	Vehicle is passing another moving vehicle on its offside	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other
3	2	Slight	Driver or rider	Female	66 - 75	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date: Tuesday, November 01, 2016 **Time of Crash:** 10:42:00 AM **Crash Reference:** 201660U166400

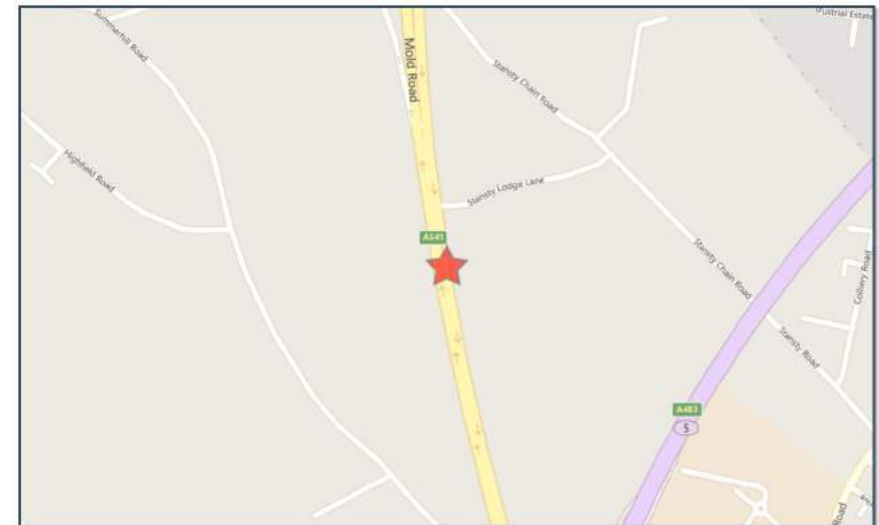
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Dual carriageway
Junction Control: Not Applicable

Road Number: A541

Number of Casualties: 1

Number of Vehicles: 1

OS Grid Reference: 332138 351972



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 50cc and up to 125cc	-1	Male	21 - 25	Vehicle is changing lane to the right (including slip road)	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date: Saturday, September 02, 2017 **Time of Crash:** 3:00:00 PM **Crash Reference:** 201760V134319

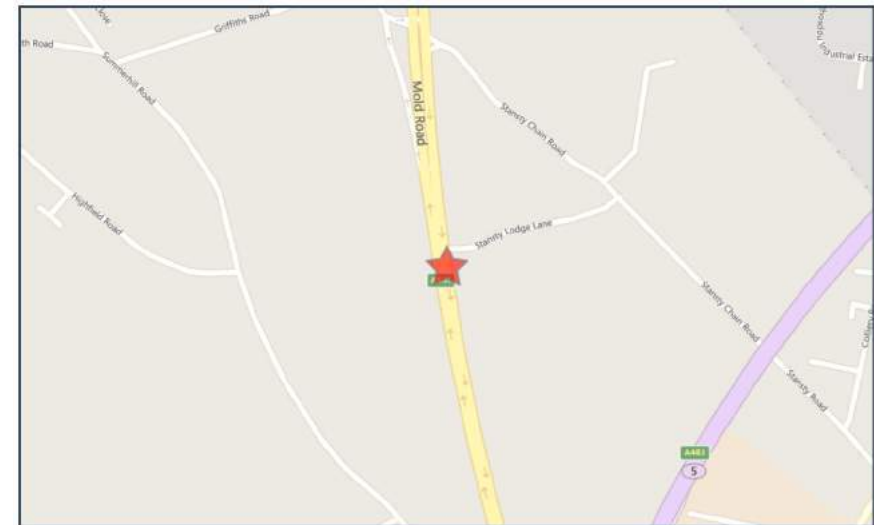
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham County Borough
Weather Description: Fine without high winds
Road Surface Description: Wet or Damp
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Dual carriageway
Junction Control: Not Applicable

Road Number: A541

Number of Casualties: 2

Number of Vehicles: 2

OS Grid Reference: 332127 352037



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	46 - 55	Vehicle is changing lane to the right (including slip road)	Back	Other	Kerb	None
1	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is passing another moving vehicle on its offside	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

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Crash Date: Tuesday, February 04, 2014 **Time of Crash:** 8:30:00 AM **Crash Reference:** 201460R016656

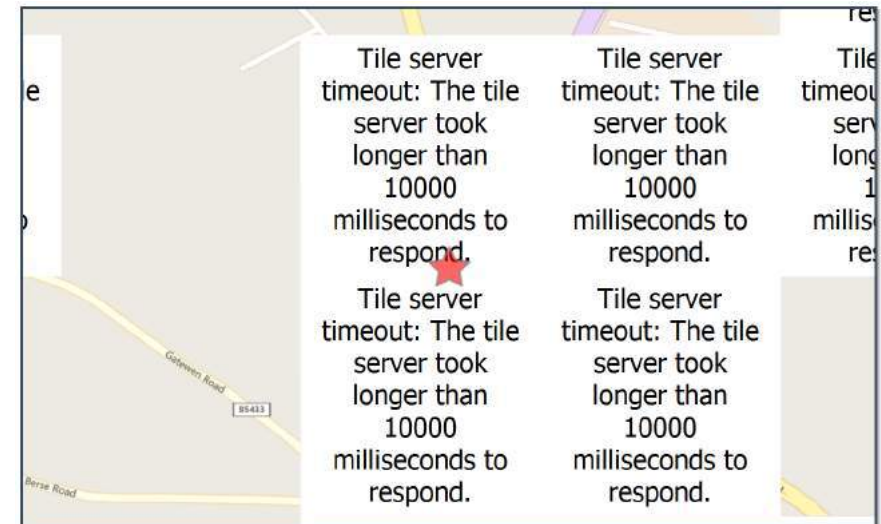
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham
Weather Description: Fine without high winds
Road Surface Description: Wet or Damp
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Slip road
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Slip Road
Junction Control: Auto traffic signal

Road Number: A483

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 332246 351288



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	36 - 45	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
1	Car (excluding private hire)	-1	Female	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

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Crash Date: Friday, September 05, 2014 **Time of Crash:** 4:15:00 PM **Crash Reference:** 201460R140045

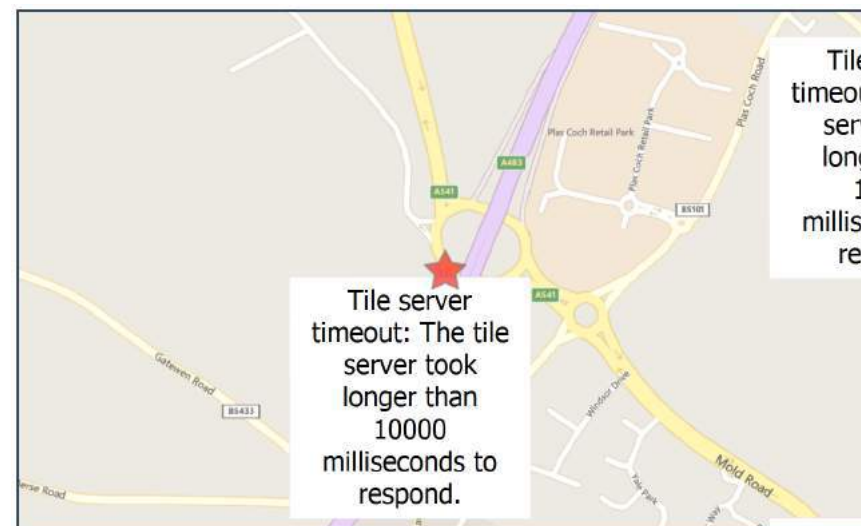
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Slip road
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Roundabout
Junction Control: Give way or uncontrolled

Road Number: A541

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 332256 351286



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is moving off	Back	Other	None	None
1	Car (excluding private hire)	-1	Male	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

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Crash Date: Monday, October 20, 2014 **Time of Crash:** 3:10:00 PM **Crash Reference:** 201460R165468

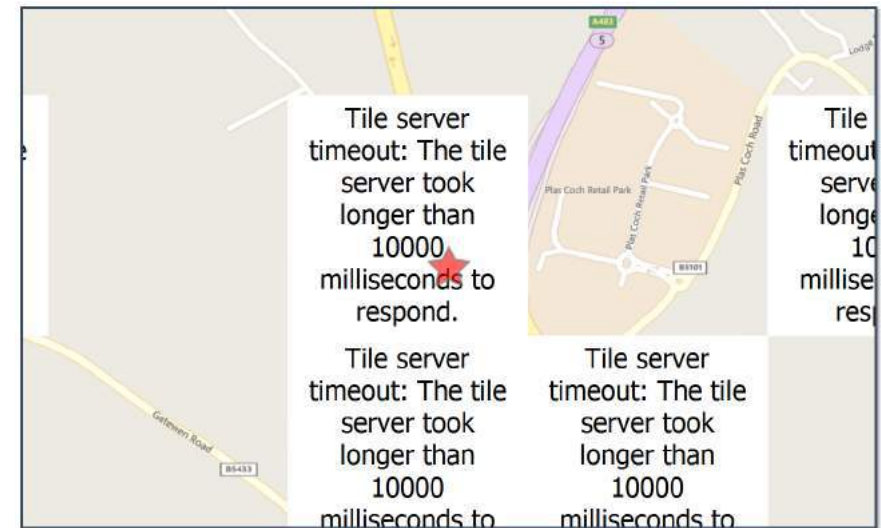
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 60
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Roundabout
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Roundabout
Junction Control: Auto traffic signal

Road Number: A541

Number of Casualties: 1

Number of Vehicles: 1

OS Grid Reference: 332267 351380



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Female	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	Nearside or offside crash barrier

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	Over 75	Unknown or other	Unknown or other

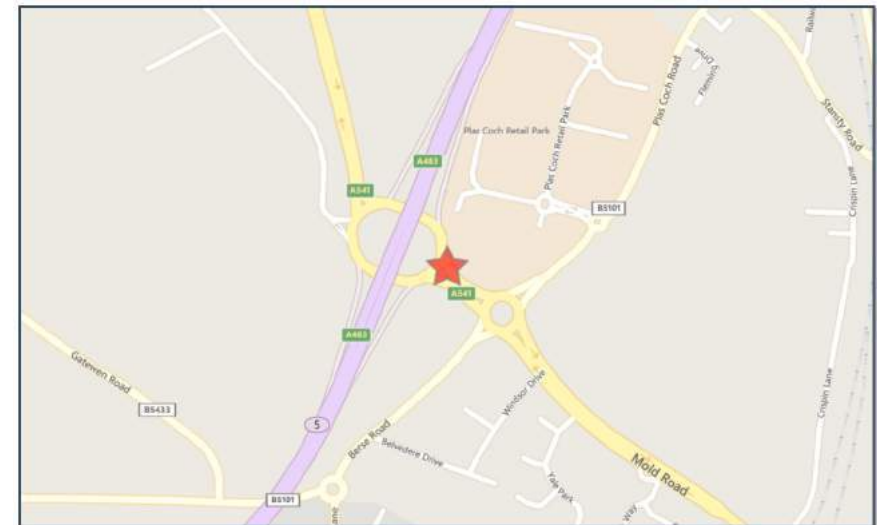
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Crash Date:	Friday, February 20, 2015	Time of Crash:	7:20:00 AM	Crash Reference:	201560S024353
Highest Injury Severity:	Slight	Road Number:	A483	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332386 351286
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Goods vehicle 7.5 tonnes mgw and over	-1	Male	26 - 35	Vehicle is in the act of turning left	Offside	Journey as part of work	None	None
1	Car (excluding private hire)	-1	Female	21 - 25	Vehicle is changing lane to the left	Nearside	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	21 - 25	Unknown or other	Unknown or other

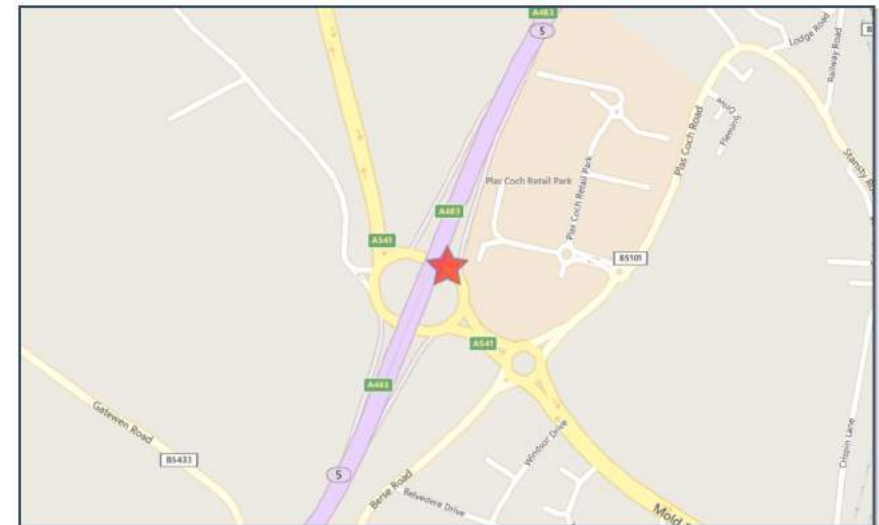
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Crash Date:	Thursday, May 07, 2015	Time of Crash:	2:05:00 PM	Crash Reference:	201560S064922
Highest Injury Severity:	Slight	Road Number:	A541	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332353 351364
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	46 - 55	Vehicle is moving off	Back	Other	None	None
1	Car (excluding private hire)	-1	Female	56 - 65	Vehicle is changing lane to the left	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

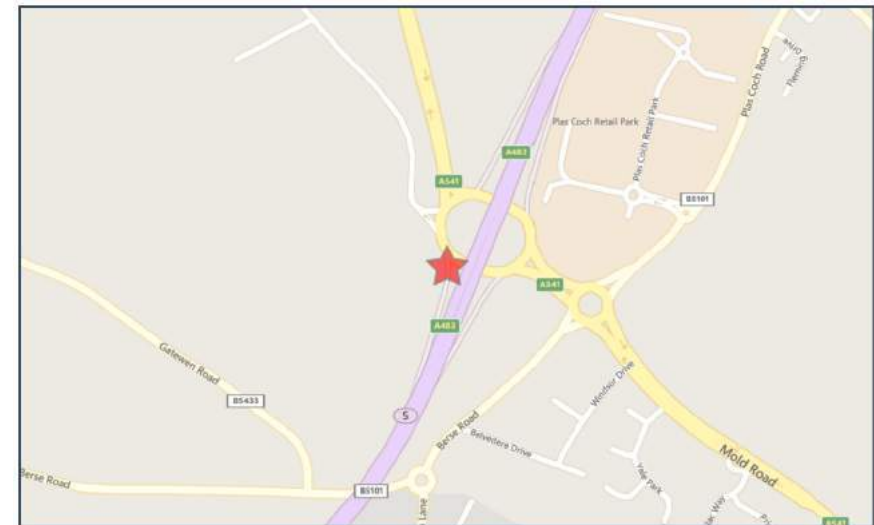
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Crash Date:	Wednesday, September 16, 2015	Time of Crash:	9:41:00 PM	Crash Reference:	201560S142196
Highest Injury Severity:	Slight	Road Number:	A483	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332250 351275
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Slip road				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Unknown	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Did not impact	Journey as part of work	None	None
1	Car (excluding private hire)	-1	Male	21 - 25	Vehicle is slowing down or stopping	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	0 - 5	Unknown or other	Unknown or other

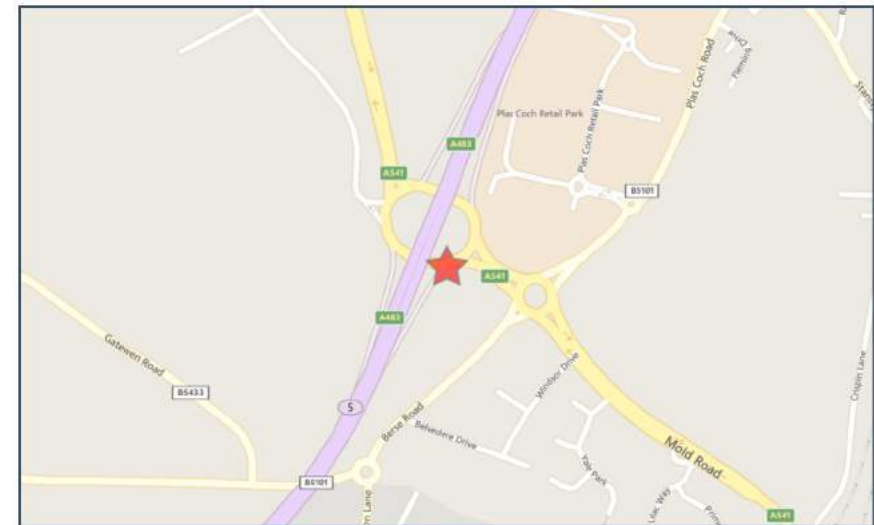
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Crash Date:	Saturday, August 06, 2016	Time of Crash:	2:59:00 PM	Crash Reference:	201660U116969
Highest Injury Severity:	Slight	Road Number:	A541	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	332334 351260
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	36 - 45	Vehicle is moving off	Nearside	Other	None	None
1	Car (excluding private hire)	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

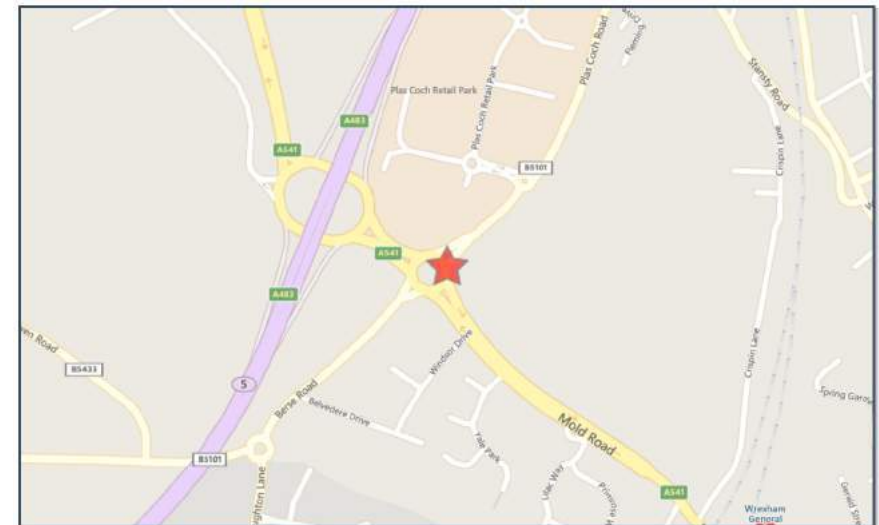
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Crash Date:	Saturday, May 10, 2014	Time of Crash:	1:40:00 PM	Crash Reference:	201460R069247
Highest Injury Severity:	Slight	Road Number:	B5101	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332499 351226
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Auto traffic signal				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	16 - 20	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
1	Car (excluding private hire)	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	16 - 20	Unknown or other	Unknown or other

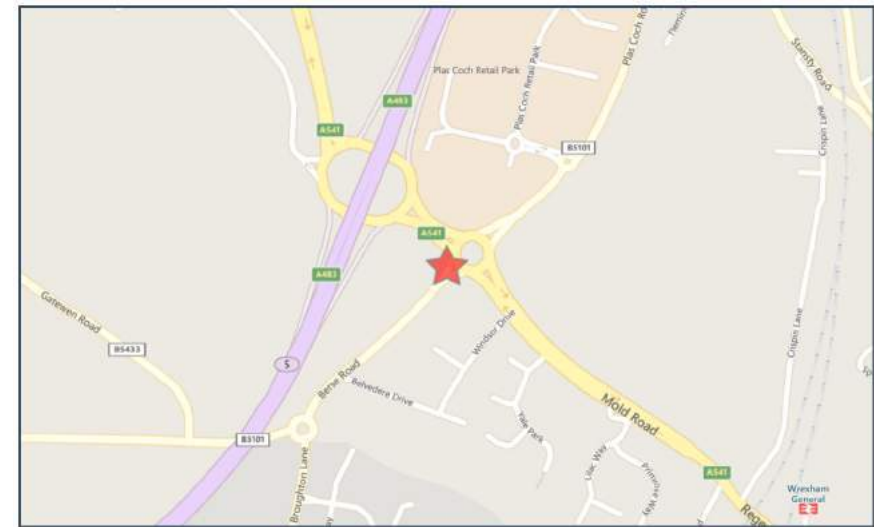
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Crash Date:	Friday, March 06, 2015	Time of Crash:	12:15:00 PM	Crash Reference:	201560S031748
Highest Injury Severity:	Slight	Road Number:	B5101	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332430 351195
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	26 - 35	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
1	Car (excluding private hire)	-1	Female	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	26 - 35	Unknown or other	Unknown or other

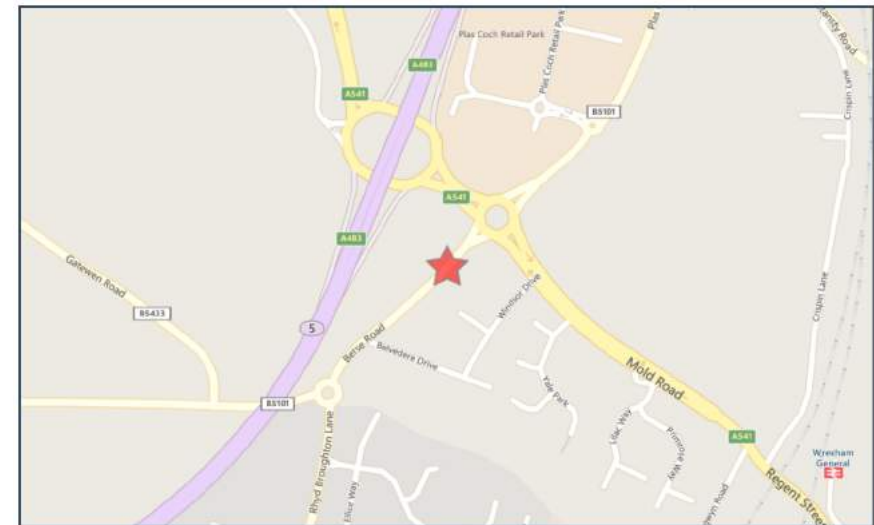
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Crash Date:	Tuesday, September 15, 2015	Time of Crash:	12:02:00 PM	Crash Reference:	201560S141322
Highest Injury Severity:	Slight	Road Number:	B5101	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332392 351140
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Pedal cycle	-1	Female	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Commuting to/from work	None	None
1	Car (excluding private hire)	-1	Male	Unknown	Vehicle is passing another moving vehicle on its offside	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	46 - 55	Unknown or other	Unknown or other

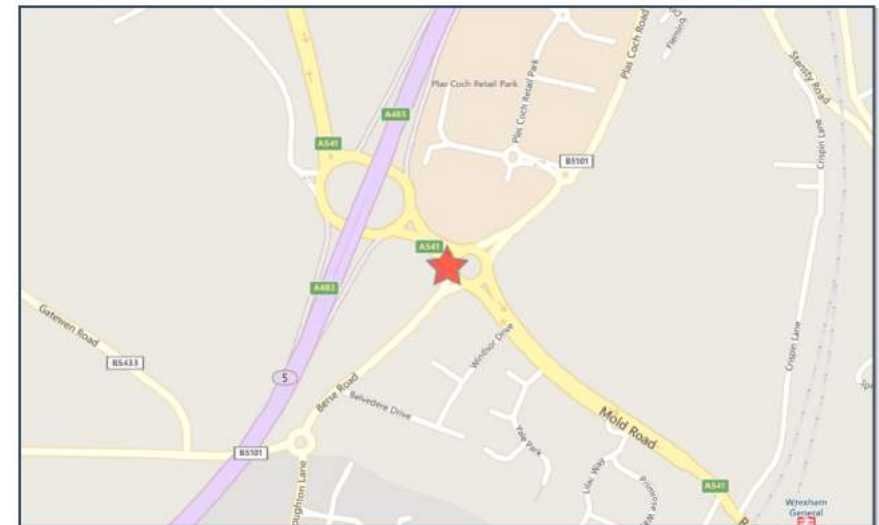
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Crash Date:	Monday, August 01, 2016	Time of Crash:	5:42:00 PM	Crash Reference:	201660U113977
Highest Injury Severity:	Serious	Road Number:	A541	Number of Casualties:	1
Highway Authority:	Wrexham	Number of Vehicles:	2	OS Grid Reference:	332434 351215
Local Authority:	Wrexham County Borough				
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Auto traffic signal				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Motorcycle over 125cc and up to 500cc	-1	Male	56 - 65	Vehicle proceeding normally along the carriageway, on a right hand bend	Nearside	Other	None	None
1	Car (excluding private hire)	-1	Female	46 - 55	Vehicle is changing lane to the right (including slip road)	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

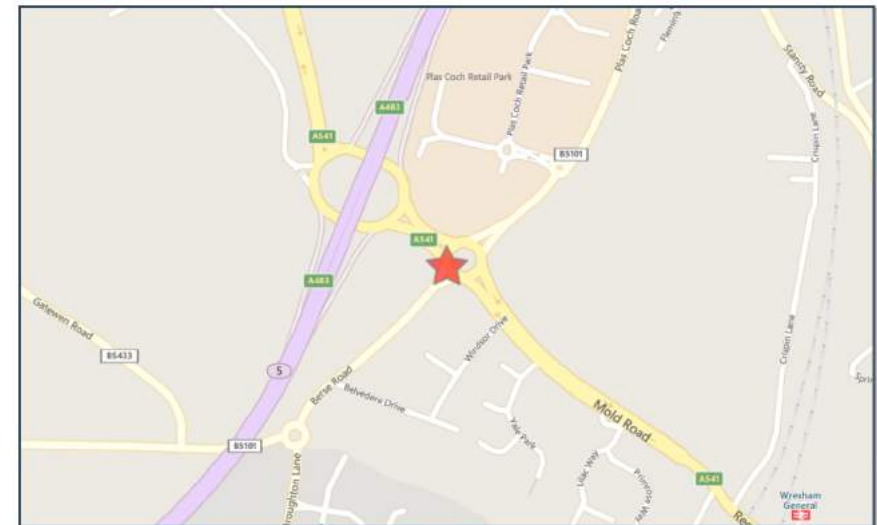
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Crash Date:	Monday, April 10, 2017	Time of Crash:	4:30:00 PM	Crash Reference:	201760V050511
Highest Injury Severity:	Slight	Road Number:	A541	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	332443 351202
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Auto traffic signal				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	46 - 55	Vehicle is slowing down or stopping	Back	Journey as part of work	None	None
1	Motorcycle over 500cc	-1	Male	26 - 35	Vehicle is in the act of turning right	Front	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

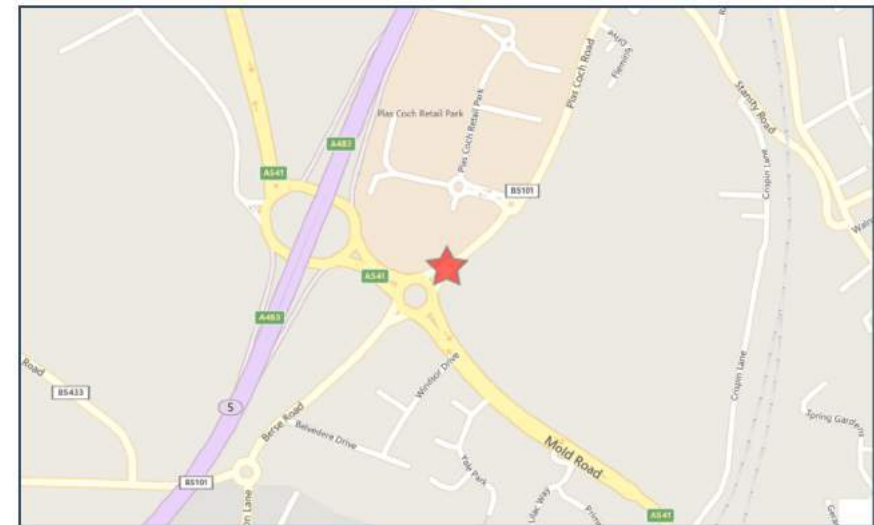
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Crash Date:	Tuesday, July 18, 2017	Time of Crash:	6:40:00 PM	Crash Reference:	201760V108035
Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	332518 351251
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is waiting to proceed normally but is held up	Front	Other	None	None
1	Car (excluding private hire)	-1	Male	36 - 45	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

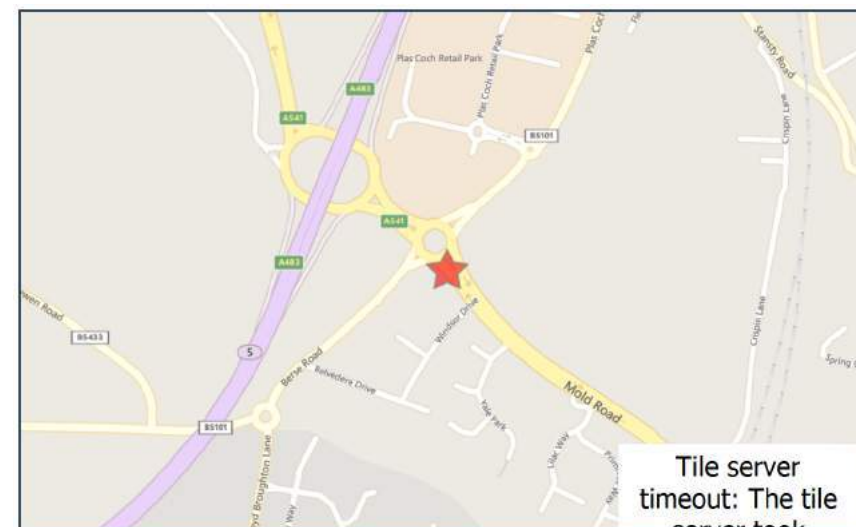
For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Tuesday, August 22, 2017	Time of Crash:	6:30:00 PM	Crash Reference:	201760V128151
Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	2
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	332488 351169
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Auto traffic signal				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	46 - 55	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
1	Motorcycle over 50cc and up to 125cc	-1	Male	26 - 35	Vehicle is slowing down or stopping	Front	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

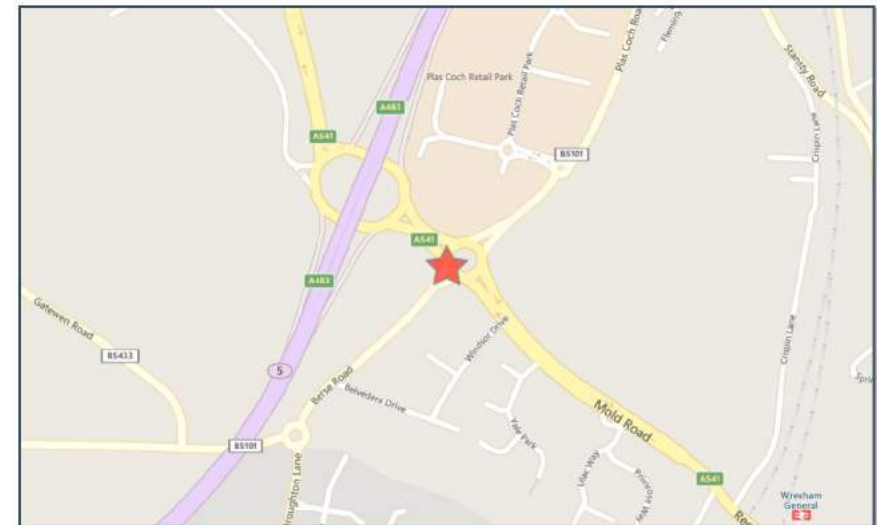
For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Friday, December 22, 2017	Time of Crash:	3:00:00 PM	Crash Reference:	201760V191698
Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	332442 351205
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Motorcycle over 500cc	-1	Male	46 - 55	Vehicle is moving off	Did not impact	Other	None	None
1	Car (excluding private hire)	-1	Female	26 - 35	Vehicle is moving off	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

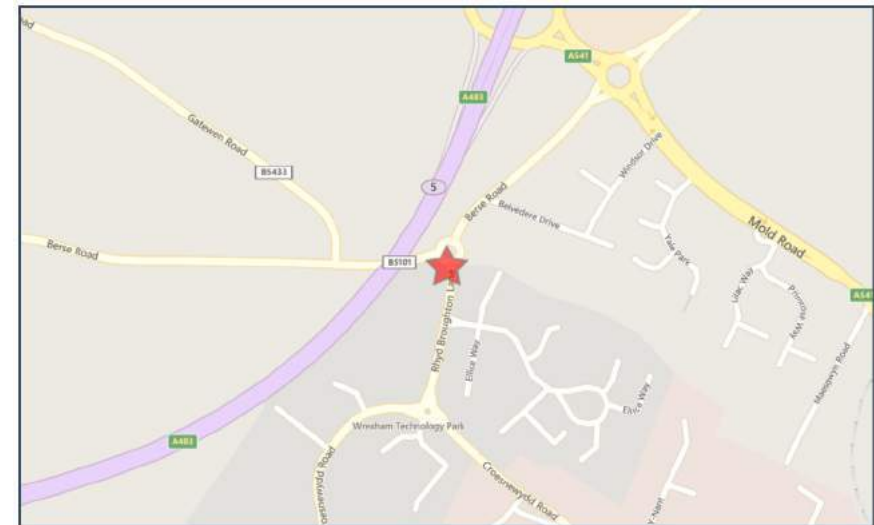
For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Sunday, September 14, 2014	Time of Crash:	4:00:00 PM	Crash Reference:	201460R145477
Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham			OS Grid Reference:	332203 350928
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	56 - 65	Vehicle is waiting to turn right	Back	Other	None	None
1	Car (excluding private hire)	-1	Male	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

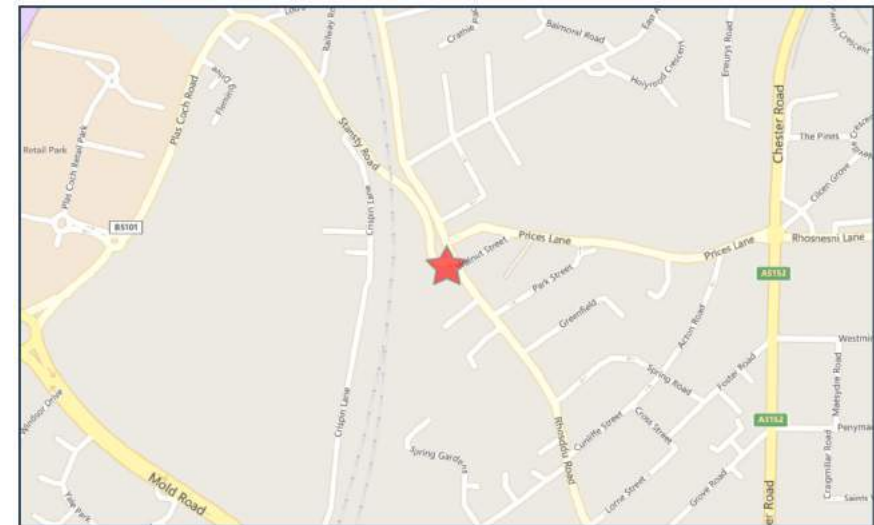
For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Crash Date:	Wednesday, December 30, 2015	Time of Crash:	7:15:00 PM	Crash Reference:	201560S199285
Highest Injury Severity:	Slight	Road Number:	B5101	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	1
Local Authority:	Wrexham			OS Grid Reference:	333128 351306
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	36 - 45	Vehicle is in the act of turning left	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	66 - 75	In carriageway, crossing elsewhere	Crossing from driver's offside

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Brymbo - Wrexham

Bank Holiday Mondays (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM								
Mount Sion, Library	1048	1148	1248	1348	1448	1548	1648	
New Broughton, Cross Street	1053	1153	1253	1353	1453	1553	1653	
Caego, Chapel Gardens	1102	1202	1302	1402	1502	1602	1702	
Wrexham, Bus Station, Bay 8	1113	1213	1313	1413	1513	1613	1713	

Wrexham - Brymbo

Bank Holiday Mondays (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM								
Wrexham, Bus Station, Bay 8	1020	1120	1220	1320	1420	1520	1620	
Caego, Chapel Gardens	1031	1131	1231	1331	1431	1531	1631	
Pentre Broughton, Gwalia House	1040	1140	1240	1340	1440	1540	1640	
Mount Sion, Library	1047	1147	1247	1347	1447	1547	1647	

Brymbo - Wrexham

Monday to Friday (Excluding Bank Holidays) (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM													
Mount Sion, Library	0620	0720	0820	0920	1020	1120	1220	1320	1420	1520	1620	1720	1820
New Broughton, Cross Street	0627	0727	0827	0927	1027	1127	1227	1327	1427	1527	1627	1727	1827
Caego, Chapel Gardens	0636	0736	0836	0936	1036	1136	1236	1336	1436	1536	1636	1736	1836
Wrexham, Bus Station, Bay 8	0648	0748	0848	0948	1048	1148	1248	1348	1448	1548	1648	1748	1848

Wrexham - Brymbo

Monday to Friday (Excluding Bank Holidays) (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM													
Wrexham, Bus Station, Bay 8	0611	0711	0811	0911	1011	1111	1211	1311	1411	1511	1611	1711	1811
Caego, Chapel Gardens	0623	0723	0823	0923	1023	1123	1223	1323	1423	1523	1623	1723	1823
Pentre Broughton, Gwalia House	0632	0732	0832	0932	1032	1132	1232	1332	1432	1532	1632	1732	1832
Mount Sion, Library	0639	0739	0839	0939	1039	1139	1239	1339	1439	1539	1639	1739	1839

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Brymbo - Wrexham

Saturday (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM

Mount Sion, Library	0620	0720	0820	0920	1020	1120	1220	1320	1420	1520	1620	1720	1820
New Broughton, Cross Street	0627	0727	0827	0927	1027	1127	1227	1327	1427	1527	1627	1727	1827
Caego, Chapel Gardens	0636	0736	0836	0936	1036	1136	1236	1336	1436	1536	1636	1736	1836
Wrexham, Bus Station, Bay 8	0648	0748	0848	0948	1048	1148	1248	1348	1448	1548	1648	1748	1848

Wrexham - Brymbo

Saturday (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM

Wrexham, Bus Station, Bay 8	0611	0711	0811	0911	1011	1111	1211	1311	1411	1511	1611	1711	1811
Caego, Chapel Gardens	0623	0723	0823	0923	1023	1123	1223	1323	1423	1523	1623	1723	1823
Pentre Broughton, Gwalia House	0632	0732	0832	0932	1032	1132	1232	1332	1432	1532	1632	1732	1832
Mount Sion, Library	0639	0739	0839	0939	1039	1139	1239	1339	1439	1539	1639	1739	1839

Brymbo - Wrexham

Sunday (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM

Mount Sion, Library	1048	1148	1248	1348	1448	1548	1648
New Broughton, Cross Street	1053	1153	1253	1353	1453	1553	1653
Caego, Chapel Gardens	1102	1202	1302	1402	1502	1602	1702
Wrexham, Bus Station, Bay 8	1113	1213	1313	1413	1513	1613	1713

Wrexham - Brymbo

Sunday (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM

Wrexham, Bus Station, Bay 8	1020	1120	1220	1320	1420	1520	1620
Caego, Chapel Gardens	1031	1131	1231	1331	1431	1531	1631
Pentre Broughton, Gwalia House	1040	1140	1240	1340	1440	1540	1640
Mount Sion, Library	1047	1147	1247	1347	1447	1547	1647

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Service 12A (ACAO012A)

Timetable valid from 31st March 2019 until further notice

Brymbo - Wrexham Industrial Estate via Wrexham

Service 13A (ACAO013A)

Monday to Friday (Excluding Bank Holidays) (Inbound)

Timetable valid from 2nd January 2019 until further notice

Operator:	ACYM	ACYM
Brymbo Offa Street	0450	0550
Pentre Broughton Gwalia Road	0457	0557
New Broughton Bus Shelter	0506	0606
Wrexham Bus Station 5	0518	0618

Wrexham Industrial Estate - Brymbo via Wrexham

Service 13A (ACAO013A)

Monday to Friday (Excluding Bank Holidays) (Outbound)

Timetable valid from 2nd January 2019 until further notice

Operator:	ACYM	ACYM
Wrexham Bus Station 5	0640	0710
New Broughton Bus Shelter	0652	0722
Pentre Broughton Gwalia Road	0701	0731
Brymbo Offa Street	0708	0738

Brymbo - Wrexham Industrial Estate via Wrexham

Service 13A (ACAO013A)

Saturday (Inbound)

Timetable valid from 2nd January 2019 until further notice

Operator:	ACYM
Brymbo Offa Street	0550
Pentre Broughton Gwalia Road	0557
New Broughton Bus Shelter	0606
Wrexham Bus Station 5	0618

Moss - Wrexham

Saturday (Inbound)

Operator: WTAX WTAX WTAX

Moss, Erw Gaer	1123	1423	1723
The Lodge	1129	1429	1729
Plas Coch Retail Park	1136	1436	--
Plas Coch	1138	1438	--
Wrexham Bus Station Stand 8	1143	1443	--

Wrexham - Moss

Saturday (Outbound)

Operator: WTAX WTAX WTAX

Wrexham Bus Station Stand 8	1105	1405	1705
Plas Coch	1110	1410	1710
Plas Coch Retail Park	1112	1412	1712
Coed Efa Lane	1118	1418	1718
Castle Inn	1120	1420	1720
Moss, Erw Gaer	1123	1423	1723

Moss - Wrexham

Wednesday & Friday (Inbound)

Operator: WTAX WTAX WTAX

Moss, Erw Gaer	1123	1423	1723
The Lodge	1129	1429	1729
Plas Coch Retail Park	1136	1436	--
Plas Coch	1138	1438	--
Wrexham Bus Station Stand 8	1143	1443	--

Service 17 (WTAO017)

Timetable valid from 21st December 2016 until further notice

Service 17 (WTAO017)

Timetable valid from 21st December 2016 until further notice

Service 17 (WTAO017)

Timetable valid from 21st December 2016 until further notice

Wrexham - Moss

Wednesday & Friday (Outbound)

Operator: WTAX WTAX WTAX

Wrexham Bus Station Stand 8	1105	1405	1705
Plas Coch	1110	1410	1710
Plas Coch Retail Park	1112	1412	1712
Coed Efa Lane	1118	1418	1718
Castle Inn	1120	1420	1720
Moss, Erw Gaer	1123	1423	1723

Service 17 (WTAO017)

Timetable valid from 21st December 2016 until further notice

Wrexham - Summer Hill - Wrexham

Bank Holiday Mondays (Outbound)

Operator: ACYM ACYM ACYM ACYM				
Wrexham, Bus Station, Bay 4	1135	1335	1535	1735
Gwersyllt, Pendine Shops	1147	1347	1547	1747
Summer Hill, Norham Court	1153	1353	1553	1753
Gwersyllt, Pendine Shops	1201	1401	1601	1801
Wrexham, Bus Station, o/s	1213	1413	1613	1813

Wrexham - Summer Hill - Wrexham

Monday to Friday (Excluding Bank Holidays) (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM																		
Wrexham, Bus Station, Bay 4	0641	0741	0841	0941	1041	1141	1241	1341	1441	1541	1641	1741	1815	1915	2015	2115	2215	
Gwersyllt, Pendine Shops	0653	0753	0853	0953	1053	1153	1253	1353	1453	1553	1653	1753	1825	1925	2025	2125	2225	
Summer Hill, Norham Court	0659	0801	0901	0959	1059	1159	1259	1359	1459	1601	1701	1759	1830	1930	2030	2130	2230	
Gwersyllt, Pendine Shops	0707	0810	0910	1007	1107	1207	1307	1407	1507	1610	1710	1807	1837	1937	2037	2137	2237	
Wrexham, Bus Station, o/s	0719	0823	0923	1019	1119	1219	1319	1419	1519	1623	1723	1819	1847	1947	2047	2147	2247	

Wrexham - Summer Hill - Wrexham

Saturday (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM																		
Wrexham, Bus Station, Bay 4	0641	0741	0841	0941	1041	1141	1241	1341	1441	1541	1641	1741	1815	1915	2015	2115	2215	
Gwersyllt, Pendine Shops	0653	0753	0853	0953	1053	1153	1253	1353	1453	1553	1653	1753	1825	1925	2025	2125	2225	
Summer Hill, Norham Court	0659	0759	0859	0959	1059	1159	1259	1359	1459	1559	1659	1759	1830	1930	2030	2130	2230	
Gwersyllt, Pendine Shops	0707	0807	0907	1007	1107	1207	1307	1407	1507	1607	1707	1807	1837	1937	2037	2137	2237	
Wrexham, Bus Station, o/s	0719	0819	0919	1019	1119	1219	1319	1419	1519	1619	1719	1819	1847	1947	2047	2147	2247	

Wrexham - Summer Hill - Wrexham

Sunday (Outbound)

Operator: ACYM ACYM ACYM ACYM				
Wrexham, Bus Station, Bay 4	1135	1335	1535	1735
Gwersyllt, Pendine Shops	1147	1347	1547	1747
Summer Hill, Norham Court	1153	1353	1553	1753
Gwersyllt, Pendine Shops	1201	1401	1601	1801
Wrexham, Bus Station, o/s	1213	1413	1613	1813

Service 21 (ACAO021)

Timetable valid from 31st March 2019 until further notice

Service 21 (ACAO021)

Timetable valid from 31st March 2019 until further notice

Service 21 (ACAO021)

Timetable valid from 31st March 2019 until further notice

Service 21 (ACAO021)

Timetable valid from 31st March 2019 until further notice

Mold - Wrexham

Monday to Friday (Excluding Bank Holidays) (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Mold, Bus Station, Stand 4	0658	0738	0848	0943	1043	1143	1243	1343	1443	1543	1648	1748	1843	
Leeswood, Drury Lane	0711	0751	0901	0956	1056	1156	1256	1356	1456	1556	1701	1801	1856	
Caergwrle, Pentre Lane Turn	0722	0802	0912	1007	1107	1207	1307	1407	1507	1607	1712	1812	1907	
Sydallt, Tan-yr-allt	0732	0812	0922	1017	1117	1217	1317	1417	1517	1617	1722	1821	1916	
Wrexham, Bus Station, o/s	0747	0827	0937	1032	1132	1232	1332	1432	1532	1632	1737	1836	1931	

Wrexham - Mold

Monday to Friday (Excluding Bank Holidays) (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Wrexham, Bus Station, Bay 4	0605	0645	0755	0850	0950	1050	1150	1250	1350	1450	1555	1655	1755	
Sydallt, Tan-yr-allt	0620	0700	0810	0905	1005	1105	1205	1305	1405	1505	1610	1710	1810	
Pontblyddyn, Bridge Inn	0631	0711	0821	0916	1016	1116	1216	1316	1416	1516	1621	1721	1821	
Leeswood, Bethel Chapel	0639	0719	0829	0924	1024	1124	1224	1324	1424	1524	1629	1729	1829	
Mold, Bus Station, Stand 4	0652	0732	0842	0937	1037	1137	1237	1337	1437	1537	1642	1742	1842	

Mold - Wrexham

Saturday (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Mold, Bus Station, Stand 4	0658	0738	0848	0943	1043	1143	1243	1343	1443	1543	1648	1748	1843	
Leeswood, Drury Lane	0711	0751	0901	0956	1056	1156	1256	1356	1456	1556	1701	1801	1856	
Caergwrle, Pentre Lane Turn	0722	0802	0912	1007	1107	1207	1307	1407	1507	1607	1712	1812	1907	
Sydallt, Tan-yr-allt	0732	0812	0922	1017	1117	1217	1317	1417	1517	1617	1722	1821	1916	
Wrexham, Bus Station, o/s	0747	0827	0937	1032	1132	1232	1332	1432	1532	1632	1737	1836	1931	

Wrexham - Mold

Saturday (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Wrexham, Bus Station, Bay 4	0605	0645	0755	0850	0950	1050	1150	1250	1350	1450	1555	1655	1755	
Sydallt, Tan-yr-allt	0620	0700	0810	0905	1005	1105	1205	1305	1405	1505	1610	1710	1810	
Pontblyddyn, Bridge Inn	0631	0711	0821	0916	1016	1116	1216	1316	1416	1516	1621	1721	1821	
Leeswood, Bethel Chapel	0639	0719	0829	0924	1024	1124	1224	1324	1424	1524	1629	1729	1829	
Mold, Bus Station, Stand 4	0652	0732	0842	0937	1037	1137	1237	1337	1437	1537	1642	1742	1842	

Service 27 (ACBO027)

Timetable valid from 31st March 2019 until further notice

Service 27 (ACBO027)

Timetable valid from 31st March 2019 until further notice

Service 27 (ACBO027)

Timetable valid from 31st March 2019 until further notice

Service 27 (ACBO027)

Timetable valid from 31st March 2019 until further notice



NTM Growth Factors

2019-2024 AM Peak Period

TEMPro main form

Data selections

Trip end selections

Trip end by time period selections

Select time period: Weekday AM peak period (0700 - 0900)

Trip end type: Production/Attraction, Origin/Destination

Reset Selections

Select data type: Growth factors, Future year minus base year, Base year data, Future year data

*Italicized results indicate that there is a lower level of confidence in data presented at the zonal level than when aggregated to higher geographical levels

Car Driver Combined Modes

Area Description	Name	Origin	Destination
Level	Wrexham	1.0525	1.0378
Authority			

NTM Traffic Growth Calculations

1- Select NTM Dataset:

NTM Dataset Description	From	To
NTM AF15 Dataset	2010	2040
NTM AF09 Dataset	2003	2035
NTM AF03 Dataset	2003	2025

2- Select Areas to make up the geographic region: Wrexham

3- Select area type: Urban, Rural, All

4- Select road type: Motorway, Trunk, Principal, Minor, All

5- Select which area it serves: Region, England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
Authority	Wrexham	1.0589

2019-2024 PM Peak Period

TEMPro main form

Data selections

Trip end selections

Trip end by time period selections

Select time period: Weekday PM peak period (1600 - 1800)

Trip end type: Production/Attraction, Origin/Destination

Reset Selections

Select data type: Growth factors, Future year minus base year, Base year data, Future year data

*Italicized results indicate that there is a lower level of confidence in data presented at the zonal level than when aggregated to higher geographical levels

Car Driver Combined Modes

Area Description	Name	Origin	Destination
Level	Wrexham	1.0407	1.0466
Authority			

NTM Traffic Growth Calculations

1- Select NTM Dataset:

NTM Dataset Description	From	To
NTM AF15 Dataset	2010	2040
NTM AF09 Dataset	2003	2035
NTM AF03 Dataset	2003	2025

2- Select Areas to make up the geographic region: Wrexham

3- Select area type: Urban, Rural, All

4- Select road type: Motorway, Trunk, Principal, Minor, All

5- Select which area it serves: Region, England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
Authority	Wrexham	1.0591

2019-2024 Average Weekday

TEMPio main form

Data selection:

Trip end selection:
 Trip end by time period selection:
 Select time period:
 Average Weekday

Trip end type:

Production/Attraction
 Origin/Destination

Reset Selections

Select data type:

☒ Growth factors
 ☐ Future year minus base year
 ☐ Base year data
 ☐ Future year data

*Italicized results indicate that there is a lower level of confidence in data presented at the zonal level than when aggregated to higher geographical levels

Car Driver: Combined Modes

Area Description	Name	Origin	Destination
Level			
Authority	Wrexham	1.0474	1.0473

Results

NTM Traffic Growth Calculations

1. Select NTM Dataset:

NTM Dataset Description	From	To
NTM AP 11 Dataset	2010	2010
NTM AP09 Dataset	2003	2035
NTM AP08 Dataset	2003	2025

2. Select Areas to make up the geographic region:

☒ Wrexham

3. Select area type:

☐ Urban
 ☐ Rural
 ☒ All

4. Select road type:

☐ Motorway
 ☐ Trunk
 ☐ Principal
 ☐ Minor
 ☒ All

5. Select which area it serves:

☒ Region
 ☐ England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
Authority	Wrexham	1.0612

2019-2030 AM Peak Period

TEMPio main form

Data selection:

Trip end selection:
 Trip end by time period selection:
 Select time period:
 Weekday AM peak period (0700 - 0900)

Trip end type:

Production/Attraction
 Origin/Destination

Reset Selections

Select data type:

☒ Growth factors
 ☐ Future year minus base year
 ☐ Base year data
 ☐ Future year data

*Italicized results indicate that there is a lower level of confidence in data presented at the zonal level than when aggregated to higher geographical levels

Car Driver: Combined Modes

Area Description	Name	Origin	Destination
Level			
Authority	Wrexham	1.1117	1.0746

Results

NTM Traffic Growth Calculations

1. Select NTM Dataset:

NTM Dataset Description	From	To
NTM AP 11 Dataset	2010	2010
NTM AP09 Dataset	2003	2035
NTM AP08 Dataset	2003	2025

2. Select Areas to make up the geographic region:

☒ Wrexham

3. Select area type:

☐ Urban
 ☐ Rural
 ☒ All

4. Select road type:

☐ Motorway
 ☐ Trunk
 ☐ Principal
 ☐ Minor
 ☒ All

5. Select which area it serves:

☒ Region
 ☐ England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
Authority	Wrexham	1.1212

2019-2030 PM Peak Period

TEMPio main form

Data selection:

Trip end selection:
 Trip end by time period selection:
 Select time period: Weekday PM peak period (1600 - 1859)
 Trip end type:
 Production/Attraction
 Origin/Destination

Select data type:

☒ Growth factors
 ☐ Future year minus base year
 ☐ Base year data
 ☐ Future year data

*Italicized results indicate that there is a lower level of confidence in data presented at the zonal level than when aggregated to higher geographical levels

Car Driver: Combined Modes

Area Description	Name	Origin	Destination
Level	Wrexham	1.0832	1.1064
Authority			

NTM Traffic Growth Calculations

1. Select NTM Dataset:

NTM Dataset Description	From	To
NTM AP 10 Dataset	2010	2040
NTM AP09 Dataset	2003	2035
NTM AP08 Dataset	2003	2025

2. Select Areas to make up the geographic region:
 ☒ Wrexham

3. Select area type:
 ☐ Urban
 ☐ Rural
 ☒ All

4. Select road type:
 ☐ Motorway
 ☐ Trunk
 ☐ Principal
 ☐ Minor
 ☒ All

5. Select which area it serves:
 ☒ Region
 ☐ England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
Authority	Wrexham	1.1238

2019-2030 Average Weekday

TEMPio main form

Data selection:

Trip end selection:
 Trip end by time period selection:
 Select time period: Average Weekday

Select data type:

☒ Growth factors
 ☐ Future year minus base year
 ☐ Base year data
 ☐ Future year data

*Italicized results indicate that there is a lower level of confidence in data presented at the zonal level than when aggregated to higher geographical levels

Car Driver: Combined Modes

Area Description	Name	Origin	Destination
Level	Wrexham	1.0979	1.0976
Authority			

NTM Traffic Growth Calculations

1. Select NTM Dataset:

NTM Dataset Description	From	To
NTM AP 10 Dataset	2010	2040
NTM AP09 Dataset	2003	2035
NTM AP08 Dataset	2003	2025

2. Select Areas to make up the geographic region:
 ☒ Wrexham

3. Select area type:
 ☐ Urban
 ☐ Rural
 ☒ All

4. Select road type:
 ☐ Motorway
 ☐ Trunk
 ☐ Principal
 ☐ Minor
 ☒ All

5. Select which area it serves:
 ☒ Region
 ☐ England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
Authority	Wrexham	1.1238



Calculation Reference: AUDIT-506501-190729-0704

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
 Category : D - FAST FOOD - DRIVE THROUGH
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	SO SLOUGH	1 days
03	SOUTH WEST	
	BR BRISTOL CITY	1 days
	DC DORSET	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	NR NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
10	WALES	
	CO CONWY	1 days
11	SCOTLAND	
	EB CITY OF EDINBURGH	1 days
	FI FIFE	2 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 210 to 498 (units: sqm)
 Range Selected by User: 182 to 500 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 19/09/17

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:

Monday	1 days
Tuesday	5 days
Wednesday	2 days
Thursday	2 days
Friday	1 days

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

Selected survey types:

Manual count	11 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:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	4
Neighbourhood Centre (PPS6 Local Centre)	2

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:

Industrial Zone	2
Commercial Zone	1
Development Zone	1
Residential Zone	3
Out of Town	1
High Street	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.

Secondary Filtering selection:

Use Class:

A3	10 days
A5	1 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:

5,001 to 10,000	5 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:

25,001 to 50,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	4 days
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:

0.6 to 1.0	5 days
1.1 to 1.5	6 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:

Not Known	1 days
No	10 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.

PTAL Rating:

No PTAL Present	11 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BR-06-D-01 SHEENE ROAD BRISTOL BEDMINSTER Neighbourhood Centre (PPS6 Local Centre) High Street Total Gross floor area: Survey date: MONDAY	MCDONALD'S 210 sqm 21/09/15	BRISTOL CITY Survey Type: MANUAL
2	CA-06-D-02 NEWMARKET ROAD CAMBRIDGE Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: Survey date: TUESDAY	MCDONALD'S 435 sqm 19/09/17	CAMBRIDGESHIRE Survey Type: MANUAL
3	CO-06-D-01 RHUDDLAN ROAD ABERGELE Edge of Town Out of Town Total Gross floor area: Survey date: FRIDAY	MCDONALD'S 410 sqm 21/10/11	CONWY Survey Type: MANUAL
4	DC-06-D-01 SOMERFORD ROAD CHRISTCHURCH SOMERFORD Neighbourhood Centre (PPS6 Local Centre) Industrial Zone Total Gross floor area: Survey date: THURSDAY	MCDONALD'S 498 sqm 09/10/03	DORSET Survey Type: MANUAL
5	EB-06-D-01 GYLEMUIR ROAD EDINBURGH Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: Survey date: WEDNESDAY	MCDONALD'S 475 sqm 18/06/08	CITY OF EDINBURGH Survey Type: MANUAL
6	FI-06-D-01 FLEMINGTON ROAD GLENROTHES QUEENSWAY Suburban Area (PPS6 Out of Centre) Industrial Zone Total Gross floor area: Survey date: TUESDAY	MCDONALD'S 283 sqm 26/06/01	FIFE Survey Type: MANUAL
7	FI-06-D-02 WHIMBREL PLACE DUNFERMLINE HALBEATH Edge of Town Development Zone Total Gross floor area: Survey date: TUESDAY	KFC 275 sqm 22/03/16	FIFE Survey Type: MANUAL
8	NR-06-D-01 MARQUEE DRIVE NORTHAMPTON Edge of Town Commercial Zone Total Gross floor area: Survey date: TUESDAY	MCDONALD'S 220 sqm 22/05/07	NORTHAMPTONSHIRE Survey Type: MANUAL
9	SO-06-D-01 WINDSOR ROAD SLOUGH Edge of Town Residential Zone Total Gross floor area: Survey date: WEDNESDAY	MCDONALD'S 480 sqm 21/11/12	SLOUGH Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	SY-06-D-01	KFC		SOUTH YORKSHIRE
	WAKEFIELD ROAD			
	BARNSELY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Gross floor area:	360 sqm		
	Survey date: THURSDAY	10/04/03		Survey Type: MANUAL
11	WM-06-D-01	BURGER KING		WEST MIDLANDS
	KINGSBURY ROAD			
	BIRMINGHAM			
	ERDINGTON			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Gross floor area:	250 sqm		
	Survey date: TUESDAY	25/11/08		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 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH
VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	480	0.417	1	480	0.000	1	480	0.417
06:00 - 07:00	2	445	3.708	2	445	2.921	2	445	6.629
07:00 - 08:00	7	362	6.703	7	362	5.481	7	362	12.184
08:00 - 09:00	7	362	10.607	7	362	10.016	7	362	20.623
09:00 - 10:00	8	348	9.548	8	348	9.620	8	348	19.168
10:00 - 11:00	10	354	8.145	10	354	8.314	10	354	16.459
11:00 - 12:00	11	354	9.189	11	354	8.162	11	354	17.351
12:00 - 13:00	11	354	16.735	11	354	15.400	11	354	32.135
13:00 - 14:00	11	354	14.091	11	354	15.452	11	354	29.543
14:00 - 15:00	11	354	9.189	11	354	10.601	11	354	19.790
15:00 - 16:00	11	354	10.344	11	354	9.292	11	354	19.636
16:00 - 17:00	11	354	11.910	11	354	10.626	11	354	22.536
17:00 - 18:00	11	354	12.603	11	354	12.628	11	354	25.231
18:00 - 19:00	11	354	12.911	11	354	13.527	11	354	26.438
19:00 - 20:00	10	361	10.518	10	361	11.597	10	361	22.115
20:00 - 21:00	10	361	8.193	10	361	8.857	10	361	17.050
21:00 - 22:00	10	361	5.702	10	361	6.034	10	361	11.736
22:00 - 23:00	6	370	3.243	6	370	3.739	6	370	6.982
23:00 - 24:00	2	478	0.733	2	478	1.257	2	478	1.990
Total Rates:			164.489			163.524			328.013

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

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

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Parameter summary

Trip rate parameter range selected:	210 - 498 (units: sqm)
Survey date date range:	01/01/00 - 19/09/17
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
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 TA5 - WCBC Derived Residential Survey/Trip Rate Data

WBC Supplied Survey Data
Kensington Grove - July 2018
34 Dwellings

	Arrivals								Departures								Two-Way																			
	Sat	Sun	Mon	Tue	Wed	Thu	Fri		Sat	Sun	Mon	Tue	Wed	Thu	Fri		Sat	Sun	Mon	Tue	Wed	Thu	Fri		Sat	Sun	Mon	Tue	Wed	Thu	Fri					
Time Range	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	5-day	7-day	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	5-day	7-day	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	5-day	7-day	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul	5-day	7-day
00:00-01:00	2	0	0	1	0	0	0	0.2	0.4	1	0	0	0	1	0	0	0.2	0.3	3	0	0	1	1	0	0	0.4	0.7	3	0	0	1	1	0	0	0.4	0.7
01:00-02:00	0	1	0	1	0	1	0	0.4	0.4	1	1	0	0	1	0	0	0.4	0.6	1	2	0	2	0	2	0	0.8	1.0	1	2	0	2	0	2	0	0.8	1.0
02:00-03:00	0	1	0	0	1	0	0	0.2	0.3	0	1	0	0	0	0	0	0	0.1	0	2	0	0	1	0	0	0.2	0.4	0	2	0	0	1	0	0	0.2	0.4
03:00-04:00	0	0	0	0	1	0	0	0.2	0.1	0	0	0	0	1	0	0	0.2	0.1	0	0	0	0	2	0	0	0.4	0.3	0	0	0	0	2	0	0	0.4	0.3
04:00-05:00	0	0	0	0	0	1	0	0.2	0.1	0	0	0	0	0	1	1	0.4	0.3	0	0	0	0	0	2	1	0.6	0.4	0	0	0	0	2	1	0.6	0.4	
05:00-06:00	1	1	1	0	1	1	0	0.6	0.7	0	0	2	3	4	2	2	2.6	1.9	1	1	3	3	5	3	2	3.2	2.6	1	1	3	3	5	3	2	3.2	2.6
06:00-07:00	1	1	1	0	0	2	1	0.8	0.9	2	1	4	4	2	6	2	3.6	3.0	3	2	5	4	2	8	3	4.4	3.9	3	2	5	4	2	8	3	4.4	3.9
07:00-08:00	1	1	3	5	4	2	3	3.4	2.7	2	2	14	15	15	13	14	14.2	10.7	3	3	17	20	19	15	17	17.6	13.4	3	3	17	20	19	15	17	17.6	13.4
08:00-09:00	2	2	3	2	3	8	5	4.2	3.6	10	2	12	13	23	19	14	16.2	13.3	12	4	15	15	26	27	19	20.4	16.9	12	4	15	15	26	27	19	20.4	16.9
09:00-10:00	6	3	5	6	7	7	7	6.4	5.9	11	12	9	7	10	11	10	9.4	10.0	17	15	14	13	17	18	17	15.8	15.9	17	15	14	13	17	18	17	15.8	15.9
10:00-11:00	3	11	11	5	3	7	3	5.8	6.1	5	9	8	7	4	6	8	6.6	6.7	8	20	19	12	7	13	11	12.4	12.9	8	20	19	12	7	13	11	12.4	12.9
11:00-12:00	9	9	8	7	5	9	9	7.6	8.0	12	11	12	5	4	8	5	6.8	8.1	21	20	20	12	9	17	14	14.4	16.1	21	20	20	12	9	17	14	14.4	16.1
12:00-13:00	13	15	8	4	4	7	5	5.6	8.0	10	16	5	5	4	6	8	5.6	7.7	23	31	13	9	8	13	13	11.2	15.7	23	31	13	9	8	13	13	11.2	15.7
13:00-14:00	10	4	7	8	6	3	8	6.4	6.6	11	6	8	6	6	5	7	6.4	7.0	21	10	15	14	12	8	15	12.8	13.6	21	10	15	14	12	8	15	12.8	13.6
14:00-15:00	14	13	13	4	10	8	9	8.8	10.1	12	9	15	12	7	4	9	9.4	9.7	26	22	28	16	17	12	18	18.2	19.9	26	22	28	16	17	12	18	18.2	19.9
15:00-16:00	10	11	9	8	13	13	9	10.4	10.4	7	5	6	7	9	9	5	7.2	6.9	17	16	15	15	22	22	14	17.6	17.3	17	16	15	15	22	22	14	17.6	17.3
16:00-17:00	7	6	10	17	16	14	14	14.2	12.0	8	5	14	5	10	9	7	9	8.3	15	11	24	22	26	23	21	23.2	20.3	15	11	24	22	26	23	21	23.2	20.3
17:00-18:00	5	2	19	11	24	16	12	16.4	12.7	7	3	12	7	13	7	5	8.8	7.7	12	5	31	18	37	23	17	25.2	20.4	12	5	31	18	37	23	17	25.2	20.4
18:00-19:00	7	6	11	15	11	9	13	11.8	10.3	5	9	7	11	6	12	10	9.2	8.6	12	15	18	26	17	21	23	21	18.9	12	15	18	26	17	21	23	21	18.9
19:00-20:00	6	3	9	6	14	10	8	9.4	8.0	2	2	2	5	5	5	9	5.2	4.3	8	5	11	11	19	15	17	14.6	12.3	8	5	11	11	19	15	17	14.6	12.3
20:00-21:00	6	3	3	9	3	11	4	6	5.6	3	3	0	1	4	7	2	2.8	2.9	9	6	3	10	7	18	6	8.8	8.4	9	6	3	10	7	18	6	8.8	8.4
21:00-22:00	1	2	2	7	5	2	3	3.8	3.1	1	0	0	6	8	2	1	3.4	2.6	2	2	2	13	13	4	4	7.2	5.7	2	2	2	13	13	4	4	7.2	5.7
22:00-23:00	4	2	2	2	3	7	4	3.6	3.4	2	0	0	2	2	3	3	2	1.7	6	2	2	4	5	10	7	5.6	5.1	6	2	2	4	5	10	7	5.6	5.1
23:00-24:00	2	1	1	2	1	2	5	2.2	2.0	1	0	0	1	1	0	2	0.8	0.7	3	1	1	3	2	2	7	3	2.7	3	1	1	3	2	2	7	3	2.7
12Hr	87	83	107	92	106	103	97	101.0	96.4	100	89	122	100	111	109	102	108.8	104.7	187	172	229	192	217	212	199	209.8	201.1	187	172	229	192	217	212	199	209.8	201.1
24Hr	110	98	126	120	135	140	122	128.6	121.6	113	97	130	123	139	136	124	130.4	123.1	223	195	256	243	274	276	246	259.0	244.7	223	195	256	243	274	276	246	259.0	244.7

Time Range	Arrival Trip Rates								Departure Trip Rates								Two-Way Trip Rates													
	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Avge	5-day	7-day	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Avge	5-day	7-day	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Avge	5-day	7-day
	07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul				07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul				07-Jul	08-Jul	09-Jul	10-Jul	11-Jul	12-Jul	13-Jul			
00:00-01:00	0.059	0.000	0.000	0.029	0.000	0.000	0.000	0.006	0.013		0.029	0.000	0.000	0.000	0.029	0.000	0.000	0.006	0.008		0.088	0.000	0.000	0.029	0.029	0.000	0.000	0.012	0.021	
01:00-02:00	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.012	0.013		0.029	0.029	0.000	0.029	0.000	0.029	0.000	0.012	0.017		0.029	0.059	0.000	0.059	0.000	0.059	0.000	0.024	0.029	
02:00-03:00	0.000	0.029	0.000	0.000	0.029	0.000	0.000	0.006	0.008		0.000	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.004		0.000	0.059	0.000	0.000	0.029	0.000	0.000	0.006	0.013	
03:00-04:00	0.000	0.000	0.000	0.000	0.029	0.000	0.000	0.006	0.004		0.000	0.000	0.000	0.000	0.029	0.000	0.000	0.006	0.004		0.000	0.000	0.000	0.000	0.059	0.000	0.000	0.012	0.008	
04:00-05:00	0.000	0.000	0.000	0.000	0.000	0.029	0.000	0.006	0.004		0.000	0.000	0.000	0.000	0.000	0.029	0.029	0.012	0.008		0.000	0.000	0.000	0.000	0.000	0.059	0.029	0.018	0.013	
05:00-06:00	0.029	0.029	0.029	0.000	0.029	0.029	0.000	0.018	0.021		0.000	0.000	0.059	0.088	0.118	0.059	0.059	0.076	0.055		0.029	0.029	0.088	0.088	0.147	0.088	0.059	0.094	0.076	
06:00-07:00	0.029	0.029	0.029	0.000	0.000	0.059	0.029	0.024	0.025		0.059	0.029	0.118	0.118	0.059	0.176	0.059	0.106	0.088		0.088	0.059	0.147	0.118	0.059	0.235	0.088	0.129	0.113	
07:00-08:00	0.029	0.029	0.088	0.147	0.118	0.059	0.088	0.100	0.080		0.059	0.059	0.412	0.441	0.441	0.382	0.412	0.418	0.315		0.088	0.088	0.500	0.588	0.559	0.441	0.500	0.518	0.395	
08:00-09:00	0.059	0.059	0.088	0.059	0.088	0.235	0.147	0.124	0.105		0.294	0.059	0.353	0.382	0.676	0.559	0.412	0.476	0.391		0.353	0.118	0.441	0.441	0.765	0.794	0.559	0.600	0.496	
09:00-10:00	0.176	0.088	0.147	0.176	0.206	0.206	0.206	0.188	0.172		0.324	0.353	0.265	0.206	0.294	0.324	0.294	0.276	0.294		0.500	0.441	0.412	0.382	0.500	0.529	0.500	0.465	0.466	
10:00-11:00	0.088	0.324	0.324	0.147	0.088	0.206	0.088	0.171	0.181		0.147	0.265	0.235	0.206	0.118	0.176	0.235	0.194	0.197		0.235	0.588	0.559	0.353	0.206	0.382	0.324	0.365	0.378	
11:00-12:00	0.265	0.265	0.235	0.206	0.147	0.265	0.265	0.224	0.235		0.353	0.324	0.353	0.147	0.118	0.235	0.147	0.200	0.239		0.618	0.588	0.588	0.353	0.265	0.500	0.412	0.424	0.475	
12:00-13:00	0.382	0.441	0.235	0.118	0.118	0.206	0.147	0.165	0.235		0.294	0.471	0.147	0.147	0.118	0.176	0.235	0.165	0.227		0.676	0.912	0.382	0.265	0.235	0.382	0.382	0.329	0.462	
13:00-14:00	0.294	0.118	0.206	0.235	0.176	0.088	0.235	0.188	0.193		0.324	0.176	0.235	0.176	0.176	0.147	0.206	0.188	0.206		0.618	0.294	0.441	0.412	0.353	0.235	0.441	0.376	0.399	
14:00-15:00	0.412	0.382	0.382	0.118	0.294	0.235	0.265	0.259	0.298		0.353	0.265	0.441	0.353	0.206	0.118	0.265	0.276	0.286		0.765	0.647	0.824	0.471	0.500	0.353	0.529	0.535	0.584	
15:00-16:00	0.294	0.324	0.265	0.235	0.382	0.382	0.265	0.306	0.307		0.206	0.147	0.176	0.206	0.265	0.265	0.147	0.212	0.202		0.500	0.471	0.441	0.441	0.647	0.647	0.412	0.518	0.508	
16:00-17:00	0.206	0.176	0.294	0.500	0.471	0.412	0.412	0.418	0.353		0.235	0.147	0.412	0.147	0.294	0.265	0.206	0.265	0.244		0.441	0.324	0.706	0.647	0.765	0.676	0.618	0.682	0.597	
17:00-18:00	0.147	0.059	0.559	0.324	0.706	0.471	0.353	0.482	0.374		0.206	0.088	0.353	0.206	0.382	0.206	0.147	0.259	0.227		0.353	0.147	0.912	0.529	1.088	0.676	0.500	0.741	0.601	
18:00-19:00	0.206	0.176	0.324	0.441	0.324	0.265	0.382	0.347	0.303		0.147	0.265	0.206	0.324	0.176	0.353	0.294	0.271	0.252		0.353	0.441	0.529	0.765	0.500	0.618	0.676	0.618	0.555	
19:00-20:00	0.176	0.088	0.265	0.176	0.412	0.294	0.235	0.276	0.235		0.059	0.059	0.059	0.147	0.147	0.147	0.265	0.153	0.126		0.235	0.147	0.324	0.324	0.559	0.441	0.500	0.429	0.361	
20:00-21:00	0.176	0.088	0.088	0.265	0.088	0.324	0.118	0.176	0.164		0.088	0.088	0.000	0.029	0.118	0.206	0.059	0.082	0.084		0.265	0.176	0.088	0.294	0.206	0.529	0.176	0.259	0.248	
21:00-22:00	0.029	0.059	0.059	0.206	0.147	0.059	0.088	0.112	0.092		0.029	0.000	0.000	0.176	0.235	0.059	0.029	0.100	0.076		0.059	0.059	0.059	0.382	0.382	0.118	0.118	0.212	0.168	
22:00-23:00	0.118	0.059	0.059	0.059	0.088	0.206	0.118	0.106	0.101		0.059	0.000	0.000	0.059	0.059	0.088	0.088	0.059	0.050		0.176	0.059	0.059	0.118	0.147	0.294	0.206	0.165	0.151	
23:00-24:00	0.059	0.029	0.029	0.059	0.029	0.059	0.147	0.065	0.059		0.029	0.000	0.000	0.029	0.029	0.000	0.059	0.024	0.021		0.088	0.029	0.029	0.088	0.059	0.059	0.206	0.088	0.080	
12Hr	2.559	2.441	3.147	2.706	3.118	3.029	2.853	2.971	2.836		2.941	2.618	3.588	2.941	3.265	3.206	3.000	3.200	3.080		5.500	5.059	6.735	5.647	6.382	6.235	5.853	6.171	5.916	
24Hr	3.235	2.882	3.706	3.529	3.971	4.118	3.583	3.782	3.576		3.324	2.853	3.824	3.618	4.088	4.000	3.647	3.835	3.622		6.559	5.735	7.529	7.147	8.059	8.118	7.235	7.618	7.197	



Junctions 9										
PICADY 9 - Priority Intersection Module										
Version: 9.5.1.7462										
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Filename: New Rd_Stansty Rd_Final.j9

Path: C:\Data\Projects\J000051-J000100\J000069 Stansty Residential, Wrexham\Background Information\Junction Assessments\New Rd

Report generation date: 04/10/2019 13:02:06

- »2019 Survey, AM
- »2019 Survey, PM
- »2024 Base, AM
- »2024 Base, PM
- »2030 Base, AM
- »2030 Base, PM
- »2024 Base + Dev, AM
- »2024 Base + Dev, PM
- »2030 Base + Dev, AM
- »2030 Base + Dev, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2019 Survey									
Stream B-C	D1	1.1	11.79	0.51	B	D2	2.2	21.00	0.70	C
Stream B-A		0.7	16.41	0.42	C		0.7	20.37	0.42	C
Stream C-AB		0.7	8.11	0.39	A		1.2	11.64	0.52	B
	2024 Base									
Stream B-C	D3	1.5	15.66	0.61	C	D4	3.9	34.87	0.81	D
Stream B-A		1.4	24.86	0.60	C		1.2	30.71	0.56	D
Stream C-AB		0.8	8.70	0.43	A		1.8	14.07	0.61	B
	2030 Base									
Stream B-C	D5	1.9	18.57	0.66	C	D6	6.8	58.70	0.90	F
Stream B-A		1.8	30.95	0.66	D		1.8	42.03	0.65	E
Stream C-AB		0.9	9.12	0.46	A		2.3	15.83	0.66	C
	2024 Base + Dev									
Stream B-C	D7	1.8	17.16	0.64	C	D8	4.6	40.23	0.84	E
Stream B-A		1.6	26.65	0.62	D		1.4	34.23	0.60	D
Stream C-AB		0.8	8.79	0.44	A		2.0	14.99	0.64	B
	2030 Base + Dev									
Stream B-C	D9	3.0	26.05	0.76	D	D10	13.8	106.32	0.99	F
Stream B-A		2.6	40.04	0.74	E		2.9	66.50	0.77	F
Stream C-AB		1.0	9.37	0.48	A		3.6	19.89	0.75	C

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

File summary

File Description

Title	New Road/Stansty Road
Location	Wrexham
Site number	
Date	12/08/2019
Version	
Status	Planning
Identifier	
Client	Russell Homes Ltd
Jobnumber	J000069
Enumerator	FTPDT-01\Office
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:30	09:00	15	✓
D2	2019 Survey	PM	ONE HOUR	16:30	18:00	15	✓
D3	2024 Base	AM	ONE HOUR	07:30	09:00	15	✓
D4	2024 Base	PM	ONE HOUR	16:30	18:00	15	✓
D5	2030 Base	AM	ONE HOUR	07:30	09:00	15	✓
D6	2030 Base	PM	ONE HOUR	16:30	18:00	15	✓
D7	2024 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓
D8	2024 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓
D9	2030 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓
D10	2030 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

Analysis Set Details

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

2019 Survey, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rhosddu Road		Major
B	Stansty Road		Minor
C	New Road		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.00		✓	3.40	250.0	✓	3.00

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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	5.00	4.93	175	65

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	678	0.118	0.298	0.188	0.426
B-C	798	0.117	0.296	-	-
C-B	813	0.301	0.301	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	310	100.000
B		ONE HOUR	✓	439	100.000
C		ONE HOUR	✓	669	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	82	228
	B	147	0	292
	C	422	247	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	5
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.51	11.79	1.1	B	271	406
B-A	0.42	16.41	0.7	C	135	202
C-AB	0.39	8.11	0.7	A	234	351
C-A					390	584
A-B					75	113
A-C					220	330

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	222	56	695	0.320	220	0.0	0.5	7.635	A
B-A	111	28	476	0.233	109	0.0	0.3	9.799	A
C-AB	189	47	745	0.254	188	0.0	0.3	6.508	A
C-A	323	81			323				
A-B	62	15			62				
A-C	180	45			180				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	265	66	670	0.396	264	0.5	0.7	8.943	A
B-A	132	33	436	0.303	132	0.3	0.4	11.810	B
C-AB	228	57	737	0.309	227	0.3	0.5	7.125	A
C-A	383	96			383				
A-B	74	18			74				
A-C	215	54			215				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	325	81	633	0.513	323	0.7	1.0	11.659	B
B-A	162	40	382	0.424	161	0.4	0.7	16.215	C
C-AB	286	71	735	0.389	285	0.5	0.7	8.077	A
C-A	463	116			463				
A-B	90	23			90				
A-C	264	66			264				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	325	81	633	0.513	325	1.0	1.1	11.792	B
B-A	162	40	381	0.425	162	0.7	0.7	16.405	C
C-AB	286	71	735	0.389	286	0.7	0.7	8.106	A
C-A	463	116			463				
A-B	90	23			90				
A-C	264	66			264				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	265	66	669	0.396	267	1.0	0.7	9.059	A
B-A	132	33	435	0.304	133	0.7	0.4	11.959	B
C-AB	228	57	738	0.309	229	0.7	0.5	7.159	A
C-A	383	96			383				
A-B	74	18			74				
A-C	215	54			215				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	222	56	694	0.320	223	0.7	0.5	7.733	A
B-A	111	28	475	0.233	111	0.4	0.3	9.912	A
C-AB	189	47	745	0.254	190	0.5	0.3	6.552	A
C-A	323	81			323				
A-B	62	15			62				
A-C	180	45			180				

2019 Survey, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Survey	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	655	100.000
B		ONE HOUR	✓	471	100.000
C		ONE HOUR	✓	620	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	235	420
	B	115	0	356
	C	339	281	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.70	21.00	2.2	C	327	490
B-A	0.42	20.37	0.7	C	106	158
C-AB	0.52	11.64	1.2	B	271	406
C-A					301	452
A-B					217	325
A-C					389	584

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	268	67	648	0.414	265	0.0	0.7	9.345	A
B-A	87	22	423	0.205	86	0.0	0.3	10.642	B
C-AB	214	54	671	0.319	212	0.0	0.5	7.815	A
C-A	255	64			255				
A-B	178	44			178				
A-C	319	80			319				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	320	80	614	0.521	319	0.7	1.1	12.118	B
B-A	103	26	373	0.277	103	0.3	0.4	13.325	B
C-AB	260	65	653	0.399	260	0.5	0.7	9.128	A
C-A	300	75			300				
A-B	212	53			212				
A-C	381	95			381				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	392	98	563	0.696	388	1.1	2.1	20.029	C
B-A	127	32	304	0.417	125	0.4	0.7	20.027	C
C-AB	337	84	647	0.521	335	0.7	1.1	11.510	B
C-A	349	87			349				
A-B	260	65			260				
A-C	467	117			467				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	392	98	562	0.697	392	2.1	2.2	20.997	C
B-A	127	32	303	0.418	127	0.7	0.7	20.372	C
C-AB	337	84	647	0.521	337	1.1	1.2	11.644	B
C-A	349	87			349				
A-B	260	65			260				
A-C	467	117			467				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	320	80	613	0.522	324	2.2	1.1	12.645	B
B-A	103	26	371	0.278	105	0.7	0.4	13.550	B
C-AB	260	65	654	0.398	262	1.2	0.7	9.254	A
C-A	300	75			300				
A-B	212	53			212				
A-C	381	95			381				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	268	67	647	0.414	270	1.1	0.7	9.579	A
B-A	87	22	422	0.205	87	0.4	0.3	10.778	B
C-AB	214	54	671	0.319	215	0.7	0.5	7.908	A
C-A	255	64			255				
A-B	178	44			178				
A-C	319	80			319				

2024 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2024 Base	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	339	100.000
B		ONE HOUR	✓	521	100.000
C		ONE HOUR	✓	718	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	98	241
	B	194	0	327
	C	447	271	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	5
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.61	15.66	1.5	C	303	455
B-A	0.60	24.86	1.4	C	178	267
C-AB	0.43	8.70	0.8	A	260	390
C-A					410	614
A-B					90	135
A-C					232	348

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	249	62	675	0.368	246	0.0	0.6	8.441	A
B-A	146	37	460	0.318	144	0.0	0.5	11.345	B
C-AB	208	52	741	0.281	207	0.0	0.4	6.788	A
C-A	341	85			341				
A-B	74	18			74				
A-C	191	48			191				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	297	74	644	0.461	296	0.6	0.8	10.403	B
B-A	174	44	417	0.418	173	0.5	0.7	14.726	B
C-AB	252	63	735	0.343	251	0.4	0.5	7.518	A
C-A	404	101			404				
A-B	88	22			88				
A-C	227	57			227				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	364	91	597	0.609	361	0.8	1.5	15.243	C
B-A	214	53	358	0.596	211	0.7	1.4	23.986	C
C-AB	319	80	738	0.433	318	0.5	0.8	8.654	A
C-A	484	121			484				
A-B	108	27			108				
A-C	279	70			279				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	364	91	595	0.611	363	1.5	1.5	15.658	C
B-A	214	53	358	0.597	213	1.4	1.4	24.861	C
C-AB	319	80	738	0.433	319	0.8	0.8	8.696	A
C-A	484	121			484				
A-B	108	27			108				
A-C	279	70			279				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	297	74	642	0.462	300	1.5	0.9	10.683	B
B-A	174	44	416	0.419	177	1.4	0.7	15.228	C
C-AB	252	63	735	0.343	253	0.8	0.5	7.570	A
C-A	404	101			404				
A-B	88	22			88				
A-C	227	57			227				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	249	62	674	0.369	250	0.9	0.6	8.605	A
B-A	146	37	459	0.318	147	0.7	0.5	11.586	B
C-AB	208	52	741	0.281	209	0.5	0.4	6.841	A
C-A	341	85			341				
A-B	74	18			74				
A-C	191	48			191				

2024 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		11.63	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2024 Base	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	731	100.000
B		ONE HOUR	✓	524	100.000
C		ONE HOUR	✓	674	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	286	445
	B	137	0	387
	C	359	315	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.81	34.87	3.9	D	355	533
B-A	0.56	30.71	1.2	D	126	189
C-AB	0.61	14.07	1.8	B	314	471
C-A					308	462
A-B					262	394
A-C					412	619

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	291	73	629	0.463	288	0.0	0.8	10.449	B
B-A	103	26	399	0.259	102	0.0	0.3	12.060	B
C-AB	242	61	659	0.367	240	0.0	0.6	8.537	A
C-A	268	67			268				
A-B	215	54			215				
A-C	338	85			338				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	348	87	590	0.590	346	0.8	1.4	14.622	B
B-A	123	31	344	0.358	122	0.3	0.5	16.191	C
C-AB	298	74	645	0.462	297	0.6	0.9	10.301	B
C-A	311	78			311				
A-B	257	64			257				
A-C	404	101			404				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	426	107	527	0.808	417	1.4	3.6	30.549	D
B-A	151	38	269	0.562	148	0.5	1.2	29.296	D
C-AB	402	101	659	0.610	399	0.9	1.7	13.741	B
C-A	344	86			344				
A-B	315	79			315				
A-C	495	124			495				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	426	107	525	0.811	425	3.6	3.9	34.874	D
B-A	151	38	267	0.564	151	1.2	1.2	30.711	D
C-AB	402	101	659	0.610	402	1.7	1.8	14.073	B
C-A	344	86			344				
A-B	315	79			315				
A-C	495	124			495				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	348	87	588	0.592	357	3.9	1.5	16.231	C
B-A	123	31	342	0.360	126	1.2	0.6	16.842	C
C-AB	298	74	646	0.461	301	1.8	0.9	10.573	B
C-A	311	78			311				
A-B	257	64			257				
A-C	404	101			404				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	291	73	628	0.464	294	1.5	0.9	10.848	B
B-A	103	26	397	0.260	104	0.6	0.4	12.308	B
C-AB	242	61	659	0.367	243	0.9	0.6	8.686	A
C-A	268	67			268				
A-B	215	54			215				
A-C	338	85			338				

2030 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		9.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030 Base	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	359	100.000
B		ONE HOUR	✓	548	100.000
C		ONE HOUR	✓	760	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	103	256
	B	203	0	345
	C	473	287	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	5
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.66	18.57	1.9	C	320	480
B-A	0.66	30.95	1.8	D	186	279
C-AB	0.46	9.12	0.9	A	278	417
C-A					431	646
A-B					95	142
A-C					247	370

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	262	66	667	0.393	260	0.0	0.6	8.879	A
B-A	153	38	447	0.342	151	0.0	0.5	12.077	B
C-AB	221	55	738	0.300	220	0.0	0.4	6.986	A
C-A	360	90			360				
A-B	78	19			78				
A-C	202	51			202				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	313	78	633	0.495	312	0.6	1.0	11.264	B
B-A	182	46	401	0.455	181	0.5	0.8	16.265	C
C-AB	269	67	734	0.366	268	0.4	0.6	7.798	A
C-A	426	106			426				
A-B	93	23			93				
A-C	242	60			242				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	384	96	581	0.661	380	1.0	1.9	17.806	C
B-A	224	56	339	0.659	220	0.8	1.8	29.209	D
C-AB	344	86	743	0.463	343	0.6	0.9	9.067	A
C-A	506	127			506				
A-B	113	28			113				
A-C	296	74			296				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	384	96	579	0.663	383	1.9	1.9	18.571	C
B-A	224	56	339	0.660	223	1.8	1.8	30.953	D
C-AB	344	86	743	0.463	344	0.9	0.9	9.123	A
C-A	506	127			506				
A-B	113	28			113				
A-C	296	74			296				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	313	78	631	0.497	317	1.9	1.0	11.709	B
B-A	182	46	401	0.456	186	1.8	0.9	17.099	C
C-AB	269	67	734	0.366	270	0.9	0.6	7.862	A
C-A	426	106			426				
A-B	93	23			93				
A-C	242	60			242				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	262	66	665	0.394	264	1.0	0.7	9.088	A
B-A	153	38	446	0.343	154	0.9	0.5	12.396	B
C-AB	221	55	739	0.300	222	0.6	0.4	7.049	A
C-A	360	90			360				
A-B	78	19			78				
A-C	202	51			202				

2030 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		17.57	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030 Base	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	773	100.000
B		ONE HOUR	✓	554	100.000
C		ONE HOUR	✓	714	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	301	472
	B	144	0	410
	C	381	333	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.90	58.70	6.8	F	376	564
B-A	0.65	42.03	1.8	E	132	198
C-AB	0.66	15.83	2.3	C	342	513
C-A					317	475
A-B					276	414
A-C					437	656

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	309	77	618	0.499	305	0.0	1.0	11.352	B
B-A	108	27	383	0.283	107	0.0	0.4	12.986	B
C-AB	258	64	654	0.394	255	0.0	0.7	8.972	A
C-A	283	71			283				
A-B	227	57			227				
A-C	359	90			359				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	369	92	575	0.641	366	1.0	1.7	16.955	C
B-A	129	32	324	0.399	128	0.4	0.6	18.288	C
C-AB	321	80	644	0.497	319	0.7	1.0	11.030	B
C-A	325	81			325				
A-B	271	68			271				
A-C	429	107			429				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	451	113	504	0.895	435	1.7	5.7	44.363	E
B-A	159	40	244	0.649	155	0.6	1.7	38.464	E
C-AB	447	112	677	0.661	443	1.0	2.2	15.262	C
C-A	343	86			343				
A-B	331	83			331				
A-C	525	131			525				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	451	113	501	0.901	447	5.7	6.8	58.705	F
B-A	159	40	243	0.653	158	1.7	1.8	42.031	E
C-AB	447	112	677	0.661	447	2.2	2.3	15.827	C
C-A	343	86			343				
A-B	331	83			331				
A-C	525	131			525				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	369	92	572	0.645	388	6.8	1.9	21.460	C
B-A	129	32	322	0.402	134	1.8	0.7	19.542	C
C-AB	321	80	645	0.497	325	2.3	1.1	11.463	B
C-A	325	81			325				
A-B	271	68			271				
A-C	429	107			429				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	309	77	617	0.500	312	1.9	1.0	11.953	B
B-A	108	27	381	0.285	110	0.7	0.4	13.328	B
C-AB	258	64	654	0.394	259	1.1	0.7	9.164	A
C-A	283	71			283				
A-B	227	57			227				
A-C	359	90			359				

2024 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		8.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2024 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	341	100.000
B		ONE HOUR	✓	542	100.000
C		ONE HOUR	✓	722	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	100	241
	B	201	0	341
	C	447	275	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	5
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.64	17.16	1.8	C	316	474
B-A	0.62	26.65	1.6	D	184	277
C-AB	0.44	8.79	0.8	A	264	396
C-A					409	614
A-B					92	138
A-C					232	348

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	259	65	672	0.386	257	0.0	0.6	8.699	A
B-A	151	38	458	0.330	149	0.0	0.5	11.582	B
C-AB	211	53	741	0.285	210	0.0	0.4	6.828	A
C-A	341	85			341				
A-B	75	19			75				
A-C	191	48			191				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	310	77	641	0.483	308	0.6	0.9	10.893	B
B-A	181	45	415	0.435	180	0.5	0.7	15.218	C
C-AB	256	64	735	0.348	255	0.4	0.5	7.577	A
C-A	404	101			404				
A-B	90	22			90				
A-C	227	57			227				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	379	95	592	0.641	376	0.9	1.7	16.588	C
B-A	221	55	356	0.622	218	0.7	1.5	25.546	D
C-AB	325	81	739	0.440	324	0.5	0.8	8.742	A
C-A	483	121			483				
A-B	110	28			110				
A-C	279	70			279				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	379	95	590	0.642	379	1.7	1.8	17.163	C
B-A	221	55	356	0.622	221	1.5	1.6	26.653	D
C-AB	325	81	739	0.440	325	0.8	0.8	8.787	A
C-A	483	121			483				
A-B	110	28			110				
A-C	279	70			279				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	310	77	639	0.485	313	1.8	1.0	11.253	B
B-A	181	45	414	0.436	184	1.6	0.8	15.817	C
C-AB	256	64	735	0.348	257	0.8	0.6	7.631	A
C-A	404	101			404				
A-B	90	22			90				
A-C	227	57			227				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	259	65	671	0.386	261	1.0	0.6	8.889	A
B-A	151	38	457	0.331	152	0.8	0.5	11.852	B
C-AB	211	53	741	0.285	212	0.6	0.4	6.887	A
C-A	341	85			341				
A-B	75	19			75				
A-C	191	48			191				

2024 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		13.27	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2024 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	738	100.000
B		ONE HOUR	✓	536	100.000
C		ONE HOUR	✓	688	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	293	445
	B	141	0	395
	C	359	329	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.84	40.23	4.6	E	362	544
B-A	0.60	34.23	1.4	D	129	194
C-AB	0.64	14.99	2.0	B	332	498
C-A					303	454
A-B					269	403
A-C					412	619

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	297	74	627	0.474	294	0.0	0.9	10.702	B
B-A	106	27	394	0.270	105	0.0	0.4	12.391	B
C-AB	254	63	660	0.384	251	0.0	0.6	8.761	A
C-A	267	67			267				
A-B	221	55			221				
A-C	338	85			338				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	355	89	586	0.606	353	0.9	1.5	15.259	C
B-A	127	32	338	0.375	126	0.4	0.6	16.924	C
C-AB	314	78	648	0.484	312	0.6	1.0	10.682	B
C-A	308	77			308				
A-B	263	66			263				
A-C	404	101			404				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	435	109	521	0.834	424	1.5	4.1	33.998	D
B-A	155	39	261	0.595	152	0.6	1.4	32.218	D
C-AB	429	107	671	0.640	425	1.0	2.0	14.552	B
C-A	332	83			332				
A-B	323	81			323				
A-C	495	124			495				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	435	109	519	0.838	433	4.1	4.6	40.227	E
B-A	155	39	260	0.598	155	1.4	1.4	34.227	D
C-AB	429	107	671	0.640	429	2.0	2.0	14.994	B
C-A	332	83			332				
A-B	323	81			323				
A-C	495	124			495				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	355	89	584	0.608	367	4.6	1.6	17.406	C
B-A	127	32	336	0.378	130	1.4	0.6	17.758	C
C-AB	314	78	649	0.483	318	2.0	1.0	11.030	B
C-A	308	77			308				
A-B	263	66			263				
A-C	404	101			404				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	297	74	626	0.475	300	1.6	0.9	11.156	B
B-A	106	27	392	0.271	107	0.6	0.4	12.673	B
C-AB	254	63	660	0.384	255	1.0	0.7	8.933	A
C-A	267	67			267				
A-B	221	55			221				
A-C	338	85			338				

2030 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		12.41	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	364	100.000
B		ONE HOUR	✓	606	100.000
C		ONE HOUR	✓	770	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	108	256
	B	223	0	383
	C	473	297	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	5
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.76	26.05	3.0	D	355	532
B-A	0.74	40.04	2.6	E	205	307
C-AB	0.48	9.37	1.0	A	289	434
C-A					429	643
A-B					99	149
A-C					247	370

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	291	73	660	0.442	288	0.0	0.8	9.707	A
B-A	168	42	443	0.379	166	0.0	0.6	12.856	B
C-AB	229	57	738	0.311	228	0.0	0.5	7.094	A
C-A	360	90			360				
A-B	81	20			81				
A-C	202	51			202				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	348	87	624	0.557	346	0.8	1.2	12.998	B
B-A	200	50	397	0.505	199	0.6	1.0	18.033	C
C-AB	279	70	735	0.380	278	0.5	0.6	7.952	A
C-A	424	106			424				
A-B	97	24			97				
A-C	242	60			242				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	426	106	566	0.752	420	1.2	2.8	23.835	C
B-A	246	61	334	0.736	240	1.0	2.4	36.266	E
C-AB	359	90	748	0.480	358	0.6	1.0	9.307	A
C-A	502	126			502				
A-B	119	30			119				
A-C	296	74			296				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	426	106	563	0.756	425	2.8	3.0	26.050	D
B-A	246	61	333	0.737	245	2.4	2.6	40.036	E
C-AB	359	90	748	0.480	359	1.0	1.0	9.374	A
C-A	502	126			502				
A-B	119	30			119				
A-C	296	74			296				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	348	87	620	0.561	354	3.0	1.3	13.994	B
B-A	200	50	396	0.506	207	2.6	1.1	19.551	C
C-AB	279	70	735	0.379	280	1.0	0.6	8.028	A
C-A	424	106			424				
A-B	97	24			97				
A-C	242	60			242				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	291	73	658	0.443	293	1.3	0.8	10.032	B
B-A	168	42	442	0.380	170	1.1	0.6	13.295	B
C-AB	229	57	739	0.311	230	0.6	0.5	7.163	A
C-A	360	90			360				
A-B	81	20			81				
A-C	202	51			202				

2030 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		30.28	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2030 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	793	100.000
B		ONE HOUR	✓	586	100.000
C		ONE HOUR	✓	752	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	321	472
	B	155	0	431
	C	381	371	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.99	106.32	13.8	F	395	593
B-A	0.77	66.50	2.9	F	142	213
C-AB	0.75	19.89	3.6	C	399	598
C-A					295	442
A-B					295	442
A-C					437	656

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	324	81	611	0.531	320	0.0	1.1	12.198	B
B-A	117	29	369	0.317	115	0.0	0.5	14.092	B
C-AB	290	73	657	0.442	287	0.0	0.8	9.671	A
C-A	279	70			279				
A-B	242	60			242				
A-C	359	90			359				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	387	97	564	0.687	384	1.1	2.1	19.515	C
B-A	139	35	307	0.454	138	0.5	0.8	21.091	C
C-AB	367	92	657	0.559	365	0.8	1.3	12.288	B
C-A	312	78			312				
A-B	289	72			289				
A-C	429	107			429				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	475	119	484	0.980	445	2.1	9.5	65.010	F
B-A	171	43	223	0.764	164	0.8	2.6	54.816	F
C-AB	539	135	723	0.746	531	1.3	3.4	18.481	C
C-A	293	73			293				
A-B	353	88			353				
A-C	525	131			525				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	475	119	478	0.992	458	9.5	13.8	106.322	F
B-A	171	43	221	0.773	169	2.6	2.9	66.502	F
C-AB	539	135	723	0.745	538	3.4	3.6	19.890	C
C-A	293	73			293				
A-B	353	88			353				
A-C	525	131			525				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	387	97	558	0.694	433	13.8	2.5	36.686	E
B-A	139	35	303	0.459	147	2.9	0.9	24.176	C
C-AB	367	92	658	0.559	376	3.6	1.5	13.223	B
C-A	312	78			312				
A-B	289	72			289				
A-C	429	107			429				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	324	81	609	0.533	330	2.5	1.2	13.110	B
B-A	117	29	366	0.319	118	0.9	0.5	14.615	B
C-AB	290	73	657	0.442	293	1.5	0.8	9.966	A
C-A	279	70			279				
A-B	242	60			242				
A-C	359	90			359				

Junctions 9										
PICADY 9 - Priority Intersection Module										
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Filename: Plas Coch_Stansty Rd_Final.j9

Path: C:\Data\Projects\J000051-J000100\J000069 Stansty Residential, Wrexham\Background Information\Junction Assessments\Plas Coch_Stansty

Report generation date: 04/10/2019 16:58:58

- »2019 Survey, AM
- »2019 Survey, PM
- »2024 Base, AM
- »2024 Base, PM
- »2030 Base, AM
- »2030 Base, PM
- »2024 Base + Dev, AM
- »2024 Base + Dev, PM
- »2030 Base + Dev, AM
- »2030 Base + Dev, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2019 Survey									
Stream B-AC	D1	0.7	10.58	0.43	B	D2	0.2	7.85	0.18	A
Stream C-AB		0.3	5.89	0.16	A		0.2	4.77	0.09	A
	2024 Base									
Stream B-AC	D3	0.9	12.18	0.48	B	D4	0.3	8.47	0.20	A
Stream C-AB		0.4	5.98	0.18	A		0.2	4.60	0.11	A
	2030 Base									
Stream B-AC	D5	1.0	13.26	0.51	B	D6	0.3	8.86	0.22	A
Stream C-AB		0.4	5.98	0.19	A		0.3	4.56	0.12	A
	2024 Base + Dev									
Stream B-AC	D7	1.2	13.79	0.54	B	D8	0.3	8.99	0.24	A
Stream C-AB		0.4	6.04	0.19	A		0.5	4.81	0.18	A
	2030 Base + Dev									
Stream B-AC	D9	1.8	18.25	0.65	C	D10	0.4	10.23	0.31	B
Stream C-AB		0.5	6.31	0.23	A		1.0	5.58	0.32	A

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

File summary

File Description

Title	Plas Coch Road/Stansty Road
Location	Wrexham
Site number	
Date	12/08/2019
Version	
Status	Planning
Identifier	
Client	Russell Homes Ltd
Jobnumber	J000069
Enumerator	FTPDT-01\Office
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:30	09:00	15	✓
D2	2019 Survey	PM	ONE HOUR	16:30	18:00	15	✓
D3	2024 Base	AM	ONE HOUR	07:30	09:00	15	✓
D4	2024 Base	PM	ONE HOUR	16:30	18:00	15	✓
D5	2030 Base	AM	ONE HOUR	07:30	09:00	15	✓
D6	2030 Base	PM	ONE HOUR	16:30	18:00	15	✓
D7	2024 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓
D8	2024 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓
D9	2030 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓
D10	2030 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

Analysis Set Details

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

2019 Survey, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Plas Coch Road		Major
B	Stansty Road W		Minor
C	Stansty Road E		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.05			84.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	4.80	91	88

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	651	0.113	0.286	0.180	0.409
B-C	802	0.117	0.296	-	-
C-B	623	0.230	0.230	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	348	100.000
B		ONE HOUR	✓	230	100.000
C		ONE HOUR	✓	315	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	76	272
	B	84	0	146
	C	252	63	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	0
	B	1	0	1
	C	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.43	10.58	0.7	B	213	320
C-AB	0.16	5.89	0.3	A	88	132
C-A					202	302
A-B					70	105
A-C					250	374

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	175	44	645	0.271	173	0.0	0.4	7.689	A
C-AB	66	16	693	0.095	65	0.0	0.2	5.777	A
C-A	172	43			172				
A-B	57	14			57				
A-C	205	51			205				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	209	52	626	0.334	208	0.4	0.5	8.697	A
C-AB	84	21	708	0.119	84	0.2	0.2	5.815	A
C-A	199	50			199				
A-B	68	17			68				
A-C	245	61			245				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	256	64	599	0.427	255	0.5	0.7	10.523	B
C-AB	113	28	730	0.155	113	0.2	0.3	5.879	A
C-A	234	59			234				
A-B	84	21			84				
A-C	299	75			299				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	256	64	599	0.427	256	0.7	0.7	10.581	B
C-AB	114	28	730	0.156	113	0.3	0.3	5.886	A
C-A	234	59			234				
A-B	84	21			84				
A-C	299	75			299				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	209	52	626	0.334	210	0.7	0.5	8.759	A
C-AB	84	21	708	0.119	85	0.3	0.2	5.821	A
C-A	199	50			199				
A-B	68	17			68				
A-C	245	61			245				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	175	44	645	0.271	175	0.5	0.4	7.756	A
C-AB	66	17	693	0.096	66	0.2	0.2	5.792	A
C-A	171	43			171				
A-B	57	14			57				
A-C	205	51			205				

2019 Survey, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Survey	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	388	100.000
B		ONE HOUR	✓	93	100.000
C		ONE HOUR	✓	495	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	24	364
	B	33	0	60
	C	464	31	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	7.85	0.2	A	85	128
C-AB	0.09	4.77	0.2	A	60	89
C-A					395	592
A-B					22	33
A-C					337	506

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	18	620	0.113	70	0.0	0.1	6.533	A
C-AB	42	10	796	0.052	41	0.0	0.1	4.767	A
C-A	331	83			331				
A-B	18	5			18				
A-C	277	69			277				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	21	596	0.140	83	0.1	0.2	7.028	A
C-AB	56	14	833	0.067	56	0.1	0.1	4.633	A
C-A	389	97			389				
A-B	22	5			22				
A-C	331	83			331				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	26	561	0.183	102	0.2	0.2	7.846	A
C-AB	81	20	886	0.091	81	0.1	0.2	4.474	A
C-A	464	116			464				
A-B	26	7			26				
A-C	405	101			405				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	26	561	0.183	102	0.2	0.2	7.854	A
C-AB	81	20	886	0.092	81	0.2	0.2	4.475	A
C-A	464	116			464				
A-B	26	7			26				
A-C	405	101			405				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	21	595	0.140	84	0.2	0.2	7.038	A
C-AB	56	14	833	0.067	56	0.2	0.1	4.637	A
C-A	389	97			389				
A-B	22	5			22				
A-C	331	83			331				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	18	620	0.113	70	0.2	0.1	6.550	A
C-AB	42	10	797	0.052	42	0.1	0.1	4.773	A
C-A	331	83			331				
A-B	18	5			18				
A-C	277	69			277				

2024 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2024 Base	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	423	100.000
B		ONE HOUR	✓	244	100.000
C		ONE HOUR	✓	355	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	80	343
	B	89	0	155
	C	288	67	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	1	0	1
	C	0	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.48	12.18	0.9	B	226	339
C-AB	0.18	5.98	0.4	A	101	152
C-A					226	339
A-B					73	110
A-C					315	472

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	186	46	625	0.297	184	0.0	0.4	8.208	A
C-AB	75	19	700	0.106	74	0.0	0.2	5.827	A
C-A	194	48			194				
A-B	60	15			60				
A-C	258	65			258				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	222	55	602	0.368	221	0.4	0.6	9.521	A
C-AB	96	24	717	0.134	96	0.2	0.2	5.877	A
C-A	224	56			224				
A-B	72	18			72				
A-C	308	77			308				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	271	68	570	0.476	270	0.6	0.9	12.081	B
C-AB	132	33	742	0.178	131	0.2	0.4	5.975	A
C-A	260	65			260				
A-B	88	22			88				
A-C	378	94			378				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	271	68	570	0.476	271	0.9	0.9	12.178	B
C-AB	132	33	742	0.178	132	0.4	0.4	5.977	A
C-A	260	65			260				
A-B	88	22			88				
A-C	378	94			378				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	222	55	602	0.368	223	0.9	0.6	9.620	A
C-AB	97	24	717	0.135	97	0.4	0.2	5.881	A
C-A	224	56			224				
A-B	72	18			72				
A-C	308	77			308				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	186	46	625	0.297	186	0.6	0.4	8.299	A
C-AB	75	19	700	0.107	75	0.2	0.2	5.842	A
C-A	193	48			193				
A-B	60	15			60				
A-C	258	65			258				

2024 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2024 Base	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	436	100.000
B		ONE HOUR	✓	99	100.000
C		ONE HOUR	✓	579	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	25	411
	B	35	0	64
	C	546	33	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	8.47	0.3	A	91	136
C-AB	0.11	4.60	0.2	A	73	109
C-A					459	688
A-B					23	34
A-C					381	571

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	75	19	603	0.124	74	0.0	0.1	6.797	A
C-AB	49	12	833	0.059	49	0.0	0.1	4.592	A
C-A	387	97			387				
A-B	19	5			19				
A-C	313	78			313				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	22	575	0.155	89	0.1	0.2	7.410	A
C-AB	68	17	878	0.077	67	0.1	0.1	4.446	A
C-A	453	113			453				
A-B	22	6			22				
A-C	373	93			373				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27	534	0.204	109	0.2	0.3	8.457	A
C-AB	101	25	942	0.107	101	0.1	0.2	4.283	A
C-A	537	134			537				
A-B	28	7			28				
A-C	457	114			457				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27	534	0.204	109	0.3	0.3	8.470	A
C-AB	101	25	942	0.107	101	0.2	0.2	4.285	A
C-A	536	134			536				
A-B	28	7			28				
A-C	457	114			457				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	22	574	0.155	89	0.3	0.2	7.425	A
C-AB	68	17	878	0.077	68	0.2	0.1	4.450	A
C-A	453	113			453				
A-B	22	6			22				
A-C	373	93			373				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	75	19	603	0.124	75	0.2	0.1	6.816	A
C-AB	49	12	833	0.059	50	0.1	0.1	4.599	A
C-A	387	97			387				
A-B	19	5			19				
A-C	313	78			313				

2030 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030 Base	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	445	100.000
B		ONE HOUR	✓	258	100.000
C		ONE HOUR	✓	374	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	85	360
	B	94	0	164
	C	303	71	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	1	0	1
	C	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.51	13.26	1.0	B	239	359
C-AB	0.19	5.98	0.4	A	109	163
C-A					235	352
A-B					78	117
A-C					330	496

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	196	49	619	0.317	194	0.0	0.5	8.520	A
C-AB	80	20	704	0.113	79	0.0	0.2	5.792	A
C-A	202	51			202				
A-B	64	16			64				
A-C	271	68			271				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	234	59	595	0.394	234	0.5	0.6	10.037	B
C-AB	104	26	723	0.144	104	0.2	0.3	5.854	A
C-A	233	58			233				
A-B	76	19			76				
A-C	324	81			324				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	287	72	561	0.512	285	0.6	1.0	13.123	B
C-AB	143	36	749	0.191	142	0.3	0.4	5.976	A
C-A	270	67			270				
A-B	94	23			94				
A-C	396	99			396				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	287	72	561	0.512	287	1.0	1.0	13.264	B
C-AB	143	36	749	0.191	143	0.4	0.4	5.981	A
C-A	269	67			269				
A-B	94	23			94				
A-C	396	99			396				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	234	59	595	0.394	236	1.0	0.7	10.168	B
C-AB	104	26	723	0.144	104	0.4	0.3	5.866	A
C-A	233	58			233				
A-B	76	19			76				
A-C	324	81			324				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	196	49	619	0.317	197	0.7	0.5	8.627	A
C-AB	80	20	705	0.114	80	0.3	0.2	5.812	A
C-A	202	50			202				
A-B	64	16			64				
A-C	271	68			271				

2030 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030 Base	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	461	100.000
B		ONE HOUR	✓	104	100.000
C		ONE HOUR	✓	610	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	27	434
	B	37	0	67
	C	575	35	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.22	8.86	0.3	A	95	143
C-AB	0.12	4.56	0.3	A	81	122
C-A					479	718
A-B					25	37
A-C					402	603

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	78	20	594	0.132	78	0.0	0.2	6.961	A
C-AB	54	14	845	0.064	54	0.0	0.1	4.552	A
C-A	405	101			405				
A-B	20	5			20				
A-C	330	83			330				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	93	23	564	0.166	93	0.2	0.2	7.643	A
C-AB	75	19	892	0.084	75	0.1	0.2	4.407	A
C-A	473	118			473				
A-B	24	6			24				
A-C	394	99			394				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	115	29	521	0.220	114	0.2	0.3	8.847	A
C-AB	114	28	961	0.118	113	0.2	0.3	4.253	A
C-A	558	139			558				
A-B	30	7			30				
A-C	483	121			483				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	115	29	521	0.220	114	0.3	0.3	8.862	A
C-AB	114	28	961	0.119	114	0.3	0.3	4.255	A
C-A	558	139			558				
A-B	30	7			30				
A-C	483	121			483				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	93	23	564	0.166	94	0.3	0.2	7.664	A
C-AB	75	19	893	0.084	76	0.3	0.2	4.412	A
C-A	473	118			473				
A-B	24	6			24				
A-C	394	99			394				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	78	20	594	0.132	78	0.2	0.2	6.984	A
C-AB	54	14	845	0.064	55	0.2	0.1	4.560	A
C-A	405	101			405				
A-B	20	5			20				
A-C	330	83			330				

2024 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2024 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	427	100.000
B		ONE HOUR	✓	275	100.000
C		ONE HOUR	✓	360	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	84	343
	B	99	0	176
	C	288	72	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	1	0	1
	C	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.54	13.79	1.2	B	255	382
C-AB	0.19	6.04	0.4	A	108	161
C-A					223	335
A-B					77	116
A-C					315	472

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	209	52	625	0.334	207	0.0	0.5	8.656	A
C-AB	79	20	699	0.113	79	0.0	0.2	5.836	A
C-A	192	48			192				
A-B	63	16			63				
A-C	258	65			258				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	250	62	602	0.415	249	0.5	0.7	10.267	B
C-AB	103	26	716	0.143	102	0.2	0.3	5.904	A
C-A	222	55			222				
A-B	76	19			76				
A-C	308	77			308				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	306	76	569	0.537	304	0.7	1.1	13.616	B
C-AB	140	35	741	0.190	140	0.3	0.4	6.030	A
C-A	257	64			257				
A-B	92	23			92				
A-C	378	94			378				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	306	76	569	0.537	306	1.1	1.2	13.788	B
C-AB	141	35	741	0.190	141	0.4	0.4	6.037	A
C-A	257	64			257				
A-B	92	23			92				
A-C	378	94			378				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	250	62	602	0.415	251	1.2	0.7	10.427	B
C-AB	103	26	717	0.144	103	0.4	0.3	5.916	A
C-A	221	55			221				
A-B	76	19			76				
A-C	308	77			308				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	209	52	625	0.335	210	0.7	0.5	8.779	A
C-AB	80	20	700	0.114	80	0.3	0.2	5.854	A
C-A	192	48			192				
A-B	63	16			63				
A-C	258	65			258				

2024 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2024 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	452	100.000
B		ONE HOUR	✓	115	100.000
C		ONE HOUR	✓	600	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	41	411
	B	40	0	75
	C	546	54	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.24	8.99	0.3	A	106	158
C-AB	0.18	4.81	0.5	A	120	179
C-A					431	647
A-B					38	56
A-C					381	571

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	22	599	0.144	86	0.0	0.2	7.003	A
C-AB	80	20	830	0.097	80	0.0	0.2	4.795	A
C-A	371	93			371				
A-B	31	8			31				
A-C	313	78			313				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	570	0.181	103	0.2	0.2	7.714	A
C-AB	111	28	875	0.127	111	0.2	0.3	4.714	A
C-A	428	107			428				
A-B	37	9			37				
A-C	373	93			373				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32	527	0.240	126	0.2	0.3	8.968	A
C-AB	166	42	939	0.177	166	0.3	0.5	4.662	A
C-A	494	124			494				
A-B	45	11			45				
A-C	457	114			457				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32	527	0.240	127	0.3	0.3	8.987	A
C-AB	167	42	940	0.177	167	0.5	0.5	4.670	A
C-A	494	123			494				
A-B	45	11			45				
A-C	457	114			457				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	569	0.182	104	0.3	0.2	7.735	A
C-AB	112	28	876	0.127	112	0.5	0.3	4.727	A
C-A	428	107			428				
A-B	37	9			37				
A-C	373	93			373				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	22	599	0.145	87	0.2	0.2	7.028	A
C-AB	81	20	831	0.098	82	0.3	0.2	4.810	A
C-A	371	93			371				
A-B	31	8			31				
A-C	313	78			313				

2030 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.95	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	451	100.000
B		ONE HOUR	✓	332	100.000
C		ONE HOUR	✓	389	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	91	360
	B	110	0	222
	C	303	86	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	1	0	0
	C	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.65	18.25	1.8	C	306	458
C-AB	0.23	6.31	0.5	A	132	198
C-A					226	338
A-B					84	125
A-C					330	496

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	251	63	623	0.402	248	0.0	0.7	9.560	A
C-AB	97	24	704	0.138	96	0.0	0.2	5.960	A
C-A	197	49			197				
A-B	69	17			69				
A-C	271	68			271				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	299	75	599	0.500	298	0.7	1.0	11.965	B
C-AB	126	31	722	0.174	125	0.2	0.3	6.083	A
C-A	225	56			225				
A-B	82	20			82				
A-C	324	81			324				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	367	92	564	0.650	364	1.0	1.8	17.671	C
C-AB	173	43	748	0.232	173	0.3	0.5	6.301	A
C-A	256	64			256				
A-B	100	25			100				
A-C	396	99			396				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	367	92	564	0.650	367	1.8	1.8	18.246	C
C-AB	174	43	748	0.232	174	0.5	0.5	6.315	A
C-A	256	64			256				
A-B	100	25			100				
A-C	396	99			396				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	299	75	599	0.500	303	1.8	1.0	12.326	B
C-AB	126	32	722	0.175	127	0.5	0.3	6.095	A
C-A	224	56			224				
A-B	82	20			82				
A-C	324	81			324				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	251	63	623	0.402	252	1.0	0.7	9.772	A
C-AB	97	24	704	0.138	98	0.3	0.2	5.985	A
C-A	196	49			196				
A-B	69	17			69				
A-C	271	68			271				

2030 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2030 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	484	100.000
B		ONE HOUR	✓	145	100.000
C		ONE HOUR	✓	669	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	50	434
	B	46	0	99
	C	575	94	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.31	10.23	0.4	B	133	200
C-AB	0.32	5.58	1.0	A	220	329
C-A					394	592
A-B					46	69
A-C					402	603

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27	592	0.184	108	0.0	0.2	7.423	A
C-AB	146	36	841	0.173	144	0.0	0.4	5.161	A
C-A	358	89			358				
A-B	38	9			38				
A-C	330	83			330				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33	559	0.233	130	0.2	0.3	8.378	A
C-AB	203	51	889	0.228	202	0.4	0.6	5.251	A
C-A	398	100			398				
A-B	45	11			45				
A-C	394	99			394				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40	512	0.312	159	0.3	0.4	10.186	B
C-AB	308	77	957	0.322	307	0.6	1.0	5.553	A
C-A	428	107			428				
A-B	55	14			55				
A-C	483	121			483				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40	512	0.312	160	0.4	0.4	10.227	B
C-AB	309	77	958	0.323	309	1.0	1.0	5.577	A
C-A	427	107			427				
A-B	55	14			55				
A-C	483	121			483				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33	559	0.233	131	0.4	0.3	8.418	A
C-AB	204	51	891	0.229	206	1.0	0.6	5.285	A
C-A	397	99			397				
A-B	45	11			45				
A-C	394	99			394				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27	592	0.184	109	0.3	0.2	7.468	A
C-AB	147	37	842	0.174	148	0.6	0.4	5.197	A
C-A	357	89			357				
A-B	38	9			38				
A-C	330	83			330				



Junctions 9										
ARCADY 9 - Roundabout Module										
Version: 9.5.1.7462 © Copyright TRL Limited, 2019										
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Filename: Berse Rd_Final.j9

Path: C:\Data\Projects\J000051-J000100\J000069 Stansty Residential, Wrexham\Background Information\Junction Assessments\Berse Rd

Report generation date: 04/10/2019 12:11:12

»2019 Survey, AM
 »2019 Survey, PM
 »2024 Base, AM
 »2024 Base, PM
 »2030 Base, AM
 »2030 Base, PM
 »2024 Base + Dev, AM
 »2024 Base + Dev, PM
 »2030 Base + Dev, AM
 »2030 Base + Dev, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2019 Survey									
Arm 1	D1	2.1	7.21	0.68	A	D2	0.8	3.71	0.45	A
Arm 2		0.3	2.43	0.20	A		0.8	4.07	0.44	A
Arm 3		3.5	11.07	0.78	B		0.4	3.61	0.26	A
	2024 Base									
Arm 1	D3	3.0	9.44	0.75	A	D4	0.9	3.92	0.48	A
Arm 2		0.3	2.48	0.21	A		1.0	4.54	0.49	A
Arm 3		4.9	14.94	0.83	B		0.4	3.85	0.28	A
	2030 Base									
Arm 1	D5	4.0	12.05	0.80	B	D6	1.1	4.23	0.51	A
Arm 2		0.3	2.53	0.22	A		1.1	5.00	0.53	A
Arm 3		7.3	21.38	0.89	C		0.4	4.03	0.31	A
	2024 Base + Dev									
Arm 1	D7	3.1	9.75	0.76	A	D8	0.9	3.93	0.48	A
Arm 2		0.3	2.50	0.21	A		1.0	4.57	0.49	A
Arm 3		5.1	15.47	0.84	C		0.4	3.87	0.28	A
	2030 Base + Dev									
Arm 1	D9	4.4	12.92	0.82	B	D10	1.1	4.30	0.52	A
Arm 2		0.3	2.54	0.23	A		1.2	5.12	0.54	A
Arm 3		7.6	22.37	0.89	C		0.5	4.08	0.31	A

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

File summary

File Description

Title	Berse Road Roundabout
Location	Wrexham
Site number	
Date	12/08/2019
Version	
Status	Planning
Identifier	
Client	Russell Homes Ltd
Jobnumber	J000069
Enumerator	FTPDT-01\Office
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:30	09:00	15	✓
D2	2019 Survey	PM	ONE HOUR	16:30	18:00	15	✓
D3	2024 Base	AM	ONE HOUR	07:30	09:00	15	✓
D4	2024 Base	PM	ONE HOUR	16:30	18:00	15	✓
D5	2030 Base	AM	ONE HOUR	07:30	09:00	15	✓
D6	2030 Base	PM	ONE HOUR	16:30	18:00	15	✓
D7	2024 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓
D8	2024 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓
D9	2030 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓
D10	2030 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

Analysis Set Details

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

2019 Survey, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	8.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Berse Road E	
2	Rhyd Broughton Lane	
3	Berse Road W	

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	3.78	7.33	14.8	35.0	38.7	9.5	
2	5.77	7.00	6.7	21.0	38.7	23.8	
3	4.22	5.88	12.8	24.8	38.7	26.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.716	1915
2	0.718	2030
3	0.646	1672

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	962	100.000
2		ONE HOUR	✓	326	100.000
3		ONE HOUR	✓	1018	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1	2	3	
From	1	0	847	115
	2	257	0	69
	3	602	416	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	1	5
	2	4	0	10
	3	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.68	7.21	2.1	A	896	1344
2	0.20	2.43	0.3	A	315	472
3	0.78	11.07	3.5	B	958	1438

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	735	184	318	1688	0.435	732	665	0.0	0.8	3.809	A
2	258	65	91	1965	0.131	258	959	0.0	0.2	2.219	A
3	786	197	201	1543	0.510	782	148	0.0	1.1	4.831	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	878	219	381	1643	0.534	876	796	0.8	1.2	4.755	A
2	309	77	108	1953	0.158	308	1148	0.2	0.2	2.304	A
3	939	235	240	1517	0.619	937	177	1.1	1.6	6.336	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1075	269	464	1583	0.679	1071	973	1.2	2.1	7.087	A
2	378	94	132	1935	0.195	378	1403	0.2	0.3	2.432	A
3	1150	287	294	1482	0.776	1143	216	1.6	3.4	10.668	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1075	269	467	1581	0.680	1075	977	2.1	2.1	7.213	A
2	378	94	133	1935	0.195	378	1409	0.3	0.3	2.433	A
3	1150	287	294	1482	0.776	1150	217	3.4	3.5	11.073	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	878	219	384	1640	0.535	881	802	2.1	1.2	4.840	A
2	309	77	109	1952	0.158	309	1157	0.3	0.2	2.306	A
3	939	235	240	1517	0.619	946	177	3.5	1.7	6.544	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	735	184	320	1686	0.436	737	670	1.2	0.8	3.854	A
2	258	65	91	1965	0.131	259	966	0.2	0.2	2.220	A
3	786	197	201	1542	0.510	789	148	1.7	1.1	4.919	A

2019 Survey, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Survey	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	716	100.000
2		ONE HOUR	✓	629	100.000
3		ONE HOUR	✓	312	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1	2	3
From	1	0	194	522
	2	420	0	209
	3	169	143	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	3	2
	2	1	0	4
	3	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.45	3.71	0.8	A	672	1008
2	0.44	4.07	0.8	A	589	884
3	0.26	3.61	0.4	A	293	439

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	551	138	112	1835	0.300	550	447	0.0	0.4	2.860	A
2	483	121	400	1743	0.277	482	262	0.0	0.4	2.908	A
3	240	60	319	1466	0.164	239	562	0.0	0.2	2.999	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	658	165	134	1819	0.362	658	534	0.4	0.6	3.167	A
2	577	144	478	1687	0.342	577	313	0.4	0.5	3.307	A
3	287	72	382	1426	0.201	287	673	0.2	0.3	3.231	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	806	202	164	1798	0.448	805	654	0.6	0.8	3.706	A
2	707	177	586	1610	0.439	706	384	0.5	0.8	4.059	A
3	351	88	467	1370	0.256	351	824	0.3	0.4	3.611	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	806	202	164	1798	0.448	806	655	0.8	0.8	3.712	A
2	707	177	586	1609	0.439	707	384	0.8	0.8	4.071	A
3	351	88	468	1370	0.256	351	825	0.4	0.4	3.612	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	658	165	134	1819	0.362	659	536	0.8	0.6	3.176	A
2	577	144	479	1686	0.342	578	314	0.8	0.5	3.318	A
3	287	72	383	1425	0.201	287	675	0.4	0.3	3.238	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	551	138	112	1835	0.300	552	448	0.6	0.4	2.872	A
2	483	121	401	1742	0.277	484	263	0.5	0.4	2.920	A
3	240	60	320	1465	0.164	240	565	0.3	0.2	3.005	A

2024 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	10.84	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2024 Base	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1050	100.000
2		ONE HOUR	✓	351	100.000
3		ONE HOUR	✓	1084	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1	2	3
	1	0	924	126
	2	278	0	73
	3	643	441	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
	1	0	1	5
	2	4	0	10
	3	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.75	9.44	3.0	A	978	1467
2	0.21	2.48	0.3	A	338	507
3	0.83	14.94	4.9	B	1020	1529

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	802	201	338	1673	0.480	798	710	0.0	0.9	4.160	A
2	277	69	99	1959	0.142	277	1038	0.0	0.2	2.243	A
3	836	209	216	1533	0.546	832	159	0.0	1.2	5.230	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	958	239	405	1625	0.589	956	849	0.9	1.4	5.442	A
2	331	83	119	1945	0.170	331	1242	0.2	0.2	2.340	A
3	999	250	259	1505	0.664	996	191	1.2	2.0	7.202	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1173	293	493	1562	0.751	1167	1036	1.4	2.9	9.112	A
2	406	101	145	1926	0.211	405	1515	0.2	0.3	2.483	A
3	1223	306	317	1468	0.834	1212	233	2.0	4.7	13.900	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1173	293	497	1559	0.752	1173	1042	2.9	3.0	9.441	A
2	406	101	146	1926	0.211	406	1525	0.3	0.3	2.484	A
3	1223	306	317	1467	0.834	1223	234	4.7	4.9	14.944	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	958	239	411	1621	0.591	964	858	3.0	1.5	5.613	A
2	331	83	120	1944	0.170	331	1255	0.3	0.2	2.343	A
3	999	250	259	1505	0.664	1010	192	4.9	2.1	7.621	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	802	201	342	1671	0.480	804	715	1.5	0.9	4.227	A
2	277	69	100	1959	0.142	277	1046	0.2	0.2	2.248	A
3	836	209	217	1532	0.546	840	160	2.1	1.2	5.356	A

2024 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2024 Base	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	772	100.000
2		ONE HOUR	✓	692	100.000
3		ONE HOUR	✓	335	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1	2	3
From	1	0	216	556
	2	471	0	221
	3	184	151	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	2	1
	2	1	0	4
	3	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.48	3.92	0.9	A	717	1076
2	0.49	4.54	1.0	A	648	972
3	0.28	3.85	0.4	A	314	471

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	147	118	1831	0.322	587	496	0.0	0.5	2.927	A
2	532	133	421	1728	0.308	530	283	0.0	0.5	3.062	A
3	258	64	358	1441	0.179	257	594	0.0	0.2	3.105	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	703	176	141	1814	0.387	702	594	0.5	0.6	3.278	A
2	635	159	504	1668	0.381	634	339	0.5	0.6	3.550	A
3	308	77	428	1396	0.221	307	710	0.2	0.3	3.380	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	861	215	173	1791	0.481	860	727	0.6	0.9	3.909	A
2	777	194	617	1587	0.490	776	415	0.6	1.0	4.523	A
3	377	94	524	1334	0.283	376	870	0.3	0.4	3.841	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	861	215	173	1791	0.481	861	728	0.9	0.9	3.918	A
2	777	194	618	1586	0.490	777	416	1.0	1.0	4.540	A
3	377	94	525	1333	0.283	377	871	0.4	0.4	3.846	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	703	176	142	1814	0.388	704	596	0.9	0.6	3.288	A
2	635	159	506	1667	0.381	636	340	1.0	0.6	3.566	A
3	308	77	429	1395	0.221	308	712	0.4	0.3	3.386	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	147	119	1830	0.322	589	499	0.6	0.5	2.941	A
2	532	133	423	1726	0.308	532	285	0.6	0.5	3.077	A
3	258	64	359	1440	0.179	258	596	0.3	0.2	3.112	A

2030 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	14.75	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030 Base	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1110	100.000
2		ONE HOUR	✓	371	100.000
3		ONE HOUR	✓	1146	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1	2	3
From	1	0	977	133
	2	294	0	77
	3	680	466	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	1	5
	2	3	0	10
	3	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.80	12.05	4.0	B	1034	1550
2	0.22	2.53	0.3	A	357	535
3	0.89	21.38	7.3	C	1076	1614

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	848	212	356	1661	0.511	844	750	0.0	1.0	4.451	A
2	293	73	105	1955	0.150	292	1095	0.0	0.2	2.266	A
3	883	221	228	1525	0.579	877	168	0.0	1.4	5.639	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1013	253	426	1610	0.629	1010	897	1.0	1.7	6.060	A
2	349	87	125	1940	0.180	349	1311	0.2	0.2	2.370	A
3	1054	263	273	1496	0.705	1050	201	1.4	2.4	8.186	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1240	310	516	1546	0.802	1231	1091	1.7	3.9	11.323	B
2	428	107	153	1921	0.223	428	1595	0.2	0.3	2.526	A
3	1291	323	334	1456	0.886	1273	246	2.4	6.8	18.567	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1240	310	523	1541	0.805	1240	1101	3.9	4.0	12.054	B
2	428	107	154	1920	0.223	428	1608	0.3	0.3	2.527	A
3	1291	323	335	1456	0.886	1289	247	6.8	7.3	21.383	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1013	253	435	1604	0.631	1022	911	4.0	1.8	6.369	A
2	349	87	127	1939	0.180	350	1330	0.3	0.2	2.374	A
3	1054	263	274	1496	0.705	1073	203	7.3	2.5	9.081	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	848	212	360	1658	0.512	851	756	1.8	1.1	4.542	A
2	293	73	105	1955	0.150	293	1105	0.2	0.2	2.269	A
3	883	221	229	1524	0.579	887	169	2.5	1.4	5.815	A

2030 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030 Base	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	817	100.000
2		ONE HOUR	✓	733	100.000
3		ONE HOUR	✓	356	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1	2	3	
From	1	0	228	589
	2	498	0	235
	3	195	161	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	3	2
	2	1	0	4
	3	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.51	4.23	1.1	A	763	1145
2	0.53	5.00	1.1	A	686	1029
3	0.31	4.03	0.4	A	334	501

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	626	157	126	1825	0.343	624	525	0.0	0.5	3.046	A
2	563	141	449	1708	0.330	561	301	0.0	0.5	3.196	A
3	274	68	378	1428	0.192	273	632	0.0	0.2	3.183	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	748	187	151	1807	0.414	747	629	0.5	0.7	3.455	A
2	672	168	537	1645	0.409	672	361	0.5	0.7	3.770	A
3	327	82	453	1380	0.237	327	756	0.2	0.3	3.495	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	916	229	184	1783	0.514	914	769	0.7	1.1	4.212	A
2	823	206	657	1558	0.528	822	442	0.7	1.1	4.971	A
3	401	100	554	1314	0.305	400	925	0.3	0.4	4.024	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	916	229	185	1783	0.514	916	771	1.1	1.1	4.226	A
2	823	206	658	1558	0.529	823	442	1.1	1.1	5.003	A
3	401	100	555	1314	0.305	401	927	0.4	0.4	4.030	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	748	187	151	1807	0.414	749	631	1.1	0.7	3.468	A
2	672	168	538	1644	0.409	674	362	1.1	0.7	3.794	A
3	327	82	454	1379	0.237	328	758	0.4	0.3	3.502	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	626	157	126	1825	0.343	627	528	0.7	0.5	3.063	A
2	563	141	451	1707	0.330	564	303	0.7	0.5	3.218	A
3	274	68	380	1427	0.192	274	635	0.3	0.2	3.193	A

2024 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	11.20	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2024 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1056	100.000
2		ONE HOUR	✓	352	100.000
3		ONE HOUR	✓	1084	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1	2	3	
From	1	0	929	127
	2	279	0	73
	3	643	441	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	1	5
	2	4	0	10
	3	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.76	9.75	3.1	A	986	1479
2	0.21	2.50	0.3	A	340	510
3	0.84	15.47	5.1	C	1025	1537

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	809	202	340	1672	0.484	805	714	0.0	0.9	4.207	A
2	279	70	100	1959	0.142	278	1045	0.0	0.2	2.253	A
3	841	210	218	1532	0.549	836	160	0.0	1.2	5.292	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	966	241	407	1624	0.595	964	854	0.9	1.5	5.532	A
2	333	83	120	1944	0.171	333	1251	0.2	0.2	2.350	A
3	1004	251	261	1504	0.667	1001	192	1.2	2.0	7.275	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1183	296	495	1560	0.758	1177	1042	1.5	3.1	9.389	A
2	408	102	146	1925	0.212	408	1526	0.2	0.3	2.496	A
3	1229	307	319	1466	0.839	1218	234	2.0	4.9	14.319	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1183	296	500	1557	0.760	1183	1048	3.1	3.1	9.752	A
2	408	102	147	1925	0.212	408	1536	0.3	0.3	2.497	A
3	1229	307	319	1466	0.839	1228	235	4.9	5.1	15.471	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	966	241	413	1619	0.596	972	863	3.1	1.5	5.715	A
2	333	83	121	1944	0.171	333	1265	0.3	0.2	2.354	A
3	1004	251	261	1504	0.668	1016	193	5.1	2.1	7.774	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	809	202	343	1669	0.485	811	719	1.5	1.0	4.280	A
2	279	70	101	1958	0.142	279	1054	0.2	0.2	2.258	A
3	841	210	219	1531	0.549	844	161	2.1	1.3	5.424	A

2024 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2024 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	774	100.000
2		ONE HOUR	✓	697	100.000
3		ONE HOUR	✓	336	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1	2	3	
From	1	0	218	556
	2	476	0	221
	3	185	151	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	2	1
	2	1	0	4
	3	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.48	3.93	0.9	A	719	1079
2	0.49	4.57	1.0	A	653	979
3	0.28	3.87	0.4	A	315	473

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	590	148	118	1831	0.322	588	501	0.0	0.5	2.931	A
2	535	134	421	1728	0.310	534	285	0.0	0.5	3.072	A
3	259	65	361	1439	0.180	258	594	0.0	0.2	3.114	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	705	176	141	1814	0.388	704	600	0.5	0.6	3.283	A
2	639	160	504	1668	0.383	639	341	0.5	0.6	3.566	A
3	309	77	433	1393	0.222	308	710	0.2	0.3	3.393	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	863	216	173	1791	0.482	862	734	0.6	0.9	3.918	A
2	783	196	617	1587	0.493	782	418	0.6	1.0	4.552	A
3	378	95	529	1330	0.284	378	870	0.3	0.4	3.862	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	863	216	173	1791	0.482	863	735	0.9	0.9	3.928	A
2	783	196	618	1586	0.494	783	418	1.0	1.0	4.571	A
3	378	95	530	1330	0.284	378	871	0.4	0.4	3.867	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	705	176	142	1814	0.389	706	602	0.9	0.6	3.293	A
2	639	160	506	1667	0.383	641	342	1.0	0.6	3.584	A
3	309	77	434	1392	0.222	309	712	0.4	0.3	3.399	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	590	148	119	1830	0.322	591	503	0.6	0.5	2.942	A
2	535	134	423	1726	0.310	536	286	0.6	0.5	3.086	A
3	259	65	363	1438	0.180	259	596	0.3	0.2	3.121	A

2030 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	15.51	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1125	100.000
2		ONE HOUR	✓	375	100.000
3		ONE HOUR	✓	1147	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1	2	3	
From	1	0	990	135
	2	298	0	77
	3	681	466	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	1	5
	2	3	0	10
	3	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.82	12.92	4.4	B	1050	1575
2	0.23	2.54	0.3	A	360	541
3	0.89	22.37	7.6	C	1080	1620

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	215	356	1661	0.519	857	756	0.0	1.1	4.535	A
2	296	74	106	1954	0.151	295	1107	0.0	0.2	2.271	A
3	886	221	231	1523	0.582	880	170	0.0	1.4	5.701	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	426	1610	0.639	1026	905	1.1	1.8	6.230	A
2	353	88	127	1939	0.182	353	1325	0.2	0.2	2.377	A
3	1058	264	277	1493	0.708	1054	203	1.4	2.4	8.324	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1260	315	516	1546	0.815	1251	1100	1.8	4.2	12.023	B
2	433	108	155	1919	0.225	432	1612	0.2	0.3	2.536	A
3	1296	324	339	1453	0.892	1277	248	2.4	7.0	19.224	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1260	315	522	1541	0.818	1259	1110	4.2	4.4	12.919	B
2	433	108	156	1918	0.225	433	1626	0.3	0.3	2.537	A
3	1296	324	339	1453	0.892	1293	249	7.0	7.6	22.366	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	435	1603	0.642	1039	920	4.4	1.9	6.603	A
2	353	88	129	1938	0.182	353	1346	0.3	0.2	2.380	A
3	1058	264	277	1493	0.708	1078	205	7.6	2.6	9.302	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	215	360	1658	0.520	865	763	1.9	1.1	4.635	A
2	296	74	107	1953	0.151	296	1117	0.2	0.2	2.275	A
3	886	221	232	1522	0.582	890	171	2.6	1.4	5.887	A

2030 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2030 Base + Dev	PM	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	825	100.000
2		ONE HOUR	✓	746	100.000
3		ONE HOUR	✓	358	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1	2	3	
From	1	0	235	590
	2	511	0	235
	3	197	161	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	3	2
	2	1	0	4
	3	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.52	4.30	1.1	A	773	1160
2	0.54	5.12	1.2	A	698	1048
3	0.31	4.08	0.5	A	336	504

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	635	159	126	1825	0.348	632	537	0.0	0.5	3.078	A
2	573	143	452	1706	0.336	571	307	0.0	0.5	3.230	A
3	276	69	388	1422	0.194	275	635	0.0	0.2	3.204	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	758	189	151	1807	0.419	757	642	0.5	0.7	3.500	A
2	684	171	540	1642	0.417	683	367	0.5	0.7	3.826	A
3	329	82	464	1372	0.240	329	759	0.2	0.3	3.526	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	928	232	184	1783	0.520	926	786	0.7	1.1	4.286	A
2	838	209	662	1555	0.539	836	449	0.7	1.2	5.096	A
3	403	101	568	1305	0.309	402	930	0.3	0.5	4.073	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	928	232	185	1783	0.520	928	788	1.1	1.1	4.301	A
2	838	209	663	1554	0.539	838	450	1.2	1.2	5.125	A
3	403	101	569	1304	0.309	403	931	0.5	0.5	4.081	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	758	189	151	1807	0.419	759	645	1.1	0.7	3.516	A
2	684	171	542	1641	0.417	686	368	1.2	0.7	3.854	A
3	329	82	466	1371	0.240	330	762	0.5	0.3	3.536	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	635	159	126	1825	0.348	635	539	0.7	0.5	3.095	A
2	573	143	454	1705	0.336	574	308	0.7	0.5	3.249	A
3	276	69	390	1420	0.194	276	638	0.3	0.2	3.215	A



User and Project Details

Project:	Mold Road Residential Development
Title:	
Location:	Wrexham
Client:	Russell Homes Ltd.
Site Ref(s):	Proposed Mold Road Site Access
Design Layout Ref:	Proposed
Model Purpose:	Planning
Additional detail:	
File name:	A541 Mold Road _Site Access_Pure.lsg3x
Author:	
Company:	Focus Transport Planning
Address:	Pentland House, Village Way, Wilmslow, Cheshire

Phase Input Data

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

Phase Intergreens Matrix

	Starting Phase						
Terminating Phase		A	B	C	D	E	F
	A		6	-	5	5	-
	B	5		5	5	-	9
	C	-	5		-	-	8
	D	5	5	-		-	-
	E	8	-	-	-		-
	F	-	8	8	-	-	

Phases In Stage

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

Lane Saturation Flows**Scenario 3: '2030 AM Base + Dev'** (FG3: '2030 AM Base + Dev', Plan 1: 'Network Control Plan 1')

Junction: A541 Mold Road / Site Access								
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 (A541 (north))	3.25	0.00	Y	Arm 5 Left	14.00	0.7 %	1939	1939
				Arm 6 Ahead	Inf	99.3 %		
1/2 (A541 (north))	3.25	0.00	N	Arm 6 Ahead	Inf	100.0 %	2080	2080
2/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	14.00	100.0 %	1752	1752
2/2 (Site Access)	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830
3/1 (A541 Mold Road (south))	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
3/2 (A541 Mold Road (south))	3.25	0.00	N	Arm 4 Ahead	Inf	100.0 %	2080	2080
3/3 (A541 Mold Road (south))	3.25	0.00	Y	Arm 5 Right	15.00	100.0 %	1764	1764
4/1 (A541 (north) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (A541 (north) exit Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A541 (south) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (A541 (south) exit Lane 2)	Infinite Saturation Flow						Inf	Inf

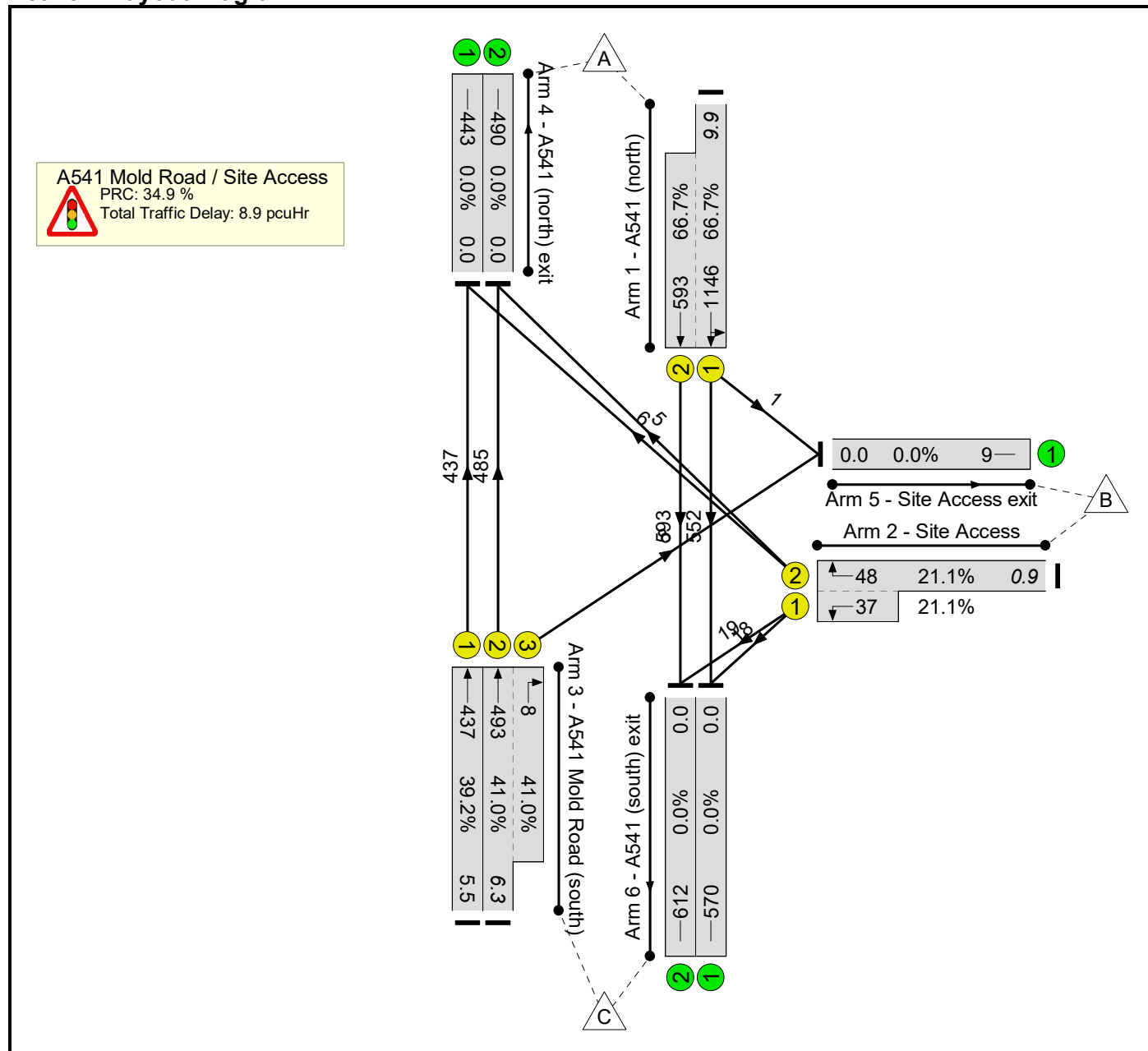
Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2024 AM Base + Dev'	07:45	08:45	01:00	
2: '2024 PM Base + Dev'	16:45	17:45	01:00	
3: '2030 AM Base + Dev'	07:45	08:45	01:00	
4: '2030 PM Base + Dev'	16:45	17:45	01:00	

Stage Timings

Stage	1	2	3	4
Duration	40	0	7	7
Change Point	0	45	50	65

Network Layout Diagram



Link Results

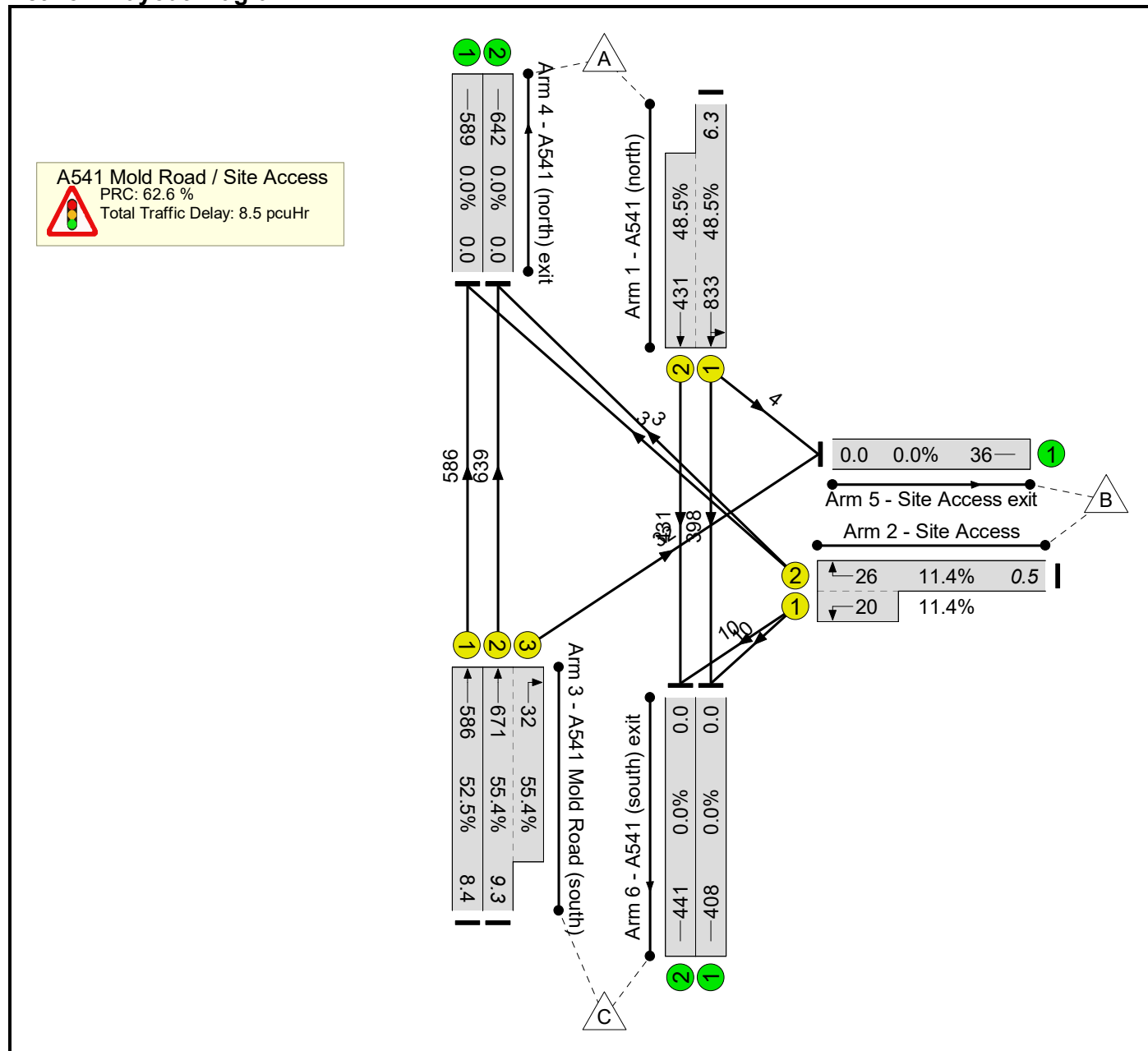
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
A541 Mold Road / Site Access	-	-	N/A	-	-		-	-	-	-	-
1/1+1/2	A541 (north) Left Ahead	U	N/A	N/A	A		1	40	-	1146	1940:2080
2/2+2/1	Site Access Right Left	U	N/A	N/A	B		1	7	-	48	1830:1752
3/1	A541 Mold Road (south) Ahead	U	N/A	N/A	C		1	45	-	437	1940
3/2+3/3	A541 Mold Road (south) Ahead Right	U	N/A	N/A	C D		1	45:18	-	493	2080:1764

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	66.7%	-	-	0	0	0	-	-	-	-
A541 Mold Road / Site Access	-	66.7%	-	-	0	0	0	-	-	-	-
1/1+1/2	829+889	66.7 : 66.7%	1146	1146	-	-	-	16.4	8.9	1.0	9.9
2/2+2/1	52+175	21.1 : 21.1%	48	48	-	-	-	43.1	0.8	0.1	0.9
3/1	1115	39.2%	437	437	-	-	-	12.0	5.2	0.3	5.5
3/2+3/3	1182+19	41.0 : 41.0%	493	493	-	-	-	12.2	5.9	0.3	6.3
C1 PRC for Signalled Lanes (%): 34.9 Total Delay for Signalled Lanes (pcuHr): 8.93 Cycle Time (s): 80 PRC Over All Lanes (%): 34.9 Total Delay Over All Lanes(pcuHr): 8.93											

Stage Timings

Stage	1	2	3	4
Duration	40	0	7	7
Change Point	0	45	50	65

Network Layout Diagram



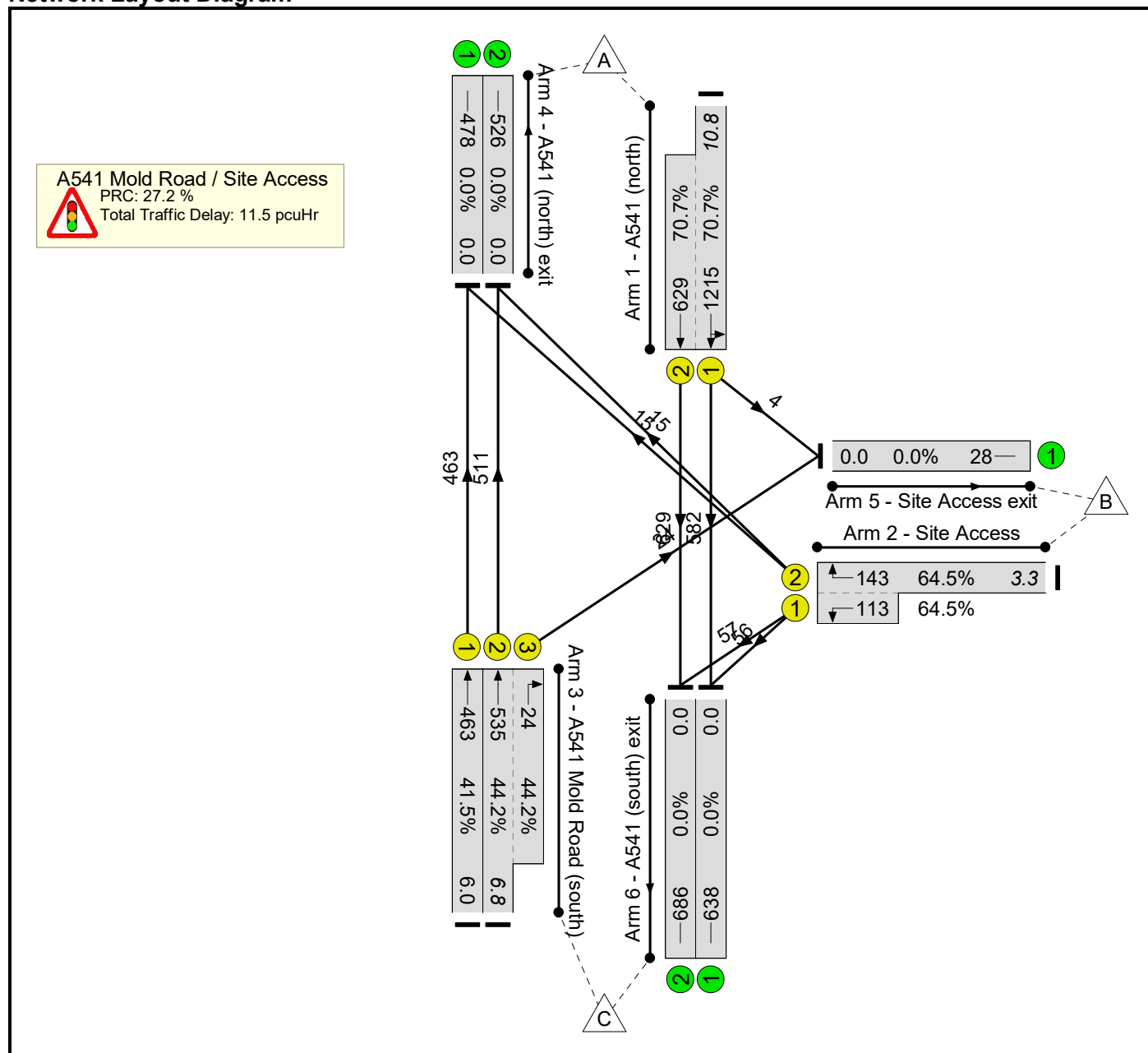
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
A541 Mold Road / Site Access	-	-	N/A	-	-		-	-	-	-	-
1/1+1/2	A541 (north) Left Ahead	U	N/A	N/A	A		1	40	-	833	1938:2080
2/2+2/1	Site Access Right Left	U	N/A	N/A	B		1	7	-	26	1830:1752
3/1	A541 Mold Road (south) Ahead	U	N/A	N/A	C		1	45	-	586	1940
3/2+3/3	A541 Mold Road (south) Ahead Right	U	N/A	N/A	C D		1	45:18	-	671	2080:1764

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	55.4%	-	-	0	0	0	-	-	-	-
A541 Mold Road / Site Access	-	55.4%	-	-	0	0	0	-	-	-	-
1/1+1/2	829+889	48.5 : 48.5%	833	833	-	-	-	14.0	5.9	0.5	6.3
2/2+2/1	53+175	11.4 : 11.4%	26	26	-	-	-	41.8	0.4	0.1	0.5
3/1	1115	52.5%	586	586	-	-	-	13.7	7.8	0.6	8.4
3/2+3/3	1154+58	55.4 : 55.4%	671	671	-	-	-	14.4	8.7	0.6	9.3
C1 PRC for Signalled Lanes (%): 62.6 Total Delay for Signalled Lanes (pcuHr): 8.47 Cycle Time (s): 80 PRC Over All Lanes (%): 62.6 Total Delay Over All Lanes(pcuHr): 8.47											

Stage Timings

Stage	1	2	3	4
Duration	40	0	7	7
Change Point	0	45	50	65

Network Layout Diagram

Link Results

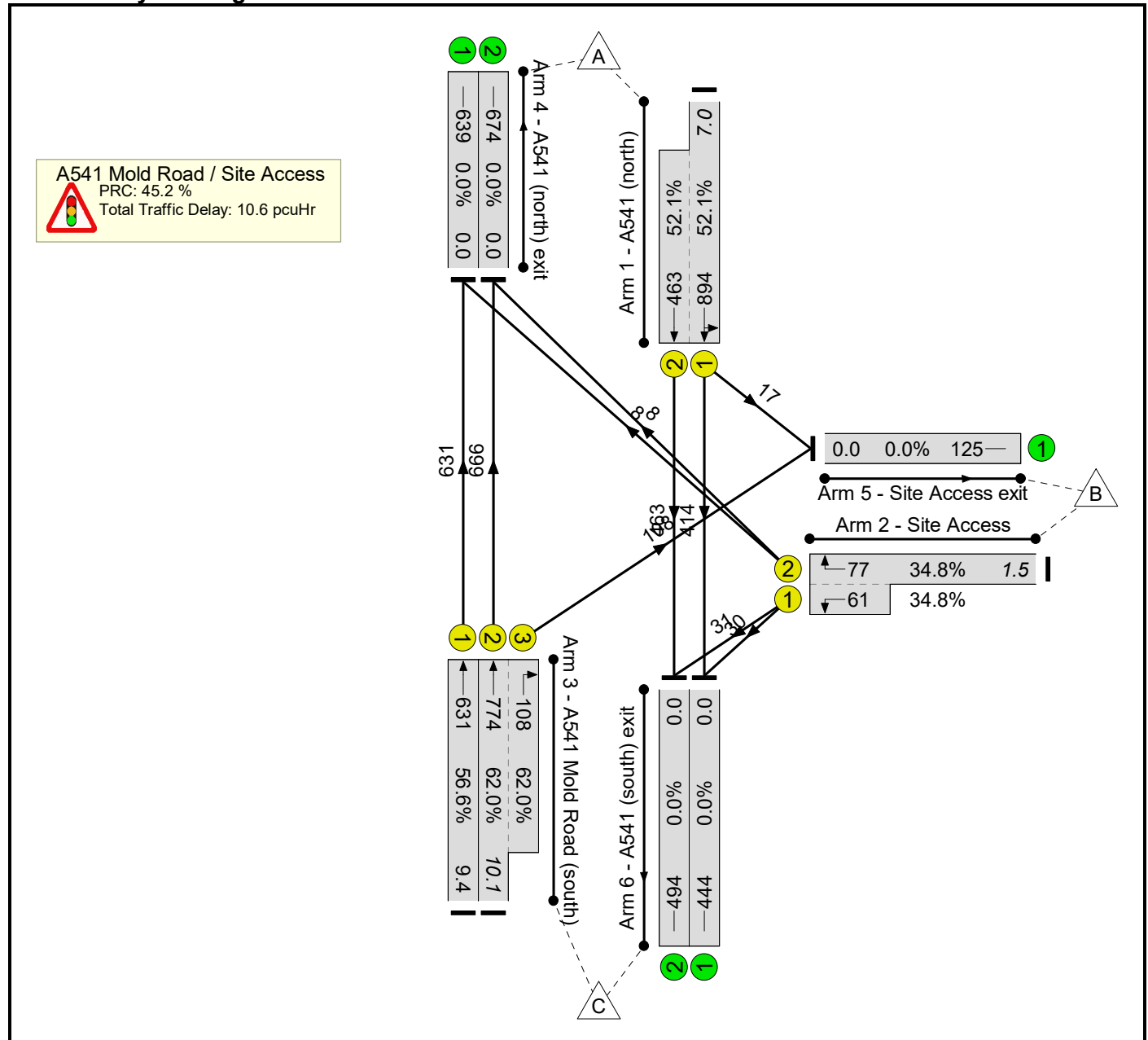
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
A541 Mold Road / Site Access	-	-	N/A	-	-		-	-	-	-	-
1/1+1/2	A541 (north) Left Ahead	U	N/A	N/A	A		1	40	-	1215	1939:2080
2/2+2/1	Site Access Right Left	U	N/A	N/A	B		1	7	-	143	1830:1752
3/1	A541 Mold Road (south) Ahead	U	N/A	N/A	C		1	45	-	463	1940
3/2+3/3	A541 Mold Road (south) Ahead Right	U	N/A	N/A	C D		1	45:18	-	535	2080:1764

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	70.7%	-	-	0	0	0	-	-	-	-
A541 Mold Road / Site Access	-	70.7%	-	-	0	0	0	-	-	-	-
1/1+1/2	828+889	70.7 : 70.7%	1215	1215	-	-	-	17.2	9.6	1.2	10.8
2/2+2/1	47+175	64.5 : 64.5%	143	143	-	-	-	56.7	2.4	0.9	3.3
3/1	1115	41.5%	463	463	-	-	-	12.2	5.7	0.4	6.0
3/2+3/3	1157+54	44.2 : 44.2%	535	535	-	-	-	12.9	6.4	0.4	6.8
C1 PRC for Signalled Lanes (%): 27.2 PRC Over All Lanes (%): 27.2 Total Delay for Signalled Lanes (pcuHr): 11.54 Total Delay Over All Lanes(pcuHr): 11.54 Cycle Time (s): 80											

Stage Timings

Stage	1	2	3	4
Duration	40	0	7	7
Change Point	0	45	50	65

Network Layout Diagram



Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
A541 Mold Road / Site Access	-	-	N/A	-	-		-	-	-	-	-
1/1+1/2	A541 (north) Left Ahead	U	N/A	N/A	A		1	40	-	894	1932:2080
2/2+2/1	Site Access Right Left	U	N/A	N/A	B		1	7	-	77	1830:1752
3/1	A541 Mold Road (south) Ahead	U	N/A	N/A	C		1	45	-	631	1940
3/2+3/3	A541 Mold Road (south) Ahead Right	U	N/A	N/A	C D		1	45:18	-	774	2080:1764

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	62.0%	-	-	0	0	0	-	-	-	-
A541 Mold Road / Site Access	-	62.0%	-	-	0	0	0	-	-	-	-
1/1+1/2	827+889	52.1 : 52.1%	894	894	-	-	-	14.4	6.4	0.5	7.0
2/2+2/1	46+175	34.8 : 34.8%	77	77	-	-	-	45.9	1.3	0.3	1.5
3/1	1115	56.6%	631	631	-	-	-	14.4	8.8	0.6	9.4
3/2+3/3	1075+174	62.0 : 62.0%	774	774	-	-	-	16.4	9.3	0.8	10.1
C1 PRC for Signalled Lanes (%): 45.2 PRC Over All Lanes (%): 45.2 Total Delay for Signalled Lanes (pcuHr): 10.61 Total Delay Over All Lanes(pcuHr): 10.61 Cycle Time (s): 80											

User and Project Details

Project:	Mold Road Residential Development
Title:	
Location:	Wrexham
Client:	Russell Homes Ltd
Site Ref(s):	Mold Road/Hope Street
Design Layout Ref:	Existing
Model Purpose:	Planning
Additional detail:	
File name:	Mold Rd_Hope St Signals_455.lsg3x
Author:	
Company:	Focus Transport Planning
Address:	Pentland House, Village Way, Wilmslow, Cheshire

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Ind. Arrow	A	4	4
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Pedestrian		7	7
K	Pedestrian		7	7

Phase Intergreens Matrix

	Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K
Terminating Phase	A		-	-	5	5	-	7	8	-	8	-
	B	-		5	5	5	-	-	-	-	8	-
	C	-	8		7	6	8	11	-	5	8	-
	D	6	6	5		-	-	8	9	-	5	-
	E	6	6	5	-		8	5	8	-	8	-
	F	-	-	5	-	5		-	-	-	-	5
	G	5	-	5	5	5	-		-	-	-	-
	H	5	-	-	5	5	-	-		-	-	-
	I	-	-	5	-	-	-	-	-		-	-
	J	5	5	5	5	5	-	-	-	-		-
	K	-	-	-	-	-	5	-	-	-	-	

Phases In Stage

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

Lane Saturation Flows**Scenario 1: '2019 Survey AM'** (FG1: '2019 Surveyed AM', Plan 1: 'Network Control Plan 1')

Junction: Mold Road/Hope Street								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Mold Rd S)	3.25	0.00	Y	Arm 6 Left	10.00	1.2 %	1937	1937
				Arm 7 Ahead	Inf	98.8 %		
1/2 (Mold Rd S)	3.20	0.00	N	Arm 7 Ahead	Inf	100.0 %	2075	2075
1/3 (Mold Rd S)	3.20	0.00	Y	Arm 8 Right	15.00	100.0 %	1759	1759
2/1 (Alyn Way Entry)	2.75	0.00	Y	Arm 5 Right	15.00	48.9 %	1734	1734
				Arm 7 Left	7.00	19.1 %		
				Arm 8 Ahead	Inf	31.9 %		
3/1 (Mold Rd N Entry)	3.25	0.00	Y	Arm 5 Ahead	Inf	94.8 %	1930	1930
				Arm 8 Left	15.00	5.2 %		
3/2 (Mold Rd N Entry)	3.25	0.00	Y	Arm 5 Ahead	Inf	99.5 %	1939	1939
				Arm 6 Right	17.00	0.5 %		
4/1 (Hope St Entry)	5.00	0.00	Y	Arm 5 Left	20.00	100.0 %	1967	1967
4/2 (Hope St Entry)	4.50	0.00	Y	Arm 6 Ahead	Inf	4.1 %	1926	1926
				Arm 7 Right	20.00	95.9 %		
5/1 (Mold Rd S Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Mold Rd S Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (Alyn Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mold Rd N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Mold Rd N Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Hope St Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

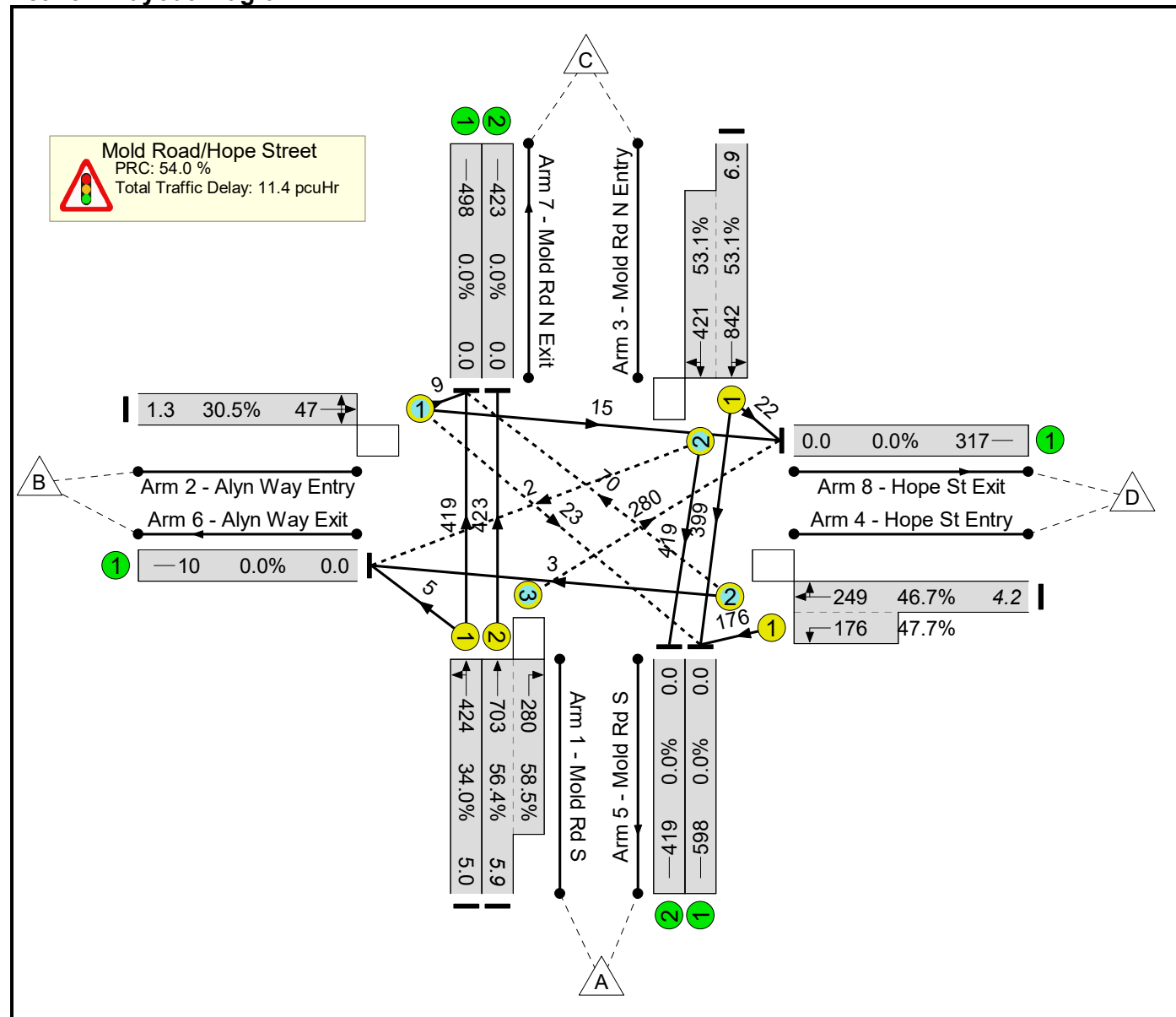
Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 Surveyed AM'	07:45	08:45	01:00	
2: '2019 Surveyed PM'	16:45	17:45	01:00	
3: '2024 Base AM'	07:45	08:45	01:00	
4: '2024 Base PM'	16:45	17:45	01:00	
5: '2030 Base AM'	07:45	08:45	01:00	
6: '2030 Base PM'	16:45	17:45	01:00	
7: '2024 Base + Dev AM'	07:45	08:45	01:00	
8: '2024 Base + Dev PM'	16:45	17:45	01:00	
9: '2030 Base + Dev AM'	07:45	08:45	01:00	
10: '2030 Base + Dev PM'	16:45	17:45	01:00	

Stage Timings

Stage	1	2	3	4
Duration	45	4	7	7
Change Point	0	51	63	78

Network Layout Diagram



Link Results

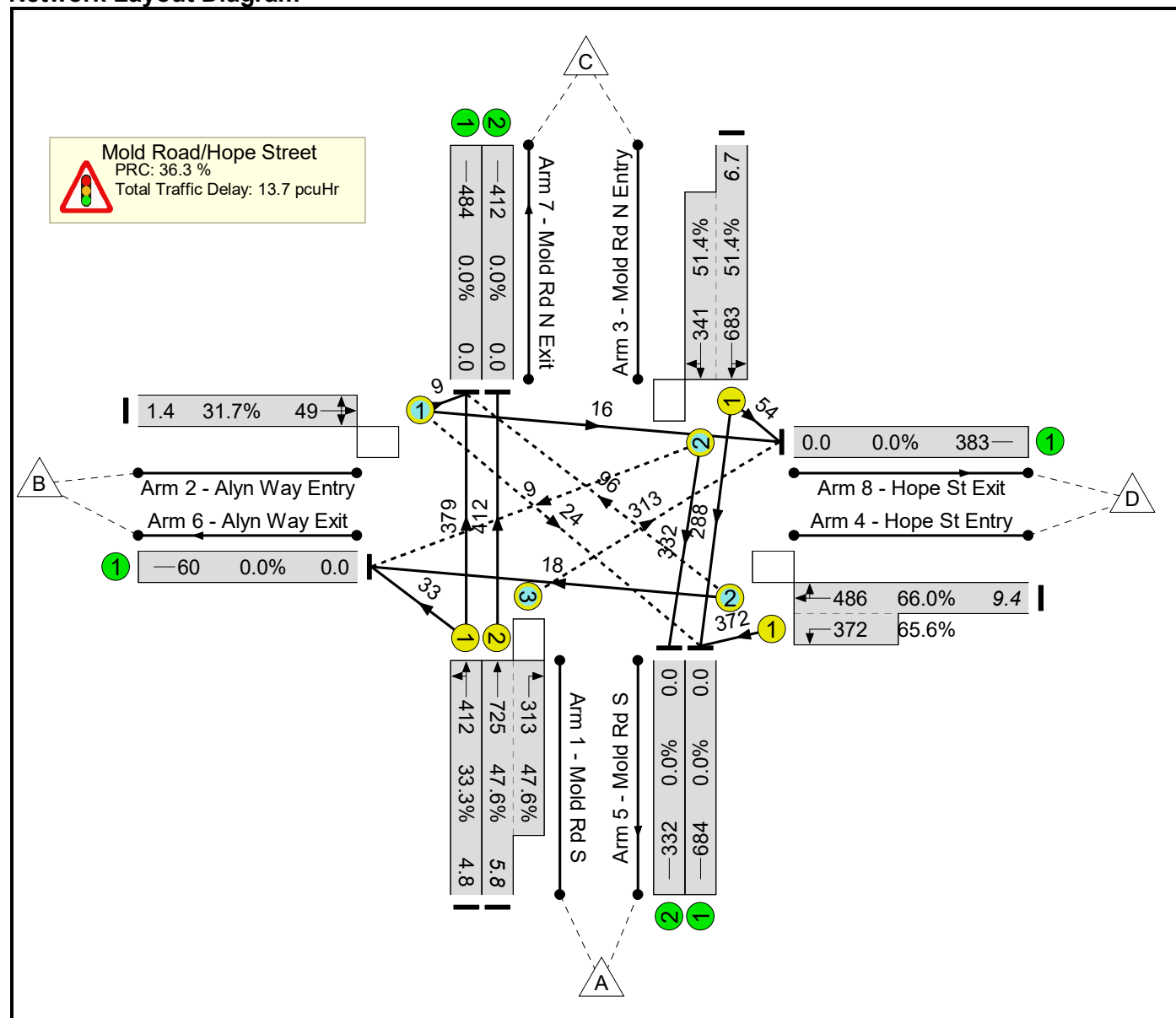
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	424	1937
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	4	703	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	47	1734
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	46	-	842	1930:1939
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:19	-	249	1926:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	58.5%	-	-	299	70	6	-	-	-	-
Mold Road/Hope Street	-	58.5%	-	-	299	70	6	-	-	-	-
1/1	1248	34.0%	424	424	-	-	-	9.5	4.7	0.3	5.0
1/2+1/3	750+479	56.4 : 58.5%	703	703	204	70	6	16.2	5.2	0.7	5.9
2/1	154	30.5%	47	47	23	0	0	55.2	1.1	0.2	1.3
3/1+3/2	794+794	53.1 : 53.1%	842	842	2	0	0	15.5	6.3	0.6	6.9
4/2+4/1	156+369	46.7 : 47.7%	249	249	70	0	0	39.5	3.7	0.4	4.2
C1 PRC for Signalled Lanes (%): 54.0 PRC Over All Lanes (%): 54.0 Total Delay for Signalled Lanes (pcuHr): 11.37 Total Delay Over All Lanes(pcuHr): 11.37 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	34	15	7	7
Change Point	0	40	63	78

Network Layout Diagram



Link Results

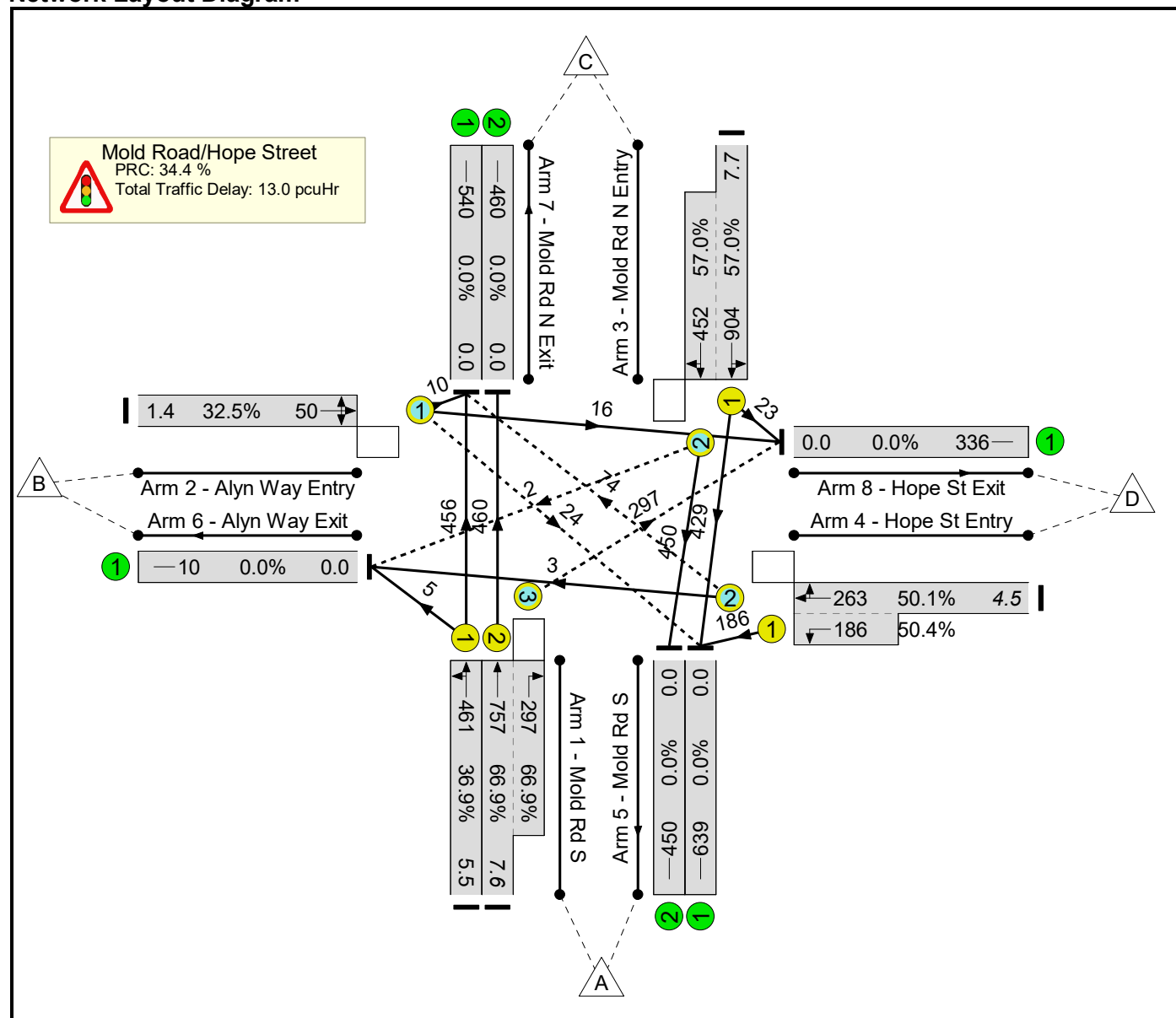
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	412	1917
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	15	725	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	49	1737
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	35	-	683	1910:1935
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:30	-	486	1942:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	66.0%	-	-	316	118	8	-	-	-	-
Mold Road/Hope Street	-	66.0%	-	-	316	118	8	-	-	-	-
1/1	1235	33.3%	412	412	-	-	-	9.4	4.6	0.3	4.8
1/2+1/3	866+658	47.6 : 47.6%	725	725	188	118	7	14.0	5.4	0.5	5.8
2/1	154	31.7%	49	49	23	0	1	55.5	1.1	0.2	1.4
3/1+3/2	665+663	51.4 : 51.4%	683	683	9	0	0	22.5	6.2	0.5	6.7
4/2+4/1	173+567	66.0 : 65.6%	486	486	96	0	0	35.1	8.5	1.0	9.4
C1 PRC for Signalled Lanes (%): 36.3 PRC Over All Lanes (%): 36.3 Total Delay for Signalled Lanes (pcuHr): 13.68 Total Delay Over All Lanes(pcuHr): 13.68 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	45	4	7	7
Change Point	0	51	63	78

Network Layout Diagram



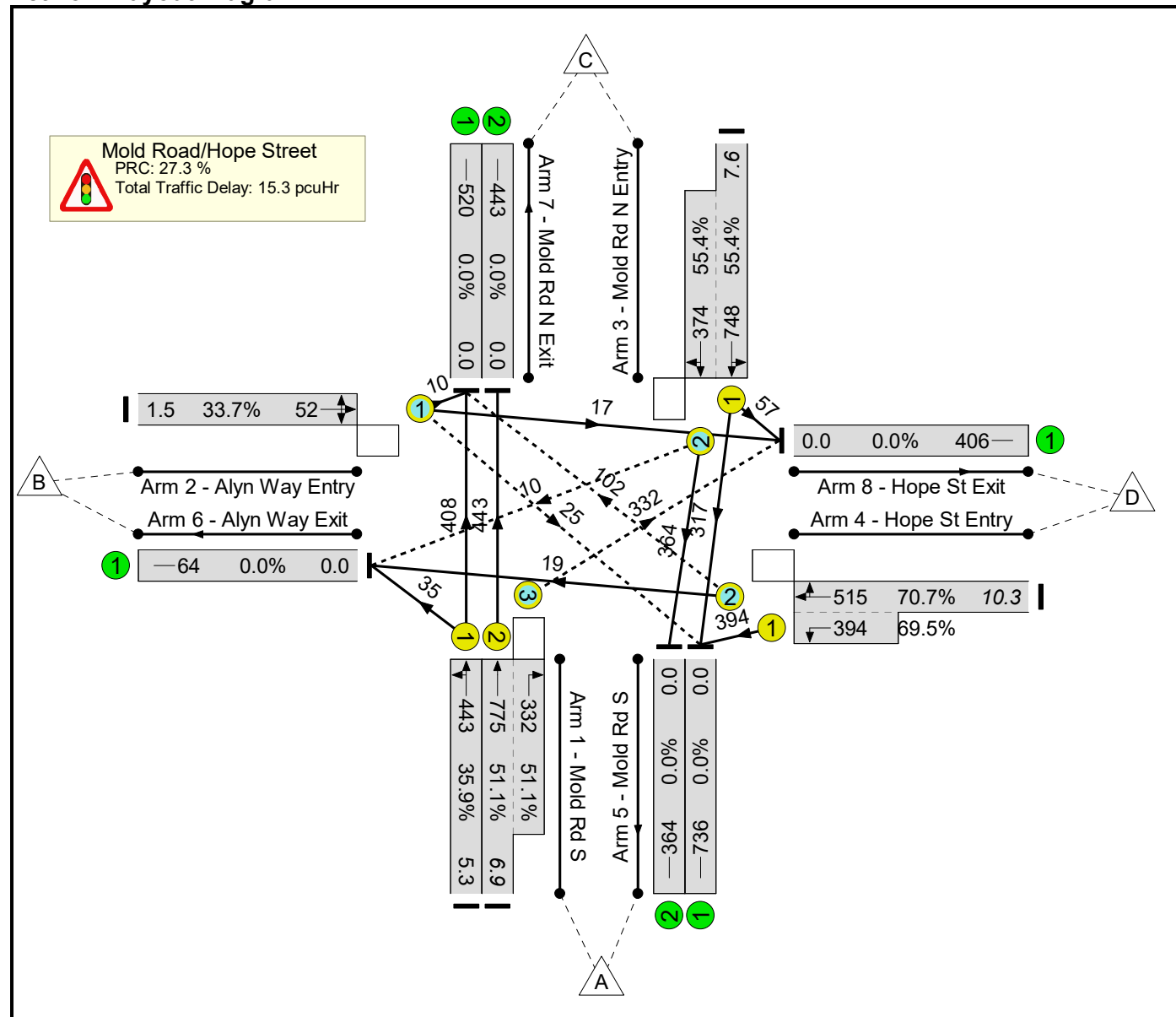
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	461	1937
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	4	757	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	50	1733
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	46	-	904	1930:1939
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:19	-	263	1926:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	66.9%	-	-	267	122	7	-	-	-	-
Mold Road/Hope Street	-	66.9%	-	-	267	122	7	-	-	-	-
1/1	1248	36.9%	461	461	-	-	-	9.8	5.3	0.3	5.5
1/2+1/3	687+444	66.9 : 66.9%	757	757	168	122	7	19.1	6.6	1.0	7.6
2/1	154	32.5%	50	50	23	0	1	55.8	1.2	0.2	1.4
3/1+3/2	794+794	57.0 : 57.0%	904	904	2	0	0	16.0	7.0	0.7	7.7
4/2+4/1	154+369	50.1 : 50.4%	263	263	74	0	0	40.1	4.0	0.5	4.5
C1 PRC for Signalled Lanes (%): 34.4 PRC Over All Lanes (%): 34.4 Total Delay for Signalled Lanes (pcuHr): 13.01 Total Delay Over All Lanes(pcuHr): 13.01 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	34	15	7	7
Change Point	0	40	63	78

Network Layout Diagram

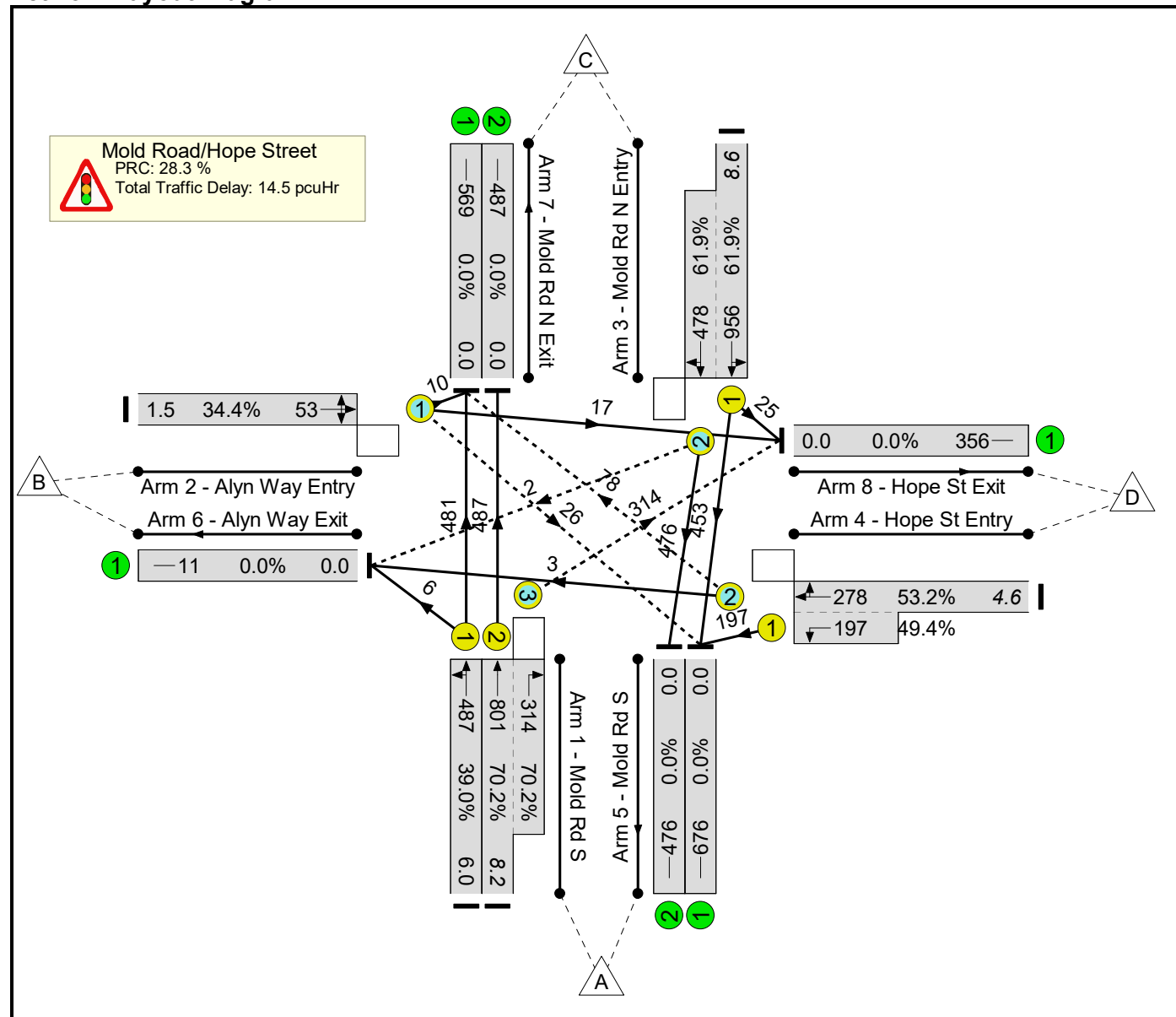
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	443	1917
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	15	775	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	52	1735
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	35	-	748	1911:1935
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:30	-	515	1942:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	70.7%	-	-	292	165	12	-	-	-	-
Mold Road/Hope Street	-	70.7%	-	-	292	165	12	-	-	-	-
1/1	1235	35.9%	443	443	-	-	-	9.7	5.0	0.3	5.3
1/2+1/3	867+650	51.1 : 51.1%	775	775	160	165	7	15.2	6.4	0.5	6.9
2/1	154	33.7%	52	52	24	0	1	56.1	1.2	0.3	1.5
3/1+3/2	675+675	55.4 : 55.4%	748	748	10	0	0	23.2	7.0	0.6	7.6
4/2+4/1	171+567	70.7 : 69.5%	515	515	98	0	4	36.4	9.2	1.1	10.3
C1 PRC for Signalled Lanes (%): 27.3 PRC Over All Lanes (%): 27.3 Total Delay for Signalled Lanes (pcuHr): 15.30 Total Delay Over All Lanes(pcuHr): 15.30 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	43	6	7	7
Change Point	0	49	63	78

Network Layout Diagram

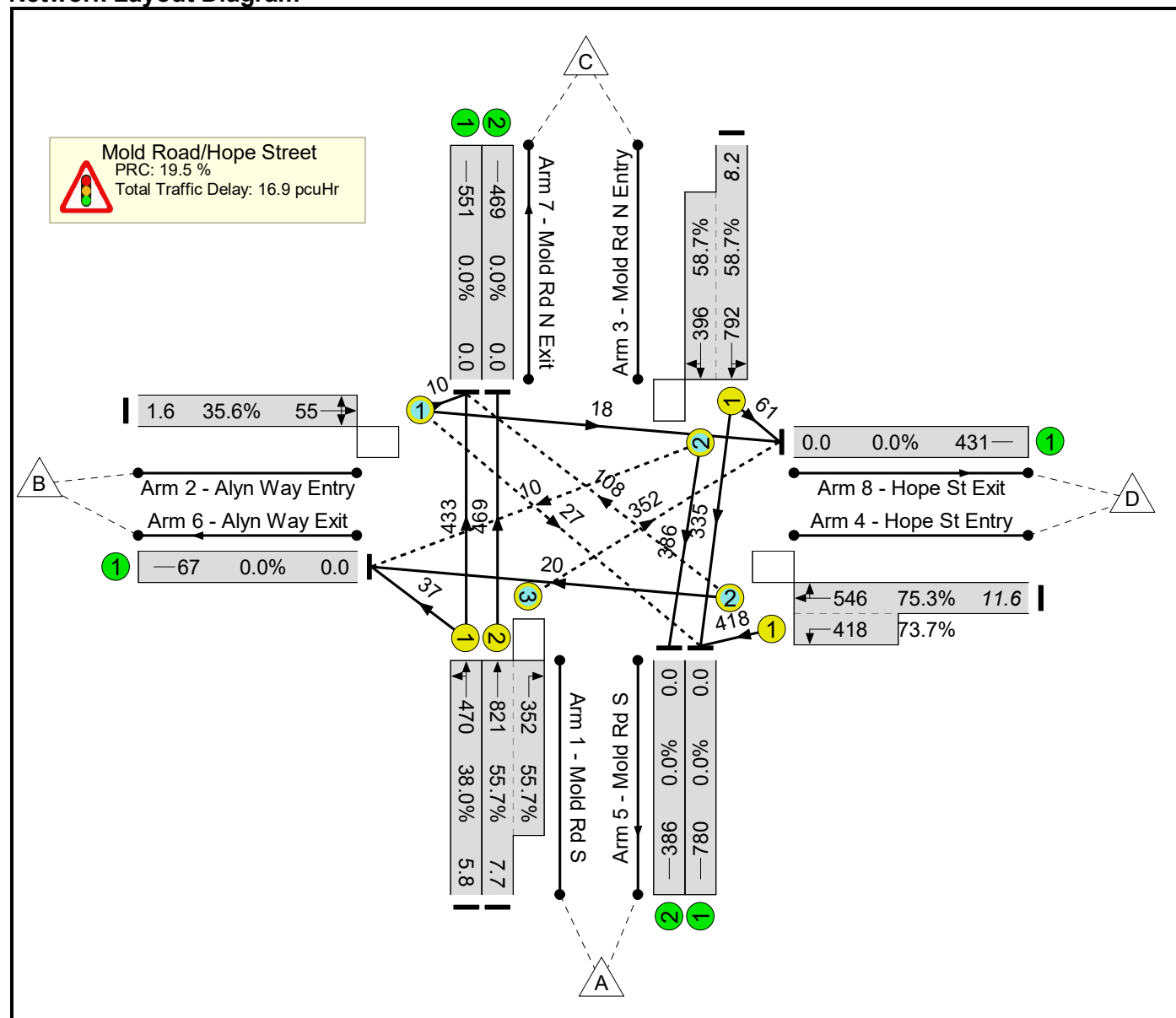
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	487	1936
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	6	801	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	53	1735
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	44	-	956	1930:1939
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:21	-	278	1926:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	70.2%	-	-	238	174	8	-	-	-	-
Mold Road/Hope Street	-	70.2%	-	-	238	174	8	-	-	-	-
1/1	1248	39.0%	487	487	-	-	-	10.0	5.7	0.3	6.0
1/2+1/3	694+448	70.2 : 70.2%	801	801	133	174	7	20.5	7.1	1.2	8.2
2/1	154	34.4%	53	53	25	0	1	56.3	1.2	0.3	1.5
3/1+3/2	772+772	61.9 : 61.9%	956	956	2	0	0	18.0	7.8	0.8	8.6
4/2+4/1	152+399	53.2 : 49.4%	278	278	78	0	0	38.7	4.1	0.5	4.6
C1 PRC for Signalled Lanes (%): 28.3 PRC Over All Lanes (%): 28.3 Total Delay for Signalled Lanes (pcuHr): 14.52 Total Delay Over All Lanes(pcuHr): 14.52 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	34	15	7	7
Change Point	0	40	63	78

Network Layout Diagram

Link Results

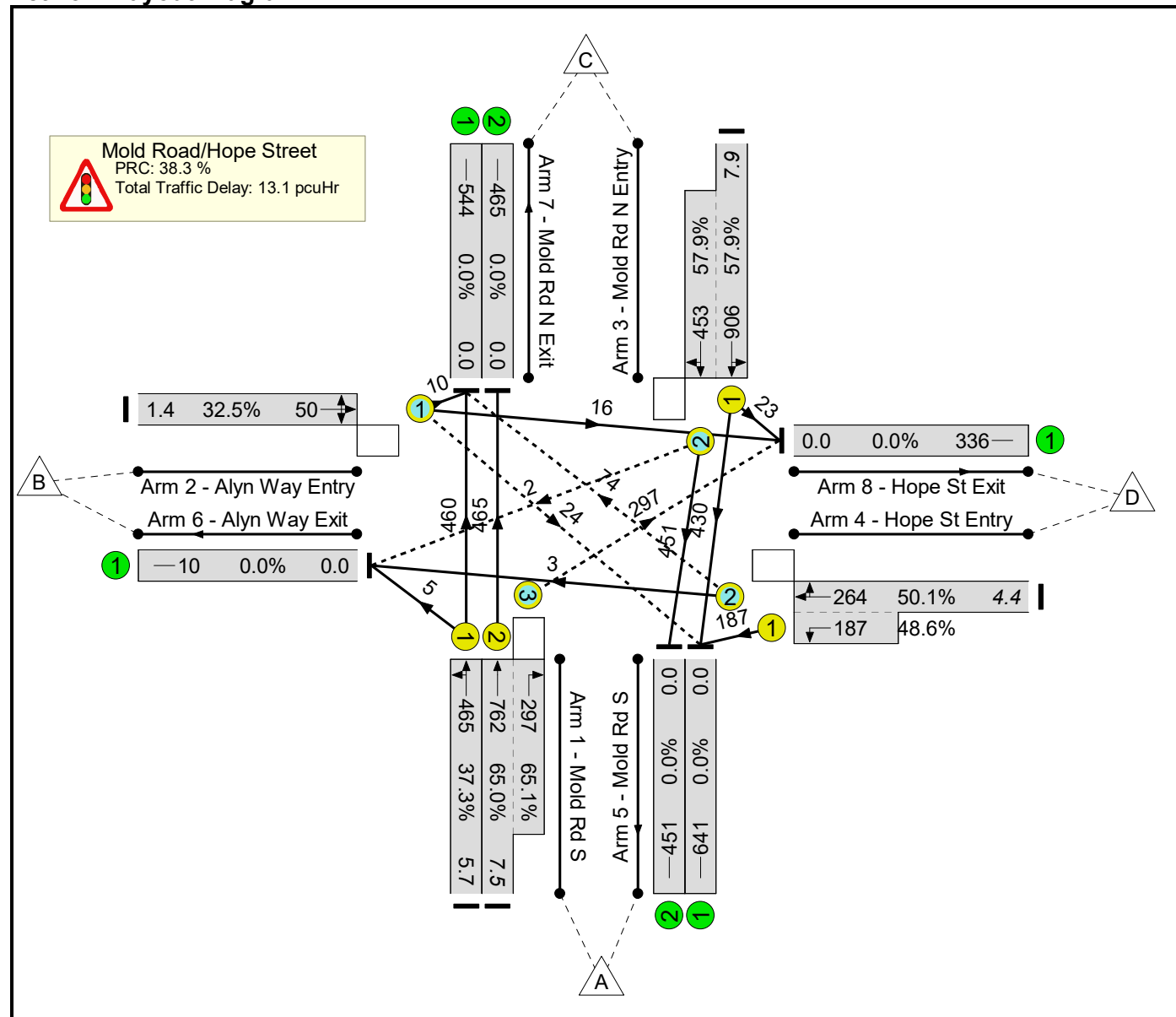
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	470	1917
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	15	821	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	55	1737
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	35	-	792	1911:1936
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:30	-	546	1942:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	75.3%	-	-	275	203	19	-	-	-	-
Mold Road/Hope Street	-	75.3%	-	-	275	203	19	-	-	-	-
1/1	1235	38.0%	470	470	-	-	-	9.9	5.5	0.3	5.8
1/2+1/3	842+632	55.7 : 55.7%	821	821	141	203	8	16.4	7.0	0.6	7.7
2/1	154	35.6%	55	55	26	0	1	56.7	1.3	0.3	1.6
3/1+3/2	675+675	58.7 : 58.7%	792	792	10	0	0	23.7	7.5	0.7	8.2
4/2+4/1	170+567	75.3 : 73.7%	546	546	97	0	11	38.2	10.1	1.4	11.6
C1 PRC for Signalled Lanes (%): 19.5 PRC Over All Lanes (%): 19.5 Total Delay for Signalled Lanes (pcuHr): 16.88 Total Delay Over All Lanes(pcuHr): 16.88 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	44	5	7	7
Change Point	0	50	63	78

Network Layout Diagram



Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	465	1937
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	5	762	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	50	1733
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	45	-	906	1930:1939
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:20	-	264	1926:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	65.1%	-	-	260	129	7	-	-	-	-
Mold Road/Hope Street	-	65.1%	-	-	260	129	7	-	-	-	-
1/1	1248	37.3%	465	465	-	-	-	9.8	5.4	0.3	5.7
1/2+1/3	715+456	65.0 : 65.1%	762	762	161	129	7	18.7	6.6	0.9	7.5
2/1	154	32.5%	50	50	23	0	1	55.8	1.2	0.2	1.4
3/1+3/2	783+783	57.9 : 57.9%	906	906	2	0	0	16.8	7.2	0.7	7.9
4/2+4/1	154+385	50.1 : 48.6%	264	264	74	0	0	39.2	3.9	0.5	4.4
C1 PRC for Signalled Lanes (%): 38.3 PRC Over All Lanes (%): 38.3 Total Delay for Signalled Lanes (pcuHr): 13.08 Total Delay Over All Lanes(pcuHr): 13.08 Cycle Time (s): 90											

Stage	1	2	3	4
Duration	33	16	7	7
Change Point	0	39	63	78

[illegible]

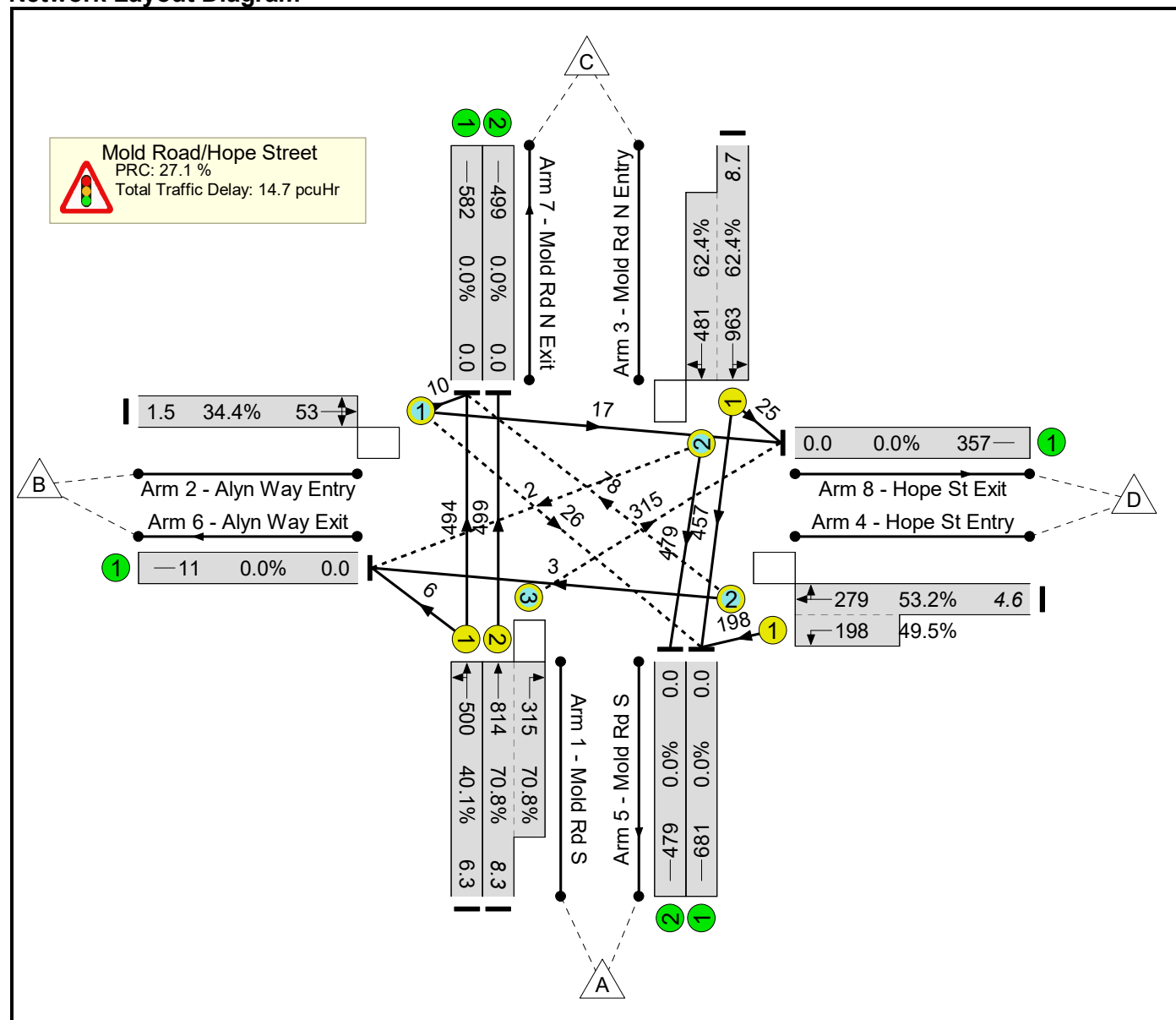
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	446	1917
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	16	777	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	52	1735
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	34	-	757	1911:1935
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:31	-	516	1942:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	70.7%	-	-	278	179	12	-	-	-	-
Mold Road/Hope Street	-	70.7%	-	-	278	179	12	-	-	-	-
1/1	1235	36.1%	446	446	-	-	-	9.7	5.1	0.3	5.4
1/2+1/3	860+642	51.7 : 51.7%	777	777	146	179	7	15.4	6.4	0.5	6.9
2/1	154	33.7%	52	52	24	0	1	56.1	1.2	0.3	1.5
3/1+3/2	664+663	57.0 : 57.0%	757	757	10	0	0	24.1	7.2	0.7	7.8
4/2+4/1	171+580	70.7 : 68.2%	516	516	98	0	4	35.4	9.1	1.1	10.2
C1 PRC for Signalled Lanes (%): 27.3 PRC Over All Lanes (%): 27.3 Total Delay for Signalled Lanes (pcuHr): 15.48 Total Delay Over All Lanes(pcuHr): 15.48 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	43	6	7	7
Change Point	0	49	63	78

Network Layout Diagram

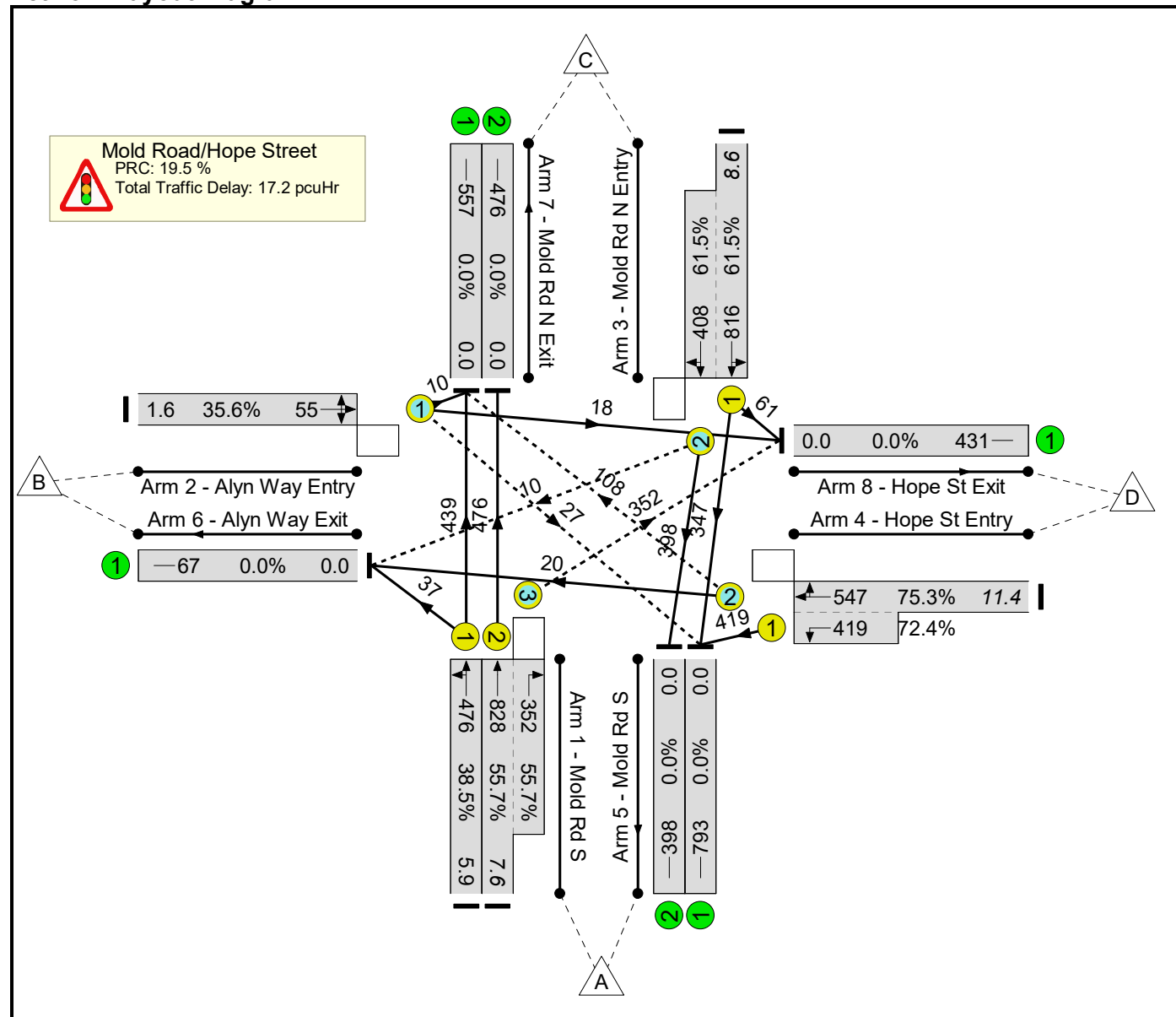
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	500	1937
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	6	814	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	53	1735
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	44	-	963	1930:1939
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:21	-	279	1926:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	70.8%	-	-	236	178	8	-	-	-	-
Mold Road/Hope Street	-	70.8%	-	-	236	178	8	-	-	-	-
1/1	1248	40.1%	500	500	-	-	-	10.1	6.0	0.3	6.3
1/2+1/3	705+445	70.8 : 70.8%	814	814	130	178	7	20.6	7.1	1.2	8.3
2/1	154	34.4%	53	53	25	0	1	56.3	1.2	0.3	1.5
3/1+3/2	773+771	62.4 : 62.4%	963	963	2	0	0	18.1	7.9	0.8	8.7
4/2+4/1	152+400	53.2 : 49.5%	279	279	78	0	0	38.7	4.1	0.5	4.6
C1 PRC for Signalled Lanes (%): 27.1 PRC Over All Lanes (%): 27.1 Total Delay for Signalled Lanes (pcuHr): 14.73 Total Delay Over All Lanes(pcuHr): 14.73 Cycle Time (s): 90											

Stage Timings

Stage	1	2	3	4
Duration	33	16	7	7
Change Point	0	39	63	78

Network Layout Diagram

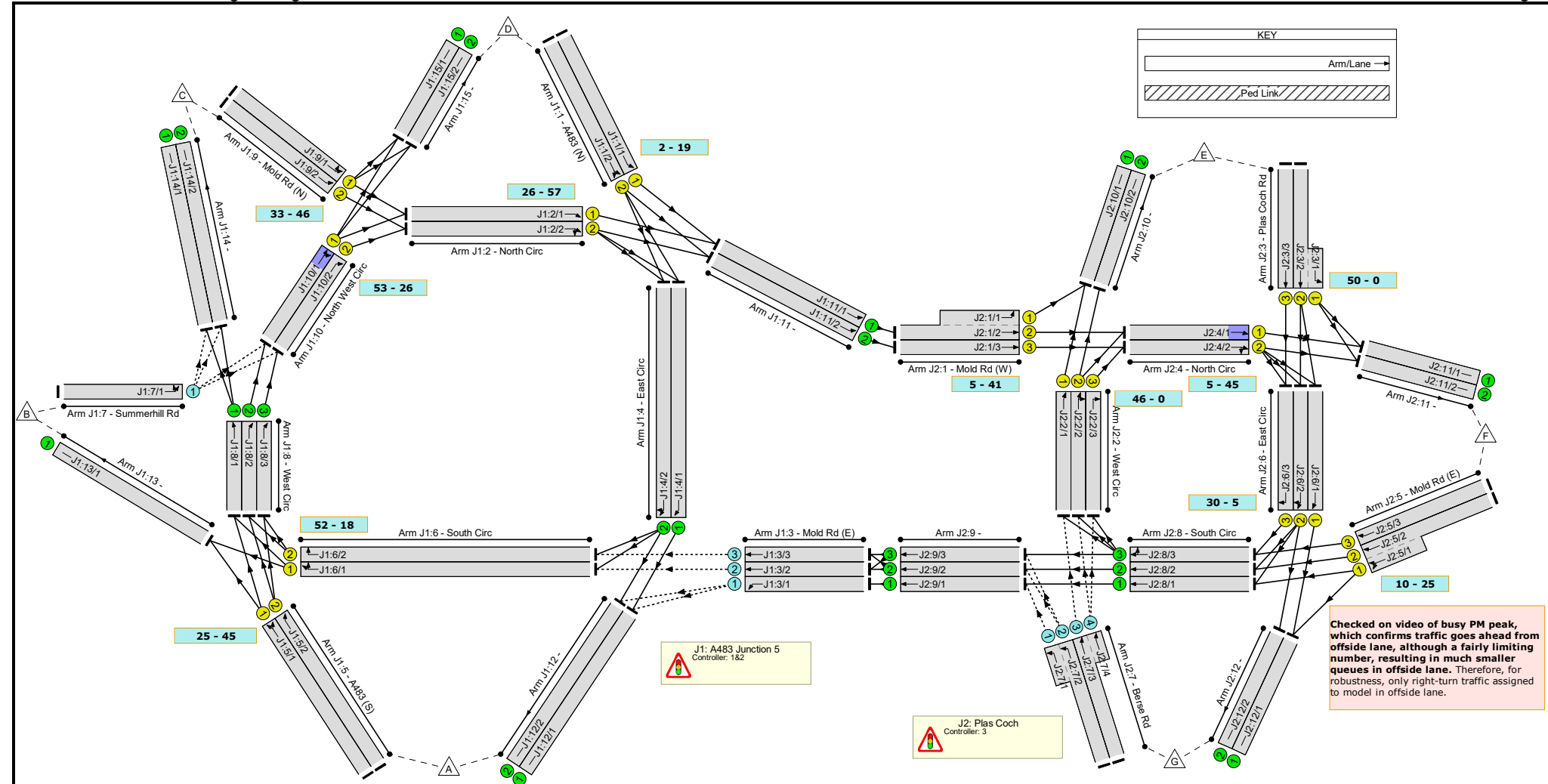
Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)
Network	-	-	N/A	-	-		-	-	-	-	-
Mold Road/Hope Street	-	-	N/A	-	-		-	-	-	-	-
1/1	Mold Rd S Left Ahead	U	N/A	N/A	A		1	57	-	476	1918
1/2+1/3	Mold Rd S Ahead Right	U+O	N/A	N/A	A	B	1	57	16	828	2075:1759
2/1	Alyn Way Entry Right Left Ahead	O	N/A	N/A	E		1	7	-	55	1737
3/1+3/2	Mold Rd N Entry Ahead Right Left	U+O	N/A	N/A	C		1	34	-	816	1911:1936
4/2+4/1	Hope St Entry Left Ahead Right	O+U	N/A	N/A	D F		1	7:31	-	547	1942:1967

Item	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	75.3%	-	-	258	220	19	-	-	-	-
Mold Road/Hope Street	-	75.3%	-	-	258	220	19	-	-	-	-
1/1	1236	38.5%	476	476	-	-	-	9.9	5.6	0.3	5.9
1/2+1/3	855+632	55.7 : 55.7%	828	828	125	220	8	16.4	6.9	0.6	7.6
2/1	154	35.6%	55	55	26	0	1	56.7	1.3	0.3	1.6
3/1+3/2	664+664	61.5 : 61.5%	816	816	10	0	0	24.9	7.8	0.8	8.6
4/2+4/1	170+579	75.3 : 72.4%	547	547	97	0	11	37.0	10.0	1.3	11.4
C1 PRC for Signalled Lanes (%): 19.5 PRC Over All Lanes (%): 19.5 Total Delay for Signalled Lanes (pcuHr): 17.23 Total Delay Over All Lanes(pcuHr): 17.23 Cycle Time (s): 90											

User and Project Details

Project:	19026 A483 J5 Rbts
Title:	Existing
Location:	North West Wrexham
Client:	Focus Transport Planning
Design Layout Ref:	Google Earth
Date Started:	05/07/2019
Date Completed:	02/09/2019
Model Purpose:	Impact of development
Flow Details:	Provided by Focus. Entered as Turning Counts (accurately using Import and Export Features) and then Matrix Estimation
Checked By:	Simon Swanston
Checked By Date:	02/09/2019
Additional detail:	
File name:	A483 J5 Network Existing.lsg3x
Author:	Simon Swanston
Company:	JCT Consultancy
Address:	LinSig House, Deepdale Lane, Nettleham, Lincoln, LN2 2LL



Model Notes

Base modelling utilised videos to observe driver behaviour / timings.

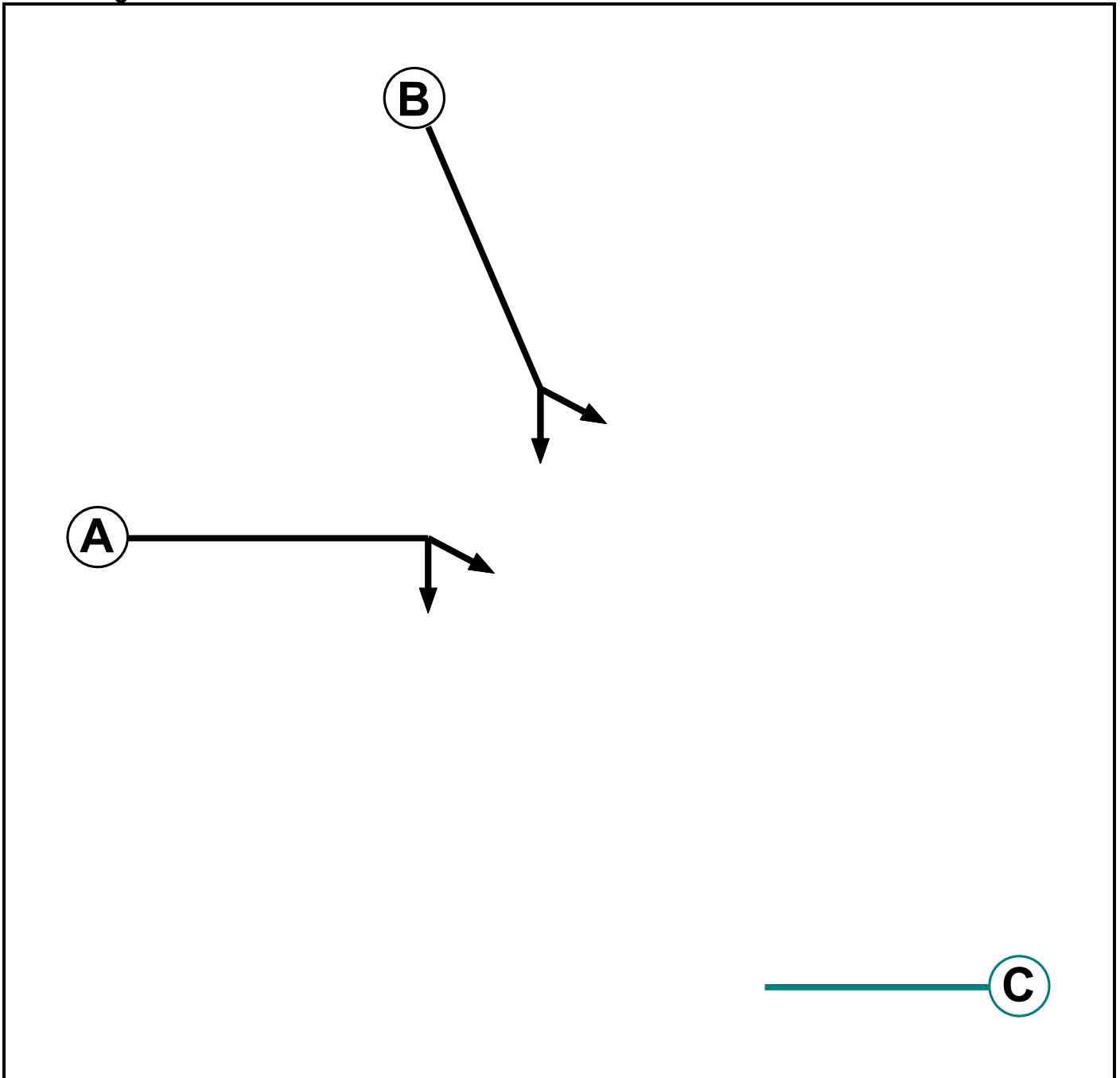
Signal timings were variable from cycle to cycle. Average cycle time for Junction 1 (West) were 55s and 63s for AM and PM respectively, Junction 1 (East) 62s and 55s, and for Junction 2 were 64s and 59s.

Max Flows for giveways at Mold Rd and Berse Rd measured from videos.

Relatively good match between queue survey and 2019 model results. However, during PM queue survey indicated queues existed on Berse Rd. Model does not show this, due to relatively low flows from Berse Rd. However, cause of queues looks to be more related to queues blocking from the Mold Rd westbound entry to Junction 1, which were in turn often blocked entering the roundabout by queues forming on the southern circulatory. The model cannot model blocking back, but does indicate the presence of queues on these downstream arms.

Timings optimised manually, with DoS set to below 90% on circulatory if over-capacity, which may differ slightly from the actual average timings on site. This was to ensure scenarios were comparable.

Sat Flows measured for A483 (N), which were observed to be 1855 pcu/hr. Not enough detail to measure elsewhere, so 1855 pcu/hr used at all signalled lanes. This would be considered a relatively robust value, with 1900 pcu/hr often considered as a robust design value.

C1 - Junction 5 (East)**Phase Diagram****Phase Input Data**

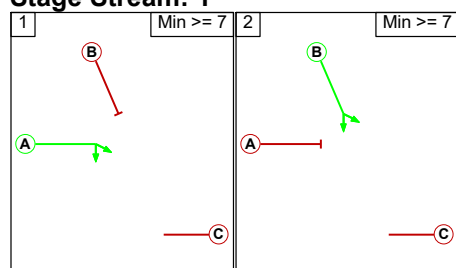
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Dummy	1		-9999	3

Phase Intergreens Matrix

		Starting Phase		
Terminating Phase		A	B	C
	A		7	3
	B	7		3
	C	2	2	

Phases in Stage

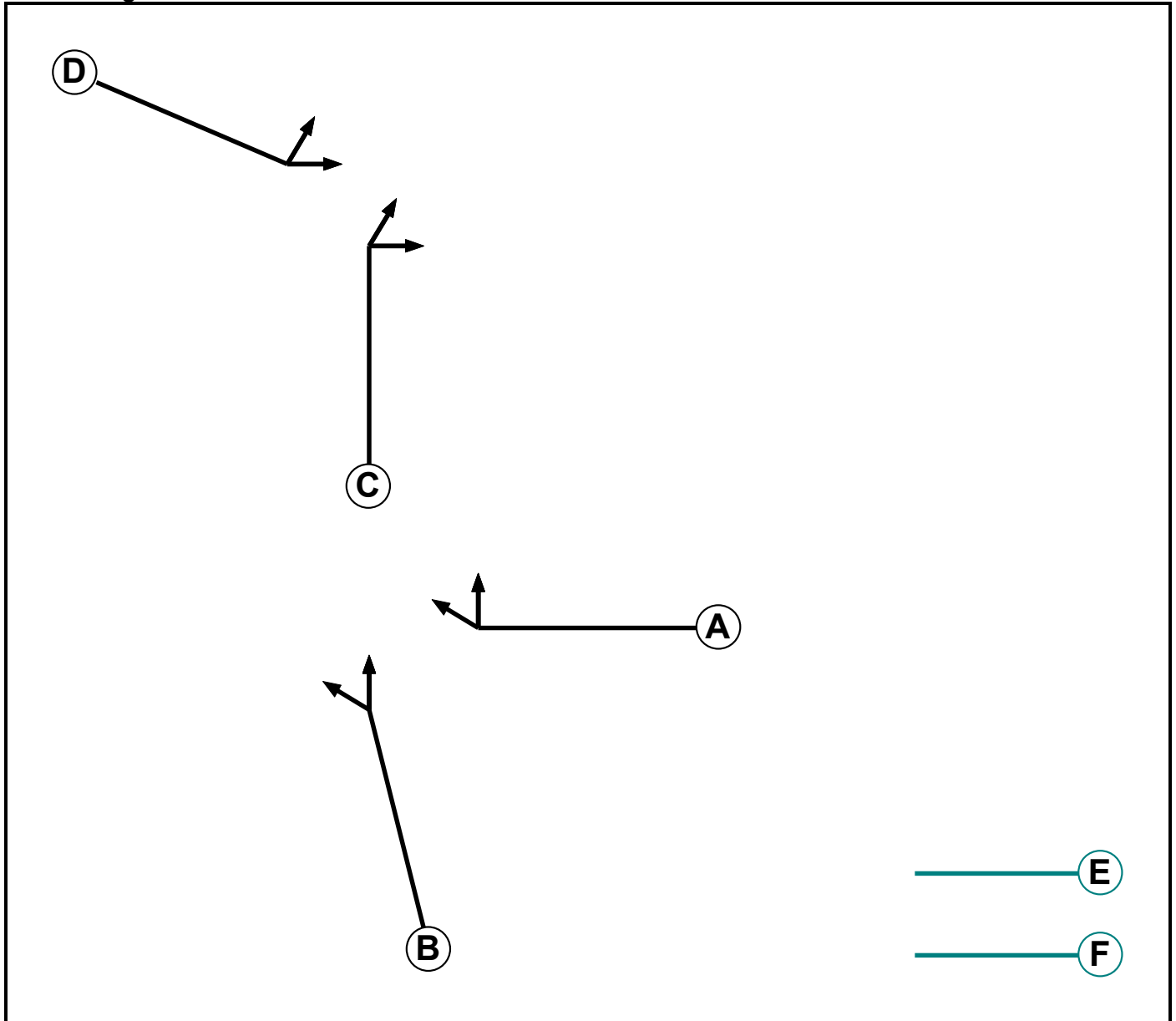
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B

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
	1		7
	2	7	

C2 - Junction 5 (West)**Phase Diagram****Phase Input Data**

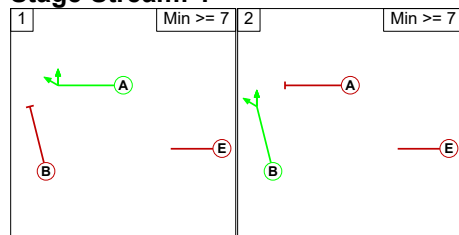
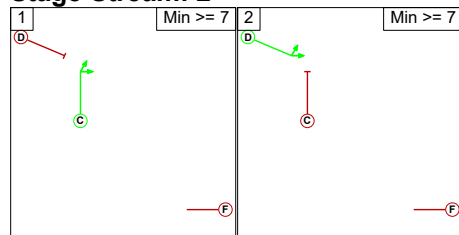
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	2		-9999	7
D	Traffic	2		-9999	7
E	Dummy	1		-9999	3
F	Dummy	2		-9999	3

Phase Intergreens Matrix

Terminating Phase	Starting Phase						
		A	B	C	D	E	F
	A		7	-	-	3	-
	B	7		-	-	3	-
	C	-	-		7	-	3
	D	-	-	7		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

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

Stage Stream: 2

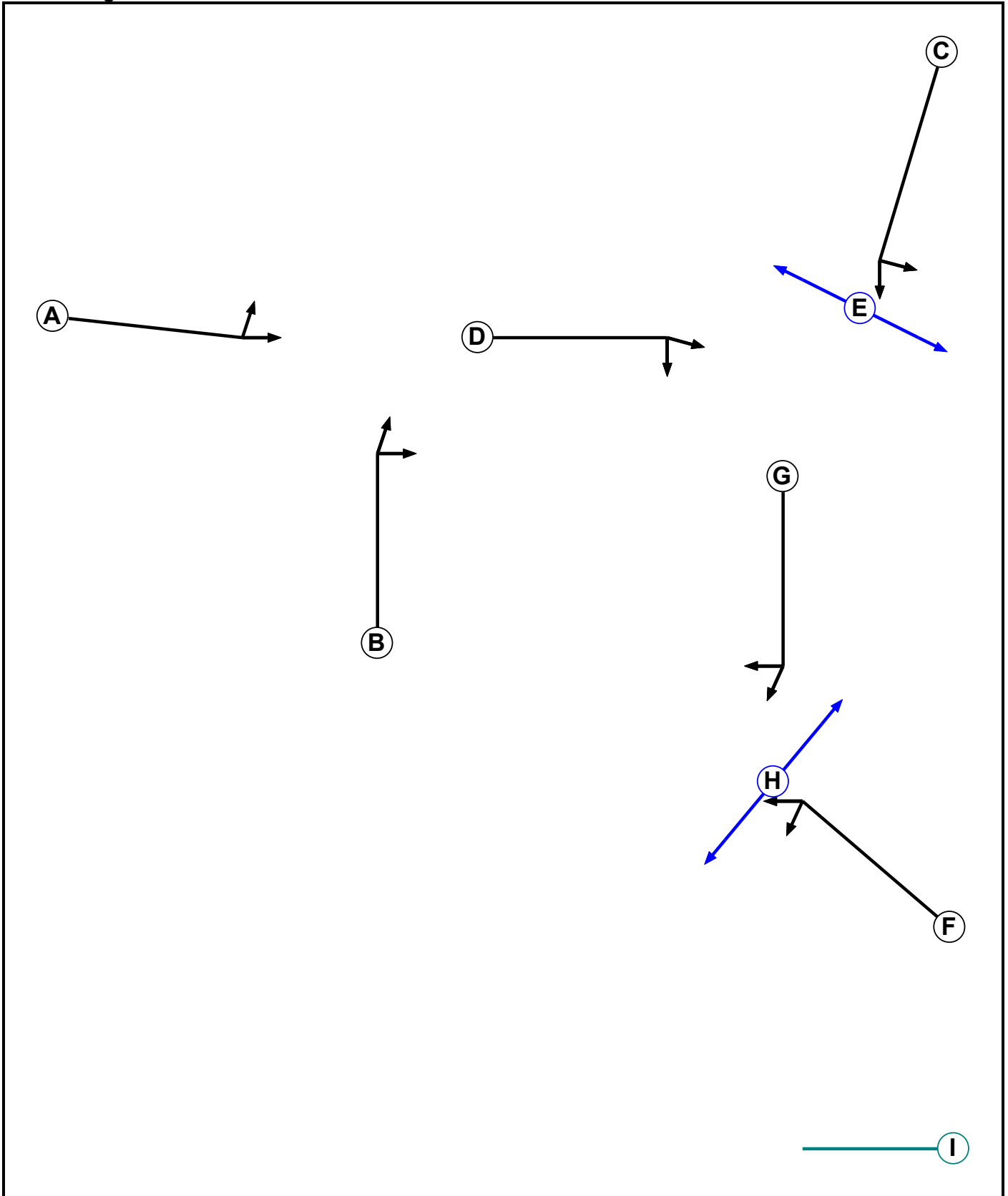
Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change**Stage Stream: 1**

	To Stage		
From Stage		1	2
	1		7
	2	7	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		7
	2	7	

**C3 - Plas Coch
Phase Diagram**

Phase Input Data

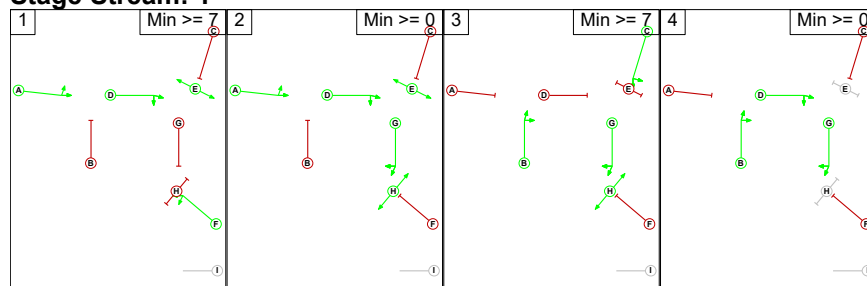
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	1		-9999	7
D	Traffic	1		-9999	7
E	Pedestrian	1		-9999	5
F	Traffic	1		-9999	7
G	Traffic	1		-9999	7
H	Pedestrian	1		-9999	5
I	Dummy	1		-9999	7

Phase Intergreens Matrix

Terminating Phase	Starting Phase									
		A	B	C	D	E	F	G	H	I
	A		5	-	-	-	-	-	-	-
	B	5		-	-	-	-	-	-	-
	C	-	-		5	5	-	-	-	-
	D	-	-	5		-	-	-	-	-
	E	-	-	8	-		-	-	-	-
	F	-	-	-	-	-		5	5	-
	G	-	-	-	-	-	5		-	-
	H	-	-	-	-	-	10	-		-
	I	-	-	-	-	-	-	-	-	

Phases in Stage

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

Stage Diagram**Stage Stream: 1**

Phase Delays**Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	D	Losing	4	4
2	3	D	Losing	4	4
3	1	G	Losing	5	5

Prohibited Stage Change**Stage Stream: 1**

From Stage	To Stage				
		1	2	3	4
	1		5	9	5
	2	10		9	5
	3	10	5		5
	4	5	5	5	

Give-Way Lane Input Data

Junction: J1: A483 Junction 5											
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)
J1:3/1 (Mold Rd (E))	J1:12/1 (Left)	1414	0	J1:4/1	1.00	All	-	-	-	-	-
				J1:4/2	1.00	All					
	J1:12/2 (Left)	1414	0	J1:4/1	1.00	All					
				J1:4/2	1.00	All					
J1:3/2 (Mold Rd (E))	J1:6/1 (Ahead)	1414	0	J1:4/1	1.00	All	-	-	-	-	-
				J1:4/2	1.00	All					
J1:3/3 (Mold Rd (E))	J1:6/2 (Ahead)	1414	0	J1:4/1	1.00	All	-	-	-	-	-
				J1:4/2	1.00	All					
J1:7/1 (Summerhill Rd)	J1:10/1 (Left)	1400	0	J1:8/1	1.00	All	-	-	-	-	-
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:10/2 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:14/1 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:14/2 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					

Junction: J2: Plas Coch											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
J2:7/1 (Berse Rd)	J2:9/1 (Left)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/2 (Berse Rd)	J2:9/2 (Left)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
	J2:9/3 (Left)	1421	0	J2:8/1	1.00	All					
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/3 (Berse Rd)	J2:2/1 (Ahead)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/4 (Berse Rd)	J2:2/2 (Ahead)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
	J2:2/3 (Ahead)	1421	0	J2:8/1	1.00	All					
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					

Lane Input Data

Junction: J1: A483 Junction 5												
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)
J1:1/1 (A483 (N))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:1/2 (A483 (N))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:2/1 (North Circ)	U	A	2	3	20.2	User	1855	-	-	-	-	-
J1:2/2 (North Circ)	U	A	2	3	20.2	User	1855	-	-	-	-	-
J1:3/1 (Mold Rd (E))	O		2	3	15.0	Inf	-	-	-	-	-	-
J1:3/2 (Mold Rd (E))	O		2	3	15.0	Inf	-	-	-	-	-	-
J1:3/3 (Mold Rd (E))	O		2	3	15.0	Inf	-	-	-	-	-	-
J1:4/1 (East Circ)	U		2	3	17.6	Inf	-	-	-	-	-	-
J1:4/2 (East Circ)	U		2	3	17.6	Inf	-	-	-	-	-	-
J1:5/1 (A483 (S))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:5/2 (A483 (S))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:6/1 (South Circ)	U	A	2	3	18.4	User	1855	-	-	-	-	-
J1:6/2 (South Circ)	U	A	2	3	18.4	User	1855	-	-	-	-	-
J1:7/1 (Summerhill Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:8/1 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:8/2 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:8/3 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:9/1 (Mold Rd (N))	U	D	2	3	60.0	User	1855	-	-	-	-	-
J1:9/2 (Mold Rd (N))	U	D	2	3	60.0	User	1855	-	-	-	-	-
J1:10/1 (North West Circ)	U	C	2	3	7.7	User	1855	-	-	-	-	-
J1:10/2 (North West Circ)	U	C	2	3	7.7	User	1855	-	-	-	-	-
J1:11/1	U		2	3	12.2	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	12.2	Inf	-	-	-	-	-	-

J1:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:14/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:14/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:15/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:15/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: Plas Coch												
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)
J2:1/1 (Mold Rd (W))	U	A	2	3	8.0	User	1855	-	-	-	-	-
J2:1/2 (Mold Rd (W))	U	A	2	3	14.4	User	1855	-	-	-	-	-
J2:1/3 (Mold Rd (W))	U	A	2	3	14.4	User	1855	-	-	-	-	-
J2:2/1 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:2/2 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:2/3 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:3/1 (Plas Coch Rd)	U	C	2	3	4.0	User	1855	-	-	-	-	-
J2:3/2 (Plas Coch Rd)	U	C	2	3	60.0	User	1855	-	-	-	-	-
J2:3/3 (Plas Coch Rd)	U	C	2	3	60.0	User	1855	-	-	-	-	-
J2:4/1 (North Circ)	U	D	2	3	8.3	User	1855	-	-	-	-	-
J2:4/2 (North Circ)	U	D	2	3	8.3	User	1855	-	-	-	-	-
J2:5/1 (Mold Rd (E))	U	F	2	3	6.0	User	1855	-	-	-	-	-
J2:5/2 (Mold Rd (E))	U	F	2	3	60.0	User	1855	-	-	-	-	-
J2:5/3 (Mold Rd (E))	U	F	2	3	60.0	User	1855	-	-	-	-	-
J2:6/1 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:6/2 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:6/3 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:7/1 (Berse Rd)	O		2	3	4.0	Inf	-	-	-	-	-	-
J2:7/2 (Berse Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/3 (Berse Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/4 (Berse Rd)	O		2	3	3.0	Inf	-	-	-	-	-	-
J2:8/1 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:8/2 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-

J2:8/3 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:9/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/3	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 Surveyed AM'	07:45	08:45	01:00	
3: '2030 AM Base'	07:45	08:45	01:00	
5: '2030 AM Base + Development'	07:45	08:45	01:00	
6: '2019 Surveyed PM'	16:45	17:45	01:00	
8: '2030 PM Base'	16:45	17:45	01:00	
10: '2030 PM Base + Development'	16:45	17:45	01:00	

Scenario 1: '2019 Surveyed AM' (FG1: '2019 Surveyed AM', Plan 2: 'No Stage 4')**Traffic Flows, Desired****Desired Flow :**

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	38	455	0	75	142	177	887
	B	20	0	3	52	23	46	57	201
	C	378	3	0	123	99	182	223	1008
	D	0	15	88	0	159	281	340	883
	E	57	18	73	111	0	48	169	476
	F	68	22	86	130	49	0	59	414
	G	112	37	136	200	254	164	0	903
	Tot.	635	133	841	616	659	863	1025	4772

Traffic Lane Flows

Lane	Scenario 1: 2019 Surveyed AM
Junction: J1: A483 Junction 5	
J1:1/1	440
J1:1/2	443
J1:2/1	560
J1:2/2	865
J1:3/1	237
J1:3/2	372
J1:3/3	441
J1:4/1	199
J1:4/2	305
J1:5/1	493
J1:5/2	394
J1:6/1	478
J1:6/2	441
J1:7/1	201
J1:8/1	838
J1:8/2	653
J1:8/3	182
J1:9/1	404
J1:9/2	604
J1:10/1	772
J1:10/2	261
J1:11/1	1000
J1:11/2	804
J1:12/1	317
J1:12/2	318
J1:13/1	133
J1:14/1	420
J1:14/2	421
J1:15/1	308
J1:15/2	308
Junction: J2: Plas Coch	
J2:1/1 (short)	356
J2:1/2 (with short)	1000(In) 644(Out)
J2:1/3	804
J2:2/1	190
J2:2/2	190
J2:2/3	87
J2:3/1 (short)	48

J2:3/2 (with short)	274(In) 226(Out)
J2:3/3	202
J2:4/1	721
J2:4/2	891
J2:5/1 (short)	127
J2:5/2 (with short)	365(In) 238(Out)
J2:5/3	49
J2:6/1	471
J2:6/2	552
J2:6/3	202
J2:7/1 (short)	112
J2:7/2 (with short)	485(In) 373(Out)
J2:7/3 (with short)	418(In) 157(Out)
J2:7/4 (short)	261
J2:8/1	125
J2:8/2	238
J2:8/3	251
J2:9/1	237
J2:9/2	424
J2:9/3	389
J2:10/1	546
J2:10/2	113
J2:11/1	745
J2:11/2	118
J2:12/1	530
J2:12/2	495

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 3: '2030 AM Base' (FG3: '2030 AM Base', Plan 2: 'No Stage 4')**Traffic Flows, Desired****Desired Flow :**

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	41	509	0	95	166	202	1013
	B	22	0	3	57	28	51	63	224
	C	422	3	0	137	122	208	251	1143
	D	0	17	98	0	193	320	382	1010
	E	90	26	108	163	0	66	221	674
	F	80	24	97	148	66	0	67	482
	G	130	39	152	225	293	188	0	1027
	Tot.	744	150	967	730	797	999	1186	5573

Traffic Lane Flows

Lane	Scenario 3: 2030 AM Base
Junction: J1: A483 Junction 5	
J1:1/1	507
J1:1/2	503
J1:2/1	567
J1:2/2	1066
J1:3/1	300
J1:3/2	446
J1:3/3	536
J1:4/1	222
J1:4/2	340
J1:5/1	550
J1:5/2	463
J1:6/1	564
J1:6/2	536
J1:7/1	224
J1:8/1	964
J1:8/2	717
J1:8/3	282
J1:9/1	467
J1:9/2	676
J1:10/1	830
J1:10/2	390
J1:11/1	1074
J1:11/2	1007
J1:12/1	372
J1:12/2	372
J1:13/1	150
J1:14/1	482
J1:14/2	485
J1:15/1	365
J1:15/2	365
Junction: J2: Plas Coch	
J2:1/1 (short)	438
J2:1/2 (with short)	1074(In) 636(Out)
J2:1/3	1007
J2:2/1	235
J2:2/2	245
J2:2/3	67
J2:3/1 (short)	66

J2:3/2 (with short)	377(In) 311(Out)
J2:3/3	297
J2:4/1	757
J2:4/2	1074
J2:5/1 (short)	147
J2:5/2 (with short)	416(In) 269(Out)
J2:5/3	66
J2:6/1	546
J2:6/2	663
J2:6/3	297
J2:7/1 (short)	130
J2:7/2 (with short)	546(In) 416(Out)
J2:7/3 (with short)	481(In) 186(Out)
J2:7/4 (short)	295
J2:8/1	170
J2:8/2	269
J2:8/3	363
J2:9/1	300
J2:9/2	476
J2:9/3	506
J2:10/1	673
J2:10/2	124
J2:11/1	790
J2:11/2	209
J2:12/1	613
J2:12/2	573

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 5: '2030 AM Base + Dev' (FG5: '2030 AM Base + Development', Plan 2: 'No Stage 4')
Traffic Flows, Desired
Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	41	521	0	95	167	203	1027
	B	22	0	3	57	28	51	63	224
	C	469	3	0	187	125	214	258	1256
	D	0	17	109	0	193	321	382	1022
	E	91	27	110	165	0	69	227	689
	F	81	23	98	149	67	0	67	485
	G	131	39	154	225	295	188	0	1032
	Tot.	794	150	995	783	803	1010	1200	5735

Traffic Lane Flows

Lane	Scenario 5: 2030 AM Base + Dev
Junction: J1: A483 Junction 5	
J1:1/1	512
J1:1/2	510
J1:2/1	620
J1:2/2	1078
J1:3/1	303
J1:3/2	451
J1:3/3	539
J1:4/1	245
J1:4/2	375
J1:5/1	562
J1:5/2	465
J1:6/1	580
J1:6/2	539
J1:7/1	224
J1:8/1	992
J1:8/2	756
J1:8/3	248
J1:9/1	526
J1:9/2	730
J1:10/1	877
J1:10/2	348
J1:11/1	1132
J1:11/2	968
J1:12/1	395
J1:12/2	399
J1:13/1	150
J1:14/1	496
J1:14/2	499
J1:15/1	391
J1:15/2	392
Junction: J2: Plas Coch	
J2:1/1 (short)	441
J2:1/2 (with short)	1132(In) 691(Out)
J2:1/3	968
J2:2/1	192
J2:2/2	246
J2:2/3	112
J2:3/1 (short)	69

J2:3/2 (with short)	387(In) 318(Out)
J2:3/3	302
J2:4/1	767
J2:4/2	1080
J2:5/1 (short)	148
J2:5/2 (with short)	418(In) 270(Out)
J2:5/3	67
J2:6/1	559
J2:6/2	665
J2:6/3	302
J2:7/1 (short)	131
J2:7/2 (with short)	549(In) 418(Out)
J2:7/3 (with short)	483(In) 148(Out)
J2:7/4 (short)	335
J2:8/1	172
J2:8/2	270
J2:8/3	369
J2:9/1	303
J2:9/2	477
J2:9/3	513
J2:10/1	633
J2:10/2	170
J2:11/1	801
J2:11/2	209
J2:12/1	626
J2:12/2	574

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 6: '2019 Surveyed PM' (FG6: '2019 Surveyed PM', Plan 2: 'No Stage 4')**Traffic Flows, Desired****Desired Flow :**

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	49	440	0	151	122	82	844
	B	24	0	4	31	38	30	19	146
	C	341	0	0	55	153	124	85	758
	D	4	35	175	2	268	221	155	860
	E	202	69	183	185	0	120	271	1030
	F	241	83	216	217	148	0	183	1088
	G	136	45	125	126	168	59	0	659
	Tot.	948	281	1143	616	926	676	795	5385

Traffic Lane Flows

Lane	Scenario 6: 2019 Surveyed PM
Junction: J1: A483 Junction 5	
J1:1/1	428
J1:1/2	432
J1:2/1	469
J1:2/2	700
J1:3/1	579
J1:3/2	721
J1:3/3	528
J1:4/1	184
J1:4/2	397
J1:5/1	489
J1:5/2	355
J1:6/1	931
J1:6/2	530
J1:7/1	146
J1:8/1	1139
J1:8/2	684
J1:8/3	201
J1:9/1	332
J1:9/2	426
J1:10/1	753
J1:10/2	274
J1:11/1	897
J1:11/2	551
J1:12/1	473
J1:12/2	475
J1:13/1	281
J1:14/1	572
J1:14/2	571
J1:15/1	307
J1:15/2	309
Junction: J2: Plas Coch	
J2:1/1 (short)	610
J2:1/2 (with short)	897(In) 287(Out)
J2:1/3	551
J2:2/1	172
J2:2/2	170
J2:2/3	33
J2:3/1 (short)	120

J2:3/2 (with short)	593(In) 473(Out)
J2:3/3	437
J2:4/1	313
J2:4/2	584
J2:5/1 (short)	424
J2:5/2 (with short)	940(In) 516(Out)
J2:5/3	148
J2:6/1	396
J2:6/2	418
J2:6/3	437
J2:7/1 (short)	136
J2:7/2 (with short)	432(In) 296(Out)
J2:7/3 (with short)	227(In) 82(Out)
J2:7/4 (short)	145
J2:8/1	443
J2:8/2	516
J2:8/3	585
J2:9/1	579
J2:9/2	665
J2:9/3	584
J2:10/1	782
J2:10/2	144
J2:11/1	373
J2:11/2	303
J2:12/1	579
J2:12/2	216

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 8: '2030 PM Base' (FG8: '2030 PM Base', Plan 2: 'No Stage 4')**Traffic Flows, Desired****Desired Flow :**

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	55	493	0	198	141	94	981
	B	27	0	4	35	47	32	21	166
	C	382	0	0	62	197	141	95	877
	D	4	39	197	2	340	251	173	1006
	E	243	82	218	221	0	140	316	1220
	F	274	93	245	249	181	0	208	1250
	G	153	50	140	142	219	68	0	772
	Tot.	1083	319	1297	711	1182	773	907	6272

Traffic Lane Flows

Lane	Scenario 8: 2030 PM Base
Junction: J1: A483 Junction 5	
J1:1/1	461
J1:1/2	545
J1:2/1	594
J1:2/2	781
J1:3/1	670
J1:3/2	828
J1:3/3	612
J1:4/1	207
J1:4/2	444
J1:5/1	548
J1:5/2	433
J1:6/1	1064
J1:6/2	614
J1:7/1	166
J1:8/1	1293
J1:8/2	822
J1:8/3	225
J1:9/1	400
J1:9/2	477
J1:10/1	905
J1:10/2	304
J1:11/1	1055
J1:11/2	675
J1:12/1	541
J1:12/2	542
J1:13/1	319
J1:14/1	647
J1:14/2	650
J1:15/1	355
J1:15/2	356
Junction: J2: Plas Coch	
J2:1/1 (short)	782
J2:1/2 (with short)	1055(In) 273(Out)
J2:1/3	675
J2:2/1	207
J2:2/2	218
J2:2/3	43
J2:3/1 (short)	140

J2:3/2 (with short)	699(In) 559(Out)
J2:3/3	521
J2:4/1	298
J2:4/2	718
J2:5/1 (short)	482
J2:5/2 (with short)	1069(In) 587(Out)
J2:5/3	181
J2:6/1	464
J2:6/2	478
J2:6/3	521
J2:7/1 (short)	153
J2:7/2 (with short)	485(In) 332(Out)
J2:7/3 (with short)	287(In) 99(Out)
J2:7/4 (short)	188
J2:8/1	517
J2:8/2	587
J2:8/3	702
J2:9/1	670
J2:9/2	754
J2:9/3	686
J2:10/1	989
J2:10/2	193
J2:11/1	368
J2:11/2	405
J2:12/1	672
J2:12/2	235

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 10: '2030 PM Base + Dev' (FG10: '2030 PM Base + Development', Plan 2: 'No Stage 4')
Traffic Flows, Desired
Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	55	540	0	200	141	94	1030
	B	27	0	4	35	47	32	21	166
	C	407	0	0	88	201	143	97	936
	D	4	39	241	2	346	253	176	1061
	E	242	81	224	221	0	141	319	1228
	F	275	92	252	249	184	0	208	1260
	G	154	50	145	143	226	68	0	786
	Tot.	1109	317	1406	738	1204	778	915	6467

Traffic Lane Flows

Lane	Scenario 10: 2030 PM Base + Dev
Junction: J1: A483 Junction 5	
J1:1/1	519
J1:1/2	542
J1:2/1	591
J1:2/2	819
J1:3/1	671
J1:3/2	844
J1:3/3	613
J1:4/1	219
J1:4/2	501
J1:5/1	595
J1:5/2	435
J1:6/1	1124
J1:6/2	615
J1:7/1	166
J1:8/1	1402
J1:8/2	815
J1:8/3	235
J1:9/1	432
J1:9/2	504
J1:10/1	897
J1:10/2	315
J1:11/1	1110
J1:11/2	641
J1:12/1	554
J1:12/2	555
J1:13/1	317
J1:14/1	703
J1:14/2	703
J1:15/1	368
J1:15/2	370
Junction: J2: Plas Coch	
J2:1/1 (short)	794
J2:1/2 (with short)	1110(In) 316(Out)
J2:1/3	641
J2:2/1	216
J2:2/2	220
J2:2/3	42
J2:3/1 (short)	141

J2:3/2 (with short)	702(In) 561(Out)
J2:3/3	526
J2:4/1	342
J2:4/2	683
J2:5/1 (short)	483
J2:5/2 (with short)	1076(In) 593(Out)
J2:5/3	184
J2:6/1	460
J2:6/2	489
J2:6/3	526
J2:7/1 (short)	154
J2:7/2 (with short)	492(In) 338(Out)
J2:7/3 (with short)	294(In) 101(Out)
J2:7/4 (short)	193
J2:8/1	517
J2:8/2	593
J2:8/3	710
J2:9/1	671
J2:9/2	763
J2:9/3	694
J2:10/1	1010
J2:10/2	194
J2:11/1	412
J2:11/2	366
J2:12/1	668
J2:12/2	247

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

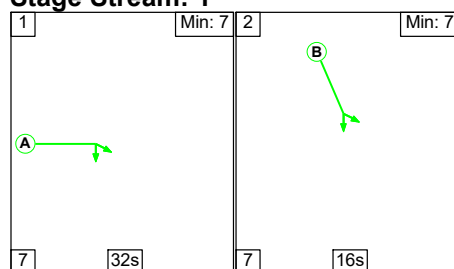
J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 1: '2019 Surveyed AM' (FG1: '2019 Surveyed AM', Plan 2: 'No Stage 4')

C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1

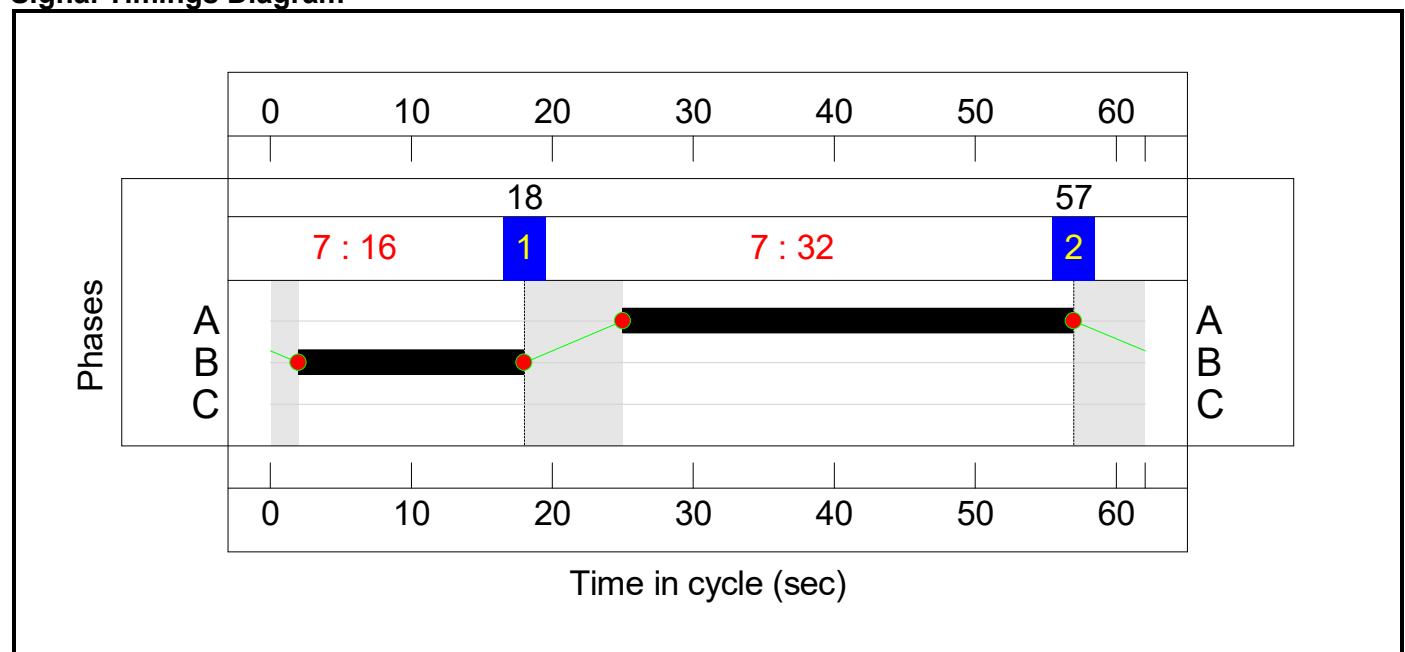


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	16
Change Point	18	57

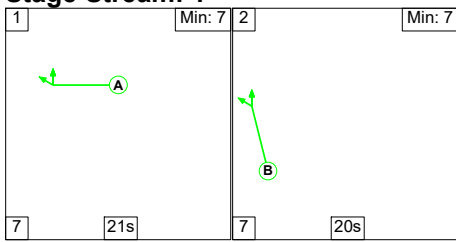
Signal Timings Diagram



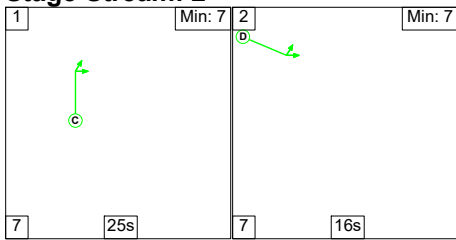
C2 - Junction 5 (West)

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



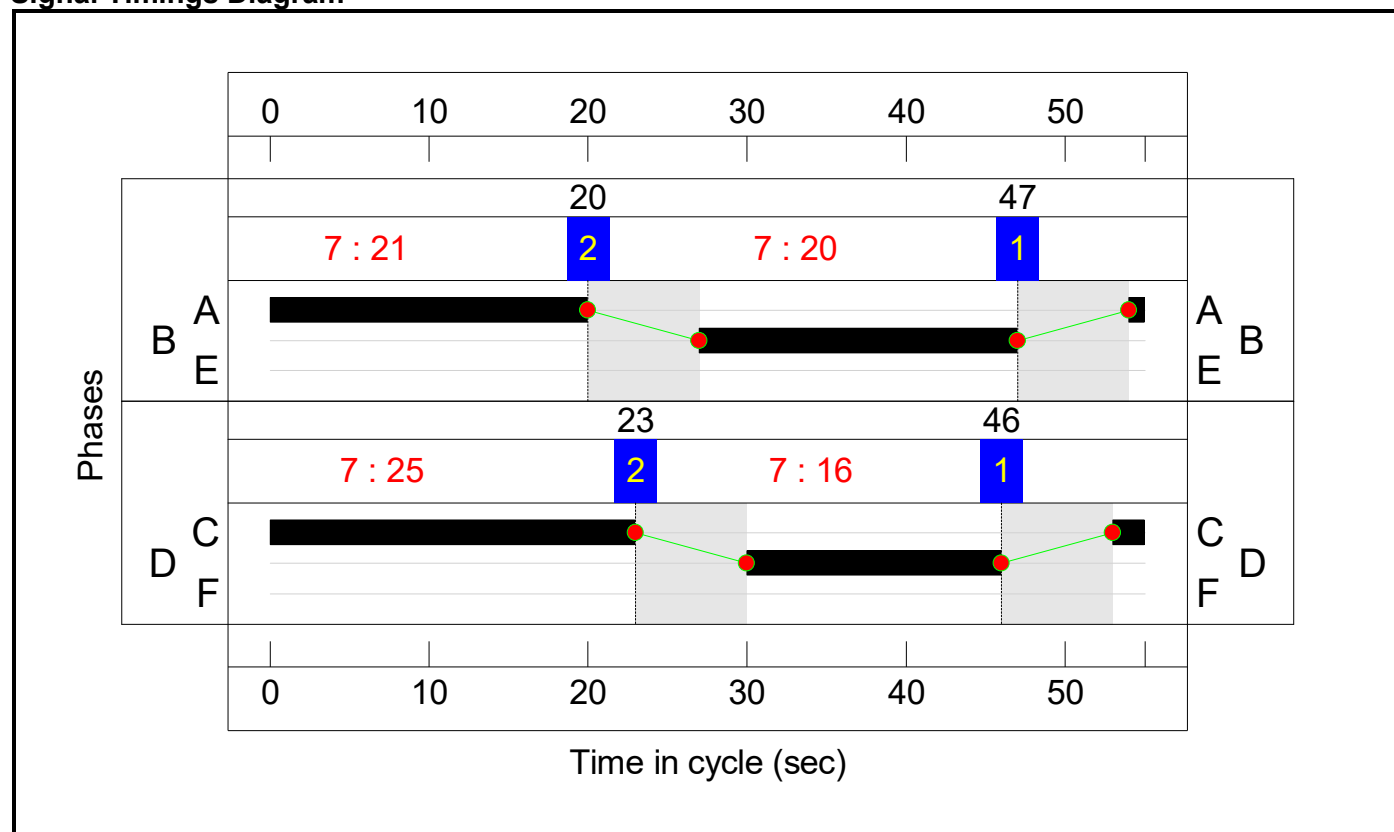
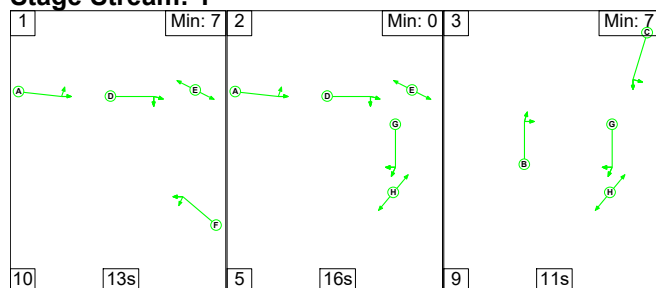
Stage Timings

Stage Stream: 1

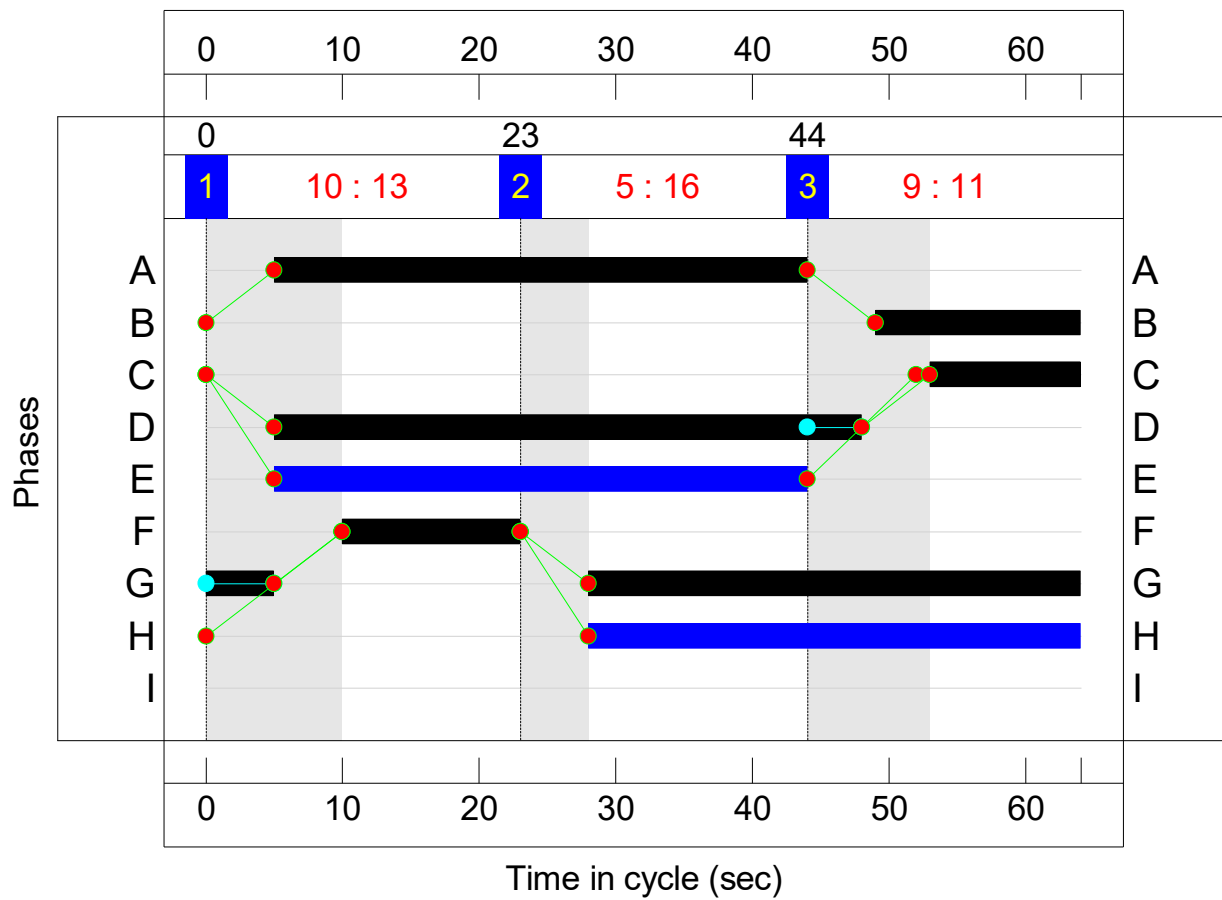
Stage	1	2
Duration	21	20
Change Point	47	20

Stage Stream: 2

Stage	1	2
Duration	25	16
Change Point	46	23

Signal Timings Diagram**C3 - Plas Coch****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	13	16	11
Change Point	0	23	44

Signal Timings Diagram

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing	-	-	N/A	-	-		-	-	-	-	-	-	105.3%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	105.3%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	16	-	440	1855	509	86.5%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	16	-	443	1855	509	87.1%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	32	-	560	1855	987	56.7%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	32	-	865	1855	987	84.5%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	237	Inf	929	25.5%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	372	Inf	929	40.0%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	441	Inf	929	47.5%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	305	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	20	-	493	1855	708	69.6%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	20	-	394	1855	708	55.6%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	21	-	478	1855	742	64.4%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	21	-	441	1855	742	59.4%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	201	Inf	495	40.6%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	838	Inf	Inf	0.0%

8/2	West Circ Ahead	U	N/A	N/A	-		-	-	-	653	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	182	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	16	-	404	1855	573	70.5%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	16	-	604	1855	573	105.3%
10/1	North West Circ Right Ahead	U	2:2	N/A	C2:C		1	25	-	772	1855	877	88.0%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	25	-	261	1855	877	29.8%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1000	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	804	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	317	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	133	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	308	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	308	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	71.7%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	39	-	1000	1855:1855	898+496	71.7 : 71.7%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	39	-	804	1855	1159	68.4%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	15	-	190	1855	464	41.0%
2/2	West Circ Right Ahead	U	3:1	N/A	C3:B		1	15	-	190	1855	464	41.0%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	15	-	87	1855	464	18.8%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	11	-	274	1855:1855	321+68	70.5 : 70.5%

3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	11	-	202	1855	348	58.1%
4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	43	-	721	1855	1275	56.5%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	43	-	891	1855	1275	69.0%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	13	-	365	1855:1855	375+200	63.4 : 63.4%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	13	-	49	1855	406	12.1%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	41	-	471	1855	1217	38.2%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	41	-	552	1855	1217	44.9%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	41	-	202	1855	1217	16.6%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	485	Inf : Inf	1043+313	35.8 : 35.8%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	418	Inf : Inf	627+1043	25.0 : 25.0%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	125	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	238	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	389	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	546	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	113	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	745	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	118	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	530	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	495	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing	-	-	3057	0	0	39.6	48.2	0.0	87.8	-	-	-	-
J1: A483 Junction 5	-	-	1251	0	0	25.0	41.0	0.0	66.0	-	-	-	-
1/1	440	440	-	-	-	2.6	3.0	-	5.6	45.6	7.1	3.0	10.0
1/2	443	443	-	-	-	2.6	3.1	-	5.7	46.5	7.3	3.1	10.3
2/1	560	560	-	-	-	1.5	0.7	-	2.2	13.9	6.4	0.7	7.0
2/2	834	834	-	-	-	2.9	2.6	-	5.5	23.7	12.1	2.6	14.7
3/1	237	237	237	0	0	0.0	0.2	-	0.2	2.6	0.8	0.2	1.0
3/2	372	372	372	0	0	0.0	0.3	-	0.3	3.2	0.0	0.3	0.3
3/3	441	441	441	0	0	0.0	0.5	-	0.5	3.9	2.4	0.5	2.8
4/1	189	189	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	295	295	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	493	493	-	-	-	2.0	1.1	-	3.1	22.6	6.3	1.1	7.4
5/2	394	394	-	-	-	1.5	0.6	-	2.1	19.1	4.7	0.6	5.3
6/1	478	478	-	-	-	1.8	0.9	-	2.7	20.1	5.8	0.9	6.7
6/2	441	441	-	-	-	1.6	0.7	-	2.3	18.9	5.3	0.7	6.0
7/1	201	201	201	0	0	0.2	0.3	-	0.6	10.4	1.1	0.3	1.5
8/1	838	838	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	653	653	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	182	182	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	404	404	-	-	-	1.9	1.2	-	3.1	27.3	5.4	1.2	6.6
9/2	604	573	-	-	-	3.8	22.1	-	25.9	154.5	9.7	22.1	31.8
10/1	772	772	-	-	-	1.7	3.5	-	5.2	24.1	5.4	3.5	8.9
10/2	261	261	-	-	-	0.9	0.2	-	1.1	15.4	3.7	0.2	3.9
11/1	1000	1000	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	793	793	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	307	307	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	308	308	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	133	133	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	308	308	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	308	308	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	1806	0	0	14.6	7.2	0.0	21.8	-	-	-	-
1/2+1/1	1000	1000	-	-	-	1.8	1.3	-	3.0	11.0	6.4	1.3	7.7
1/3	793	793	-	-	-	1.7	1.1	-	2.8	12.7	9.0	1.1	10.1
2/1	190	190	-	-	-	1.3	0.3	-	1.6	30.6	3.0	0.3	3.4
2/2	190	190	-	-	-	1.2	0.3	-	1.5	29.3	3.0	0.3	3.3
2/3	87	87	-	-	-	0.5	0.1	-	0.6	25.1	1.3	0.1	1.4
3/2+3/1	274	274	-	-	-	1.8	1.2	-	3.0	39.0	3.7	1.2	4.9
3/3	202	202	-	-	-	1.3	0.7	-	2.0	36.0	3.3	0.7	3.9
4/1	721	721	-	-	-	0.3	0.0	-	0.3	1.5	1.4	0.0	1.4
4/2	880	880	-	-	-	0.4	0.0	-	0.4	1.5	1.5	0.0	1.5
5/2+5/1	365	365	-	-	-	2.2	0.9	-	3.1	30.4	3.8	0.9	4.6
5/3	49	49	-	-	-	0.3	0.1	-	0.3	25.2	0.7	0.1	0.8
6/1	465	465	-	-	-	0.8	0.3	-	1.2	8.9	5.7	0.3	6.0
6/2	546	546	-	-	-	0.7	0.4	-	1.1	7.5	5.0	0.4	5.4
6/3	202	202	-	-	-	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
7/2+7/1	485	485	970	0	0	0.2	0.3	-	0.4	3.2	1.1	0.3	1.4
7/3+7/4	418	418	836	0	0	0.1	0.2	-	0.3	2.5	0.7	0.2	0.8
8/1	125	125	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	238	238	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	237	237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

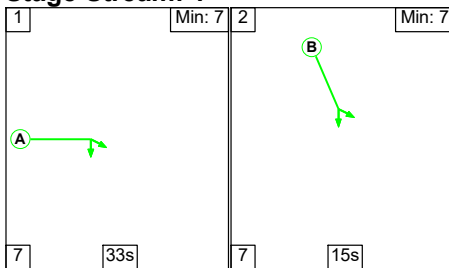
[illegible]

Scenario 3: '2030 AM Base' (FG3: '2030 AM Base', Plan 2: 'No Stage 4')

C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1

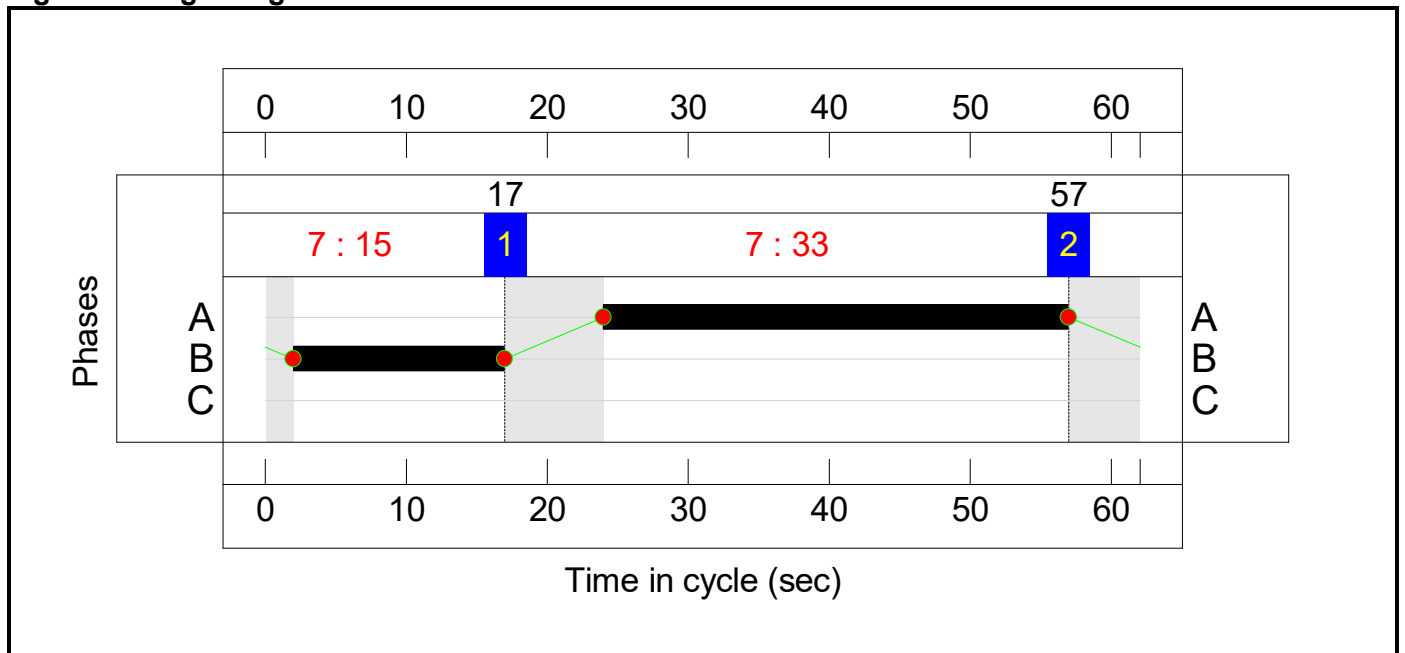


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	15
Change Point	17	57

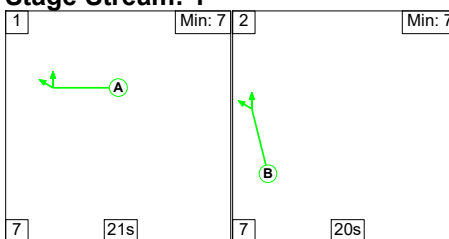
Signal Timings Diagram

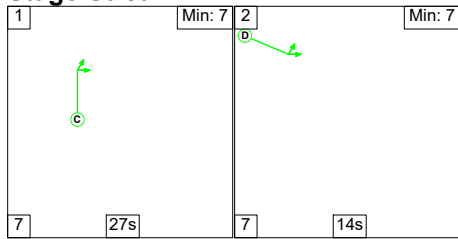


C2 - Junction 5 (West)

Stage Sequence Diagram

Stage Stream: 1

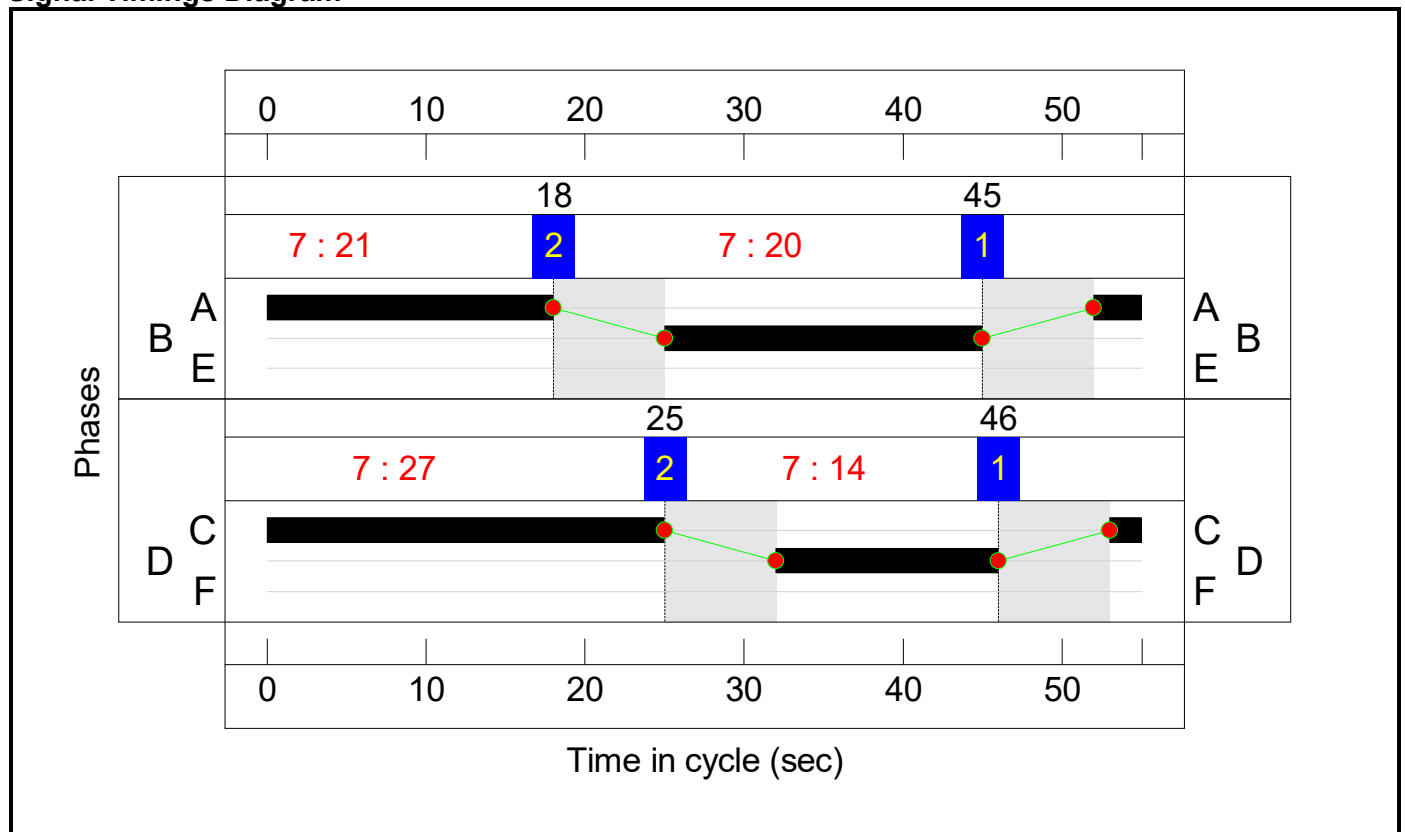


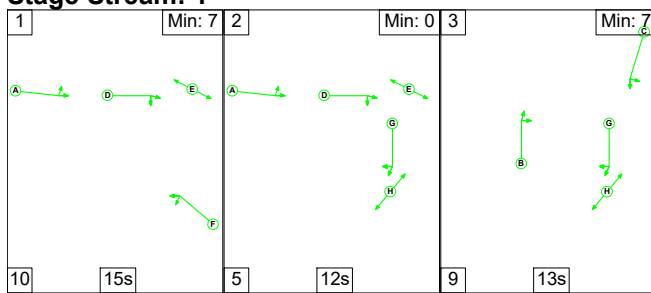
Stage Stream: 2**Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	21	20
Change Point	45	18

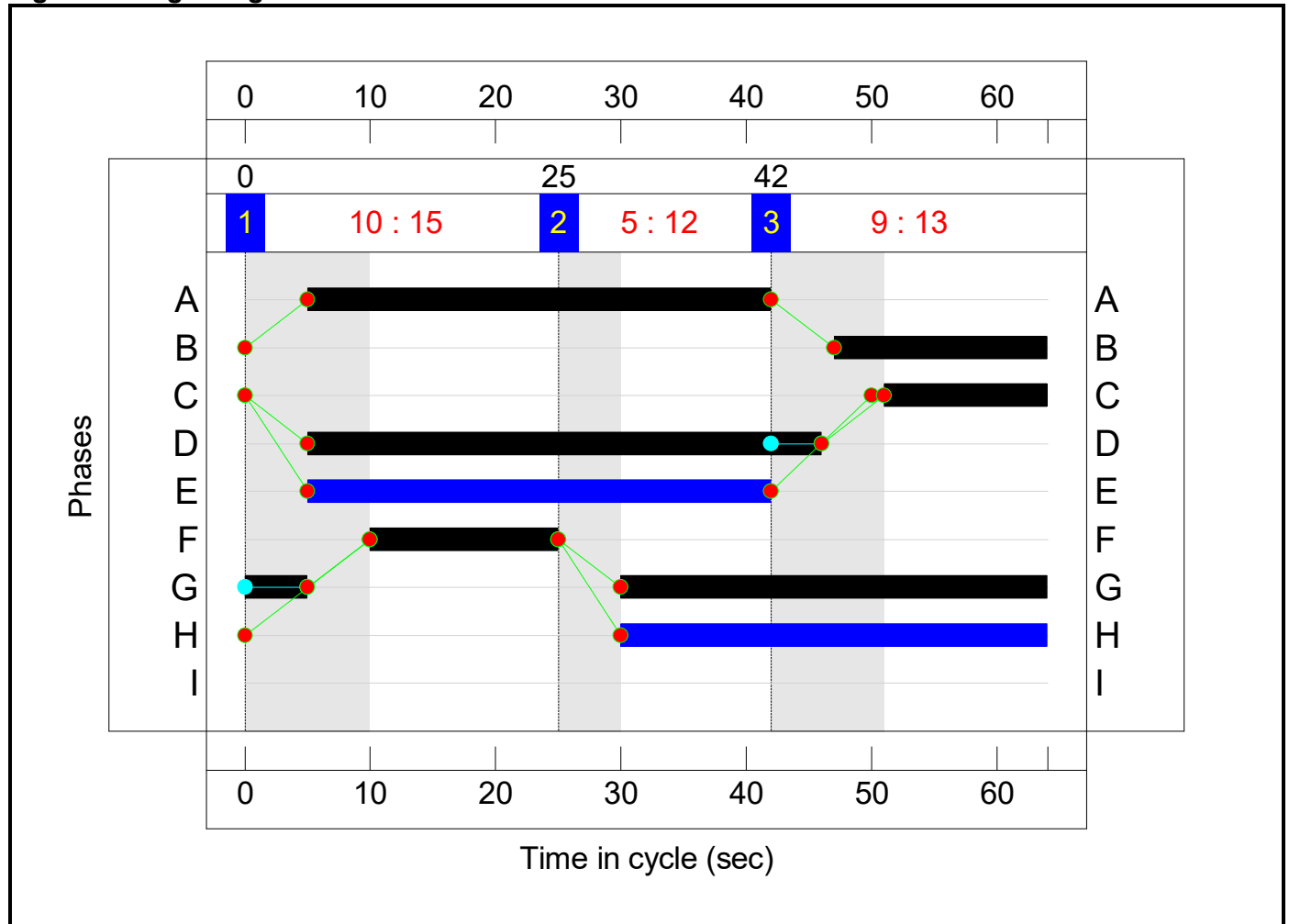
Stage Stream: 2

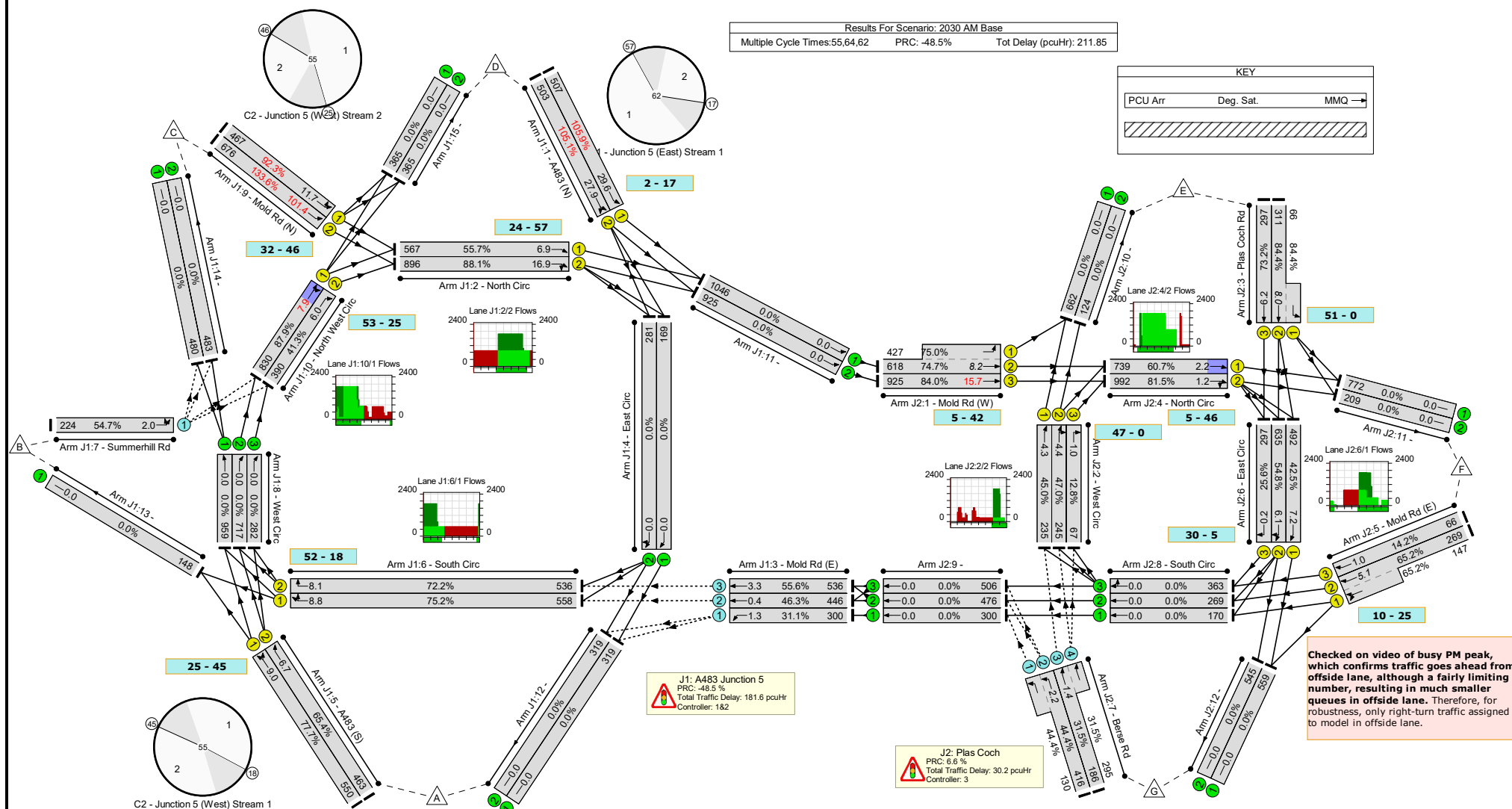
Stage	1	2
Duration	27	14
Change Point	46	25

Signal Timings Diagram

C3 - Plas Coch**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	15	12	13
Change Point	0	25	42

Signal Timings Diagram



Model Notes

Base modelling utilised videos to observe driver behaviour / timings.

Signal timings were variable from cycle to cycle. Average cycle time for Junction 1 (West) were 55s and 63s for AM and PM respectively, Junction 1 (East) 62s and 55s, and for Junction 2 were 64s and 59s.

Max Flows for giveways at Mold Rd and Berse Rd measured from videos.

Relatively good match between queue survey and 2019 model results. However, during PM queue survey indicated queues existed on Berse Rd. Model does not show this, due to relatively low flows from Berse Rd. However, cause of queues looks to be more related to queues blocking from the Mold Rd westbound entry to Junction 1, which were in turn often blocked entering the roundabout by queues forming on the southern circulatory. The model cannot model blocking back, but does indicate the presence of queues on these downstream arms.

Timings optimised manually, with DoS set to below 90% on circulatory (if over-capacity), which may differ slightly from the actual average timings on site. This was to ensure scenarios were comparable.

Sat Flows measured for A483 (N), which were observed to be 1855 pcu/hr. Not enough detail to measure elsewhere, so 1855 pcu/hr used at all signalled lanes. This would be considered a relatively robust value, with 1900 pcu/hr often considered as a robust design value.

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing	-	-	N/A	-	-		-	-	-	-	-	-	133.6%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	133.6%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	15	-	507	1855	479	105.9%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	15	-	503	1855	479	105.1%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	33	-	567	1855	1017	55.7%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	33	-	1066	1855	1017	88.1%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	300	Inf	964	31.1%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	446	Inf	964	46.3%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	536	Inf	964	55.6%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	222	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	340	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	20	-	550	1855	708	77.7%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	20	-	463	1855	708	65.4%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	21	-	564	1855	742	75.2%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	21	-	536	1855	742	72.2%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	224	Inf	409	54.7%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	964	Inf	Inf	0.0%

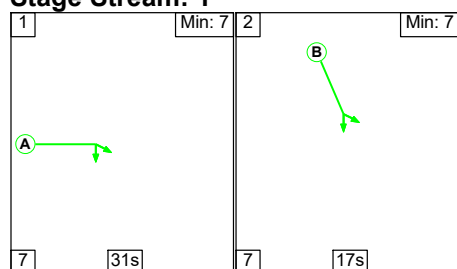
8/2	West Circ Ahead	U	N/A	N/A	-		-	-	-	717	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	282	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	14	-	467	1855	506	92.3%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	14	-	676	1855	506	133.6%
10/1	North West Circ Right Ahead	U	2:2	N/A	C2:C		1	27	-	830	1855	944	87.9%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	27	-	390	1855	944	41.3%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1074	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	1007	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	372	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	372	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	485	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	365	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	365	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	84.4%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	37	-	1074	1855:1855	828+570	74.7 : 75.0%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	37	-	1007	1855	1101	84.0%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	17	-	235	1855	522	45.0%
2/2	West Circ Right Ahead	U	3:1	N/A	C3:B		1	17	-	245	1855	522	47.0%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	17	-	67	1855	522	12.8%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	13	-	377	1855:1855	368+78	84.4 : 84.4%
3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	13	-	297	1855	406	73.2%

4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	41	-	757	1855	1217	60.7%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	41	-	1074	1855	1217	81.5%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	15	-	416	1855:1855	412+225	65.2 : 65.2%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	15	-	66	1855	464	14.2%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	39	-	546	1855	1159	42.5%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	39	-	663	1855	1159	54.8%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	39	-	297	1855	1159	25.6%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	546	Inf : Inf	936+293	44.4 : 44.4%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	481	Inf : Inf	590+936	31.5 : 31.5%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	269	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	363	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	300	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	476	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	506	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	673	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	124	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	790	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	209	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	613	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	573	Inf	Inf	0.0%

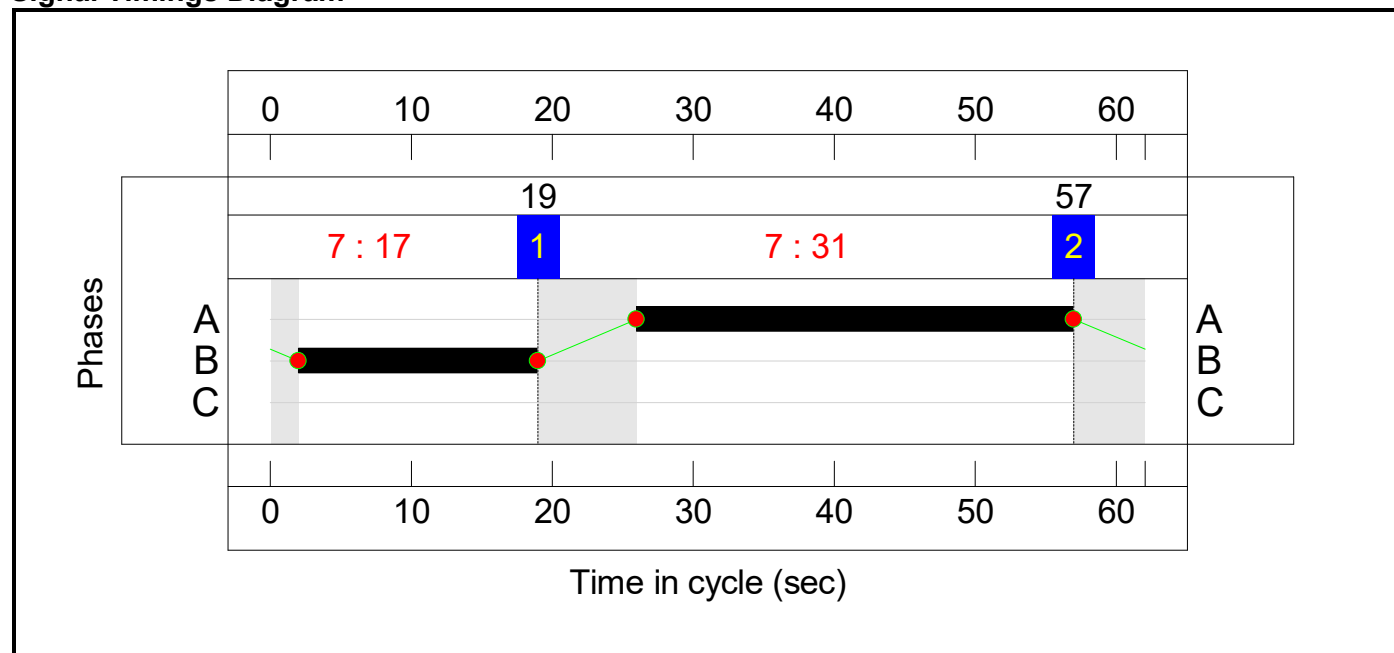
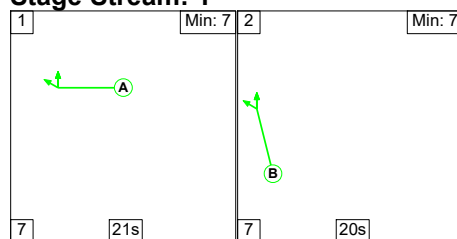
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing	-	-	3560	0	0	54.1	157.8	0.0	211.8	-	-	-	-
J1: A483 Junction 5	-	-	1506	0	0	35.4	146.2	0.0	181.6	-	-	-	-
1/1	507	479	-	-	-	4.1	20.4	-	24.5	173.9	9.2	20.4	29.6
1/2	503	479	-	-	-	4.0	18.8	-	22.8	163.2	9.1	18.8	27.9
2/1	567	567	-	-	-	1.4	0.6	-	2.1	13.1	6.3	0.6	6.9
2/2	896	896	-	-	-	3.0	3.5	-	6.5	26.3	13.4	3.5	16.9
3/1	300	300	300	0	0	0.0	0.2	-	0.2	2.7	1.1	0.2	1.3
3/2	446	446	446	0	0	0.0	0.4	-	0.4	3.5	0.0	0.4	0.4
3/3	536	536	536	0	0	0.0	0.6	-	0.6	4.3	2.7	0.6	3.3
4/1	169	169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	281	281	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	550	550	-	-	-	2.3	1.7	-	4.0	26.1	7.3	1.7	9.0
5/2	463	463	-	-	-	1.8	0.9	-	2.7	21.3	5.8	0.9	6.7
6/1	558	558	-	-	-	2.2	1.5	-	3.7	23.8	7.3	1.5	8.8
6/2	536	536	-	-	-	2.1	1.3	-	3.4	22.6	6.8	1.3	8.1
7/1	224	224	224	0	0	0.4	0.6	-	1.0	16.8	1.4	0.6	2.0
8/1	959	959	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	717	717	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	282	282	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	467	467	-	-	-	2.5	4.8	-	7.3	56.5	6.9	4.8	11.7
9/2	676	506	-	-	-	8.5	87.0	-	95.5	508.5	14.4	87.0	101.4
10/1	830	830	-	-	-	1.4	3.4	-	4.8	20.8	4.5	3.4	7.9
10/2	390	390	-	-	-	1.7	0.4	-	2.0	18.7	5.7	0.4	6.0
11/1	1046	1046	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	925	925	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

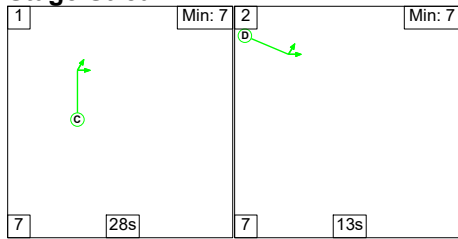
12/2	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	483	483	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	365	365	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	365	365	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	2054	0	0	18.6	11.6	0.0	30.2	-	-	-	-
1/2+1/1	1046	1046	-	-	-	2.2	1.5	-	3.6	12.6	6.7	1.5	8.2
1/3	925	925	-	-	-	2.7	2.5	-	5.3	20.5	13.1	2.5	15.7
2/1	235	235	-	-	-	1.6	0.4	-	2.0	30.3	3.9	0.4	4.3
2/2	245	245	-	-	-	1.5	0.4	-	2.0	28.8	4.0	0.4	4.4
2/3	67	67	-	-	-	0.4	0.1	-	0.4	23.1	1.0	0.1	1.0
3/2+3/1	377	377	-	-	-	2.4	2.5	-	5.0	47.3	5.4	2.5	8.0
3/3	297	297	-	-	-	1.9	1.3	-	3.3	39.4	4.9	1.3	6.2
4/1	739	739	-	-	-	0.5	0.0	-	0.5	2.6	2.2	0.0	2.2
4/2	992	992	-	-	-	0.3	0.0	-	0.3	1.2	1.2	0.0	1.2
5/2+5/1	416	416	-	-	-	2.4	0.9	-	3.3	28.6	4.2	0.9	5.1
5/3	66	66	-	-	-	0.3	0.1	-	0.4	23.2	0.9	0.1	1.0
6/1	492	492	-	-	-	1.0	0.4	-	1.4	10.3	6.9	0.4	7.2
6/2	635	635	-	-	-	0.8	0.6	-	1.4	7.9	5.5	0.6	6.1
6/3	297	297	-	-	-	0.0	0.2	-	0.2	2.1	0.0	0.2	0.2
7/2+7/1	546	546	1092	0	0	0.3	0.4	-	0.7	4.7	1.8	0.4	2.2
7/3+7/4	481	481	962	0	0	0.2	0.2	-	0.5	3.5	1.1	0.2	1.4
8/1	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	269	269	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	363	363	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	300	300	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	476	476	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	506	506	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

10/1	662	662	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	124	124	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	772	772	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	209	209	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	545	545	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - Junction 5 (East) Stream: 1 PRC for Signalled Lanes (%): -17.7 Total Delay for Signalled Lanes (pcuHr): 55.89 Cycle Time (s): 62 C2 - Junction 5 (West) Stream: 1 PRC for Signalled Lanes (%): 15.9 Total Delay for Signalled Lanes (pcuHr): 13.76 Cycle Time (s): 55 C2 - Junction 5 (West) Stream: 2 PRC for Signalled Lanes (%): -48.5 Total Delay for Signalled Lanes (pcuHr): 109.63 Cycle Time (s): 55 C3 - Plas Coch Stream: 1 PRC for Signalled Lanes (%): 6.6 Total Delay for Signalled Lanes (pcuHr): 29.04 Cycle Time (s): 64 PRC Over All Lanes (%): -48.5 Total Delay Over All Lanes(pcuHr): 211.85													

Scenario 5: '2030 AM Base + Dev' (FG5: '2030 AM Base + Development', Plan 2: 'No Stage 4')**C1 - Junction 5 (East)****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	31	17
Change Point	19	57

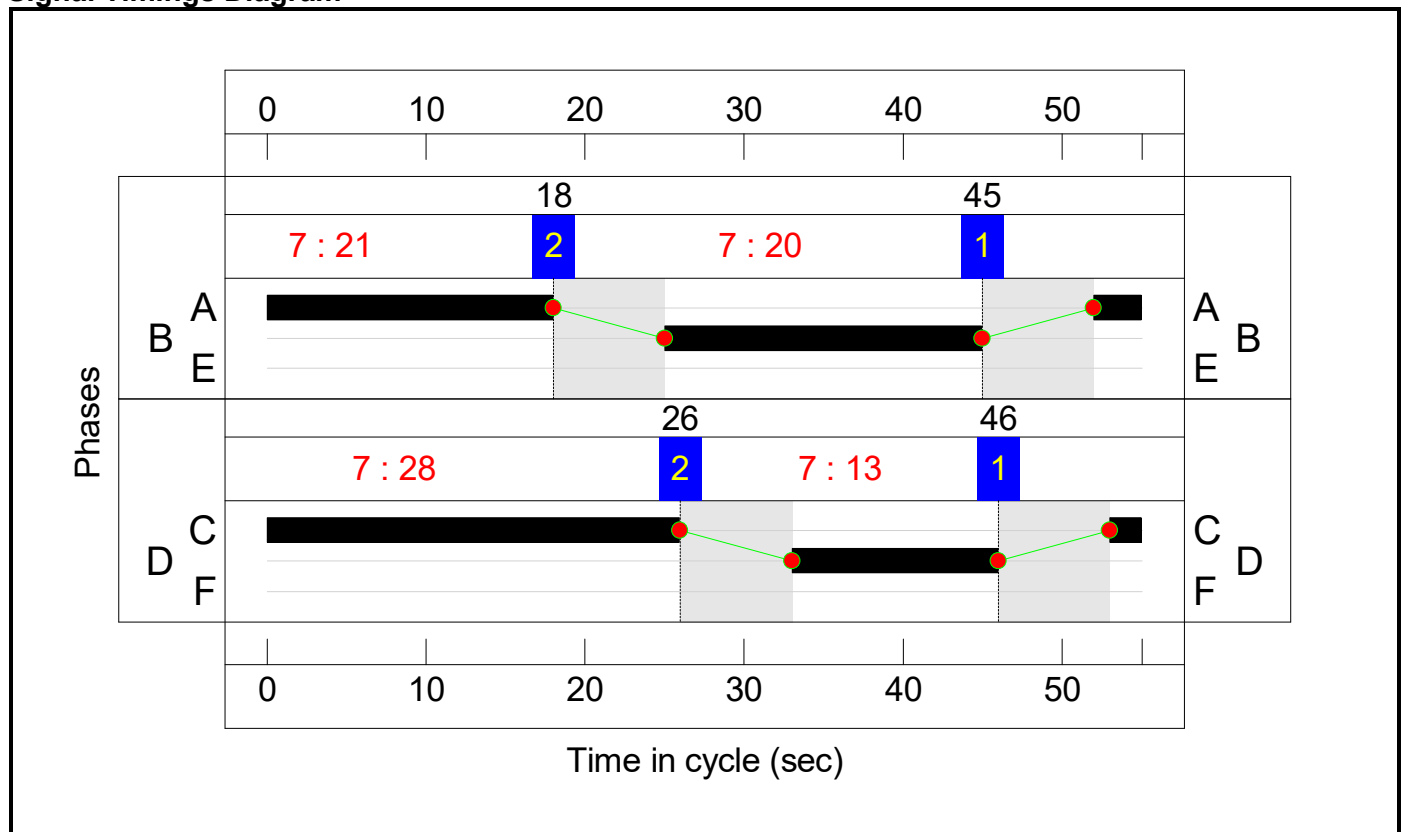
Signal Timings Diagram**C2 - Junction 5 (West)****Stage Sequence Diagram****Stage Stream: 1**

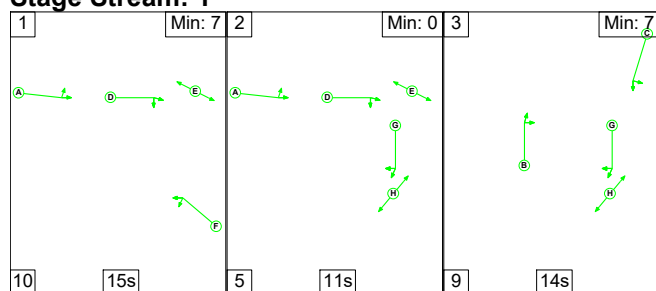
Stage Stream: 2**Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	21	20
Change Point	45	18

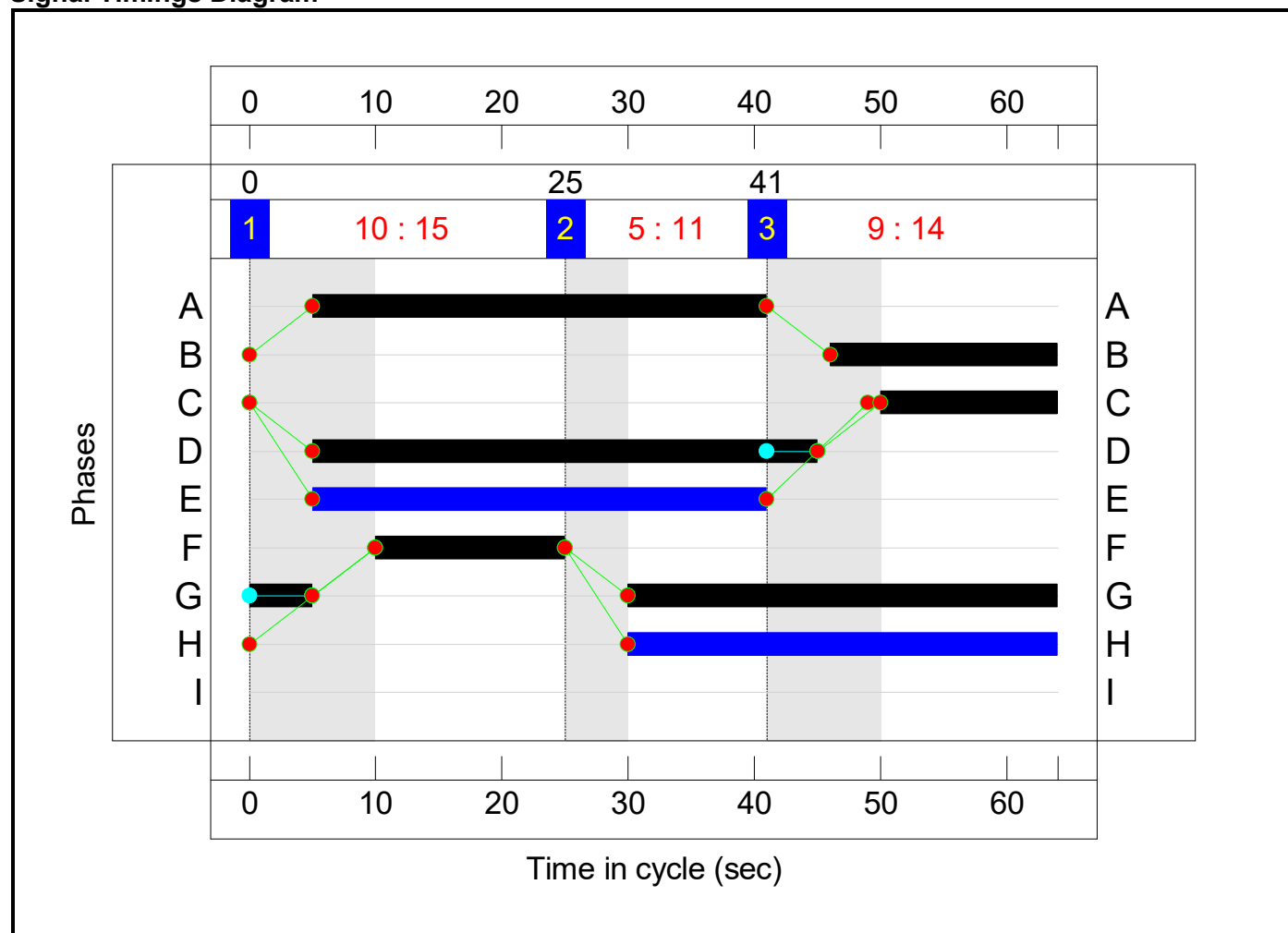
Stage Stream: 2

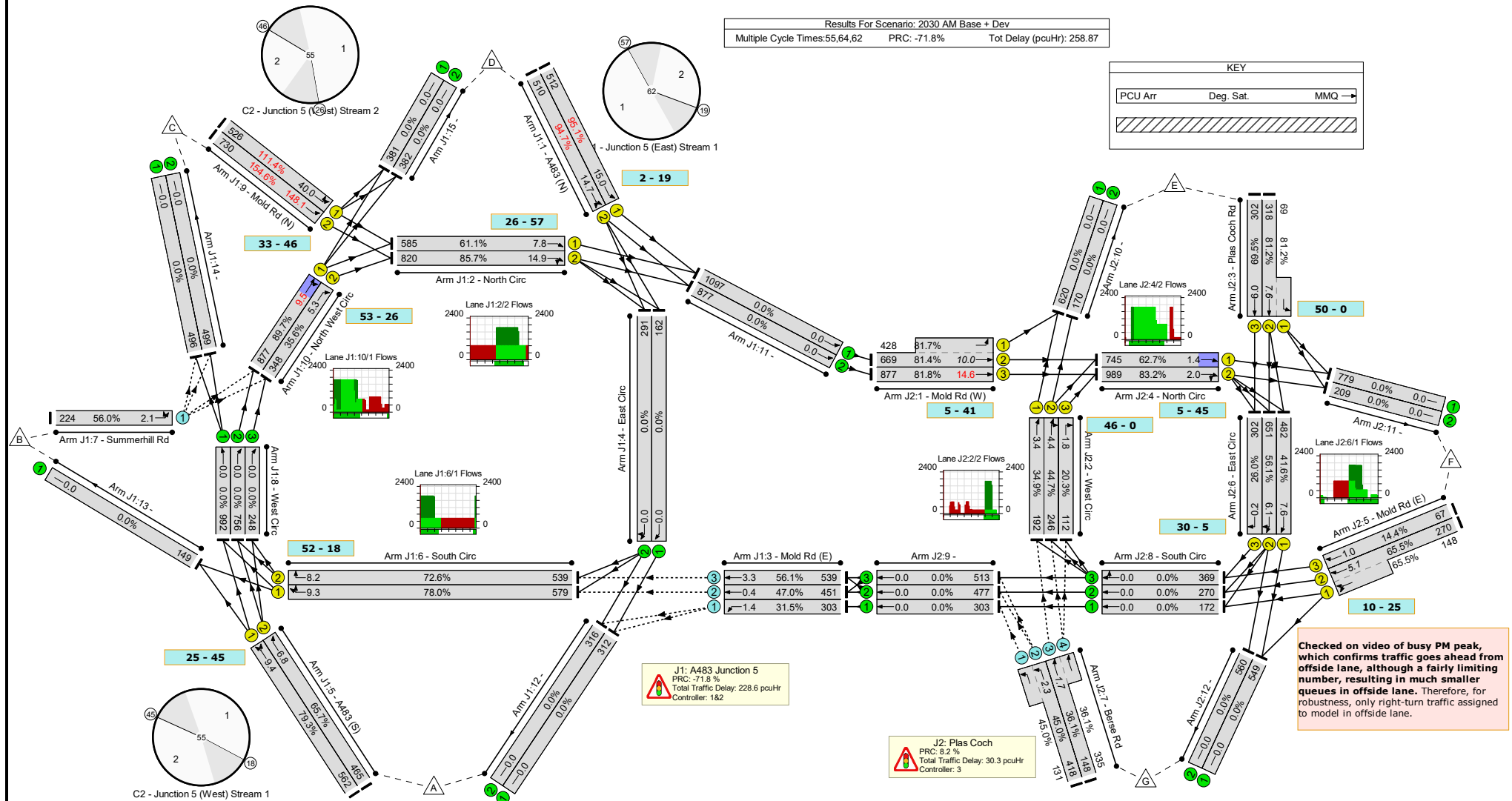
Stage	1	2
Duration	28	13
Change Point	46	26

Signal Timings Diagram

C3 - Plas Coch**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	15	11	14
Change Point	0	25	41

Signal Timings Diagram



Model Notes

Base modelling utilised videos to observe driver behaviour / timings.

Signal timings were variable from cycle to cycle. Average cycle time for Junction 1 (West) were 55s and 63s for AM and PM respectively, Junction 1 (East) 62s and 55s, and for Junction 2 were 64s and 59s.

Max Flows for giveways at Mold Rd and Berse Rd measured from videos.

Relatively good match between queue survey and 2019 model results. However, during PM queue survey indicated queues existed on Berse Rd. Model does not show this, due to relatively low flows from Berse Rd. However, cause of queues looks to be more related to queues blocking from the Mold Rd westbound entry to Junction 1, which were in turn often blocked entering the roundabout by queues forming on the southern circulatory. The model cannot model blocking back, but does indicate the presence of queues on these downstream arms.

Timings optimised manually, with DoS set to below 90% on circulatory (if over-capacity), which may differ slightly from the actual average timings on site. This was to ensure scenarios were comparable.

Sat Flows measured for A483 (N), which were observed to be 1855 pcu/hr. Not enough detail to measure elsewhere, so 1855 pcu/hr used at all signalled lanes. This would be considered a relatively robust value, with 1900 pcu/hr often considered as a robust design value.

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing	-	-	N/A	-	-		-	-	-	-	-	-	154.6%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	154.6%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	17	-	512	1855	539	95.1%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	17	-	510	1855	539	94.7%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	31	-	620	1855	957	61.1%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	31	-	1078	1855	957	85.7%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	303	Inf	960	31.5%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	451	Inf	960	47.0%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	539	Inf	960	56.1%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	375	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	20	-	562	1855	708	79.3%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	20	-	465	1855	708	65.7%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	21	-	580	1855	742	78.0%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	21	-	539	1855	742	72.6%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	224	Inf	400	56.0%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	992	Inf	Inf	0.0%

8/2	West Circ Ahead	U	N/A	N/A	-		-	-	-	756	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	248	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	13	-	526	1855	472	111.4%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	13	-	730	1855	472	154.6%
10/1	North West Circ Right Ahead	U	2:2	N/A	C2:C		1	28	-	877	1855	978	89.7%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	28	-	348	1855	978	35.6%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1132	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	968	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	395	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	399	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	496	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	499	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	83.2%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	36	-	1132	1855:1855	822+524	81.4 : 81.7%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	36	-	968	1855	1072	81.8%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	18	-	192	1855	551	34.9%
2/2	West Circ Right Ahead	U	3:1	N/A	C3:B		1	18	-	246	1855	551	44.7%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	18	-	112	1855	551	20.3%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	14	-	387	1855:1855	392+85	81.2 : 81.2%
3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	14	-	302	1855	435	69.5%

4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	40	-	767	1855	1188	62.7%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	40	-	1080	1855	1188	83.2%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	15	-	418	1855:1855	412+226	65.5 : 65.5%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	15	-	67	1855	464	14.4%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	39	-	559	1855	1159	41.6%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	39	-	665	1855	1159	56.1%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	39	-	302	1855	1159	26.0%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	549	Inf : Inf	928+291	45.0 : 45.0%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	483	Inf : Inf	410+928	36.1 : 36.1%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	172	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	270	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	303	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	477	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	513	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	633	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	801	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	209	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	626	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	574	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing	-	-	3581	0	0	57.7	201.1	0.0	258.9	-	-	-	-
J1: A483 Junction 5	-	-	1517	0	0	38.7	189.9	0.0	228.6	-	-	-	-
1/1	512	512	-	-	-	3.1	6.5	-	9.5	67.1	8.5	6.5	15.0
1/2	510	510	-	-	-	3.1	6.2	-	9.3	65.5	8.5	6.2	14.7
2/1	585	585	-	-	-	1.7	0.8	-	2.5	15.4	7.0	0.8	7.8
2/2	820	820	-	-	-	3.0	2.9	-	5.8	25.6	12.1	2.9	14.9
3/1	303	303	303	0	0	0.0	0.2	-	0.2	2.8	1.1	0.2	1.4
3/2	451	451	451	0	0	0.0	0.4	-	0.4	3.5	0.0	0.4	0.4
3/3	539	539	539	0	0	0.0	0.6	-	0.7	4.4	2.7	0.6	3.3
4/1	162	162	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	291	291	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	562	562	-	-	-	2.4	1.9	-	4.2	27.1	7.5	1.9	9.4
5/2	465	465	-	-	-	1.8	0.9	-	2.8	21.4	5.8	0.9	6.8
6/1	579	579	-	-	-	2.3	1.7	-	4.1	25.2	7.6	1.7	9.3
6/2	539	539	-	-	-	2.1	1.3	-	3.4	22.7	6.9	1.3	8.2
7/1	224	224	224	0	0	0.5	0.6	-	1.1	17.5	1.4	0.6	2.1
8/1	992	992	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	756	756	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	248	248	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	526	472	-	-	-	4.0	31.1	-	35.2	240.6	8.9	31.1	40.0
9/2	730	472	-	-	-	11.8	130.3	-	142.1	700.7	17.8	130.3	148.1
10/1	877	877	-	-	-	1.6	4.0	-	5.6	23.2	5.5	4.0	9.5
10/2	348	348	-	-	-	1.4	0.3	-	1.7	17.6	5.0	0.3	5.3
11/1	1097	1097	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	877	877	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	312	312	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	496	496	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	499	499	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	381	381	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	382	382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	2064	0	0	19.0	11.2	0.0	30.3	-	-	-	-
1/2+1/1	1097	1097	-	-	-	2.5	2.2	-	4.7	15.4	7.8	2.2	10.0
1/3	877	877	-	-	-	2.6	2.2	-	4.8	19.8	12.4	2.2	14.6
2/1	192	192	-	-	-	1.3	0.3	-	1.5	28.5	3.1	0.3	3.4
2/2	246	246	-	-	-	1.5	0.4	-	1.9	28.3	4.0	0.4	4.4
2/3	112	112	-	-	-	0.6	0.1	-	0.7	23.7	1.7	0.1	1.8
3/2+3/1	387	387	-	-	-	2.4	2.1	-	4.5	41.6	5.6	2.1	7.6
3/3	302	302	-	-	-	1.9	1.1	-	3.0	35.7	4.9	1.1	6.0
4/1	745	745	-	-	-	0.3	0.0	-	0.3	1.6	1.4	0.0	1.4
4/2	989	989	-	-	-	0.6	0.0	-	0.6	2.1	2.0	0.0	2.0
5/2+5/1	418	418	-	-	-	2.4	0.9	-	3.3	28.6	4.2	0.9	5.1
5/3	67	67	-	-	-	0.3	0.1	-	0.4	23.2	0.9	0.1	1.0
6/1	482	482	-	-	-	1.2	0.4	-	1.5	11.3	7.3	0.4	7.6
6/2	651	651	-	-	-	0.8	0.6	-	1.4	8.0	5.4	0.6	6.1
6/3	302	302	-	-	-	0.0	0.2	-	0.2	2.1	0.0	0.2	0.2
7/2+7/1	549	549	1098	0	0	0.3	0.4	-	0.7	4.8	1.9	0.4	2.3
7/3+7/4	483	483	966	0	0	0.3	0.3	-	0.5	4.0	1.4	0.3	1.7
8/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	270	270	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	303	303	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	477	477	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

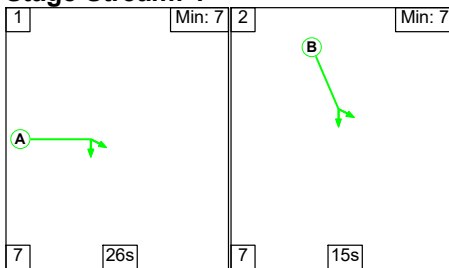
10/1	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	779	779	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	209	209	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	549	549	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - Junction 5 (East) Stream: 1 PRC for Signalled Lanes (%): -5.6 Total Delay for Signalled Lanes (pcuHr): 27.16 Cycle Time (s): 62 C2 - Junction 5 (West) Stream: 1 PRC for Signalled Lanes (%): 13.4 Total Delay for Signalled Lanes (pcuHr): 14.44 Cycle Time (s): 55 C2 - Junction 5 (West) Stream: 2 PRC for Signalled Lanes (%): -71.8 Total Delay for Signalled Lanes (pcuHr): 184.59 Cycle Time (s): 55 C3 - Plas Coch Stream: 1 PRC for Signalled Lanes (%): 8.2 Total Delay for Signalled Lanes (pcuHr): 28.98 Cycle Time (s): 64 PRC Over All Lanes (%): -71.8 Total Delay Over All Lanes(pcuHr): 258.87													

Scenario 6: '2019 Surveyed PM' (FG6: '2019 Surveyed PM', Plan 2: 'No Stage 4')

C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1

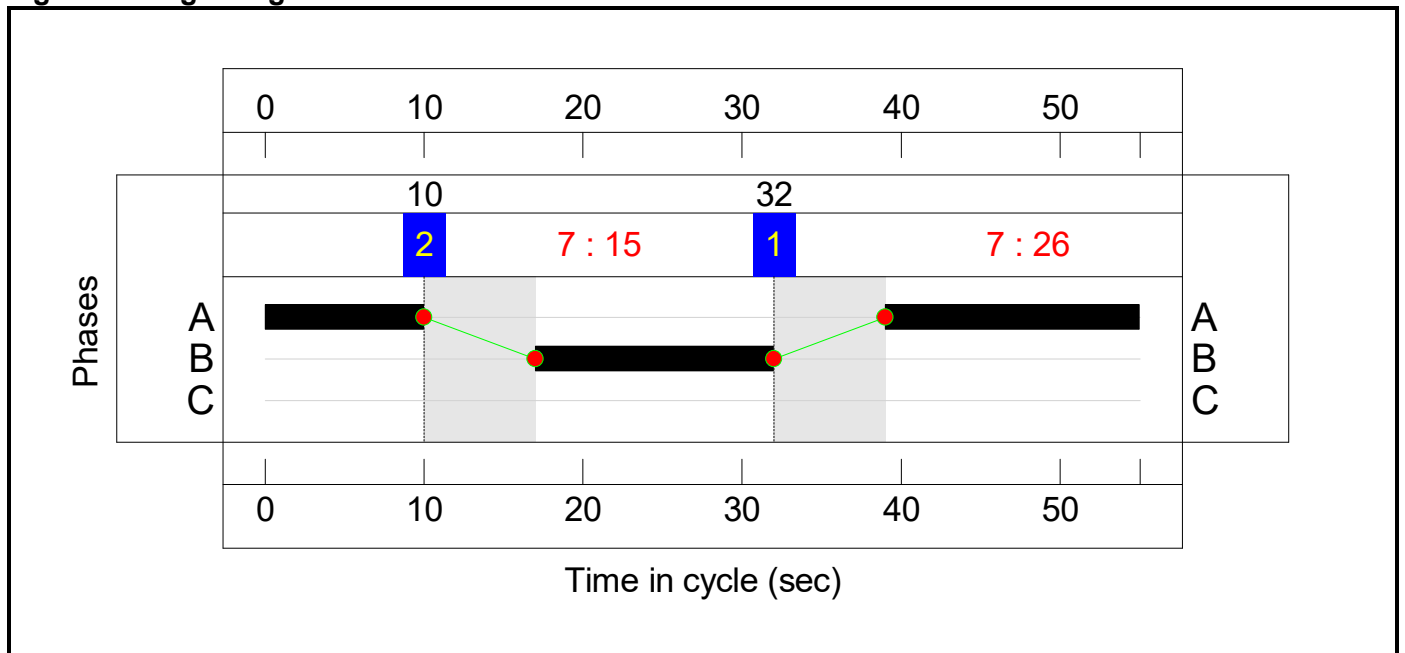


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	15
Change Point	32	10

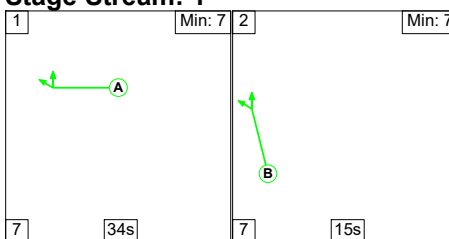
Signal Timings Diagram

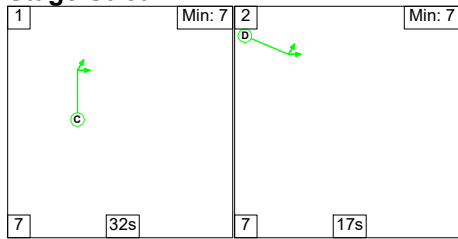


C2 - Junction 5 (West)

Stage Sequence Diagram

Stage Stream: 1

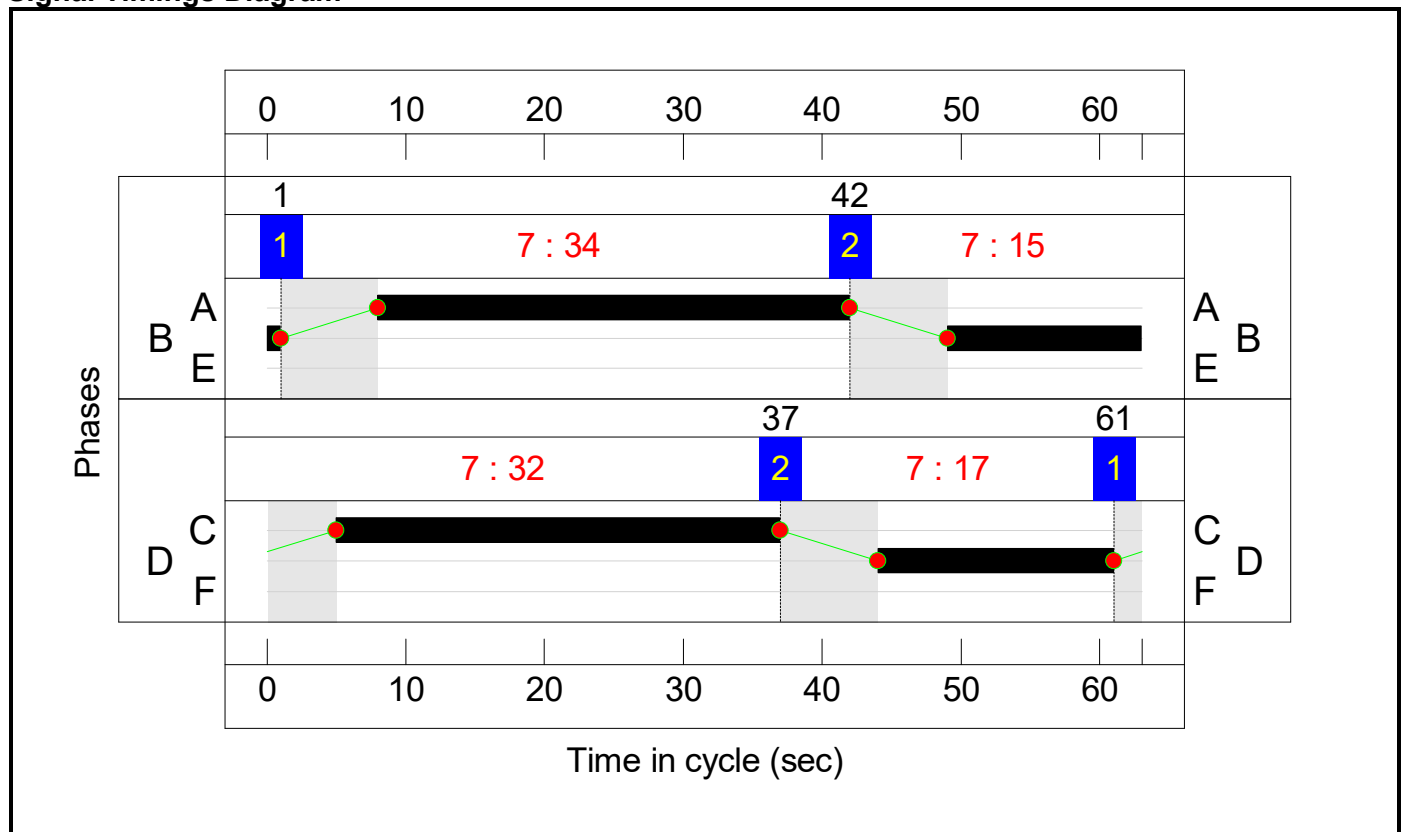


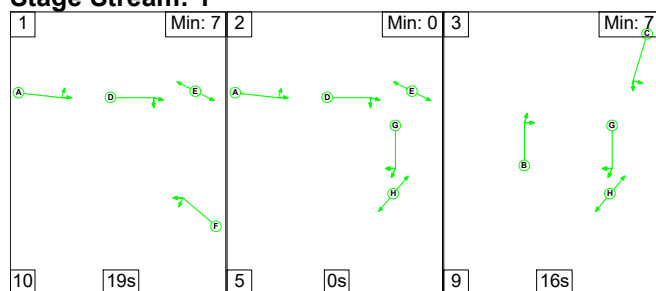
Stage Stream: 2**Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	34	15
Change Point	1	42

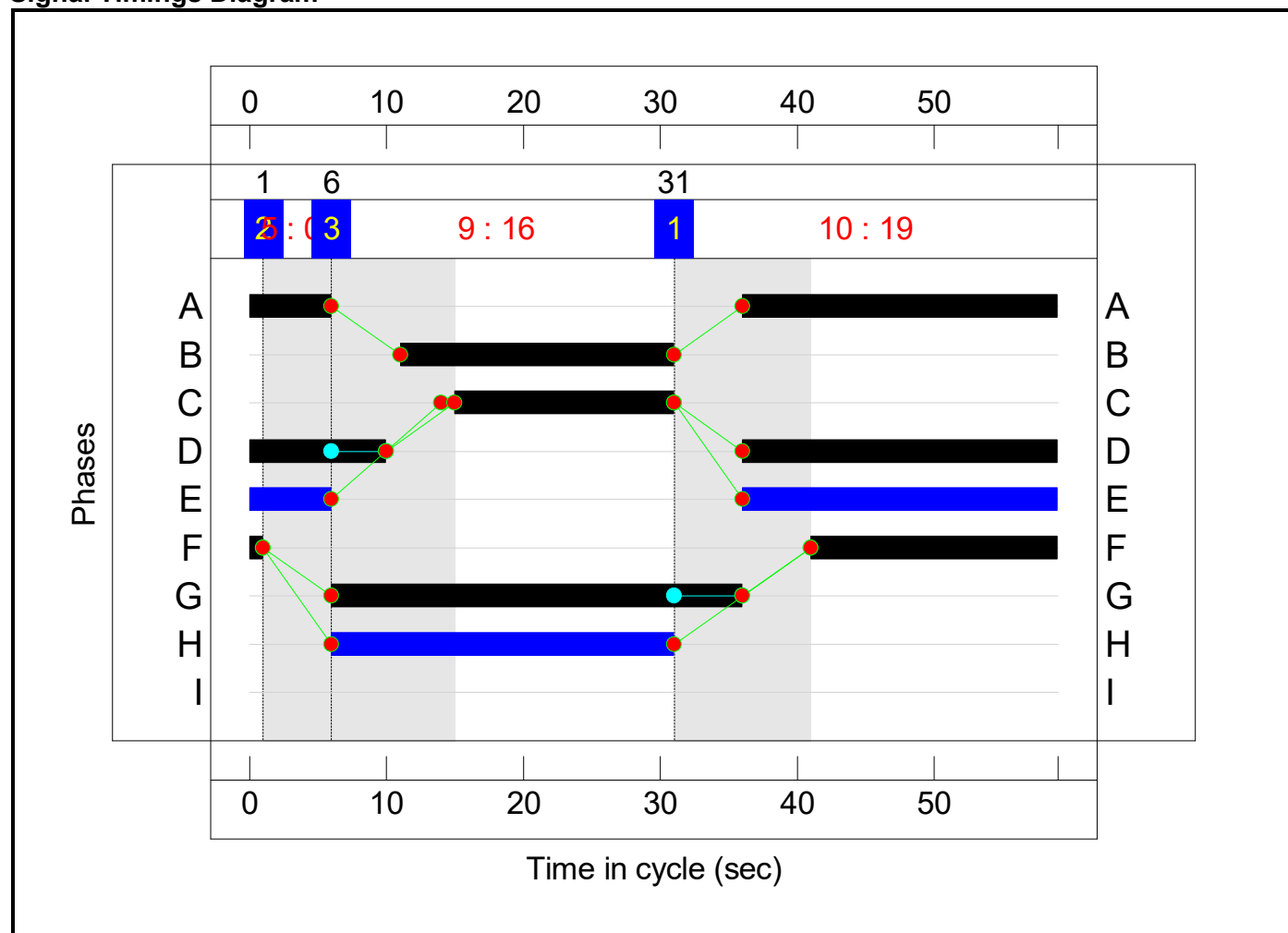
Stage Stream: 2

Stage	1	2
Duration	32	17
Change Point	61	37

Signal Timings Diagram

C3 - Plas Coch**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	19	0	16
Change Point	31	1	6

Signal Timings Diagram

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing	-	-	N/A	-	-		-	-	-	-	-	-	103.8%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	103.8%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	15	-	428	1855	540	79.3%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	15	-	432	1855	540	80.1%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	26	-	469	1855	911	51.5%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	26	-	700	1855	911	76.9%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	579	Inf	833	68.7%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	721	Inf	833	85.8%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	528	Inf	833	62.8%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	184	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	397	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	15	-	489	1855	471	103.8%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	15	-	355	1855	471	75.4%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	34	-	931	1855	1031	89.7%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	34	-	530	1855	1031	50.9%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	146	Inf	287	50.9%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	1139	Inf	Inf	0.0%

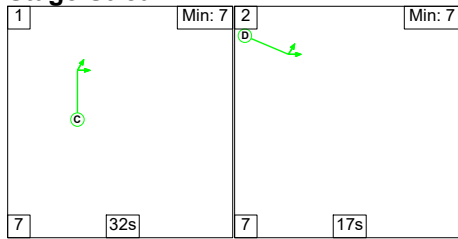
8/2	West Circ Ahead	U	N/A	N/A	-		-	-	-	684	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	201	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	17	-	332	1855	530	62.6%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	17	-	426	1855	530	80.4%
10/1	North West Circ Right Ahead	U	2:2	N/A	C2:C		1	32	-	753	1855	972	77.0%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	32	-	274	1855	972	28.2%
11/1	Ahead	U	N/A	N/A	-		-	-	-	897	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	475	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	281	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	572	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	571	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	307	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	309	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	102.3%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	29	-	897	1855:1855	370+787	77.5 : 77.5%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	29	-	551	1855	943	58.4%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	172	1855	660	26.1%
2/2	West Circ Right Ahead	U	3:1	N/A	C3:B		1	20	-	170	1855	660	25.7%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	20	-	33	1855	660	5.0%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	16	-	593	1855:1855	470+119	100.7 : 100.7%
3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	16	-	437	1855	534	81.8%

4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	33	-	313	1855	1069	29.3%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	33	-	584	1855	1069	54.6%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	19	-	940	1855:1855	504+414	102.3 : 102.3%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	19	-	148	1855	629	23.5%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	30	-	396	1855	975	40.5%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	30	-	418	1855	975	42.7%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	30	-	437	1855	975	44.8%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	432	Inf : Inf	555+255	53.3 : 53.3%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	227	Inf : Inf	314+555	26.1 : 26.1%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	443	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	516	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	585	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	579	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	665	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	782	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	373	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	303	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	579	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	216	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing	-	-	3273	0	0	45.7	80.2	0.0	125.8	-	-	-	-
J1: A483 Junction 5	-	-	1955	0	0	25.7	38.4	0.0	64.1	-	-	-	-
1/1	428	428	-	-	-	2.1	1.9	-	4.0	33.6	5.9	1.9	7.8
1/2	432	432	-	-	-	2.2	1.9	-	4.1	34.2	6.0	1.9	7.9
2/1	469	469	-	-	-	1.2	0.5	-	1.8	13.6	4.8	0.5	5.3
2/2	700	700	-	-	-	2.2	1.6	-	3.9	19.9	8.6	1.6	10.2
3/1	572	572	572	0	0	0.1	1.1	-	1.2	7.4	2.8	1.1	3.9
3/2	714	714	714	0	0	0.4	2.9	-	3.2	16.3	11.2	2.9	14.1
3/3	523	523	523	0	0	0.0	0.8	-	0.8	5.8	0.0	0.8	0.8
4/1	184	184	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	397	397	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	489	471	-	-	-	3.8	16.4	-	20.2	149.0	8.9	16.4	25.3
5/2	355	355	-	-	-	2.1	1.5	-	3.6	36.8	5.7	1.5	7.2
6/1	924	924	-	-	-	3.2	4.0	-	7.2	28.1	14.1	4.0	18.2
6/2	525	525	-	-	-	1.3	0.5	-	1.8	12.2	5.7	0.5	6.2
7/1	146	146	146	0	0	0.5	0.5	-	1.0	24.9	1.5	0.5	2.1
8/1	1118	1118	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	201	201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	332	332	-	-	-	1.8	0.8	-	2.6	28.6	5.0	0.8	5.8
9/2	426	426	-	-	-	2.5	2.0	-	4.4	37.5	6.9	2.0	8.8
10/1	748	748	-	-	-	1.6	1.6	-	3.2	15.6	5.9	1.6	7.6
10/2	274	274	-	-	-	0.7	0.2	-	0.9	12.0	4.7	0.2	4.9
11/1	897	897	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	470	470	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	472	472	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	307	307	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	1318	0	0	19.9	41.8	0.0	61.7	-	-	-	-
1/2+1/1	897	897	-	-	-	2.5	1.7	-	4.2	16.7	7.3	1.7	9.0
1/3	551	551	-	-	-	1.6	0.7	-	2.3	14.7	6.3	0.7	7.0
2/1	172	172	-	-	-	0.9	0.2	-	1.1	22.2	2.6	0.2	2.8
2/2	170	170	-	-	-	0.8	0.2	-	1.0	20.4	2.5	0.2	2.7
2/3	33	33	-	-	-	0.1	0.0	-	0.1	15.3	0.4	0.0	0.4
3/2+3/1	593	589	-	-	-	3.4	13.2	-	16.7	101.2	8.8	13.2	22.0
3/3	437	437	-	-	-	2.4	2.1	-	4.5	37.2	6.6	2.1	8.7
4/1	313	313	-	-	-	0.1	0.0	-	0.1	1.5	0.4	0.0	0.4
4/2	584	584	-	-	-	0.2	0.0	-	0.2	1.1	0.5	0.0	0.5
5/2+5/1	940	918	-	-	-	5.0	21.6	-	26.7	102.2	10.7	21.6	32.4
5/3	148	148	-	-	-	0.6	0.2	-	0.7	17.8	1.7	0.2	1.9
6/1	395	395	-	-	-	0.7	0.3	-	1.0	9.1	2.7	0.3	3.0
6/2	416	416	-	-	-	0.6	0.4	-	1.0	8.4	2.5	0.4	2.8
6/3	437	437	-	-	-	0.0	0.4	-	0.4	3.3	0.0	0.4	0.4
7/2+7/1	432	432	864	0	0	0.8	0.6	-	1.4	11.3	2.1	0.6	2.6
7/3+7/4	227	227	454	0	0	0.4	0.2	-	0.5	8.5	0.9	0.2	1.1
8/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	572	572	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	653	653	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	584	584	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

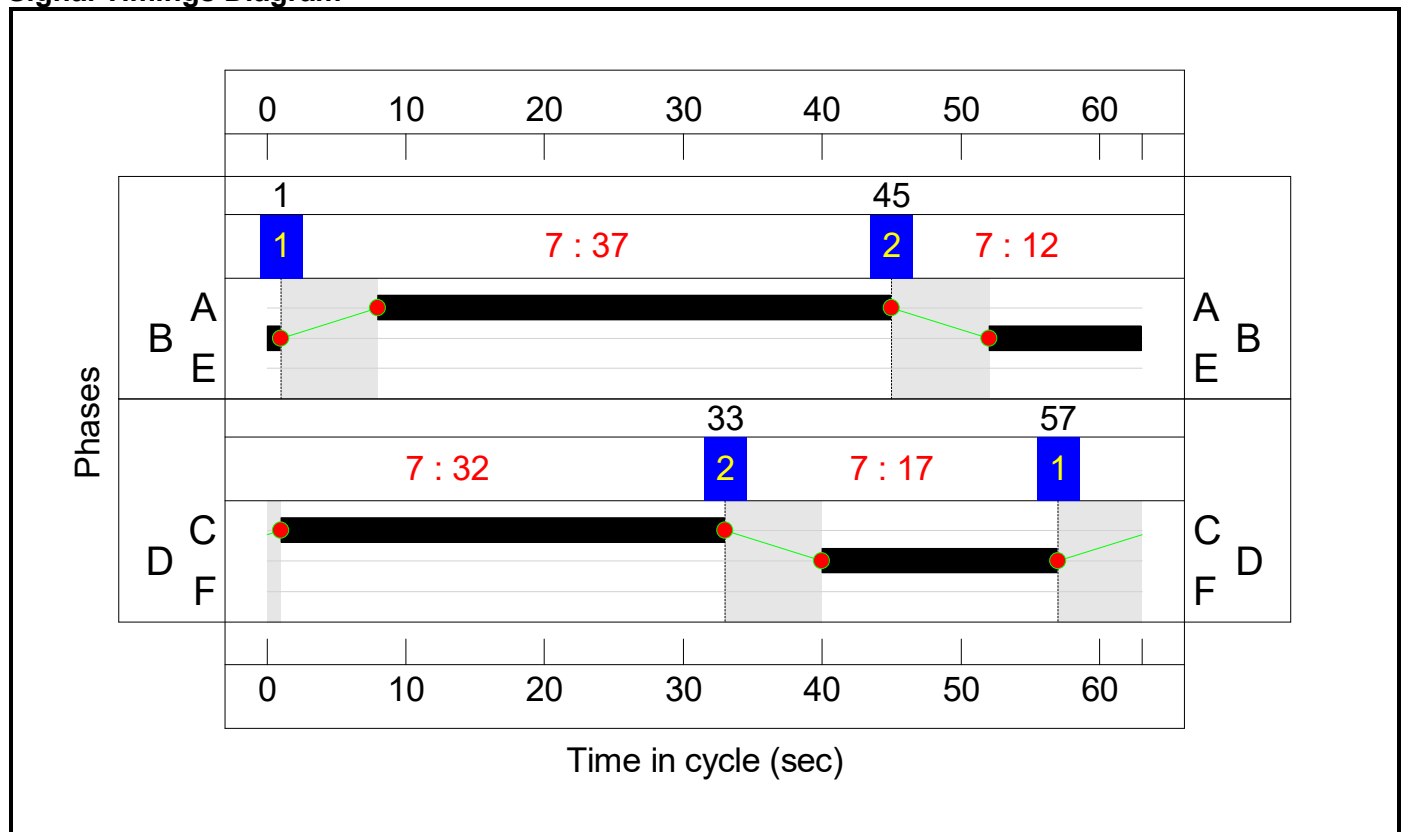
10/1	782	782	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	303	303	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	573	573	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	216	216	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - Junction 5 (East) Stream: 1 PRC for Signalled Lanes (%): 12.4 Total Delay for Signalled Lanes (pcuHr): 13.73 Cycle Time (s): 55 C2 - Junction 5 (West) Stream: 1 PRC for Signalled Lanes (%): -15.3 Total Delay for Signalled Lanes (pcuHr): 32.87 Cycle Time (s): 63 C2 - Junction 5 (West) Stream: 2 PRC for Signalled Lanes (%): 12.0 Total Delay for Signalled Lanes (pcuHr): 11.24 Cycle Time (s): 63 C3 - Plas Coch Stream: 1 PRC for Signalled Lanes (%): -13.7 Total Delay for Signalled Lanes (pcuHr): 59.86 Cycle Time (s): 59 PRC Over All Lanes (%): -15.3 Total Delay Over All Lanes(pcuHr): 125.84													

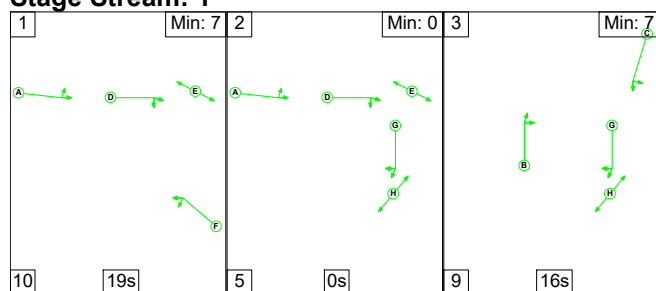
Stage Stream: 2**Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	37	12
Change Point	1	45

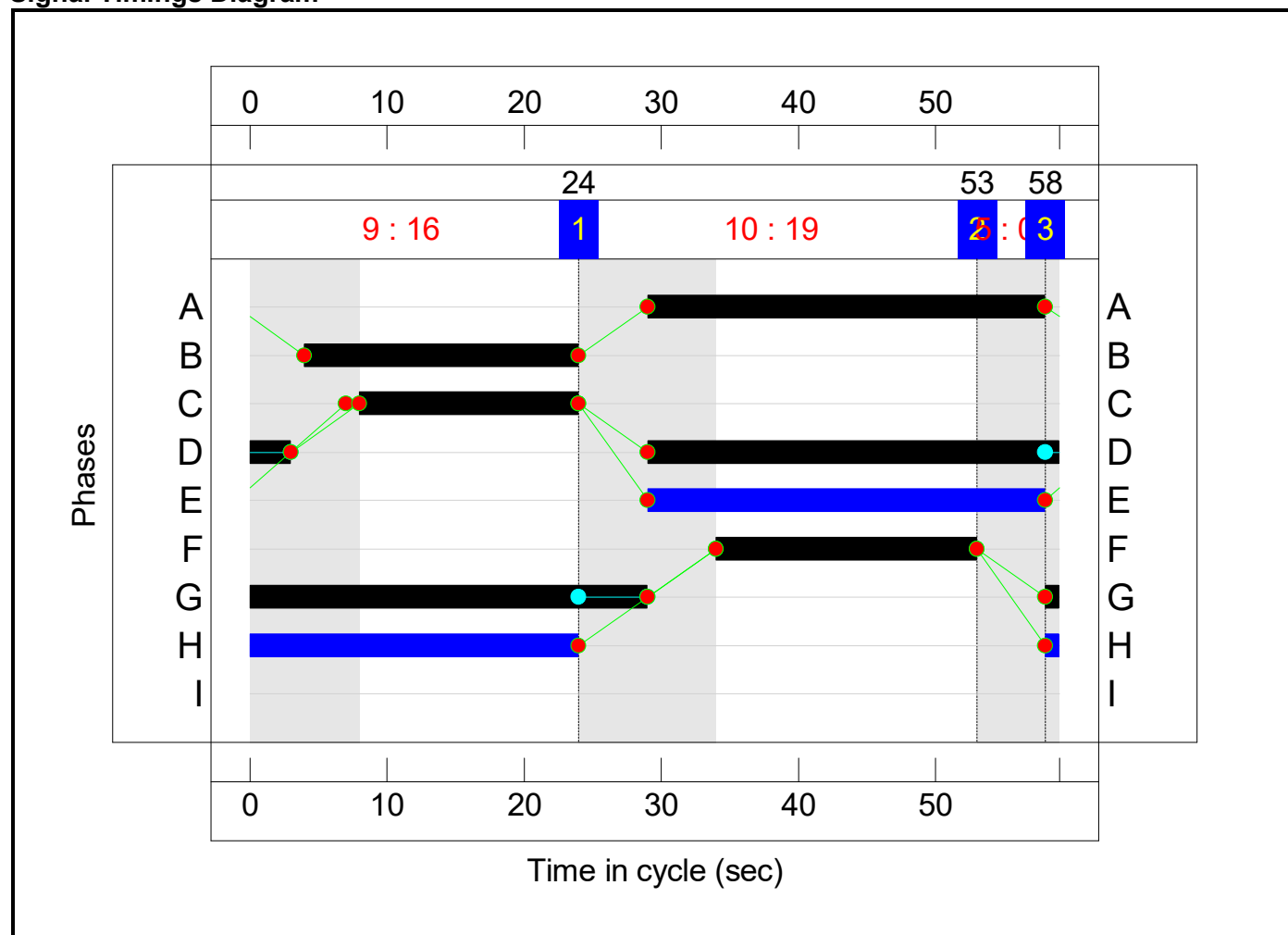
Stage Stream: 2

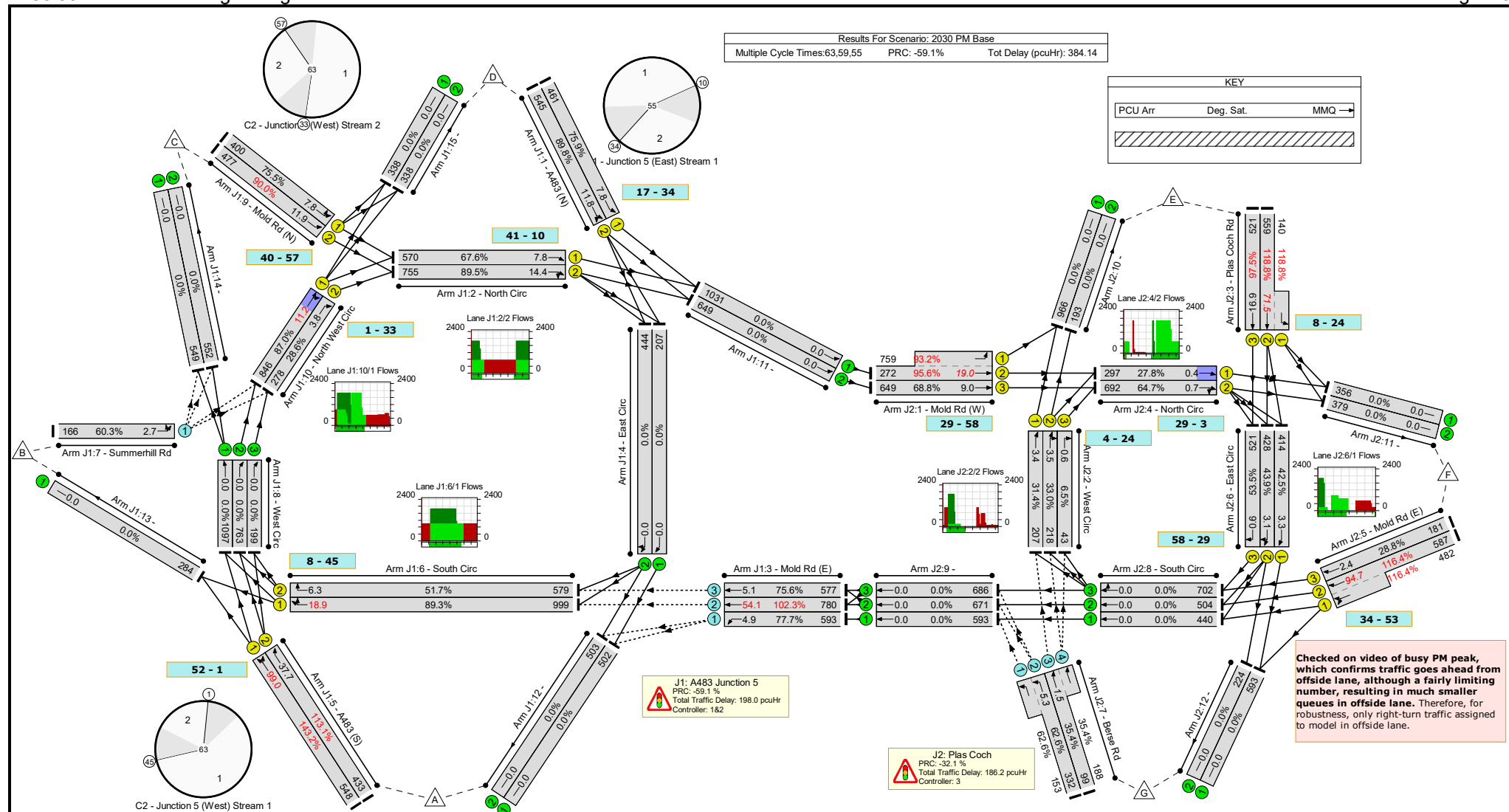
Stage	1	2
Duration	32	17
Change Point	57	33

Signal Timings Diagram

C3 - Plas Coch**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	19	0	16
Change Point	24	53	58

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing	-	-	N/A	-	-		-	-	-	-	-	-	143.2%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	143.2%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	17	-	461	1855	607	75.9%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	17	-	545	1855	607	89.8%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	24	-	594	1855	843	67.6%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	24	-	781	1855	843	89.5%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	670	Inf	763	77.7%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	828	Inf	763	102.3%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	612	Inf	763	75.6%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	207	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	444	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	12	-	548	1855	383	143.2%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	12	-	433	1855	383	113.1%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	37	-	1064	1855	1119	89.3%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	37	-	614	1855	1119	51.7%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	166	Inf	275	60.3%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	1293	Inf	Inf	0.0%

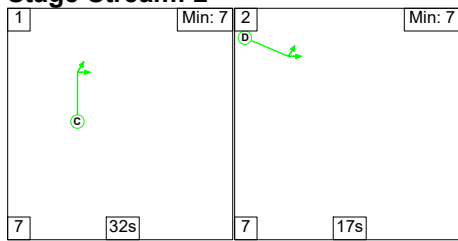
8/2	West Circ Ahead	U	N/A	N/A	-		-	-	-	822	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	225	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	17	-	400	1855	530	75.5%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	17	-	477	1855	530	90.0%
10/1	North West Circ Right Ahead	U	2:2	N/A	C2:C		1	32	-	905	1855	972	87.0%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	32	-	304	1855	972	28.6%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1055	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	675	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	541	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	542	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	319	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	650	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	355	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	356	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	118.8%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	29	-	1055	1855:1855	284+814	95.6 : 93.2%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	29	-	675	1855	943	68.8%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	207	1855	660	31.4%
2/2	West Circ Right Ahead	U	3:1	N/A	C3:B		1	20	-	218	1855	660	33.0%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	20	-	43	1855	660	6.5%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	16	-	699	1855:1855	470+118	118.8 : 118.8%
3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	16	-	521	1855	534	97.5%

4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	33	-	298	1855	1069	27.8%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	33	-	718	1855	1069	64.7%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	19	-	1069	1855:1855	504+414	116.4 : 116.4%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	19	-	181	1855	629	28.8%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	30	-	464	1855	975	42.5%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	30	-	478	1855	975	43.9%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	30	-	521	1855	975	53.5%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	485	Inf : Inf	531+245	62.6 : 62.6%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	287	Inf : Inf	279+531	35.4 : 35.4%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	587	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	702	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	670	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	754	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	686	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	989	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	193	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	405	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	672	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	235	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing	-	-	3642	0	0	68.0	316.1	0.0	384.1	-	-	-	-
J1: A483 Junction 5	-	-	2098	0	0	38.2	159.8	0.0	198.0	-	-	-	-
1/1	461	461	-	-	-	2.1	1.5	-	3.7	28.6	6.3	1.5	7.8
1/2	545	545	-	-	-	2.7	3.9	-	6.6	43.4	7.9	3.9	11.8
2/1	570	570	-	-	-	1.9	1.0	-	2.9	18.4	6.8	1.0	7.8
2/2	755	755	-	-	-	2.9	3.9	-	6.8	32.5	10.5	3.9	14.4
3/1	593	593	593	0	0	0.1	1.7	-	1.8	11.2	3.2	1.7	4.9
3/2	780	763	763	0	0	1.9	19.0	-	20.9	96.5	35.1	19.0	54.1
3/3	577	577	577	0	0	0.0	1.5	-	1.6	9.7	3.6	1.5	5.1
4/1	207	207	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	444	444	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	548	383	-	-	-	9.7	84.2	-	94.0	617.3	14.8	84.2	99.0
5/2	433	383	-	-	-	4.8	28.9	-	33.7	279.9	8.9	28.9	37.7
6/1	999	999	-	-	-	3.0	3.9	-	6.9	24.8	15.0	3.9	18.9
6/2	579	579	-	-	-	1.2	0.5	-	1.7	10.5	5.8	0.5	6.3
7/1	166	166	166	0	0	0.6	0.7	-	1.4	30.3	1.9	0.7	2.7
8/1	1097	1097	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	763	763	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	199	199	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	400	400	-	-	-	2.3	1.5	-	3.8	34.0	6.3	1.5	7.8
9/2	477	477	-	-	-	2.9	3.9	-	6.8	51.2	8.0	3.9	11.9
10/1	846	846	-	-	-	1.9	3.2	-	5.1	21.7	8.0	3.2	11.2
10/2	278	278	-	-	-	0.2	0.2	-	0.4	5.5	3.6	0.2	3.8
11/1	1031	1031	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	649	649	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	502	502	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	503	503	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	284	284	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	549	549	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	1544	0	0	29.8	156.3	0.0	186.2	-	-	-	-
1/2+1/1	1031	1031	-	-	-	3.3	6.4	-	9.7	33.9	12.6	6.4	19.0
1/3	649	649	-	-	-	2.0	1.1	-	3.1	17.0	7.9	1.1	9.0
2/1	207	207	-	-	-	1.1	0.2	-	1.3	22.4	3.2	0.2	3.4
2/2	218	218	-	-	-	1.0	0.2	-	1.3	20.7	3.3	0.2	3.5
2/3	43	43	-	-	-	0.1	0.0	-	0.2	14.6	0.6	0.0	0.6
3/2+3/1	699	588	-	-	-	7.0	58.4	-	65.4	337.0	13.0	58.4	71.5
3/3	521	521	-	-	-	3.0	8.5	-	11.5	79.7	8.4	8.5	16.9
4/1	297	297	-	-	-	0.1	0.0	-	0.1	1.5	0.4	0.0	0.4
4/2	692	692	-	-	-	0.2	0.0	-	0.2	1.2	0.7	0.0	0.7
5/2+5/1	1069	918	-	-	-	8.4	78.8	-	87.2	293.5	16.0	78.8	94.7
5/3	181	181	-	-	-	0.7	0.2	-	0.9	18.3	2.2	0.2	2.4
6/1	414	414	-	-	-	0.7	0.4	-	1.1	9.2	3.0	0.4	3.3
6/2	428	428	-	-	-	0.6	0.4	-	1.0	8.5	2.7	0.4	3.1
6/3	521	521	-	-	-	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
7/2+7/1	485	485	970	0	0	1.0	0.8	-	1.8	13.6	4.4	0.8	5.3
7/3+7/4	287	287	574	0	0	0.5	0.3	-	0.8	10.0	1.2	0.3	1.5
8/1	440	440	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	702	702	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	593	593	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	671	671	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	686	686	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

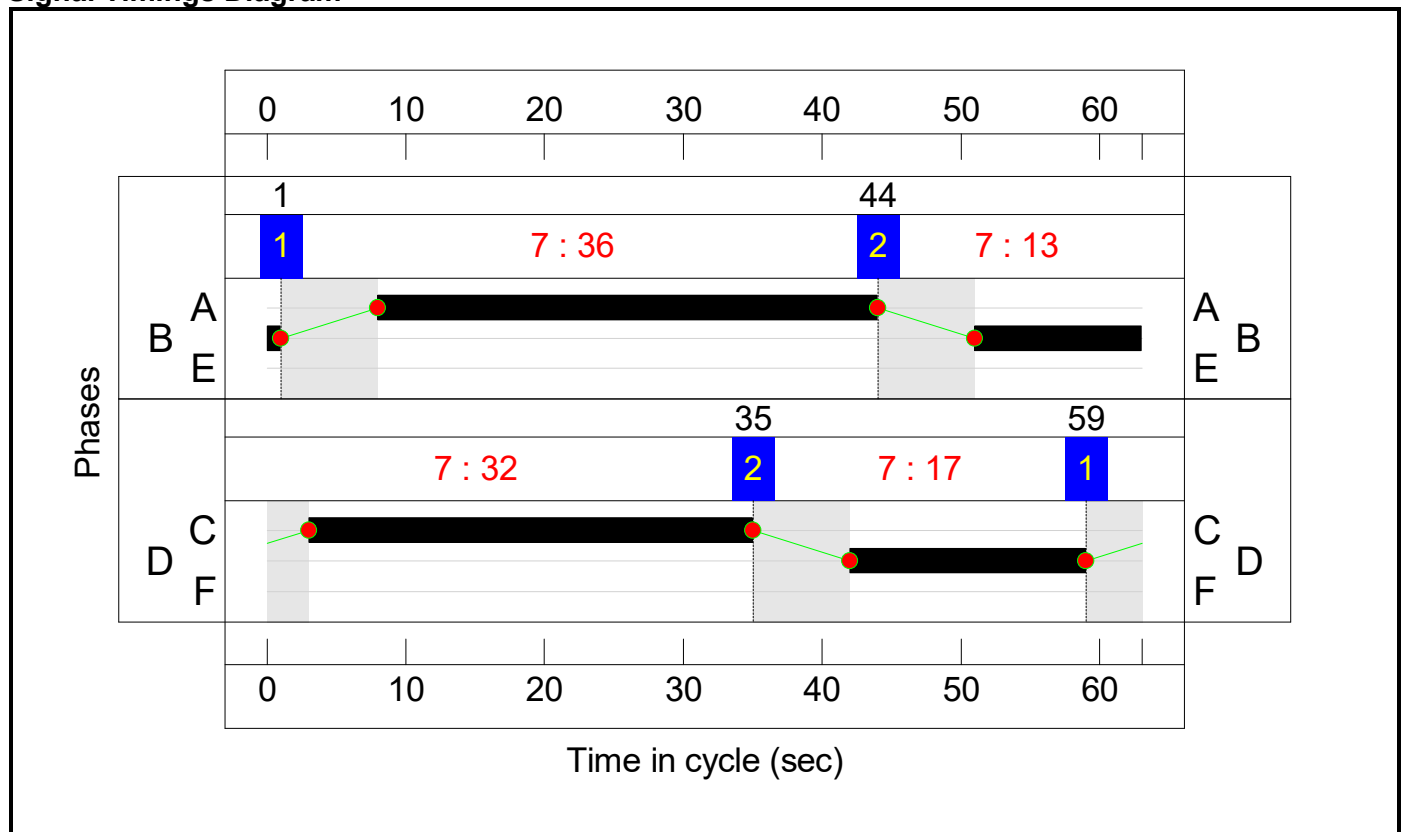
10/1	966	966	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	193	193	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	356	356	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	379	379	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	593	593	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	224	224	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - Junction 5 (East) C2 - Junction 5 (West) C2 - Junction 5 (West) C3 - Plas Coch Stream: 1 PRC for Signalled Lanes (%): 0.3 Stream: 1 PRC for Signalled Lanes (%): -59.1 Stream: 2 PRC for Signalled Lanes (%): -0.0 Stream: 1 PRC for Signalled Lanes (%): -32.1 PRC Over All Lanes (%): -59.1 Total Delay for Signalled Lanes (pcuHr): 19.96 Total Delay for Signalled Lanes (pcuHr): 136.21 Total Delay for Signalled Lanes (pcuHr): 16.09 Total Delay for Signalled Lanes (pcuHr): 183.55 Total Delay Over All Lanes(pcuHr): 384.14 Cycle Time (s): 55 Cycle Time (s): 63 Cycle Time (s): 63 Cycle Time (s): 59													

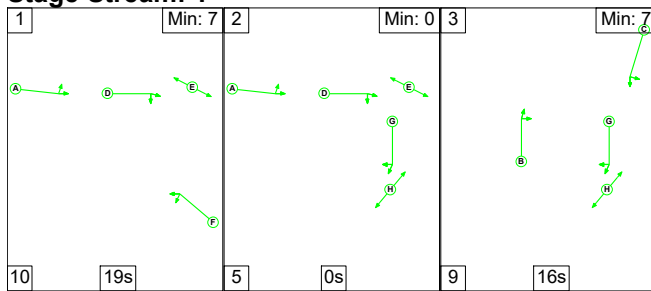
Stage Stream: 2**Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	36	13
Change Point	1	44

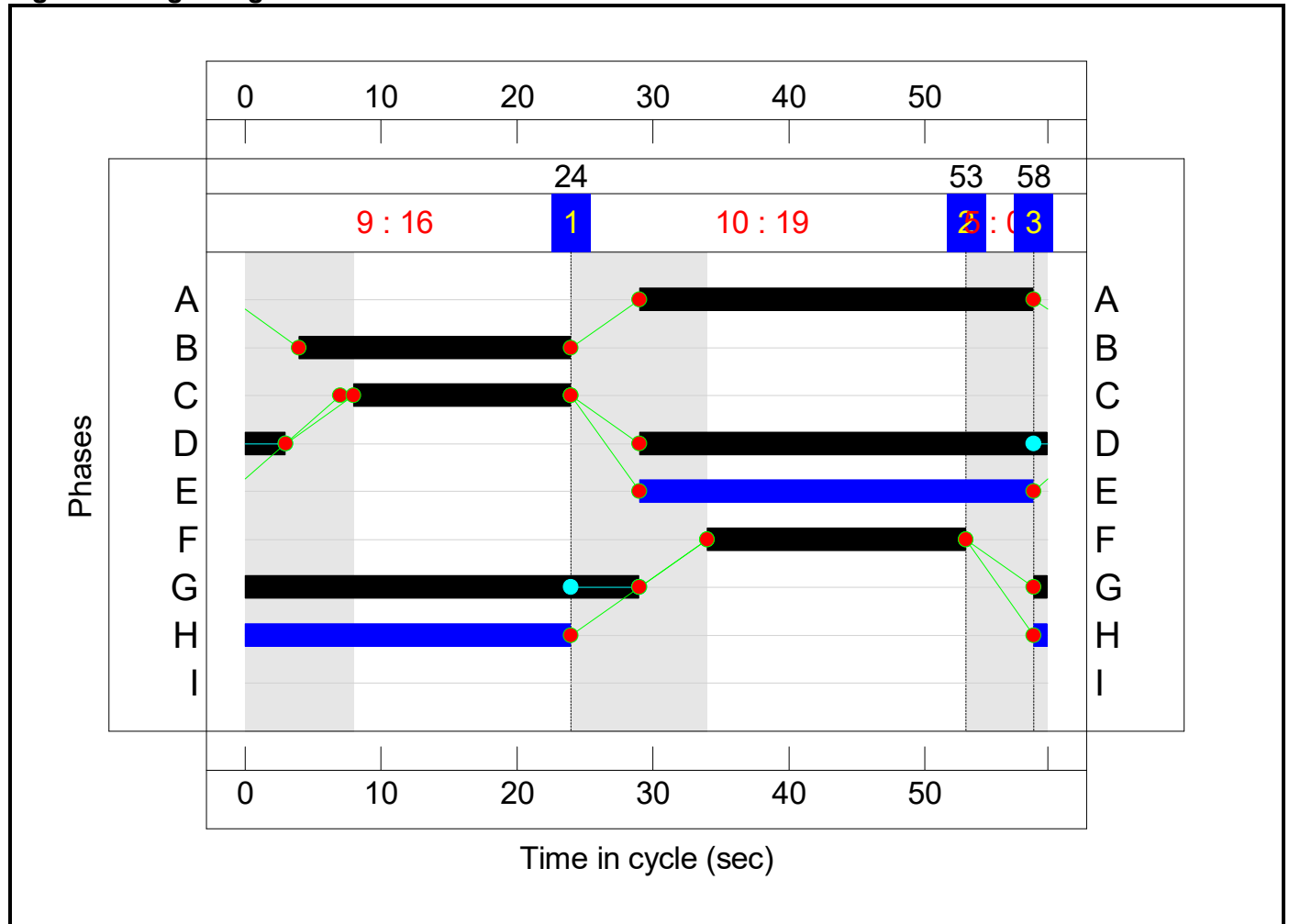
Stage Stream: 2

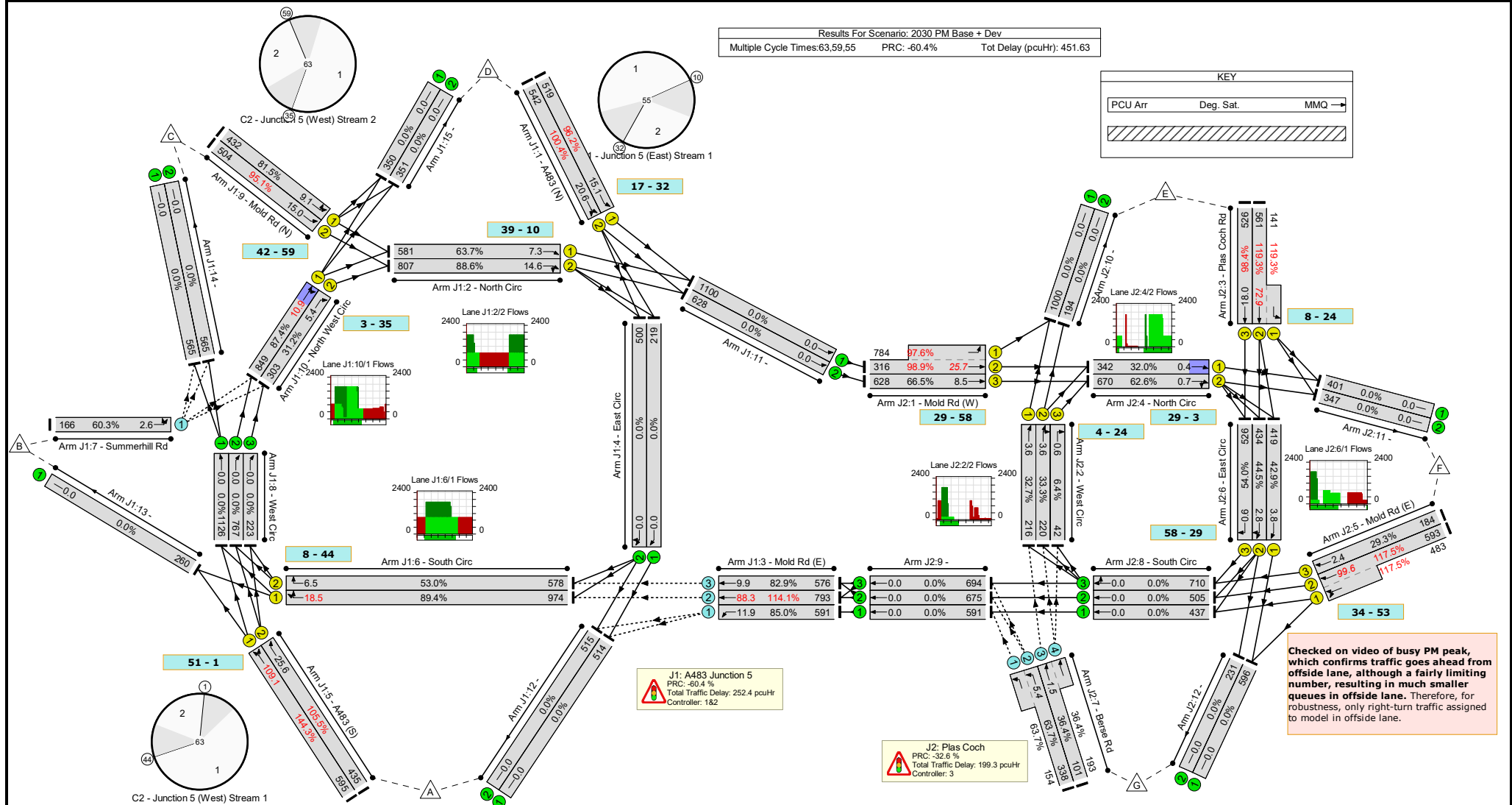
Stage	1	2
Duration	32	17
Change Point	59	35

Signal Timings Diagram

C3 - Plas Coch**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	19	0	16
Change Point	24	53	58

Signal Timings Diagram



Model Notes

Base modelling utilised videos to observe driver behaviour / timings.

Signal timings were variable from cycle to cycle. Average cycle time for Junction 1 (West) were 55s and 63s for AM and PM respectively, Junction 1 (East) 62s and 55s, and for Junction 2 were 64s and 59s.

Max Flows for giveways at Mold Rd and Berse Rd measured from videos.

Relatively good match between queue survey and 2019 model results. However, during PM queue survey indicated queues existed on Berse Rd. Model does not show this, due to relatively low flows from Berse Rd. However, cause of queues looks to be more related to queues blocking from the Mold Rd westbound entry to Junction 1, which were in turn often blocked entering the roundabout by queues forming on the southern circulatory. The model cannot model blocking back, but does indicate the presence of queues on these downstream arms.

Timings optimised manually, with DoS set to below 90% on circulatory (if over-capacity), which may differ slightly from the actual average timings on site. This was to ensure scenarios were comparable.

Sat Flows measured for A483 (N), which were observed to be 1855 pcu/hr. Not enough detail to measure elsewhere, so 1855 pcu/hr used at all signalled lanes. This would be considered a relatively robust value, with 1900 pcu/hr often considered as a robust design value.

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing	-	-	N/A	-	-		-	-	-	-	-	-	144.3%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	144.3%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	15	-	519	1855	540	96.2%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	15	-	542	1855	540	100.4%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	26	-	591	1855	911	63.7%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	26	-	819	1855	911	88.6%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	671	Inf	695	85.0%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	844	Inf	695	114.1%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	613	Inf	695	82.9%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	219	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	501	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	13	-	595	1855	412	144.3%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	13	-	435	1855	412	105.5%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	36	-	1124	1855	1089	89.4%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	36	-	615	1855	1089	53.0%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	166	Inf	276	60.3%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	1402	Inf	Inf	0.0%

8/2	West Circ Ahead	U	N/A	N/A	-		-	-	-	815	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	235	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	17	-	432	1855	530	81.5%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	17	-	504	1855	530	95.1%
10/1	North West Circ Right Ahead	U	2:2	N/A	C2:C		1	32	-	897	1855	972	87.4%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	32	-	315	1855	972	31.2%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1110	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	641	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	554	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	555	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	317	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	703	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	703	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	370	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	119.3%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	29	-	1110	1855:1855	320+803	98.9 : 97.6%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	29	-	641	1855	943	66.5%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	216	1855	660	32.7%
2/2	West Circ Right Ahead	U	3:1	N/A	C3:B		1	20	-	220	1855	660	33.3%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	20	-	42	1855	660	6.4%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	16	-	702	1855:1855	470+118	119.3 : 119.3%
3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	16	-	526	1855	534	98.4%

4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	33	-	342	1855	1069	32.0%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	33	-	683	1855	1069	62.6%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	19	-	1076	1855:1855	505+411	117.5 : 117.5%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	19	-	184	1855	629	29.3%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	30	-	460	1855	975	42.9%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	30	-	489	1855	975	44.5%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	30	-	526	1855	975	54.0%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	492	Inf : Inf	531+242	63.7 : 63.7%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	294	Inf : Inf	278+531	36.4 : 36.4%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	593	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	710	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	671	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	763	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	694	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	1010	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	194	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	412	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	366	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	668	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing	-	-	3600	0	0	73.3	378.4	0.0	451.6	-	-	-	-
J1: A483 Junction 5	-	-	2028	0	0	42.6	209.7	0.0	252.4	-	-	-	-
1/1	519	519	-	-	-	2.8	7.3	-	10.1	70.2	7.8	7.3	15.1
1/2	542	540	-	-	-	3.0	12.2	-	15.2	101.2	8.3	12.2	20.6
2/1	581	581	-	-	-	1.7	0.9	-	2.5	15.8	6.5	0.9	7.3
2/2	807	807	-	-	-	2.8	3.6	-	6.5	28.8	11.0	3.6	14.6
3/1	591	591	591	0	0	0.2	2.7	-	2.9	17.8	9.2	2.7	11.9
3/2	793	695	695	0	0	4.6	52.7	-	57.3	260.1	35.6	52.7	88.3
3/3	576	576	576	0	0	0.2	2.3	-	2.5	15.6	7.6	2.3	9.9
4/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	500	500	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	595	412	-	-	-	10.6	93.0	-	103.6	626.9	16.1	93.0	109.1
5/2	435	412	-	-	-	3.8	17.6	-	21.4	176.7	8.0	17.6	25.6
6/1	974	974	-	-	-	3.1	3.9	-	7.0	25.9	14.6	3.9	18.5
6/2	578	578	-	-	-	1.3	0.6	-	1.8	11.3	5.9	0.6	6.5
7/1	166	166	166	0	0	0.6	0.7	-	1.4	29.9	1.9	0.7	2.6
8/1	1126	1126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	767	767	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	223	223	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	432	432	-	-	-	2.5	2.1	-	4.6	38.6	7.0	2.1	9.1
9/2	504	504	-	-	-	3.1	6.5	-	9.6	68.3	8.5	6.5	15.0
10/1	849	849	-	-	-	2.0	3.3	-	5.3	22.4	7.6	3.3	10.9
10/2	303	303	-	-	-	0.5	0.2	-	0.7	8.1	5.2	0.2	5.4
11/1	1100	1100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	628	628	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

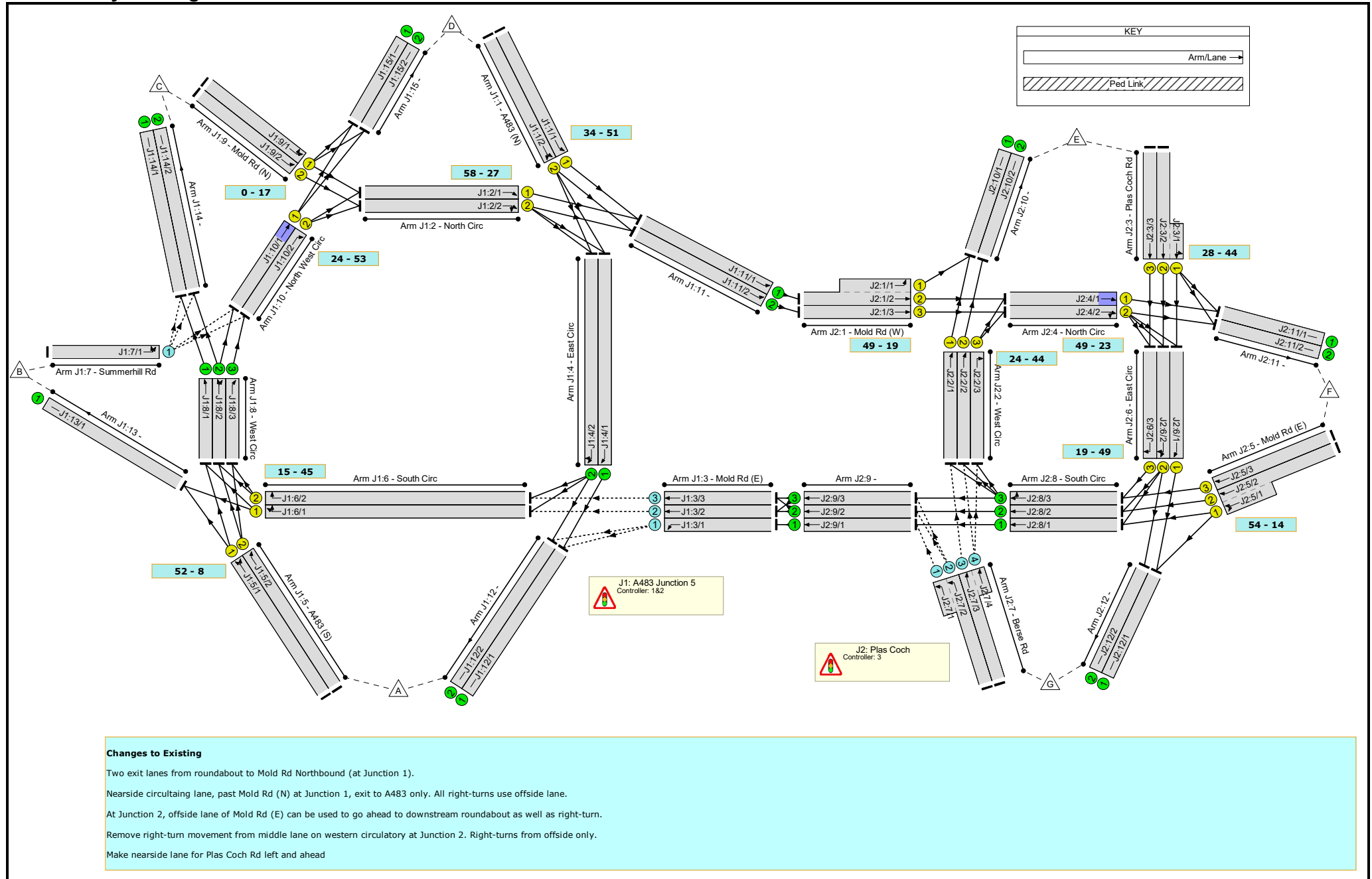
12/2	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	565	565	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	565	565	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	350	350	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	1572	0	0	30.6	168.6	0.0	199.3	-	-	-	-
1/2+1/1	1100	1100	-	-	-	3.7	11.8	-	15.5	50.7	13.9	11.8	25.7
1/3	628	628	-	-	-	1.9	1.0	-	2.9	16.4	7.5	1.0	8.5
2/1	216	216	-	-	-	1.1	0.2	-	1.4	22.7	3.3	0.2	3.6
2/2	220	220	-	-	-	1.0	0.2	-	1.3	20.5	3.3	0.2	3.6
2/3	42	42	-	-	-	0.1	0.0	-	0.2	14.6	0.5	0.0	0.6
3/2+3/1	702	588	-	-	-	7.1	59.7	-	66.9	342.9	13.1	59.7	72.9
3/3	526	526	-	-	-	3.0	9.5	-	12.6	86.2	8.5	9.5	18.0
4/1	342	342	-	-	-	0.1	0.0	-	0.1	1.3	0.4	0.0	0.4
4/2	670	670	-	-	-	0.2	0.0	-	0.2	1.2	0.7	0.0	0.7
5/2+5/1	1076	916	-	-	-	8.6	83.3	-	91.9	307.6	16.3	83.3	99.6
5/3	184	184	-	-	-	0.7	0.2	-	0.9	18.4	2.2	0.2	2.4
6/1	419	419	-	-	-	0.8	0.4	-	1.2	10.2	3.4	0.4	3.8
6/2	434	434	-	-	-	0.6	0.4	-	1.0	8.0	2.4	0.4	2.8
6/3	526	526	-	-	-	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
7/2+7/1	492	492	984	0	0	1.0	0.9	-	1.9	14.0	4.5	0.9	5.4
7/3+7/4	294	294	588	0	0	0.5	0.3	-	0.8	10.1	1.2	0.3	1.5
8/1	437	437	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	505	505	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	591	591	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	675	675	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	694	694	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

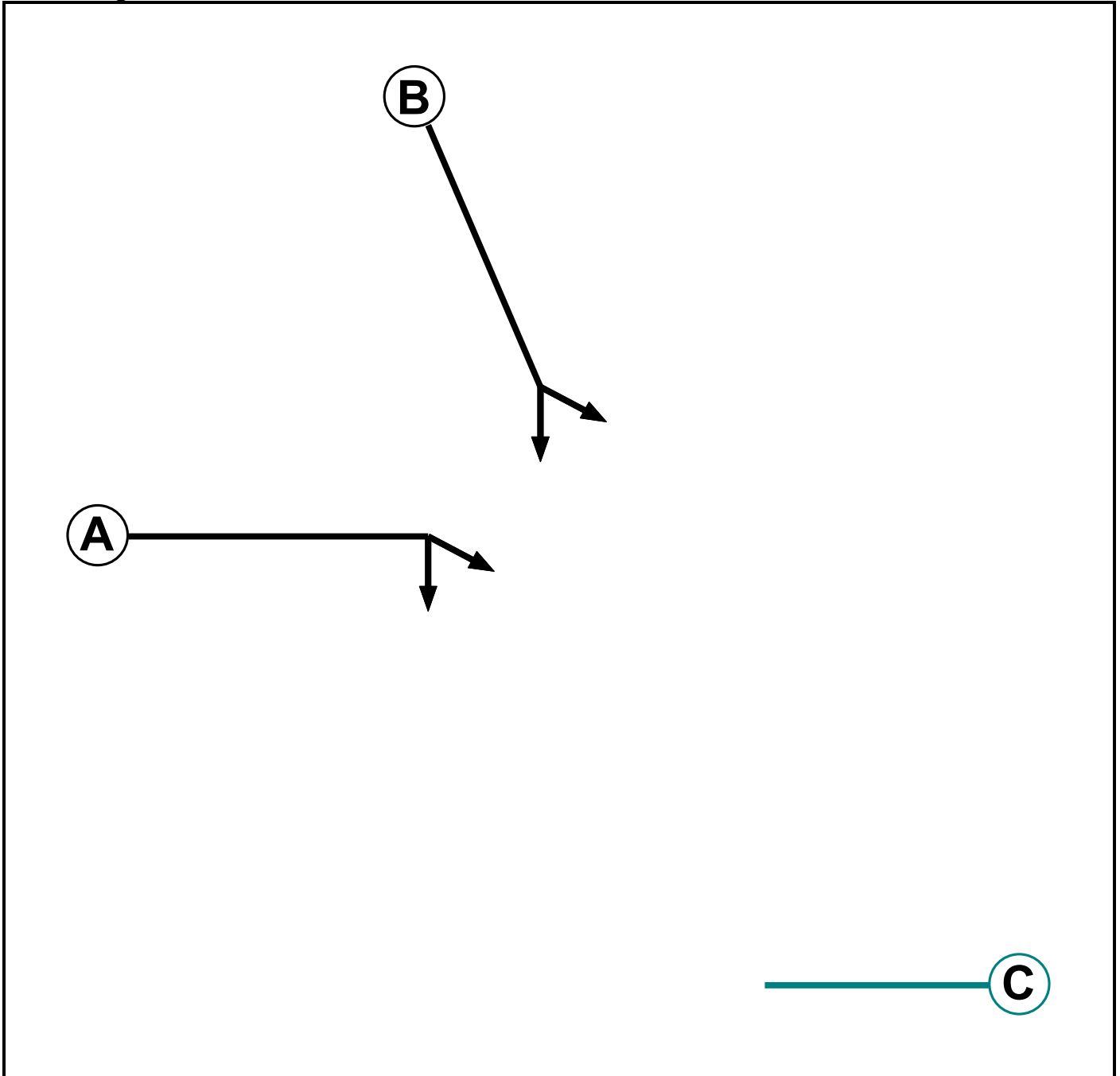
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User and Project Details

Project:	19026 A483 J5 Rbts
Title:	Proposed
Location:	North West Wrexham
Client:	Focus Transport Planning
Design Layout Ref:	Google Earth
Date Started:	05/07/2019
Date Completed:	02/09/2019
Model Purpose:	Impact of development
Flow Details:	Provided by Focus. Entered as Turning Counts (accurately using Import and Export Features) and then Matrix Estimation
Checked By:	Simon Swanston
Checked By Date:	02/09/2019
Additional detail:	
File name:	A483 J5 Network Proposed.lsg3x
Author:	Simon Swanston
Company:	JCT Consultancy
Address:	LinSig House, Deepdale Lane, Nettleham, Lincoln, LN2 2LL



C1 - Junction 5 (East)**Phase Diagram****Phase Input Data**

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Dummy	1		-9999	3

Phase Intergreens Matrix

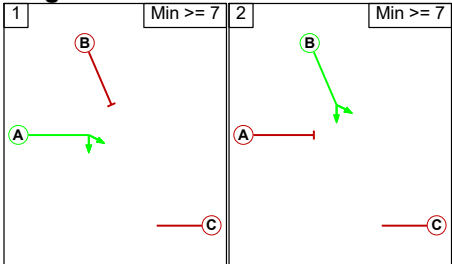
Terminating Phase	Starting Phase			
		A	B	C
	A		7	3
	B	7		3
	C	2	2	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B

Stage Diagram

Stage Stream: 1



Phase Delays

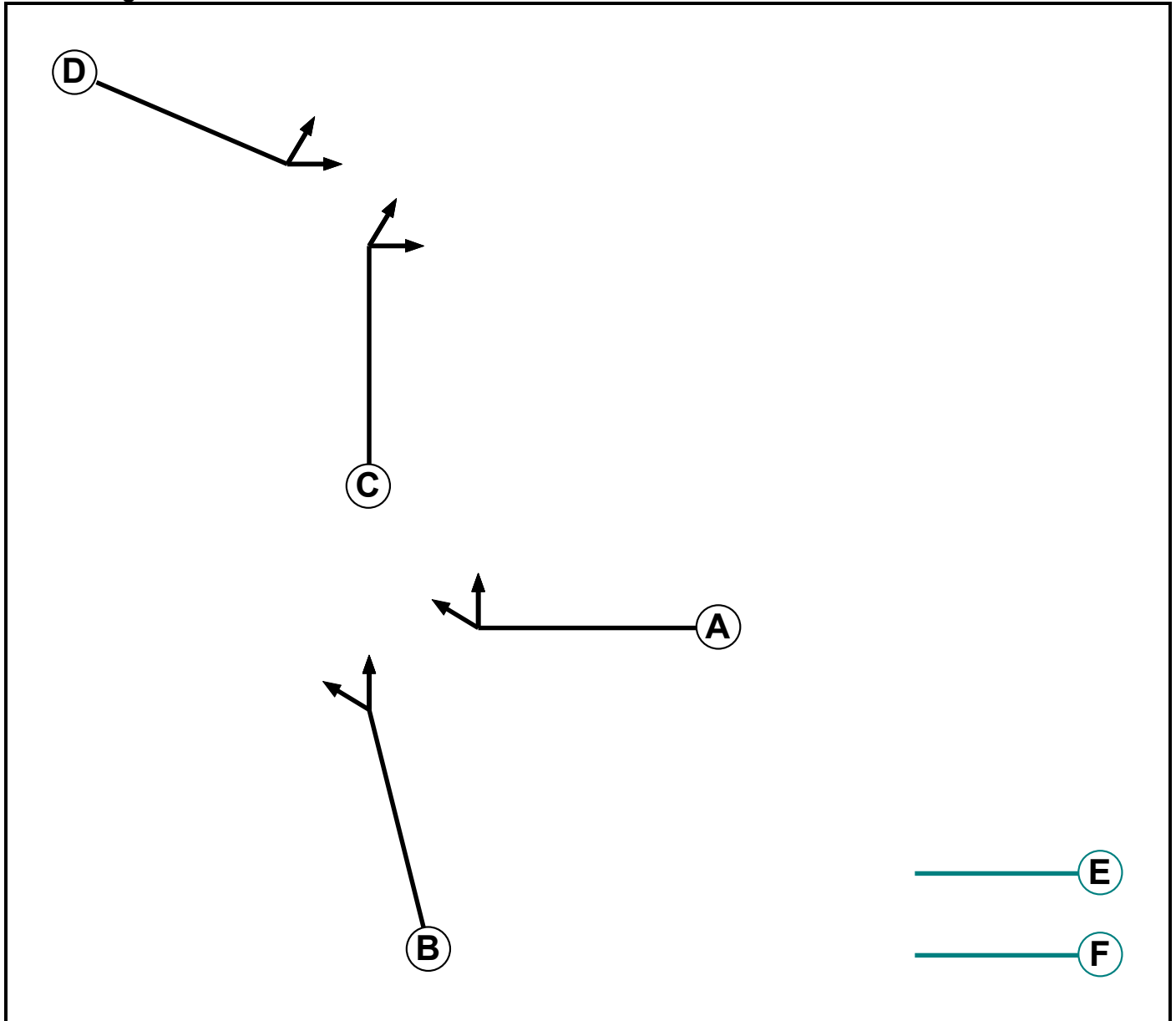
Stage Stream: 1

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

Prohibited Stage Change

Stage Stream: 1

From Stage	To Stage	
	1	2
	1	7
	2	7

C2 - Junction 5 (West)**Phase Diagram****Phase Input Data**

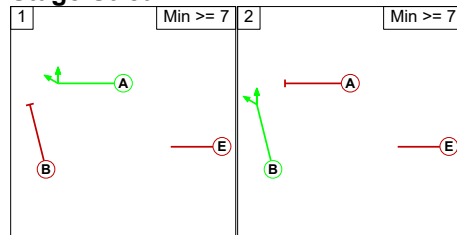
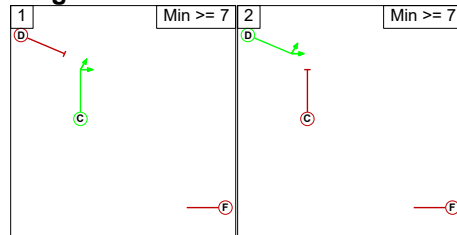
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	2		-9999	7
D	Traffic	2		-9999	7
E	Dummy	1		-9999	3
F	Dummy	2		-9999	3

Phase Intergreens Matrix

Terminating Phase	Starting Phase						
		A	B	C	D	E	F
	A		7	-	-	3	-
	B	7		-	-	3	-
	C	-	-		7	-	3
	D	-	-	7		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

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

Stage Stream: 2

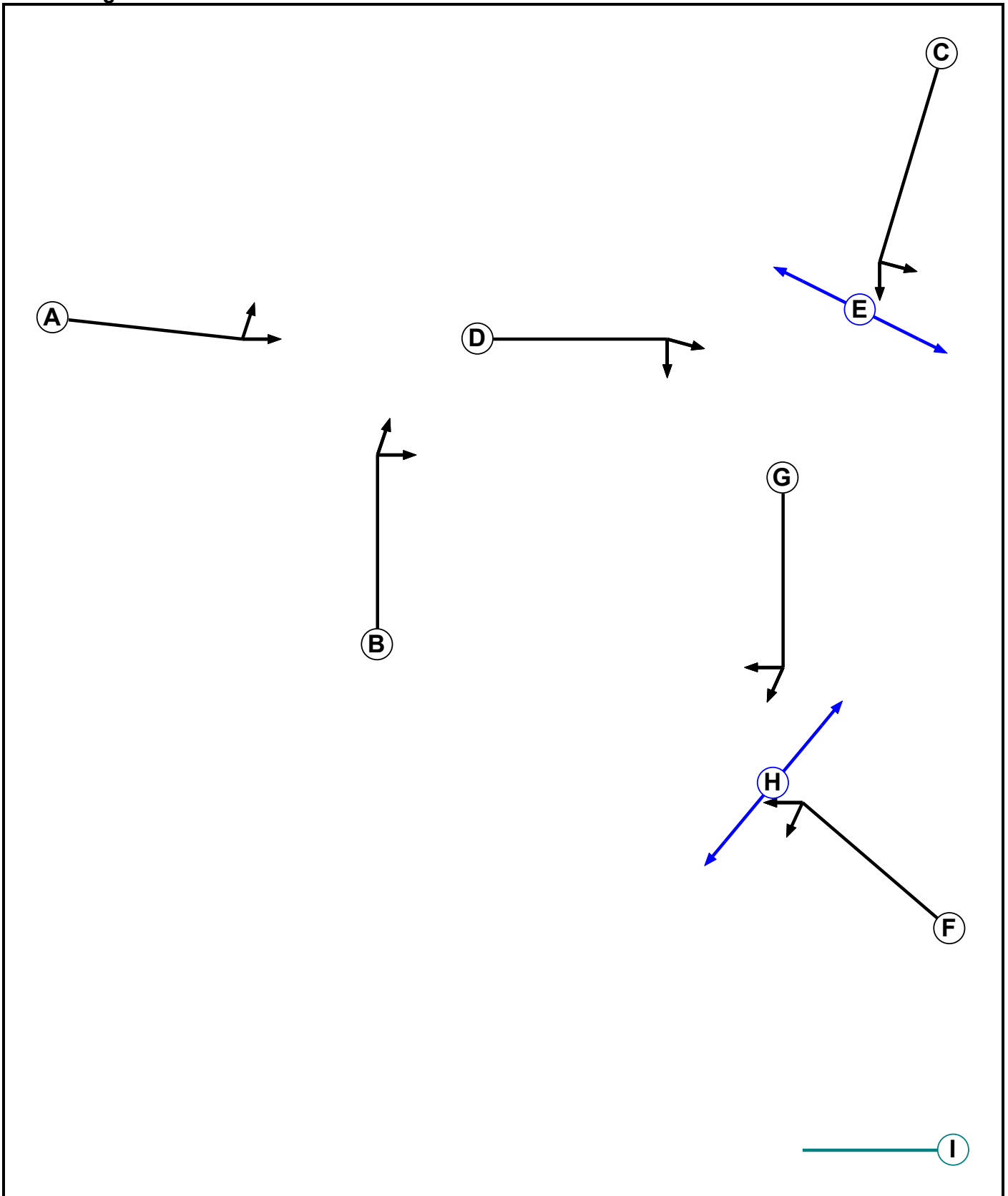
Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change**Stage Stream: 1**

	To Stage		
From Stage		1	2
	1		7
	2	7	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		7
	2	7	

C3 - Plas Coch
Phase Diagram

Phase Input Data

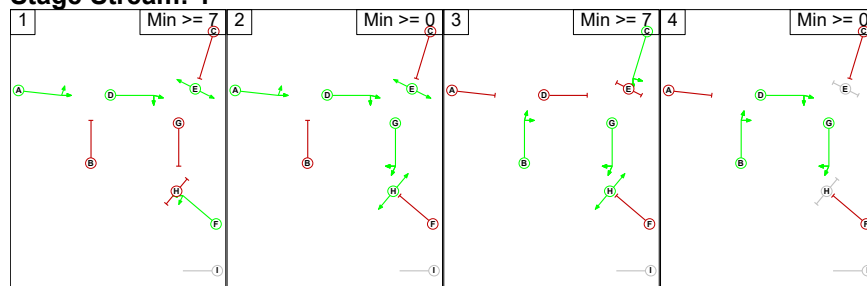
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	1		-9999	7
D	Traffic	1		-9999	7
E	Pedestrian	1		-9999	5
F	Traffic	1		-9999	7
G	Traffic	1		-9999	7
H	Pedestrian	1		-9999	5
I	Dummy	1		-9999	7

Phase Intergreens Matrix

Terminating Phase	Starting Phase									
		A	B	C	D	E	F	G	H	I
	A		5	-	-	-	-	-	-	-
	B	5		-	-	-	-	-	-	-
	C	-	-		5	5	-	-	-	-
	D	-	-	5		-	-	-	-	-
	E	-	-	8	-		-	-	-	-
	F	-	-	-	-	-		5	5	-
	G	-	-	-	-	-	5		-	-
	H	-	-	-	-	-	10	-		-
	I	-	-	-	-	-	-	-	-	

Phases in Stage

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

Stage Diagram**Stage Stream: 1**

Phase Delays**Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	D	Losing	4	4
2	3	D	Losing	4	4
3	1	G	Losing	5	5

Prohibited Stage Change**Stage Stream: 1**

From Stage	To Stage				
		1	2	3	4
	1		5	9	5
	2	10		9	5
	3	10	5		5
	4	5	5	5	

Give-Way Lane Input Data

Junction: J1: A483 Junction 5											
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)
J1:3/1 (Mold Rd (E))	J1:12/1 (Left)	1414	0	J1:4/1	1.00	All	-	-	-	-	-
				J1:4/2	1.00	All					
	J1:12/2 (Left)	1414	0	J1:4/1	1.00	All					
				J1:4/2	1.00	All					
J1:3/2 (Mold Rd (E))	J1:6/1 (Ahead)	1414	0	J1:4/1	1.00	All	-	-	-	-	-
				J1:4/2	1.00	All					
J1:3/3 (Mold Rd (E))	J1:6/2 (Ahead)	1414	0	J1:4/1	1.00	All	-	-	-	-	-
				J1:4/2	1.00	All					
J1:7/1 (Summerhill Rd)	J1:10/1 (Left)	1400	0	J1:8/1	1.00	All	-	-	-	-	-
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:10/2 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:14/1 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:14/2 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					

Junction: J2: Plas Coch											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
J2:7/1 (Berse Rd)	J2:9/1 (Left)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/2 (Berse Rd)	J2:9/2 (Left)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
	J2:9/3 (Left)	1421	0	J2:8/1	1.00	All					
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/3 (Berse Rd)	J2:2/1 (Ahead)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/4 (Berse Rd)	J2:2/2 (Ahead)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
	J2:2/3 (Ahead)	1421	0	J2:8/1	1.00	All					
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					

Lane Input Data

Junction: J1: A483 Junction 5												
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)
J1:1/1 (A483 (N))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:1/2 (A483 (N))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:2/1 (North Circ)	U	A	2	3	20.2	User	1855	-	-	-	-	-
J1:2/2 (North Circ)	U	A	2	3	20.2	User	1855	-	-	-	-	-
J1:3/1 (Mold Rd (E))	O		2	3	15.0	Inf	-	-	-	-	-	-
J1:3/2 (Mold Rd (E))	O		2	3	15.0	Inf	-	-	-	-	-	-
J1:3/3 (Mold Rd (E))	O		2	3	15.0	Inf	-	-	-	-	-	-
J1:4/1 (East Circ)	U		2	3	17.6	Inf	-	-	-	-	-	-
J1:4/2 (East Circ)	U		2	3	17.6	Inf	-	-	-	-	-	-
J1:5/1 (A483 (S))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:5/2 (A483 (S))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:6/1 (South Circ)	U	A	2	3	18.4	User	1855	-	-	-	-	-
J1:6/2 (South Circ)	U	A	2	3	18.4	User	1855	-	-	-	-	-
J1:7/1 (Summerhill Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:8/1 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:8/2 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:8/3 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:9/1 (Mold Rd (N))	U	D	2	3	60.0	User	1855	-	-	-	-	-
J1:9/2 (Mold Rd (N))	U	D	2	3	60.0	User	1855	-	-	-	-	-
J1:10/1 (North West Circ)	U	C	2	3	7.7	User	1855	-	-	-	-	-
J1:10/2 (North West Circ)	U	C	2	3	7.7	User	1855	-	-	-	-	-
J1:11/1	U		2	3	12.2	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	12.2	Inf	-	-	-	-	-	-

J1:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:14/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:14/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:15/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:15/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: Plas Coch												
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)
J2:1/1 (Mold Rd (W))	U	A	2	3	8.0	User	1855	-	-	-	-	-
J2:1/2 (Mold Rd (W))	U	A	2	3	14.4	User	1855	-	-	-	-	-
J2:1/3 (Mold Rd (W))	U	A	2	3	14.4	User	1855	-	-	-	-	-
J2:2/1 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:2/2 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:2/3 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:3/1 (Plas Coch Rd)	U	C	2	3	4.0	User	1855	-	-	-	-	-
J2:3/2 (Plas Coch Rd)	U	C	2	3	60.0	User	1855	-	-	-	-	-
J2:3/3 (Plas Coch Rd)	U	C	2	3	60.0	User	1855	-	-	-	-	-
J2:4/1 (North Circ)	U	D	2	3	8.3	User	1855	-	-	-	-	-
J2:4/2 (North Circ)	U	D	2	3	8.3	User	1855	-	-	-	-	-
J2:5/1 (Mold Rd (E))	U	F	2	3	6.0	User	1855	-	-	-	-	-
J2:5/2 (Mold Rd (E))	U	F	2	3	60.0	User	1855	-	-	-	-	-
J2:5/3 (Mold Rd (E))	U	F	2	3	60.0	User	1855	-	-	-	-	-
J2:6/1 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:6/2 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:6/3 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:7/1 (Berse Rd)	O		2	3	4.0	Inf	-	-	-	-	-	-
J2:7/2 (Berse Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/3 (Berse Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/4 (Berse Rd)	O		2	3	3.0	Inf	-	-	-	-	-	-
J2:8/1 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:8/2 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-

J2:8/3 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:9/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/3	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: '2030 Base AM + Development'	07:45	08:45	01:00	
10: '2030 Base AM + Development'	16:45	17:45	01:00	

Scenario 2: '2030 Base AM + Dev' (FG5: '2030 Base AM + Development', Plan 2: 'No Stage 4')

Traffic Flows, Desired

Desired Flow :

		Destination							
Origin		A	B	C	D	E	F	G	Tot.
	A	0	41	521	0	95	167	203	1027
	B	22	0	3	57	28	51	63	224
	C	469	3	0	187	125	214	258	1256
	D	0	17	109	0	193	321	382	1022
	E	91	27	110	165	0	69	227	689
	F	81	23	98	148	67	0	67	484
	G	131	39	153	225	295	188	0	1031
	Tot.	794	150	994	782	803	1010	1200	5733

Traffic Lane Flows

Lane	Scenario 2: 2030 Base AM + Dev
Junction: J1: A483 Junction 5	
J1:1/1	511
J1:1/2	511
J1:2/1	680
J1:2/2	1018
J1:3/1	303
J1:3/2	437
J1:3/3	551
J1:4/1	245
J1:4/2	375
J1:5/1	513
J1:5/2	514
J1:6/1	557
J1:6/2	560
J1:7/1	224
J1:8/1	920
J1:8/2	609
J1:8/3	465
J1:9/1	526
J1:9/2	730
J1:10/1	595
J1:10/2	629
J1:11/1	1191
J1:11/2	909
J1:12/1	395
J1:12/2	399
J1:13/1	150
J1:14/1	921
J1:14/2	73
J1:15/1	391
J1:15/2	391
Junction: J2: Plas Coch	
J2:1/1 (short)	441
J2:1/2 (with short)	1191(In) 750(Out)
J2:1/3	909
J2:2/1	181
J2:2/2	181
J2:2/3	188
J2:3/1 (short)	195

J2:3/2 (with short)	435(In) 240(Out)
J2:3/3	254
J2:4/1	851
J2:4/2	996
J2:5/1 (short)	148
J2:5/2 (with short)	347(In) 199(Out)
J2:5/3	137
J2:6/1	642
J2:6/2	630
J2:6/3	254
J2:7/1 (short)	131
J2:7/2 (with short)	548(In) 417(Out)
J2:7/3 (with short)	483(In) 148(Out)
J2:7/4 (short)	335
J2:8/1	172
J2:8/2	247
J2:8/3	391
J2:9/1	303
J2:9/2	455
J2:9/3	533
J2:10/1	622
J2:10/2	181
J2:11/1	885
J2:11/2	125
J2:12/1	709
J2:12/2	491

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 4: '2030 Base PM + Dev' (FG10: '2030 Base AM + Development', Plan 2: 'No Stage 4')
Traffic Flows, Desired
Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	55	540	0	200	141	94	1030
	B	27	0	4	35	47	32	21	166
	C	407	0	0	88	201	143	97	936
	D	4	39	241	2	346	253	176	1061
	E	242	81	223	221	0	141	319	1227
	F	275	93	251	249	184	0	208	1260
	G	154	50	145	144	226	68	0	787
	Tot.	1109	318	1404	739	1204	778	915	6467

Traffic Lane Flows

Lane	Scenario 4: 2030 Base PM + Dev
Junction: J1: A483 Junction 5	
J1:1/1	514
J1:1/2	547
J1:2/1	586
J1:2/2	824
J1:3/1	671
J1:3/2	728
J1:3/3	729
J1:4/1	219
J1:4/2	501
J1:5/1	515
J1:5/2	515
J1:6/1	869
J1:6/2	870
J1:7/1	166
J1:8/1	1066
J1:8/2	950
J1:8/3	435
J1:9/1	427
J1:9/2	509
J1:10/1	651
J1:10/2	562
J1:11/1	1100
J1:11/2	651
J1:12/1	554
J1:12/2	555
J1:13/1	318
J1:14/1	1068
J1:14/2	336
J1:15/1	369
J1:15/2	370
Junction: J2: Plas Coch	
J2:1/1 (short)	794
J2:1/2 (with short)	1100(In) 306(Out)
J2:1/3	651
J2:2/1	205
J2:2/2	205
J2:2/3	68
J2:3/1 (short)	381

J2:3/2 (with short)	725(In) 344(Out)
J2:3/3	502
J2:4/1	345
J2:4/2	680
J2:5/1 (short)	483
J2:5/2 (with short)	726(In) 243(Out)
J2:5/3	534
J2:6/1	449
J2:6/2	523
J2:6/3	502
J2:7/1 (short)	154
J2:7/2 (with short)	493(In) 339(Out)
J2:7/3 (with short)	294(In) 113(Out)
J2:7/4 (short)	181
J2:8/1	517
J2:8/2	266
J2:8/3	1036
J2:9/1	671
J2:9/2	436
J2:9/3	1021
J2:10/1	999
J2:10/2	205
J2:11/1	415
J2:11/2	363
J2:12/1	657
J2:12/2	258

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:3/2 (Mold Rd (E) Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:3/3 (Mold Rd (E) Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:4/1 (East Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (East Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

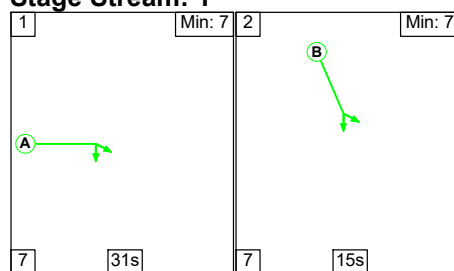
J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 2: '2030 Base AM + Dev' (FG5: '2030 Base AM + Development', Plan 2: 'No Stage 4')

C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1

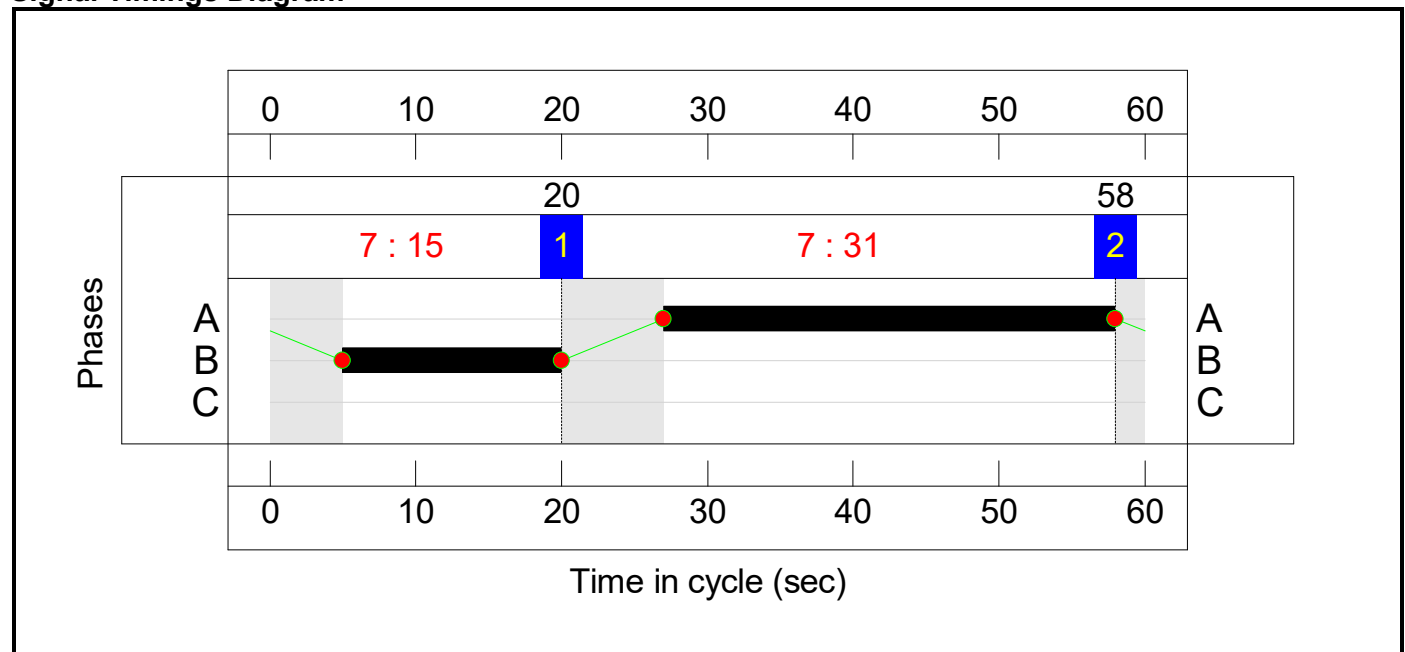


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	15
Change Point	20	58

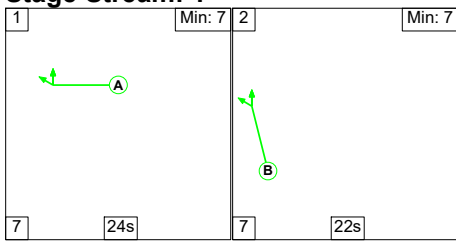
Signal Timings Diagram



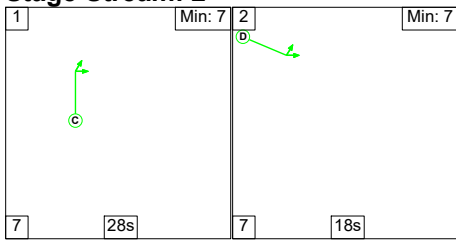
C2 - Junction 5 (West)

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



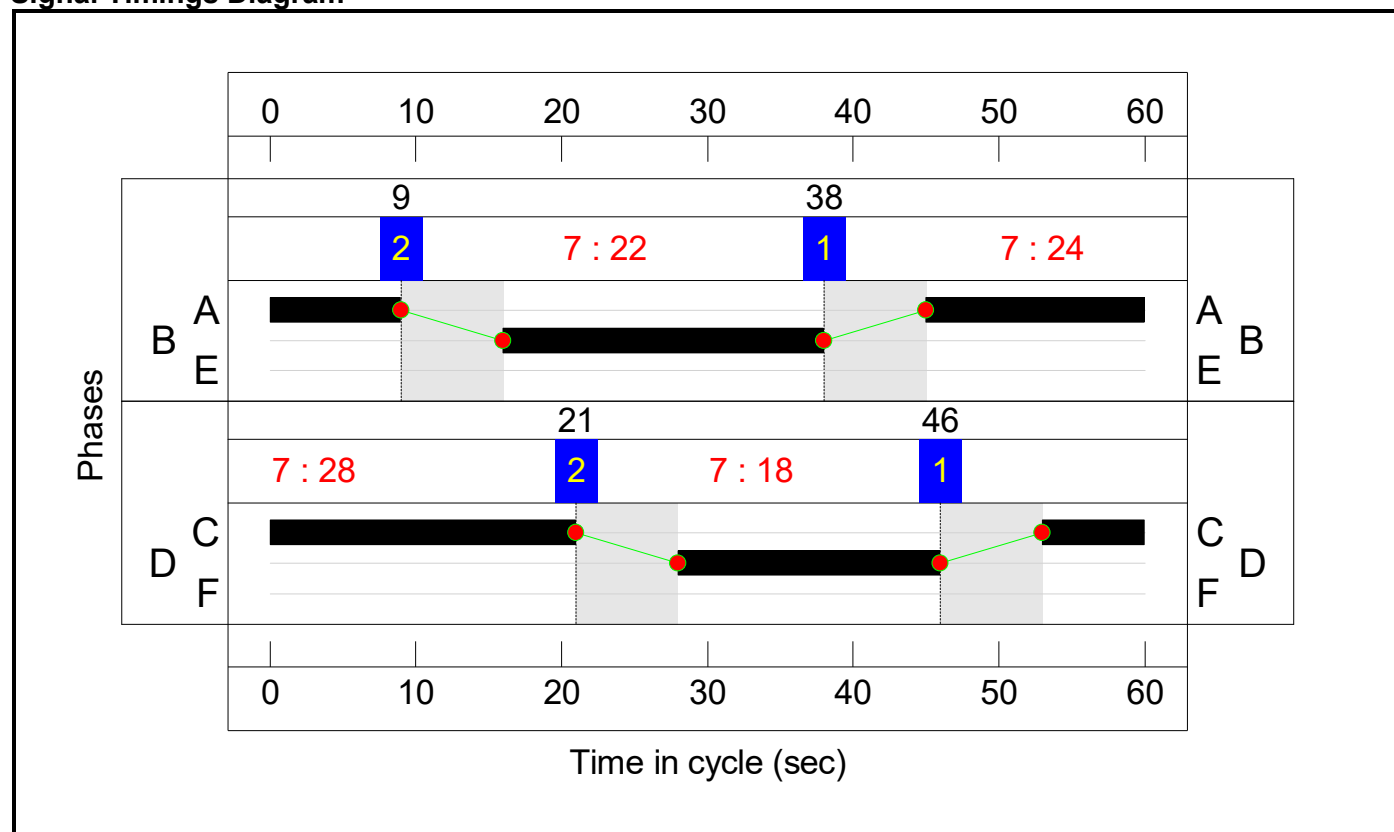
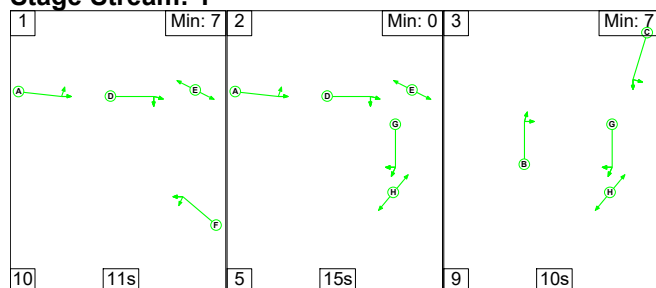
Stage Timings

Stage Stream: 1

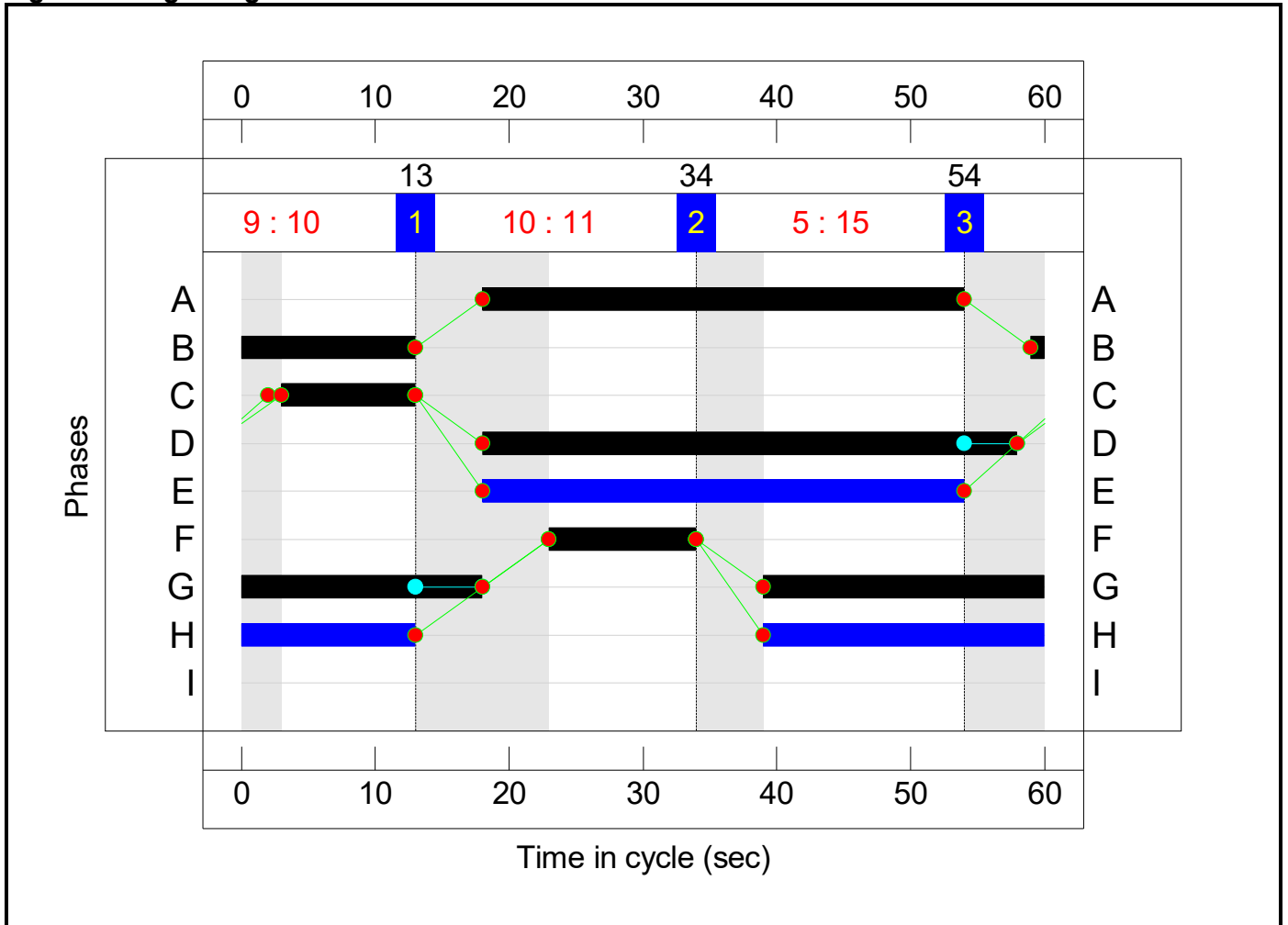
Stage	1	2
Duration	24	22
Change Point	38	9

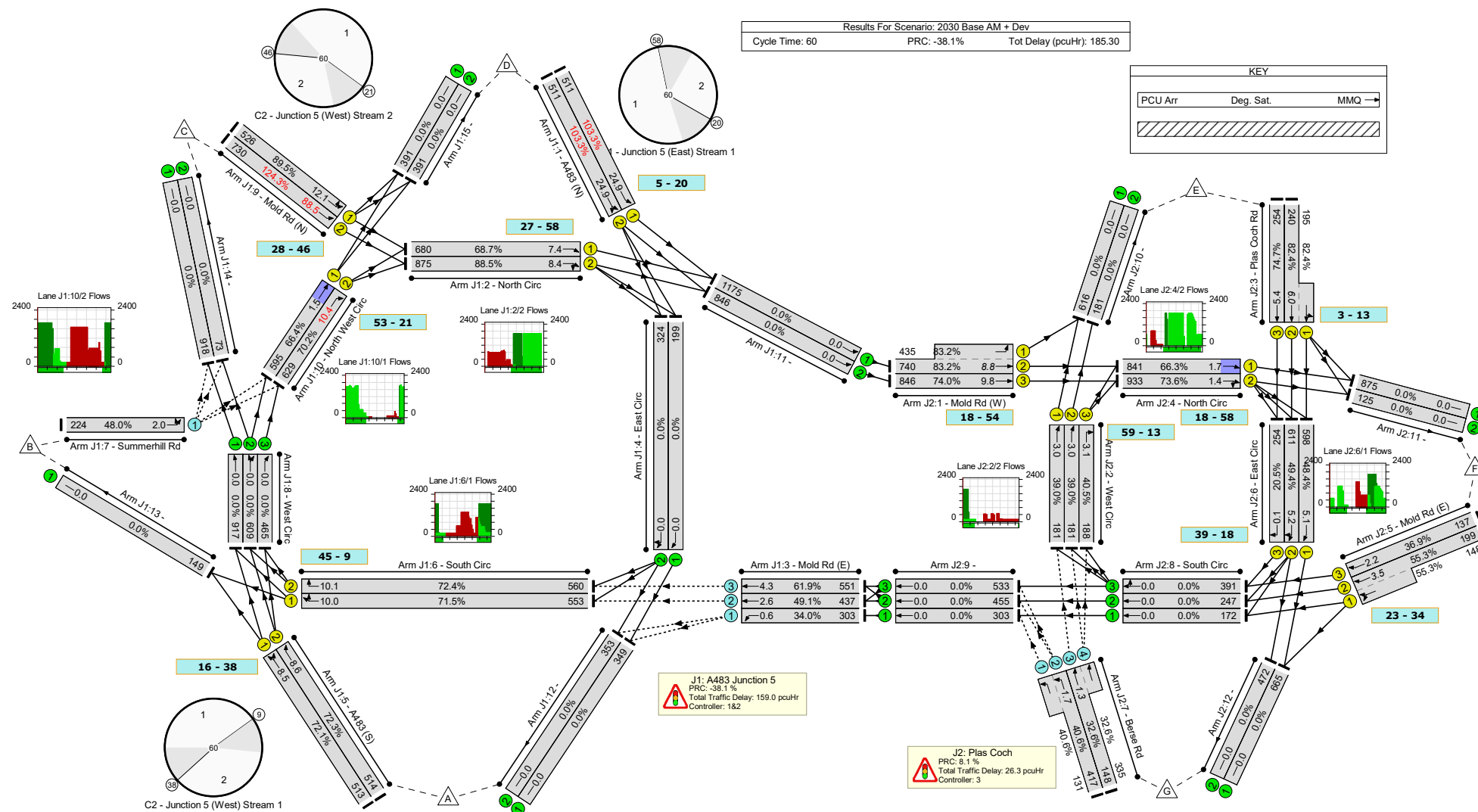
Stage Stream: 2

Stage	1	2
Duration	28	18
Change Point	46	21

Signal Timings Diagram**C3 - Plas Coch****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	11	15	10
Change Point	13	34	54

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Proposed	-	-	N/A	-	-		-	-	-	-	-	-	124.3%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	124.3%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	15	-	511	1855	495	103.3%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	15	-	511	1855	495	103.3%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	31	-	680	1855	989	68.7%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	31	-	1018	1855	989	88.5%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	303	Inf	890	34.0%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	437	Inf	890	49.1%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	551	Inf	890	61.9%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	375	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	22	-	513	1855	711	72.1%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	22	-	514	1855	711	72.3%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	24	-	557	1855	773	71.5%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	24	-	560	1855	773	72.4%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	224	Inf	467	48.0%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	920	Inf	Inf	0.0%

8/2	West Circ Ahead Ahead2	U	N/A	N/A	-		-	-	-	609	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	18	-	526	1855	587	89.5%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	18	-	730	1855	587	124.3%
10/1	North West Circ Ahead	U	2:2	N/A	C2:C		1	28	-	595	1855	897	66.4%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	28	-	629	1855	897	70.2%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1191	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	909	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	395	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	399	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	921	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	73	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	83.2%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	36	-	1191	1855:1855	889+523	83.2 : 83.2%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	36	-	909	1855	1144	74.0%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	14	-	181	1855	464	39.0%
2/2	West Circ Ahead	U	3:1	N/A	C3:B		1	14	-	181	1855	464	39.0%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	14	-	188	1855	464	40.5%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	10	-	435	1855:1855	291+237	82.4 : 82.4%

3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	10	-	254	1855	340	74.7%
4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	40	-	851	1855	1268	66.3%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	40	-	996	1855	1268	73.6%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	11	-	347	1855:1855	360+268	55.3 : 55.3%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	11	-	137	1855	371	36.9%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	39	-	642	1855	1237	48.4%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	39	-	630	1855	1237	49.4%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	39	-	254	1855	1237	20.5%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	548	Inf : Inf	1028+323	40.6 : 40.6%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	483	Inf : Inf	454+1028	32.6 : 32.6%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	172	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	303	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	455	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	622	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	181	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	885	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	125	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	709	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	491	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Proposed	-	-	3577	0	0	50.5	134.8	0.0	185.3	-	-	-	-
J1: A483 Junction 5	-	-	1515	0	0	35.2	123.7	0.0	159.0	-	-	-	-
1/1	511	495	-	-	-	3.6	16.1	-	19.7	138.8	8.8	16.1	24.9
1/2	511	495	-	-	-	3.6	16.1	-	19.7	138.8	8.8	16.1	24.9
2/1	680	680	-	-	-	1.9	1.1	-	3.0	16.0	6.3	1.1	7.4
2/2	875	875	-	-	-	1.6	3.6	-	5.2	21.4	4.8	3.6	8.4
3/1	303	303	303	0	0	0.0	0.3	-	0.3	3.1	0.3	0.3	0.6
3/2	437	437	437	0	0	0.0	0.5	-	0.5	4.0	2.2	0.5	2.6
3/3	551	551	551	0	0	0.1	0.8	-	0.9	6.0	3.4	0.8	4.3
4/1	199	199	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	324	324	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	513	513	-	-	-	2.2	1.3	-	3.5	24.7	7.3	1.3	8.5
5/2	514	514	-	-	-	2.3	1.3	-	3.5	24.8	7.3	1.3	8.6
6/1	553	553	-	-	-	2.6	1.2	-	3.9	25.2	8.8	1.2	10.0
6/2	560	560	-	-	-	2.4	1.3	-	3.7	23.5	8.9	1.3	10.1
7/1	224	224	224	0	0	0.4	0.5	-	0.9	14.1	1.5	0.5	2.0
8/1	917	917	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	609	609	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	465	465	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	526	526	-	-	-	2.9	3.8	-	6.7	45.6	8.3	3.8	12.1
9/2	730	587	-	-	-	7.5	73.8	-	81.3	400.8	14.7	73.8	88.5
10/1	595	595	-	-	-	0.1	1.0	-	1.1	6.4	0.5	1.0	1.5
10/2	629	629	-	-	-	4.1	1.2	-	5.2	29.9	9.2	1.2	10.4
11/1	1175	1175	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	846	846	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	353	353	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	391	391	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	391	391	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	2062	0	0	15.3	11.1	0.0	26.3	-	-	-	-
1/2+1/1	1175	1175	-	-	-	1.5	2.4	-	3.9	11.9	6.4	2.4	8.8
1/3	846	846	-	-	-	1.1	1.4	-	2.5	10.8	8.4	1.4	9.8
2/1	181	181	-	-	-	1.1	0.3	-	1.4	27.9	2.7	0.3	3.0
2/2	181	181	-	-	-	1.1	0.3	-	1.4	27.8	2.7	0.3	3.0
2/3	188	188	-	-	-	1.0	0.3	-	1.3	25.8	2.7	0.3	3.1
3/2+3/1	435	435	-	-	-	2.7	2.2	-	5.0	41.2	3.7	2.2	6.0
3/3	254	254	-	-	-	1.6	1.4	-	3.1	43.4	4.0	1.4	5.4
4/1	841	841	-	-	-	0.4	0.0	-	0.4	1.6	1.7	0.0	1.7
4/2	933	933	-	-	-	0.3	0.0	-	0.3	1.2	1.4	0.0	1.4
5/2+5/1	347	347	-	-	-	2.0	0.6	-	2.7	27.6	2.9	0.6	3.5
5/3	137	137	-	-	-	0.8	0.3	-	1.1	28.4	1.9	0.3	2.2
6/1	598	598	-	-	-	0.7	0.5	-	1.1	6.9	4.7	0.5	5.1
6/2	611	611	-	-	-	0.6	0.5	-	1.1	6.2	4.7	0.5	5.2
6/3	254	254	-	-	-	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
7/2+7/1	548	548	1096	0	0	0.2	0.3	-	0.5	3.5	1.4	0.3	1.7
7/3+7/4	483	483	966	0	0	0.2	0.2	-	0.4	3.0	1.0	0.2	1.3
8/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	247	247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	391	391	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	303	303	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	455	455	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

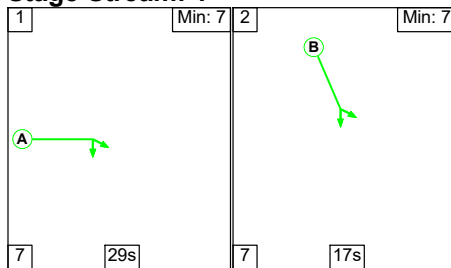
[illegible]

Scenario 4: '2030 Base PM + Dev' (FG10: '2030 Base AM + Development', Plan 2: 'No Stage 4')

C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1

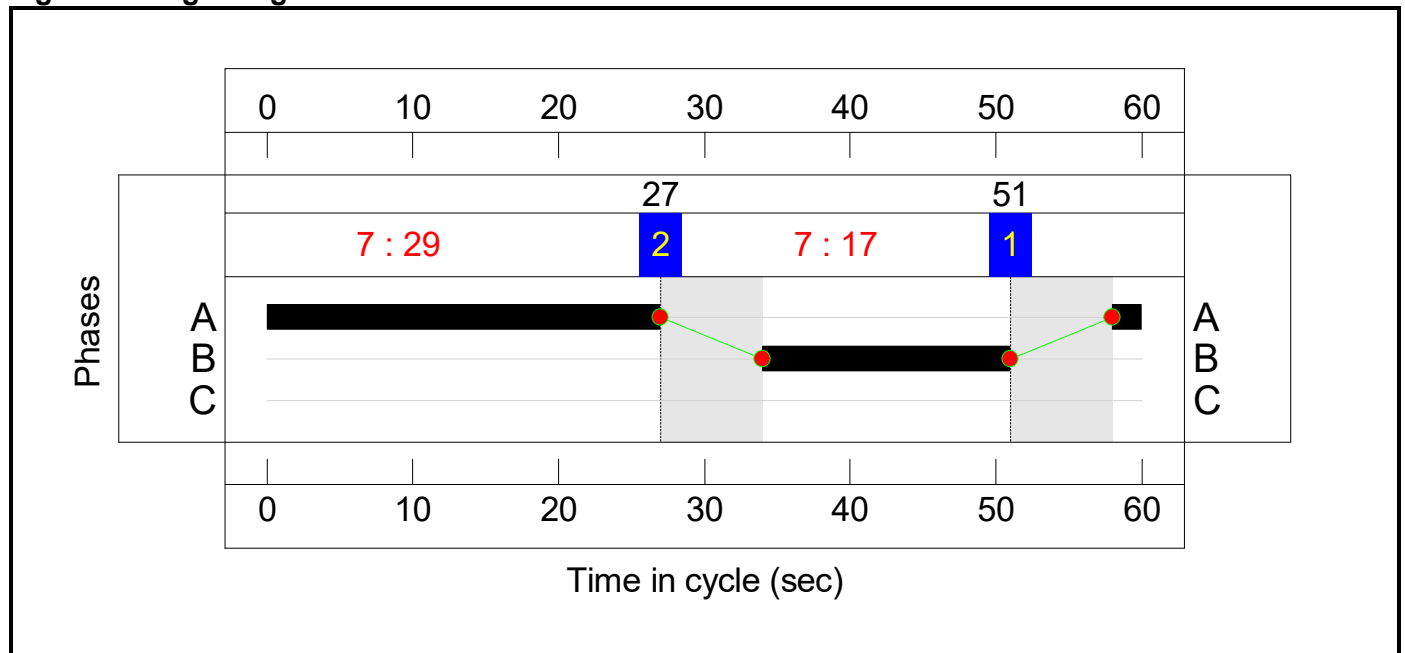


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	29	17
Change Point	51	27

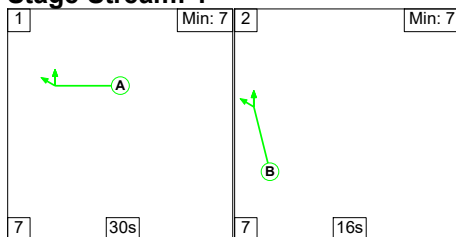
Signal Timings Diagram

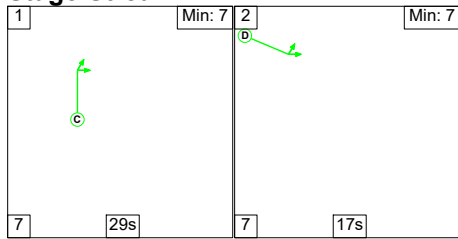


C2 - Junction 5 (West)

Stage Sequence Diagram

Stage Stream: 1

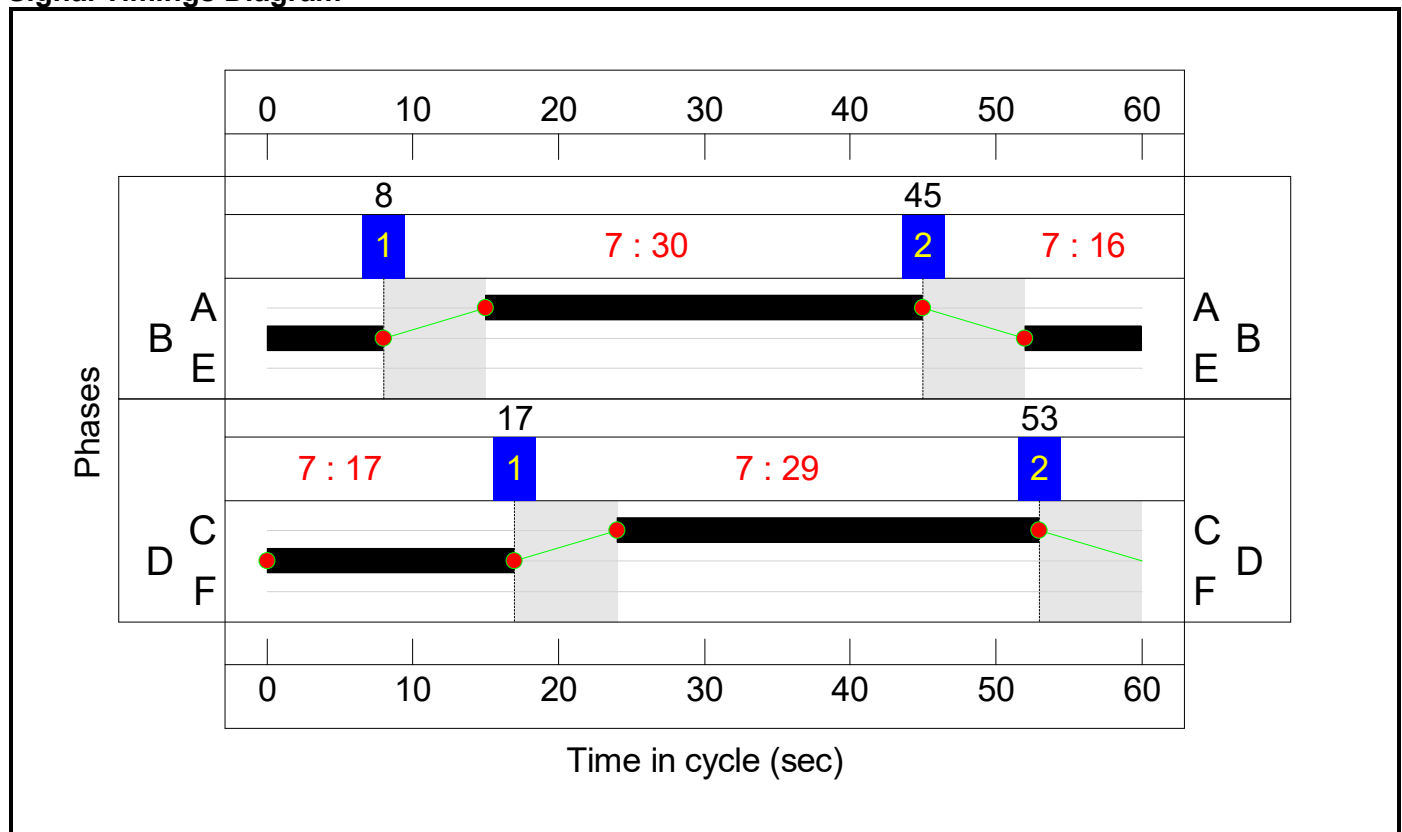


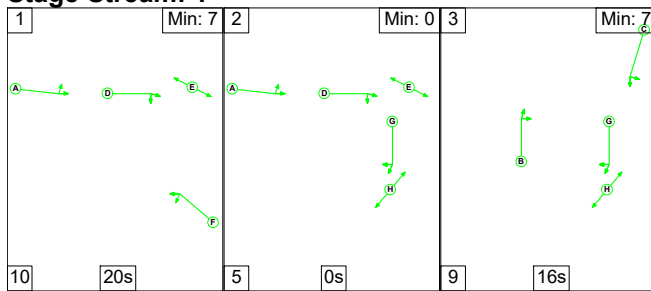
Stage Stream: 2**Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	30	16
Change Point	8	45

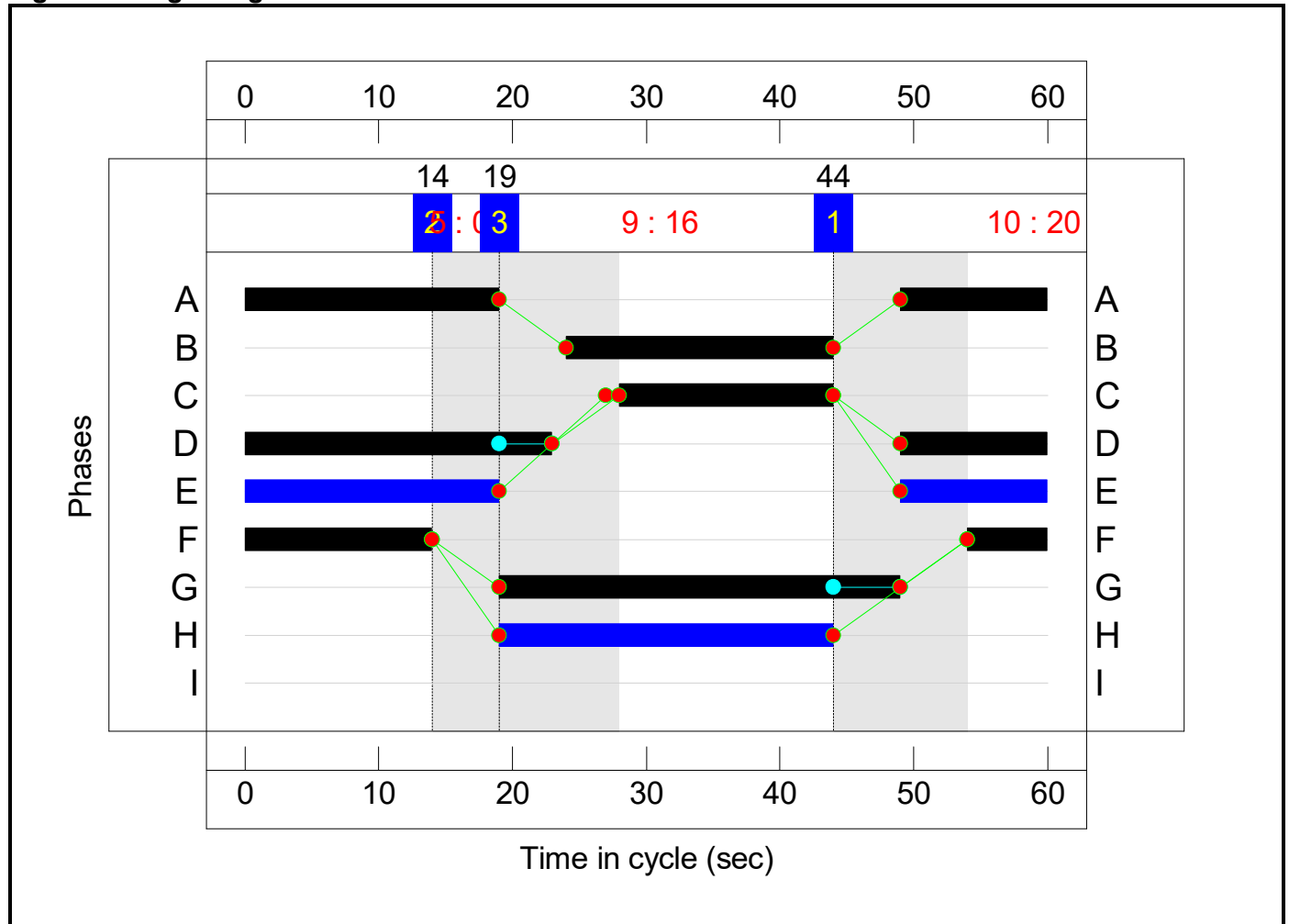
Stage Stream: 2

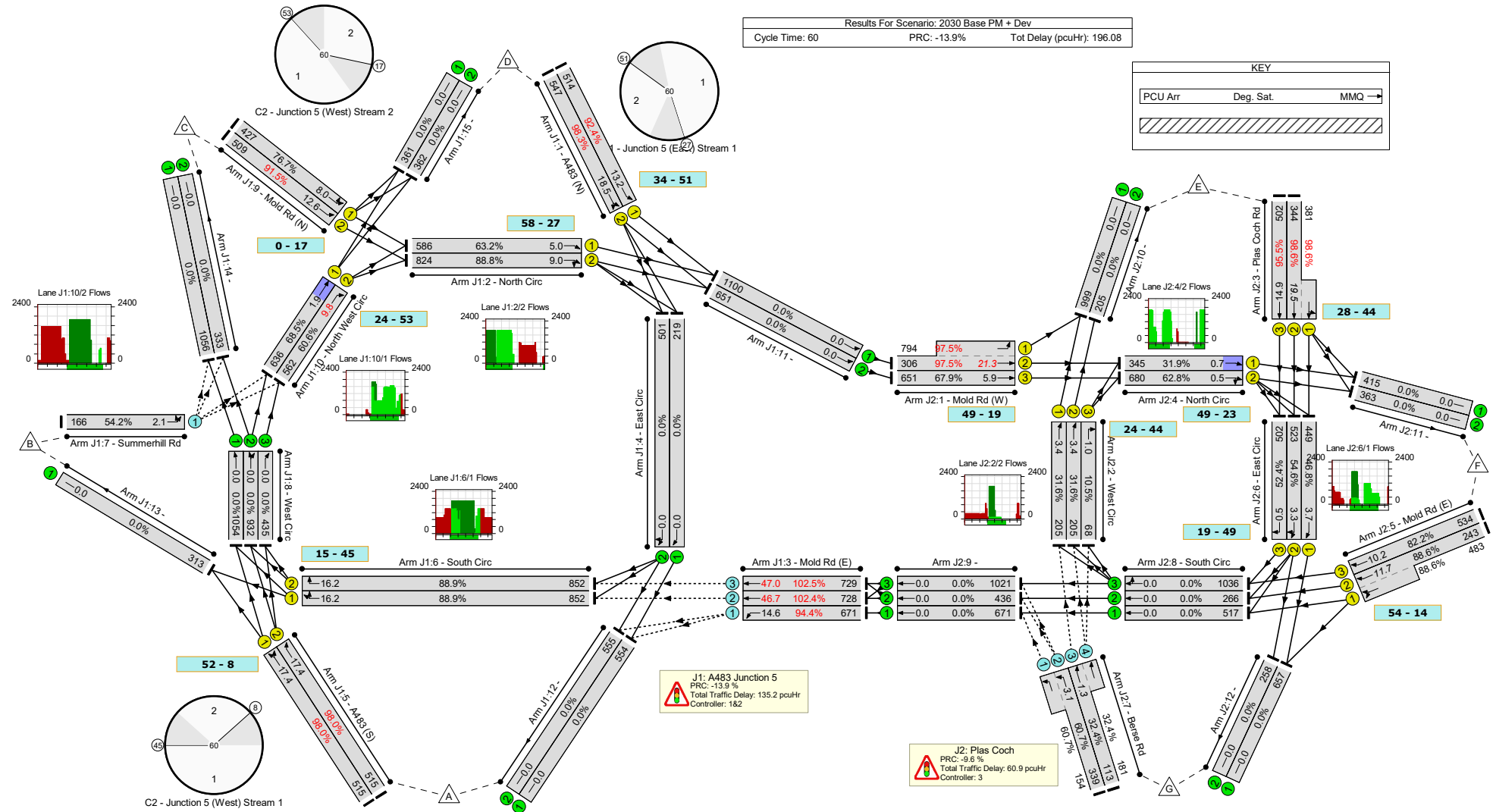
Stage	1	2
Duration	29	17
Change Point	17	53

Signal Timings Diagram

C3 - Plas Coch**Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	20	0	16
Change Point	44	14	19

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Proposed	-	-	N/A	-	-		-	-	-	-	-	-	102.5%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	102.5%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	17	-	514	1855	556	92.4%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	17	-	547	1855	556	98.3%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	29	-	586	1855	928	63.2%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	29	-	824	1855	928	88.8%
3/1	Mold Rd (E) Left	O	N/A	N/A	-		-	-	-	671	Inf	711	94.4%
3/2	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	728	Inf	711	102.4%
3/3	Mold Rd (E) Ahead	O	N/A	N/A	-		-	-	-	729	Inf	711	102.5%
4/1	East Circ Ahead	U	N/A	N/A	-		-	-	-	219	Inf	Inf	0.0%
4/2	East Circ Right Ahead	U	N/A	N/A	-		-	-	-	501	Inf	Inf	0.0%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	16	-	515	1855	526	98.0%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	16	-	515	1855	526	98.0%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	30	-	869	1855	958	88.9%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	30	-	870	1855	958	88.9%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	166	Inf	306	54.2%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	1066	Inf	Inf	0.0%

8/2	West Circ Ahead Ahead2	U	N/A	N/A	-		-	-	-	950	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	17	-	427	1855	556	76.7%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	17	-	509	1855	556	91.5%
10/1	North West Circ Ahead	U	2:2	N/A	C2:C		1	29	-	651	1855	928	68.5%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	29	-	562	1855	928	60.6%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1100	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	554	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	555	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	1068	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	336	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	370	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	98.6%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	30	-	1100	1855:1855	314+815	97.5 : 97.5%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	30	-	651	1855	958	67.9%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	205	1855	649	31.6%
2/2	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	205	1855	649	31.6%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	20	-	68	1855	649	10.5%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	16	-	725	1855:1855	349+386	98.6 : 98.6%

3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	16	-	502	1855	526	95.5%
4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	34	-	345	1855	1082	31.9%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	34	-	680	1855	1082	62.8%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	20	-	726	1855:1855	274+545	88.6 : 88.6%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	20	-	534	1855	649	82.2%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	30	-	449	1855	958	46.8%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	30	-	523	1855	958	54.6%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	30	-	502	1855	958	52.4%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	493	Inf : Inf	559+254	60.7 : 60.7%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	294	Inf : Inf	349+559	32.4 : 32.4%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	266	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	1036	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	671	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	436	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	1021	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	999	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	205	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	363	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	657	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	258	Inf	Inf	0.0%

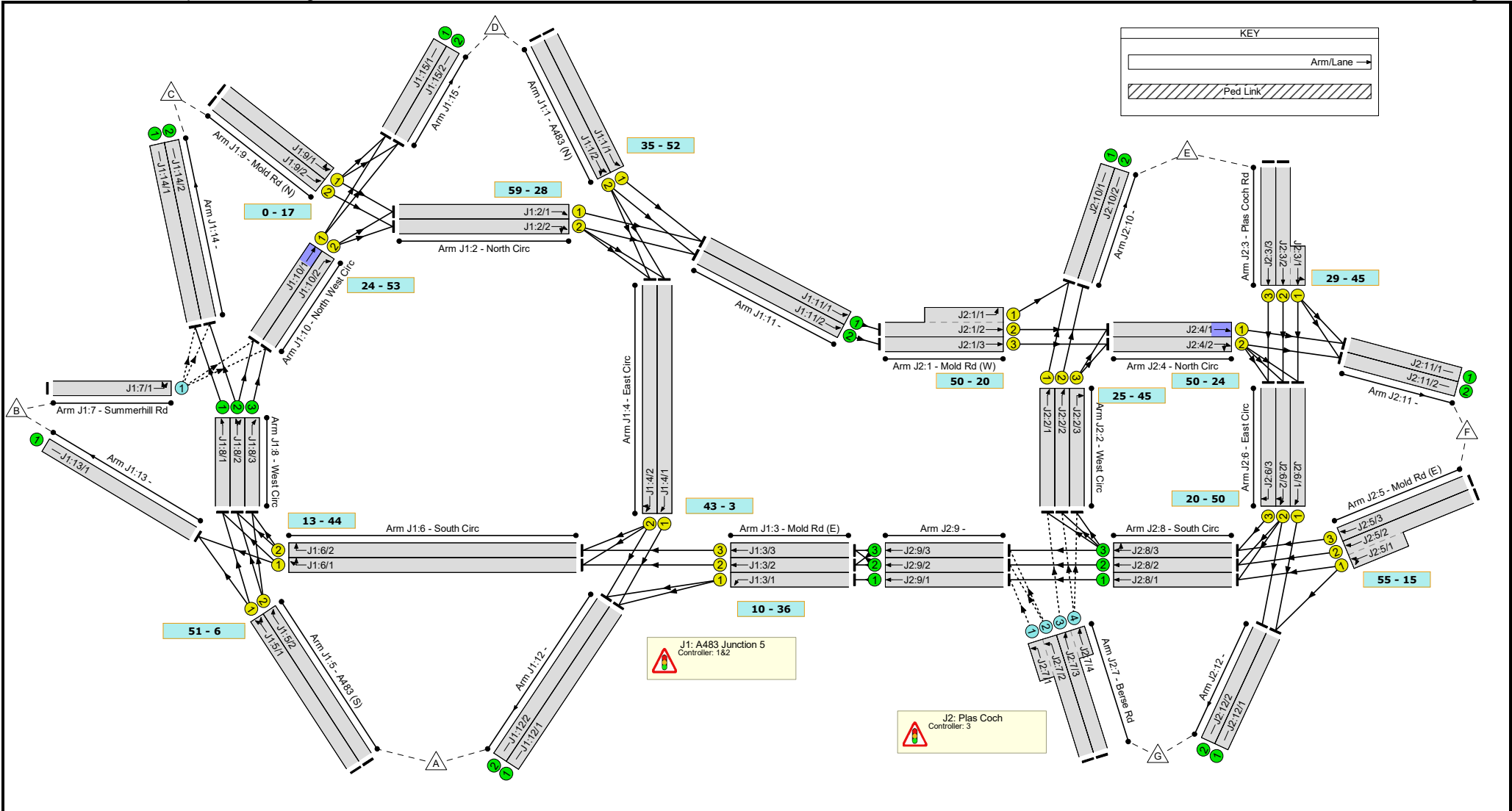
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Proposed	-	-	3833	0	0	60.7	135.3	0.0	196.1	-	-	-	-
J1: A483 Junction 5	-	-	2259	0	0	38.7	96.5	0.0	135.2	-	-	-	-
1/1	514	514	-	-	-	2.9	4.9	-	7.8	54.7	8.3	4.9	13.2
1/2	547	547	-	-	-	3.2	9.6	-	12.7	83.8	9.0	9.6	18.5
2/1	586	586	-	-	-	1.4	0.9	-	2.2	13.6	4.1	0.9	5.0
2/2	824	824	-	-	-	1.9	3.7	-	5.6	24.5	5.3	3.7	9.0
3/1	671	671	671	0	0	1.1	6.4	-	7.5	40.2	8.2	6.4	14.6
3/2	728	711	711	0	0	2.0	18.4	-	20.3	100.6	28.4	18.4	46.7
3/3	729	711	711	0	0	1.9	18.7	-	20.6	101.8	28.3	18.7	47.0
4/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	501	501	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	515	515	-	-	-	3.1	9.0	-	12.1	84.3	8.4	9.0	17.4
5/2	515	515	-	-	-	3.1	9.0	-	12.1	84.3	8.4	9.0	17.4
6/1	852	852	-	-	-	4.3	3.7	-	8.1	34.1	12.4	3.7	16.2
6/2	852	852	-	-	-	4.3	3.7	-	8.1	34.1	12.4	3.7	16.2
7/1	166	166	166	0	0	0.5	0.6	-	1.1	23.0	1.5	0.6	2.1
8/1	1054	1054	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	932	932	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	427	427	-	-	-	2.3	1.6	-	3.9	32.7	6.4	1.6	8.0
9/2	509	509	-	-	-	2.9	4.5	-	7.4	52.1	8.1	4.5	12.6
10/1	636	636	-	-	-	0.3	1.1	-	1.4	8.0	0.8	1.1	1.9
10/2	562	562	-	-	-	3.6	0.8	-	4.4	27.9	9.0	0.8	9.8
11/1	1100	1100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	651	651	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	554	554	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	555	555	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	313	313	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1056	1056	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	333	333	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	1574	0	0	22.1	38.9	0.0	60.9	-	-	-	-
1/2+1/1	1100	1100	-	-	-	2.8	10.9	-	13.7	44.9	10.4	10.9	21.3
1/3	651	651	-	-	-	0.8	1.1	-	1.9	10.5	4.9	1.1	5.9
2/1	205	205	-	-	-	1.0	0.2	-	1.2	21.1	3.2	0.2	3.4
2/2	205	205	-	-	-	1.0	0.2	-	1.2	20.9	3.2	0.2	3.4
2/3	68	68	-	-	-	0.2	0.1	-	0.3	16.2	0.9	0.1	1.0
3/2+3/1	725	725	-	-	-	4.0	11.2	-	15.2	75.5	8.3	11.2	19.5
3/3	502	502	-	-	-	2.9	6.8	-	9.7	69.6	8.1	6.8	14.9
4/1	345	345	-	-	-	0.2	0.0	-	0.2	2.2	0.7	0.0	0.7
4/2	680	680	-	-	-	0.2	0.0	-	0.2	0.8	0.5	0.0	0.5
5/2+5/1	726	726	-	-	-	3.3	3.6	-	7.0	34.5	8.1	3.6	11.7
5/3	534	534	-	-	-	2.6	2.2	-	4.9	32.8	8.0	2.2	10.2
6/1	449	449	-	-	-	0.8	0.4	-	1.3	10.3	3.3	0.4	3.7
6/2	523	523	-	-	-	0.7	0.6	-	1.2	8.6	2.7	0.6	3.3
6/3	502	502	-	-	-	0.0	0.5	-	0.5	3.9	0.0	0.5	0.5
7/2+7/1	493	493	986	0	0	0.9	0.8	-	1.7	12.3	2.4	0.8	3.1
7/3+7/4	294	294	588	0	0	0.5	0.2	-	0.7	8.8	1.1	0.2	1.3
8/1	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	266	266	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	1036	1036	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	671	671	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	1021	1021	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

10/1	999	999	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	205	205	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	415	415	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	363	363	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	258	258	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - Junction 5 (East) Stream: 1 PRC for Signalled Lanes (%): -9.2 Total Delay for Signalled Lanes (pcuHr): 28.36 Cycle Time (s): 60 C2 - Junction 5 (West) Stream: 1 PRC for Signalled Lanes (%): -8.9 Total Delay for Signalled Lanes (pcuHr): 40.26 Cycle Time (s): 60 C2 - Junction 5 (West) Stream: 2 PRC for Signalled Lanes (%): -1.6 Total Delay for Signalled Lanes (pcuHr): 17.02 Cycle Time (s): 60 C3 - Plas Coch Stream: 1 PRC for Signalled Lanes (%): -9.6 Total Delay for Signalled Lanes (pcuHr): 58.52 Cycle Time (s): 60 PRC Over All Lanes (%): -13.9 Total Delay Over All Lanes(pcuHr): 196.08													

User and Project Details

Project:	19026 A483 J5 Rbts
Title:	Proposed 2
Location:	North West Wrexham
Client:	Focus Transport Planning
Design Layout Ref:	Google Earth
Date Started:	05/07/2019
Date Completed:	02/09/2019
Model Purpose:	Impact of development
Flow Details:	Provided by Focus. Entered as Turning Counts (accurately using Import and Export Features) and then Matrix Estimation
Checked By:	Simon Swanston
Checked By Date:	02/09/2019
Additional detail:	
File name:	A483 J5 Network Proposed 2.lsg3x
Author:	Simon Swanston
Company:	JCT Consultancy
Address:	LinSig House, Deepdale Lane, Nettleham, Lincoln, LN2 2LL



Changes to Existing

Two exit lanes from roundabout to Mold Rd Northbound (at Junction 1).

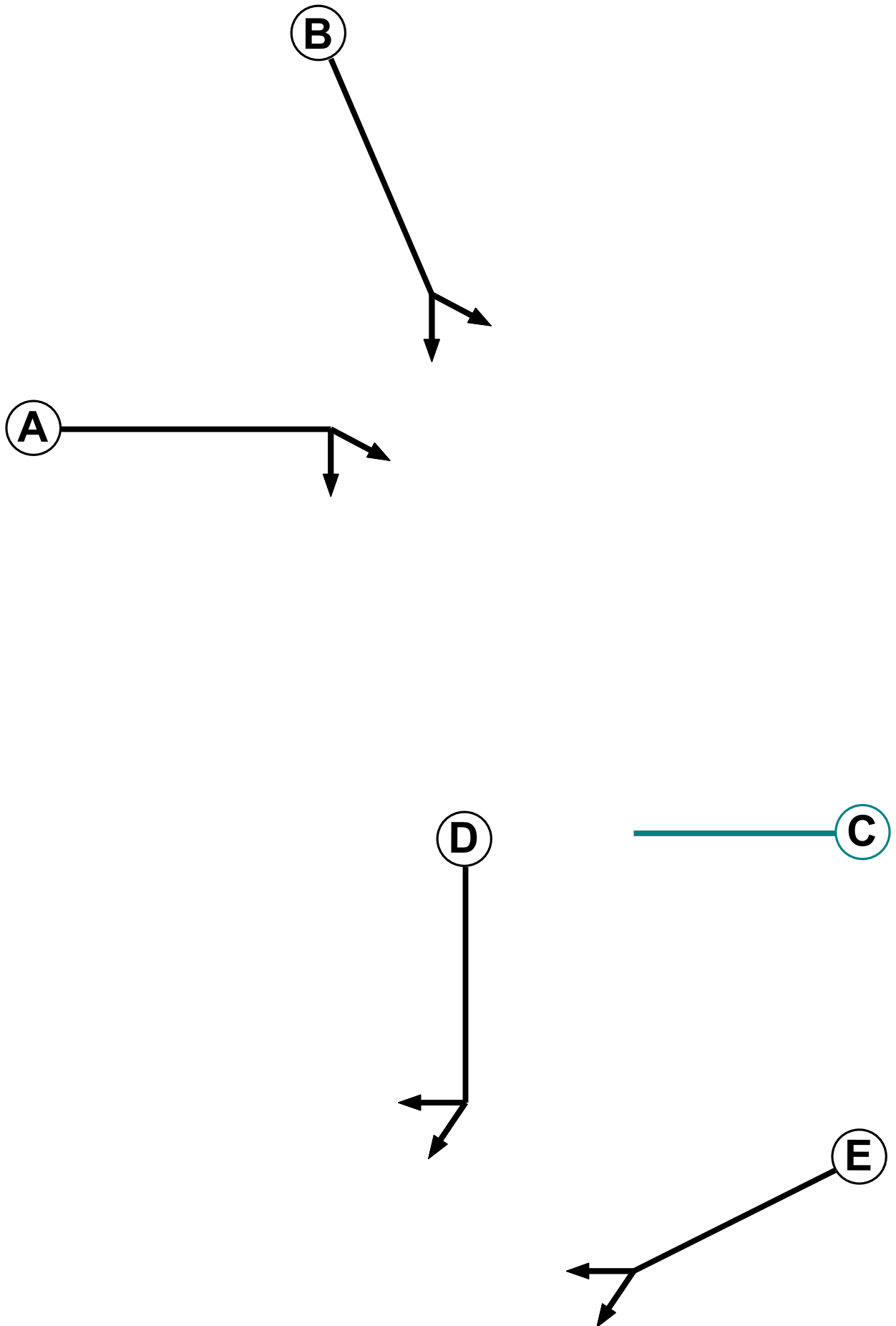
Nearside circulating lane, past Mold Rd (N) at Junction 1, exit to A483 only. All right-turns use offside lane.

At Junction 2, offside lane of Mold Rd (E) can be used to go ahead to downstream roundabout as well as right-turn.

Remove right-turn movement from middle lane on western circulatory at Junction 2. Right-turns from offside only.

Make nearside lane for Plas Coch Rd left and ahead

Proposed 2: Add signals to Mold Rd (E) at Junction 1



Phase Input Data

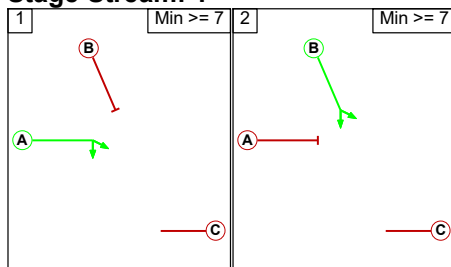
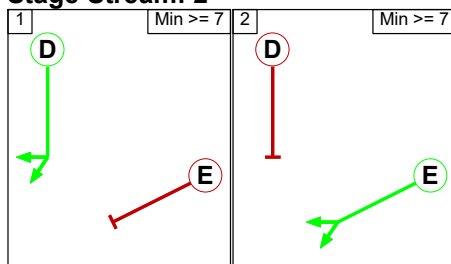
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Dummy	1		-9999	3
D	Traffic	2		-9999	7
E	Traffic	2		-9999	7

Phase Intergreens Matrix

Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		7	3	-	-
	B	7		3	-	-
	C	2	2		-	-
	D	-	-	-		7
	E	-	-	-	7	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	D
2	2	E

Stage Diagram**Stage Stream: 1****Stage Stream: 2**

Phase Delays**Stage Stream: 1**

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

Stage Stream: 2

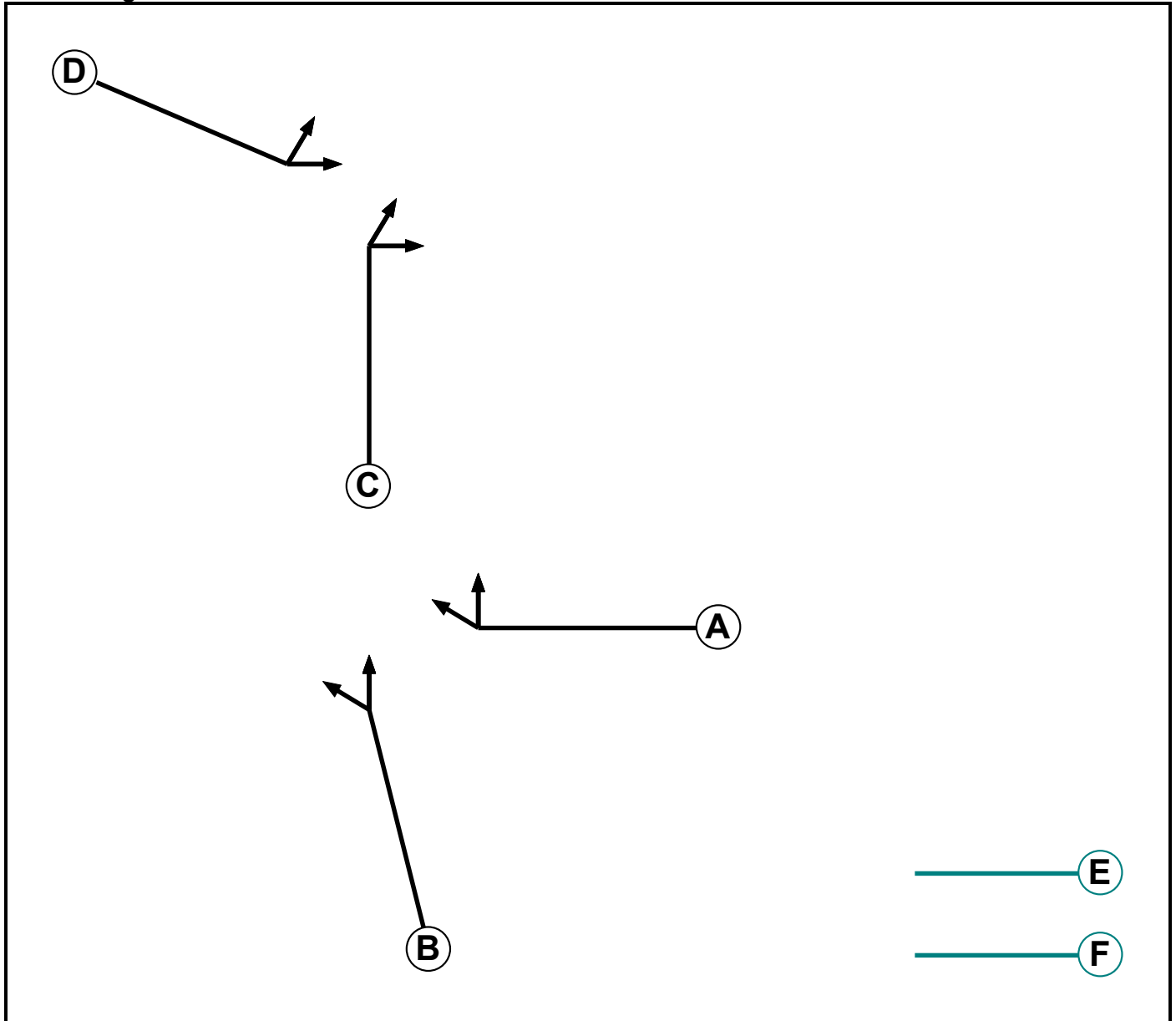
Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change**Stage Stream: 1**

	To Stage		
From Stage		1	2
	1		7
	2	7	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		7
	2	7	

C2 - Junction 5 (West)**Phase Diagram****Phase Input Data**

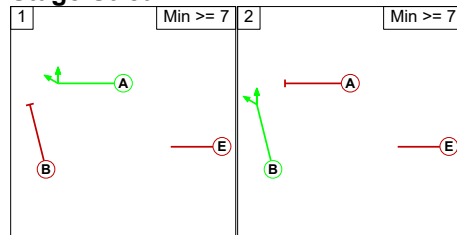
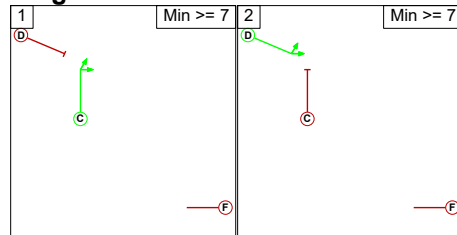
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	2		-9999	7
D	Traffic	2		-9999	7
E	Dummy	1		-9999	3
F	Dummy	2		-9999	3

Phase Intergreens Matrix

Terminating Phase	Starting Phase						
		A	B	C	D	E	F
	A		7	-	-	3	-
	B	7		-	-	3	-
	C	-	-		7	-	3
	D	-	-	7		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

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

Stage Stream: 2

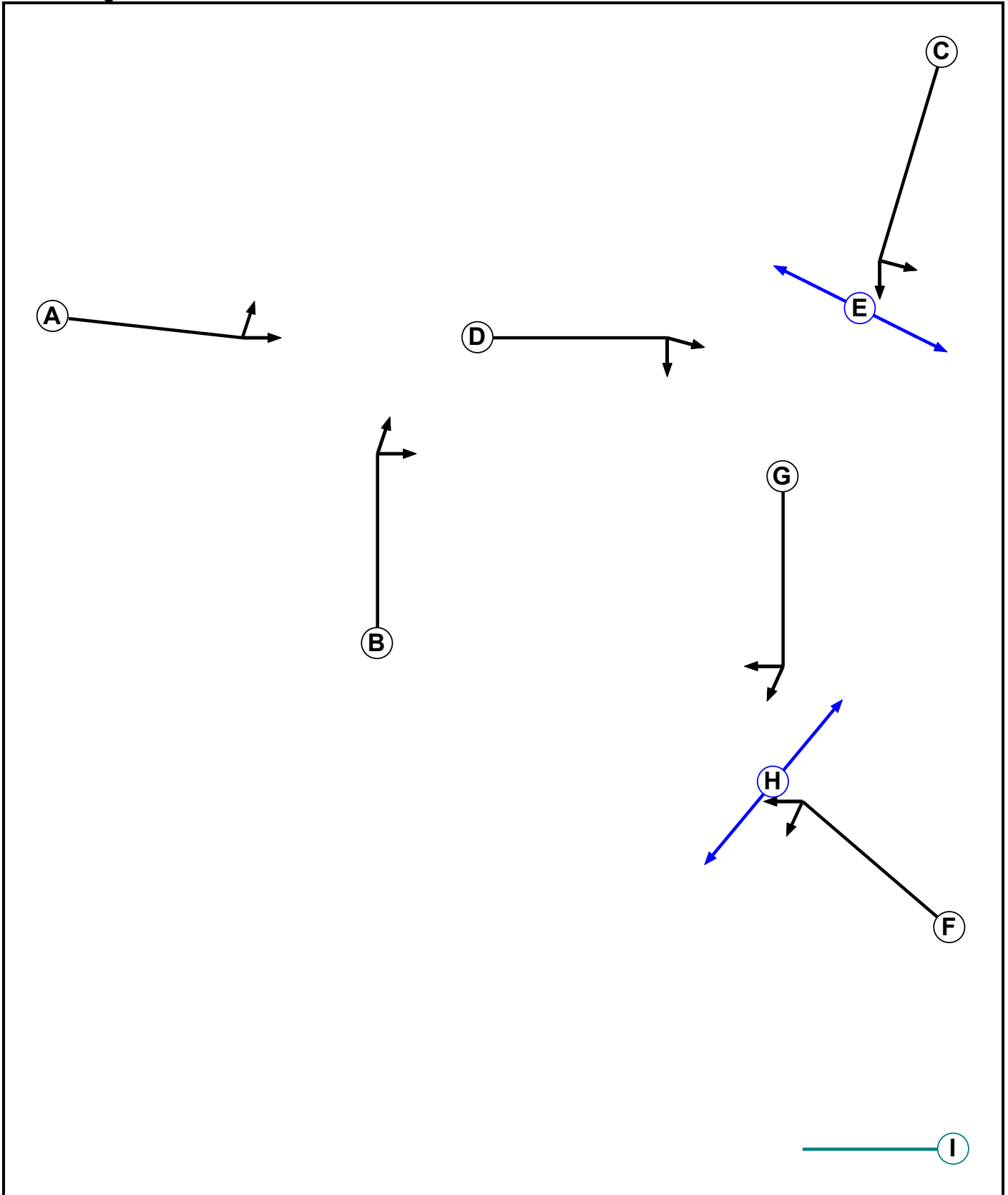
Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change**Stage Stream: 1**

	To Stage		
From Stage		1	2
	1		7
	2	7	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		7
	2	7	

**C3 - Plas Coch
Phase Diagram**

Phase Input Data

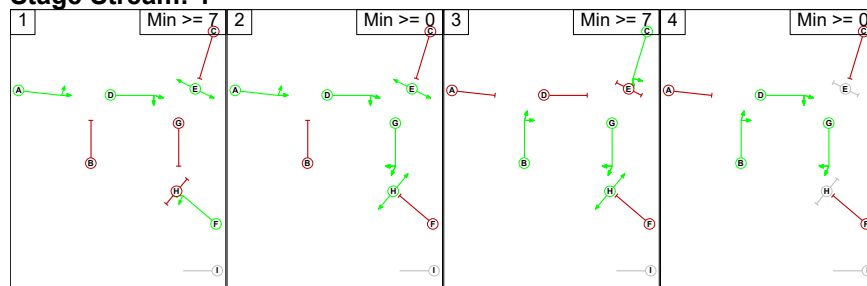
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	1		-9999	7
D	Traffic	1		-9999	7
E	Pedestrian	1		-9999	5
F	Traffic	1		-9999	7
G	Traffic	1		-9999	7
H	Pedestrian	1		-9999	5
I	Dummy	1		-9999	7

Phase Intergreens Matrix

Terminating Phase	Starting Phase									
		A	B	C	D	E	F	G	H	I
	A		5	-	-	-	-	-	-	-
	B	5		-	-	-	-	-	-	-
	C	-	-		5	5	-	-	-	-
	D	-	-	5		-	-	-	-	-
	E	-	-	8	-		-	-	-	-
	F	-	-	-	-	-		5	5	-
	G	-	-	-	-	-	5		-	-
	H	-	-	-	-	-	10	-		-
	I	-	-	-	-	-	-	-	-	

Phases in Stage

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

Stage Diagram**Stage Stream: 1**

Phase Delays**Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	D	Losing	4	4
2	3	D	Losing	4	4
3	1	G	Losing	5	5

Prohibited Stage Change**Stage Stream: 1**

From Stage	To Stage				
		1	2	3	4
	1		5	9	5
	2	10		9	5
	3	10	5		5
	4	5	5	5	

Give-Way Lane Input Data

Junction: J1: A483 Junction 5											
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)
J1:7/1 (Summerhill Rd)	J1:10/1 (Left)	1400	0	J1:8/1	1.00	All	-	-	-	-	-
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
	J1:10/2 (Left)	1400	0	J1:8/1	1.00	All					
				J1:8/2	1.00	All					
				J1:8/3	1.00	All					
				J1:8/1	1.00	All					
	J1:14/1 (Left)	1400	0	J1:8/2	1.00	All					
				J1:8/3	1.00	All					
				J1:8/1	1.00	All					
	J1:14/2 (Left)	1400	0	J1:8/2	1.00	All					
				J1:8/3	1.00	All					
				J1:8/1	1.00	All					

Junction: J2: Plas Coch											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
J2:7/1 (Berse Rd)	J2:9/1 (Left)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/2 (Berse Rd)	J2:9/2 (Left)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
	J2:9/3 (Left)	1421	0	J2:8/1	1.00	All					
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/3 (Berse Rd)	J2:2/1 (Ahead)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
J2:7/4 (Berse Rd)	J2:2/2 (Ahead)	1421	0	J2:8/1	1.00	All	-	-	-	-	-
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					
	J2:2/3 (Ahead)	1421	0	J2:8/1	1.00	All					
				J2:8/2	1.00	All					
				J2:8/3	1.00	All					

Lane Input Data

Junction: J1: A483 Junction 5												
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)
J1:1/1 (A483 (N))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:1/2 (A483 (N))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:2/1 (North Circ)	U	A	2	3	20.2	User	1855	-	-	-	-	-
J1:2/2 (North Circ)	U	A	2	3	20.2	User	1855	-	-	-	-	-
J1:3/1 (Mold Rd (E))	U	E	2	3	15.0	User	1855	-	-	-	-	-
J1:3/2 (Mold Rd (E))	U	E	2	3	15.0	User	1855	-	-	-	-	-
J1:3/3 (Mold Rd (E))	U	E	2	3	15.0	User	1855	-	-	-	-	-
J1:4/1 (East Circ)	U	D	2	3	17.6	User	1855	-	-	-	-	-
J1:4/2 (East Circ)	U	D	2	3	17.6	User	1855	-	-	-	-	-
J1:5/1 (A483 (S))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:5/2 (A483 (S))	U	B	2	3	60.0	User	1855	-	-	-	-	-
J1:6/1 (South Circ)	U	A	2	3	18.4	User	1855	-	-	-	-	-
J1:6/2 (South Circ)	U	A	2	3	18.4	User	1855	-	-	-	-	-
J1:7/1 (Summerhill Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:8/1 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:8/2 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:8/3 (West Circ)	U		2	3	13.4	Inf	-	-	-	-	-	-
J1:9/1 (Mold Rd (N))	U	D	2	3	60.0	User	1855	-	-	-	-	-
J1:9/2 (Mold Rd (N))	U	D	2	3	60.0	User	1855	-	-	-	-	-
J1:10/1 (North West Circ)	U	C	2	3	7.7	User	1855	-	-	-	-	-
J1:10/2 (North West Circ)	U	C	2	3	7.7	User	1855	-	-	-	-	-
J1:11/1	U		2	3	12.2	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	12.2	Inf	-	-	-	-	-	-

J1:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:14/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:14/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:15/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:15/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: Plas Coch												
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)
J2:1/1 (Mold Rd (W))	U	A	2	3	8.0	User	1855	-	-	-	-	-
J2:1/2 (Mold Rd (W))	U	A	2	3	14.4	User	1855	-	-	-	-	-
J2:1/3 (Mold Rd (W))	U	A	2	3	14.4	User	1855	-	-	-	-	-
J2:2/1 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:2/2 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:2/3 (West Circ)	U	B	2	3	5.7	User	1855	-	-	-	-	-
J2:3/1 (Plas Coch Rd)	U	C	2	3	4.0	User	1855	-	-	-	-	-
J2:3/2 (Plas Coch Rd)	U	C	2	3	60.0	User	1855	-	-	-	-	-
J2:3/3 (Plas Coch Rd)	U	C	2	3	60.0	User	1855	-	-	-	-	-
J2:4/1 (North Circ)	U	D	2	3	8.3	User	1855	-	-	-	-	-
J2:4/2 (North Circ)	U	D	2	3	8.3	User	1855	-	-	-	-	-
J2:5/1 (Mold Rd (E))	U	F	2	3	6.0	User	1855	-	-	-	-	-
J2:5/2 (Mold Rd (E))	U	F	2	3	60.0	User	1855	-	-	-	-	-
J2:5/3 (Mold Rd (E))	U	F	2	3	60.0	User	1855	-	-	-	-	-
J2:6/1 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:6/2 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:6/3 (East Circ)	U	G	2	3	8.7	User	1855	-	-	-	-	-
J2:7/1 (Berse Rd)	O		2	3	4.0	Inf	-	-	-	-	-	-
J2:7/2 (Berse Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/3 (Berse Rd)	O		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/4 (Berse Rd)	O		2	3	3.0	Inf	-	-	-	-	-	-
J2:8/1 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:8/2 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-

J2:8/3 (South Circ)	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:9/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/3	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
4: '2030 Base AM + Development'	07:45	08:45	01:00	
8: '2030 Base PM + Development'	16:45	17:45	01:00	

Scenario 2: '2030 Base AM + Dev' (FG4: '2030 Base AM + Development', Plan 2: 'No Stage 4')

Traffic Flows, Desired

Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	41	521	0	95	167	203	1027
	B	33	0	3	57	25	47	58	223
	C	468	3	0	187	125	214	258	1255
	D	0	17	109	0	192	321	382	1021
	E	88	27	110	165	0	69	227	686
	F	78	23	98	148	67	0	67	481
	G	126	39	154	226	295	188	0	1028
	Tot.	793	150	995	783	799	1006	1195	5721

Traffic Lane Flows

Lane	Scenario 2: 2030 Base AM + Dev
Junction: J1: A483 Junction 5	
J1:1/1	511
J1:1/2	510
J1:2/1	673
J1:2/2	1023
J1:3/1	304
J1:3/2	451
J1:3/3	539
J1:4/1	287
J1:4/2	331
J1:5/1	514
J1:5/2	513
J1:6/1	552
J1:6/2	567
J1:7/1	223
J1:8/1	916
J1:8/2	615
J1:8/3	465
J1:9/1	526
J1:9/2	729
J1:10/1	596
J1:10/2	628
J1:11/1	1184
J1:11/2	915
J1:12/1	439
J1:12/2	354
J1:13/1	150
J1:14/1	917
J1:14/2	78
J1:15/1	391
J1:15/2	392
Junction: J2: Plas Coch	
J2:1/1 (short)	437
J2:1/2 (with short)	1184(In) 747(Out)
J2:1/3	915
J2:2/1	181
J2:2/2	181
J2:2/3	188
J2:3/1 (short)	191

J2:3/2 (with short)	435(In) 244(Out)
J2:3/3	251
J2:4/1	848
J2:4/2	1002
J2:5/1 (short)	145
J2:5/2 (with short)	347(In) 202(Out)
J2:5/3	134
J2:6/1	636
J2:6/2	643
J2:6/3	251
J2:7/1 (short)	126
J2:7/2 (with short)	545(In) 419(Out)
J2:7/3 (with short)	483(In) 148(Out)
J2:7/4 (short)	335
J2:8/1	178
J2:8/2	253
J2:8/3	385
J2:9/1	304
J2:9/2	463
J2:9/3	527
J2:10/1	618
J2:10/2	181
J2:11/1	882
J2:11/2	124
J2:12/1	703
J2:12/2	492

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J1:4/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:4/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 4: '2030 Base PM + Dev' (FG8: '2030 Base PM + Development', Plan 2: 'No Stage 4')
Traffic Flows, Desired
Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	55	540	0	200	141	94	1030
	B	27	0	4	35	47	32	21	166
	C	407	0	0	88	201	143	97	936
	D	4	39	241	2	346	253	176	1061
	E	242	81	223	221	0	141	319	1227
	F	275	93	251	249	184	0	208	1260
	G	154	50	145	144	226	68	0	787
	Tot.	1109	318	1404	739	1204	778	915	6467

Traffic Lane Flows

Lane	Scenario 4: 2030 Base PM + Dev
Junction: J1: A483 Junction 5	
J1:1/1	515
J1:1/2	546
J1:2/1	587
J1:2/2	823
J1:3/1	671
J1:3/2	729
J1:3/3	728
J1:4/1	296
J1:4/2	424
J1:5/1	515
J1:5/2	515
J1:6/1	870
J1:6/2	869
J1:7/1	166
J1:8/1	1067
J1:8/2	949
J1:8/3	435
J1:9/1	426
J1:9/2	510
J1:10/1	651
J1:10/2	562
J1:11/1	1102
J1:11/2	649
J1:12/1	631
J1:12/2	478
J1:13/1	318
J1:14/1	1069
J1:14/2	335
J1:15/1	368
J1:15/2	371
Junction: J2: Plas Coch	
J2:1/1 (short)	794
J2:1/2 (with short)	1102(In) 308(Out)
J2:1/3	649
J2:2/1	205
J2:2/2	205
J2:2/3	68
J2:3/1 (short)	379

J2:3/2 (with short)	724(In) 345(Out)
J2:3/3	503
J2:4/1	346
J2:4/2	679
J2:5/1 (short)	483
J2:5/2 (with short)	719(In) 236(Out)
J2:5/3	541
J2:6/1	464
J2:6/2	507
J2:6/3	503
J2:7/1 (short)	154
J2:7/2 (with short)	493(In) 339(Out)
J2:7/3 (with short)	294(In) 114(Out)
J2:7/4 (short)	180
J2:8/1	517
J2:8/2	258
J2:8/3	1044
J2:9/1	671
J2:9/2	427
J2:9/3	1030
J2:10/1	999
J2:10/2	205
J2:11/1	416
J2:11/2	362
J2:12/1	672
J2:12/2	243

Lane Saturation Flows

Junction: J1: A483 Junction 5								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A483 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:1/2 (A483 (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:2/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:3/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J1:4/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:4/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/1 (A483 (S) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:5/2 (A483 (S) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/1 (South Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:6/2 (South Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:7/1 (Summerhill Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/1 (West Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:8/2 (West Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/3 (West Circ Lane 3)	Infinite Saturation Flow						Inf	Inf
J1:9/1 (Mold Rd (N) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:9/2 (Mold Rd (N) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/1 (North West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J1:10/2 (North West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

J1:13/1	Infinite Saturation Flow	Inf	Inf
J1:14/1	Infinite Saturation Flow	Inf	Inf
J1:14/2	Infinite Saturation Flow	Inf	Inf
J1:15/1	Infinite Saturation Flow	Inf	Inf
J1:15/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Plas Coch								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mold Rd (W) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/2 (Mold Rd (W) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:1/3 (Mold Rd (W) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/1 (West Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/2 (West Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:2/3 (West Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/1 (Plas Coch Rd Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/2 (Plas Coch Rd Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:3/3 (Plas Coch Rd Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/1 (North Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:4/2 (North Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/1 (Mold Rd (E) Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/2 (Mold Rd (E) Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:5/3 (Mold Rd (E) Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/1 (East Circ Lane 1)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/2 (East Circ Lane 2)	This lane uses a directly entered Saturation Flow						1855	1855
J2:6/3 (East Circ Lane 3)	This lane uses a directly entered Saturation Flow						1855	1855
J2:7/1 (Berse Rd Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:7/2 (Berse Rd Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:7/3 (Berse Rd Lane 3)	Infinite Saturation Flow						Inf	Inf
J2:7/4 (Berse Rd Lane 4)	Infinite Saturation Flow						Inf	Inf
J2:8/1 (South Circ Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:8/2 (South Circ Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:8/3 (South Circ Lane 3)	Infinite Saturation Flow						Inf	Inf

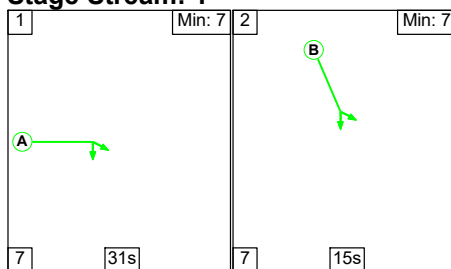
J2:9/1	Infinite Saturation Flow	Inf	Inf
J2:9/2	Infinite Saturation Flow	Inf	Inf
J2:9/3	Infinite Saturation Flow	Inf	Inf
J2:10/1	Infinite Saturation Flow	Inf	Inf
J2:10/2	Infinite Saturation Flow	Inf	Inf
J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 2: '2030 Base AM + Dev' (FG4: '2030 Base AM + Development', Plan 2: 'No Stage 4')

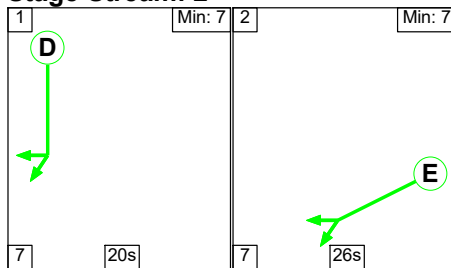
C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



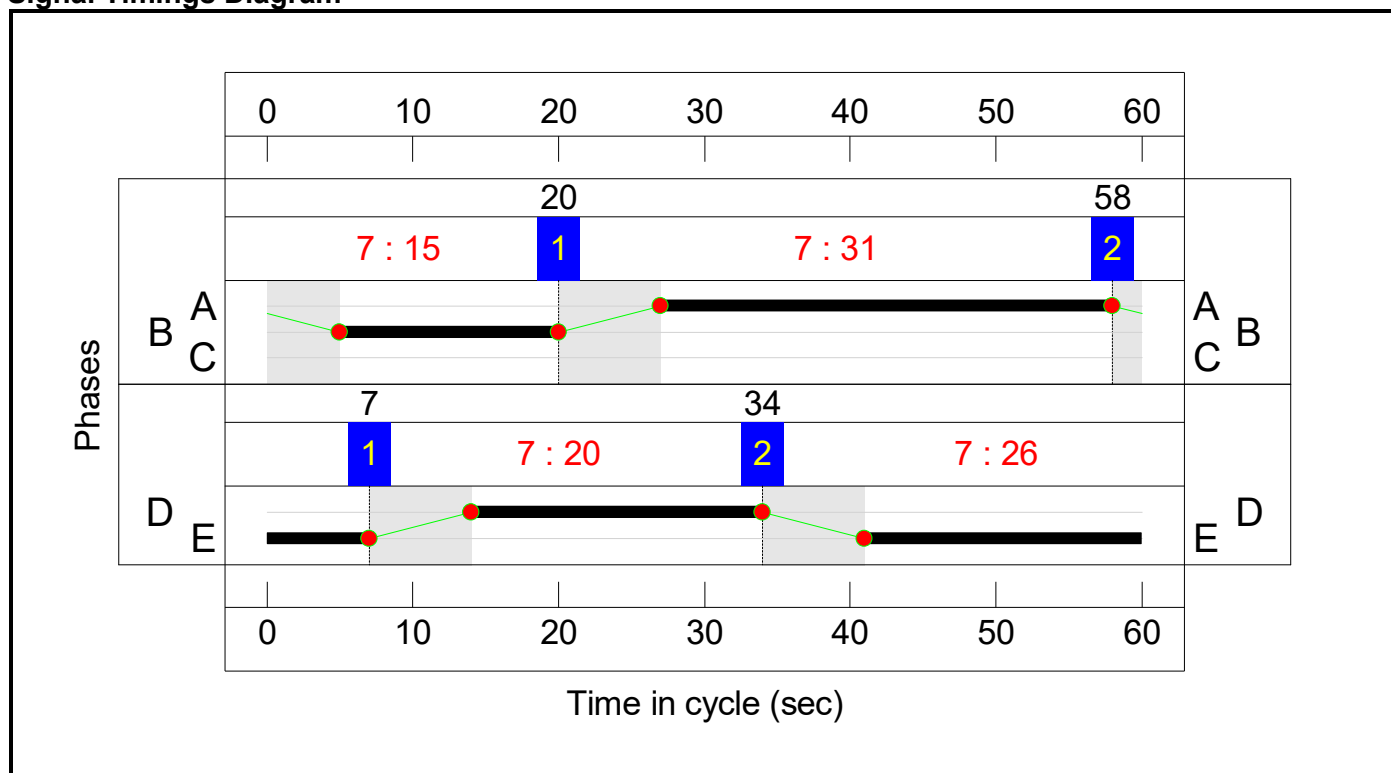
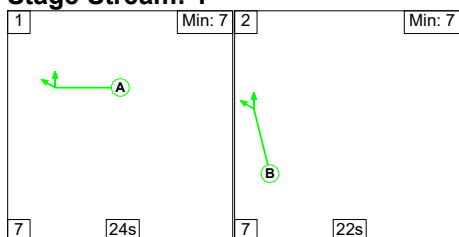
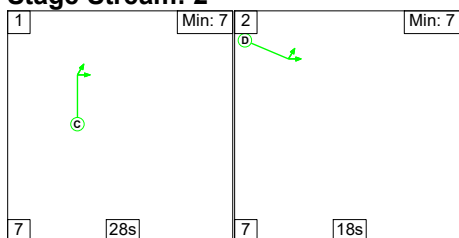
Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	15
Change Point	20	58

Stage Stream: 2

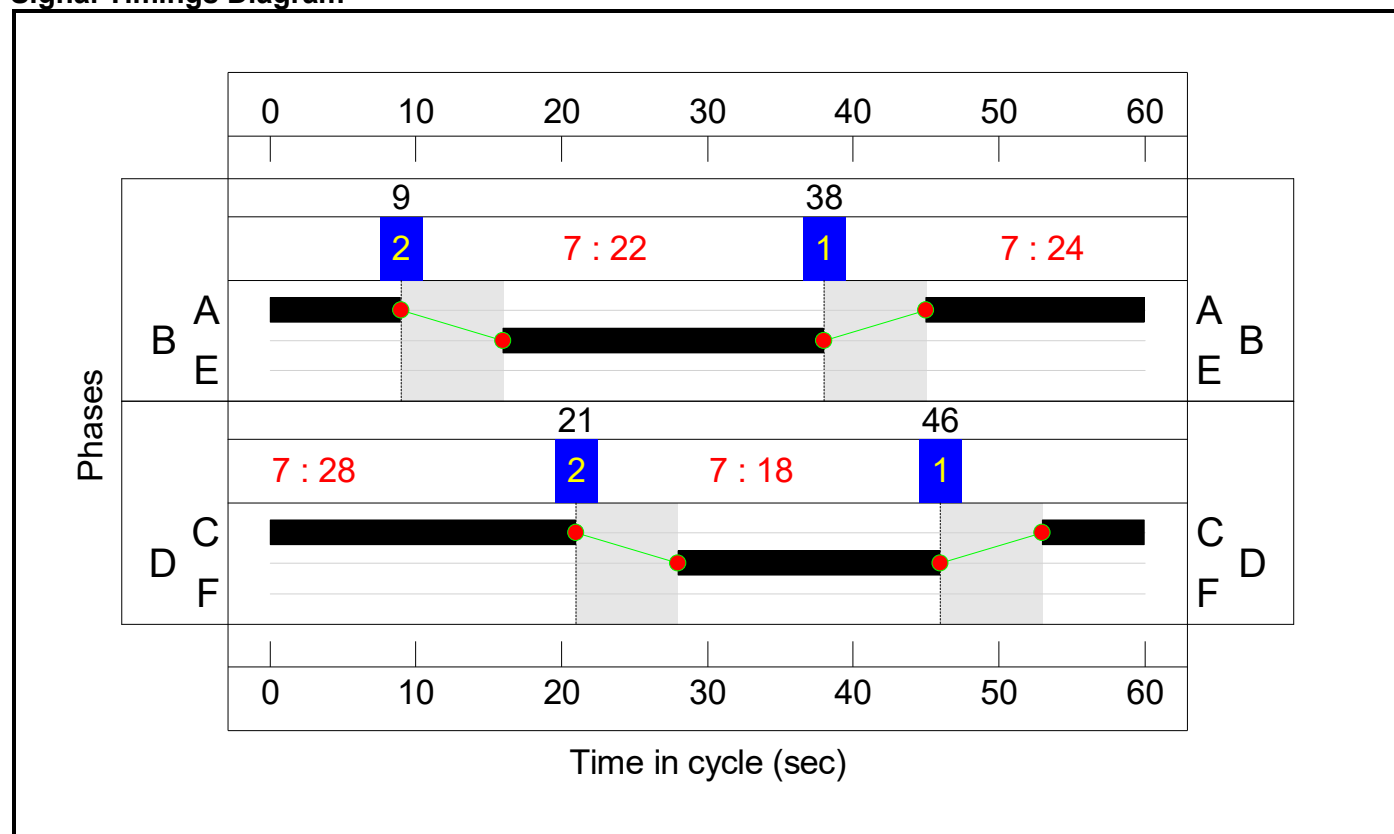
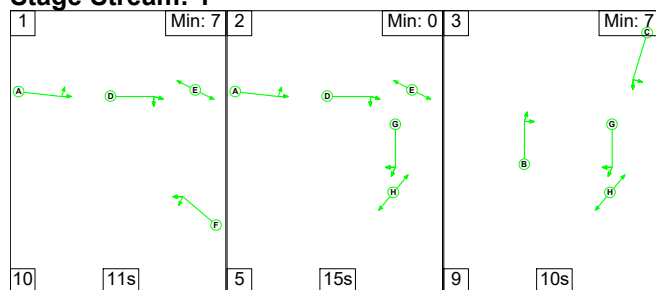
Stage	1	2
Duration	20	26
Change Point	7	34

Signal Timings Diagram
C2 - Junction 5 (West)
Stage Sequence Diagram
Stage Stream: 1
**Stage Stream: 2**
Stage Timings
Stage Stream: 1

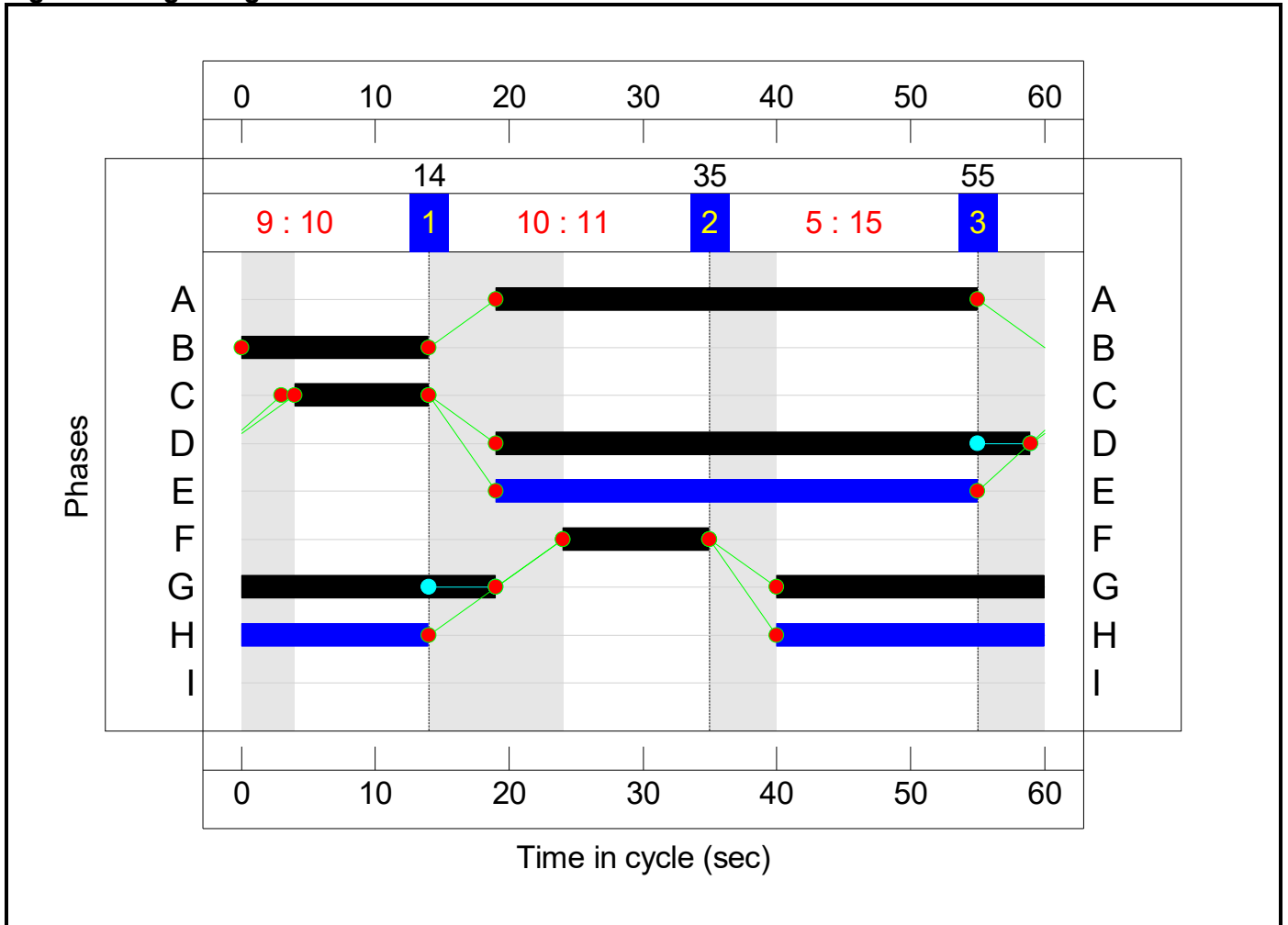
Stage	1	2
Duration	24	22
Change Point	38	9

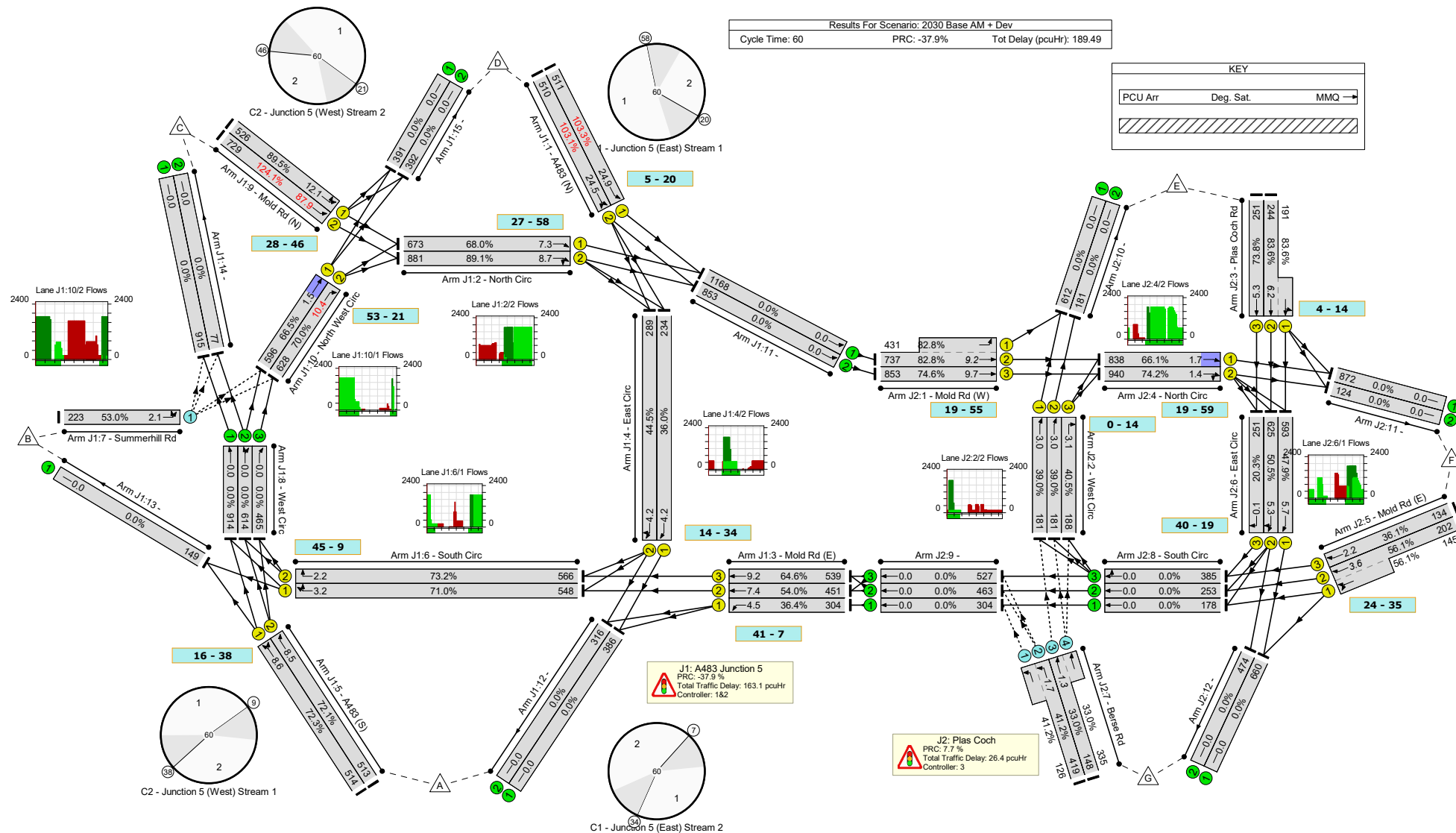
Stage Stream: 2

Stage	1	2
Duration	28	18
Change Point	46	21

Signal Timings Diagram**C3 - Plas Coch****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	11	15	10
Change Point	14	35	55

Signal Timings Diagram



Changes to Existing

Two exit lanes from roundabout to Mold Rd Northbound (at Junction 1).

Nearside circulating lane, past Mold Rd (N) at Junction 1, exit to A483 only. All right-turns use offside lane.

At Junction 2, offside lane of Mold Rd (E) can be used to go ahead to downstream roundabout as well as right-turn.

Remove right-turn movement from middle lane on western circulatory at Junction 2. Right-turns from offside only.

Make nearside lane for Plas Coch Rd left and ahead

Proposed 2: Add signals to Mold Rd (E) at Junction 1

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Proposed 2	-	-	N/A	-	-		-	-	-	-	-	-	124.1%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	124.1%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	15	-	511	1855	495	103.3%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	15	-	510	1855	495	103.1%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	31	-	673	1855	989	68.0%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	31	-	1023	1855	989	89.1%
3/1	Mold Rd (E) Left	U	1:2	N/A	C1:E		1	26	-	304	1855	835	36.4%
3/2	Mold Rd (E) Ahead	U	1:2	N/A	C1:E		1	26	-	451	1855	835	54.0%
3/3	Mold Rd (E) Ahead	U	1:2	N/A	C1:E		1	26	-	539	1855	835	64.6%
4/1	East Circ Ahead	U	1:2	N/A	C1:D		1	20	-	287	1855	649	36.0%
4/2	East Circ Right Ahead	U	1:2	N/A	C1:D		1	20	-	331	1855	649	44.5%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	22	-	514	1855	711	72.3%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	22	-	513	1855	711	72.1%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	24	-	552	1855	773	71.0%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	24	-	567	1855	773	73.2%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	223	Inf	421	53.0%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	916	Inf	Inf	0.0%

8/2	West Circ Ahead Ahead2	U	N/A	N/A	-		-	-	-	615	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	18	-	526	1855	587	89.5%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	18	-	729	1855	587	124.1%
10/1	North West Circ Ahead	U	2:2	N/A	C2:C		1	28	-	596	1855	897	66.5%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	28	-	628	1855	897	70.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1184	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	915	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	917	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	83.6%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	36	-	1184	1855:1855	890+520	82.8 : 82.8%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	36	-	915	1855	1144	74.6%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	14	-	181	1855	464	39.0%
2/2	West Circ Ahead	U	3:1	N/A	C3:B		1	14	-	181	1855	464	39.0%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	14	-	188	1855	464	40.5%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	10	-	435	1855:1855	292+229	83.6 : 83.6%

3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	10	-	251	1855	340	73.8%
4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	40	-	848	1855	1268	66.1%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	40	-	1002	1855	1268	74.2%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	11	-	347	1855:1855	360+258	56.1 : 56.1%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	11	-	134	1855	371	36.1%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	39	-	636	1855	1237	47.9%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	39	-	643	1855	1237	50.5%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	39	-	251	1855	1237	20.3%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	545	Inf : Inf	1016+306	41.2 : 41.2%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	483	Inf : Inf	449+1016	33.0 : 33.0%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	178	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	253	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	385	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	304	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	463	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	527	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	181	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	882	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	124	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	703	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	492	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Proposed 2	-	-	2279	0	0	54.2	135.3	0.0	189.5	-	-	-	-
J1: A483 Junction 5	-	-	223	0	0	39.0	124.1	0.0	163.1	-	-	-	-
1/1	511	495	-	-	-	3.6	16.1	-	19.7	138.8	8.8	16.1	24.9
1/2	510	495	-	-	-	3.6	15.8	-	19.3	136.4	8.8	15.8	24.5
2/1	673	673	-	-	-	1.9	1.1	-	2.9	15.7	6.2	1.1	7.3
2/2	881	881	-	-	-	1.6	3.8	-	5.4	22.1	4.9	3.8	8.7
3/1	304	304	-	-	-	1.1	0.3	-	1.3	15.9	4.2	0.3	4.5
3/2	451	451	-	-	-	1.8	0.6	-	2.4	19.4	6.8	0.6	7.4
3/3	539	539	-	-	-	2.4	0.9	-	3.3	22.0	8.3	0.9	9.2
4/1	234	234	-	-	-	1.6	0.3	-	1.8	28.3	3.9	0.3	4.2
4/2	289	289	-	-	-	1.1	0.4	-	1.5	18.9	3.8	0.4	4.2
5/1	514	514	-	-	-	2.3	1.3	-	3.5	24.8	7.3	1.3	8.6
5/2	513	513	-	-	-	2.2	1.3	-	3.5	24.7	7.3	1.3	8.5
6/1	548	548	-	-	-	0.6	1.2	-	1.8	12.0	1.9	1.2	3.2
6/2	566	566	-	-	-	0.3	1.4	-	1.7	10.6	0.8	1.4	2.2
7/1	223	223	223	0	0	0.5	0.6	-	1.0	16.6	1.5	0.6	2.1
8/1	914	914	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	465	465	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	526	526	-	-	-	2.9	3.8	-	6.7	45.6	8.3	3.8	12.1
9/2	729	587	-	-	-	7.5	73.3	-	80.7	398.8	14.6	73.3	87.9
10/1	596	596	-	-	-	0.1	1.0	-	1.1	6.4	0.5	1.0	1.5
10/2	628	628	-	-	-	4.1	1.2	-	5.2	29.9	9.2	1.2	10.4
11/1	1168	1168	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	853	853	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	386	386	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	915	915	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	77	77	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	391	391	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	2056	0	0	15.2	11.2	0.0	26.4	-	-	-	-
1/2+1/1	1168	1168	-	-	-	1.4	2.4	-	3.8	11.7	6.8	2.4	9.2
1/3	853	853	-	-	-	1.2	1.5	-	2.6	11.0	8.2	1.5	9.7
2/1	181	181	-	-	-	1.1	0.3	-	1.4	27.9	2.7	0.3	3.0
2/2	181	181	-	-	-	1.1	0.3	-	1.4	27.8	2.7	0.3	3.0
2/3	188	188	-	-	-	1.0	0.3	-	1.3	25.8	2.7	0.3	3.1
3/2+3/1	435	435	-	-	-	2.7	2.4	-	5.2	42.6	3.8	2.4	6.2
3/3	251	251	-	-	-	1.6	1.4	-	3.0	42.8	3.9	1.4	5.3
4/1	838	838	-	-	-	0.4	0.0	-	0.4	1.6	1.7	0.0	1.7
4/2	940	940	-	-	-	0.3	0.0	-	0.3	1.2	1.4	0.0	1.4
5/2+5/1	347	347	-	-	-	2.0	0.6	-	2.7	27.9	3.0	0.6	3.6
5/3	134	134	-	-	-	0.8	0.3	-	1.1	28.3	1.9	0.3	2.2
6/1	593	593	-	-	-	0.7	0.5	-	1.1	6.9	5.2	0.5	5.7
6/2	625	625	-	-	-	0.6	0.5	-	1.1	6.3	4.8	0.5	5.3
6/3	251	251	-	-	-	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
7/2+7/1	545	545	1090	0	0	0.2	0.4	-	0.5	3.6	1.4	0.4	1.7
7/3+7/4	483	483	966	0	0	0.2	0.2	-	0.4	3.0	1.0	0.2	1.3
8/1	178	178	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	253	253	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	385	385	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	463	463	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	527	527	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

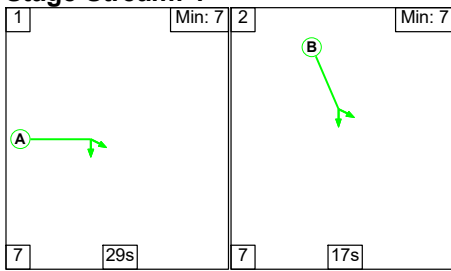
10/1	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	181	181	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	872	872	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	124	124	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	660	660	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	474	474	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - Junction 5 (East)	Stream: 1 PRC for Signalled Lanes (%):		-14.8		Total Delay for Signalled Lanes (pcuHr):	47.36		Cycle Time (s):	60				
C1 - Junction 5 (East)	Stream: 2 PRC for Signalled Lanes (%):		39.4		Total Delay for Signalled Lanes (pcuHr):	10.42		Cycle Time (s):	60				
C2 - Junction 5 (West)	Stream: 1 PRC for Signalled Lanes (%):		22.9		Total Delay for Signalled Lanes (pcuHr):	10.57		Cycle Time (s):	60				
C2 - Junction 5 (West)	Stream: 2 PRC for Signalled Lanes (%):		-37.9		Total Delay for Signalled Lanes (pcuHr):	93.70		Cycle Time (s):	60				
C3 - Plas Coch	Stream: 1 PRC for Signalled Lanes (%):		7.7		Total Delay for Signalled Lanes (pcuHr):	25.46		Cycle Time (s):	60				
	PRC Over All Lanes (%):		-37.9		Total Delay Over All Lanes(pcuHr):	189.49							

Scenario 4: '2030 Base PM + Dev' (FG8: '2030 Base PM + Development', Plan 2: 'No Stage 4')

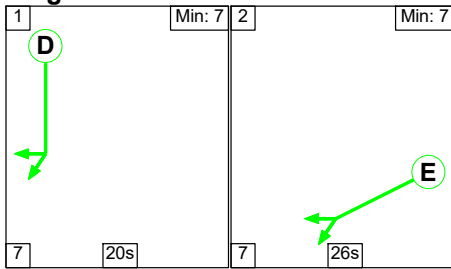
C1 - Junction 5 (East)

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



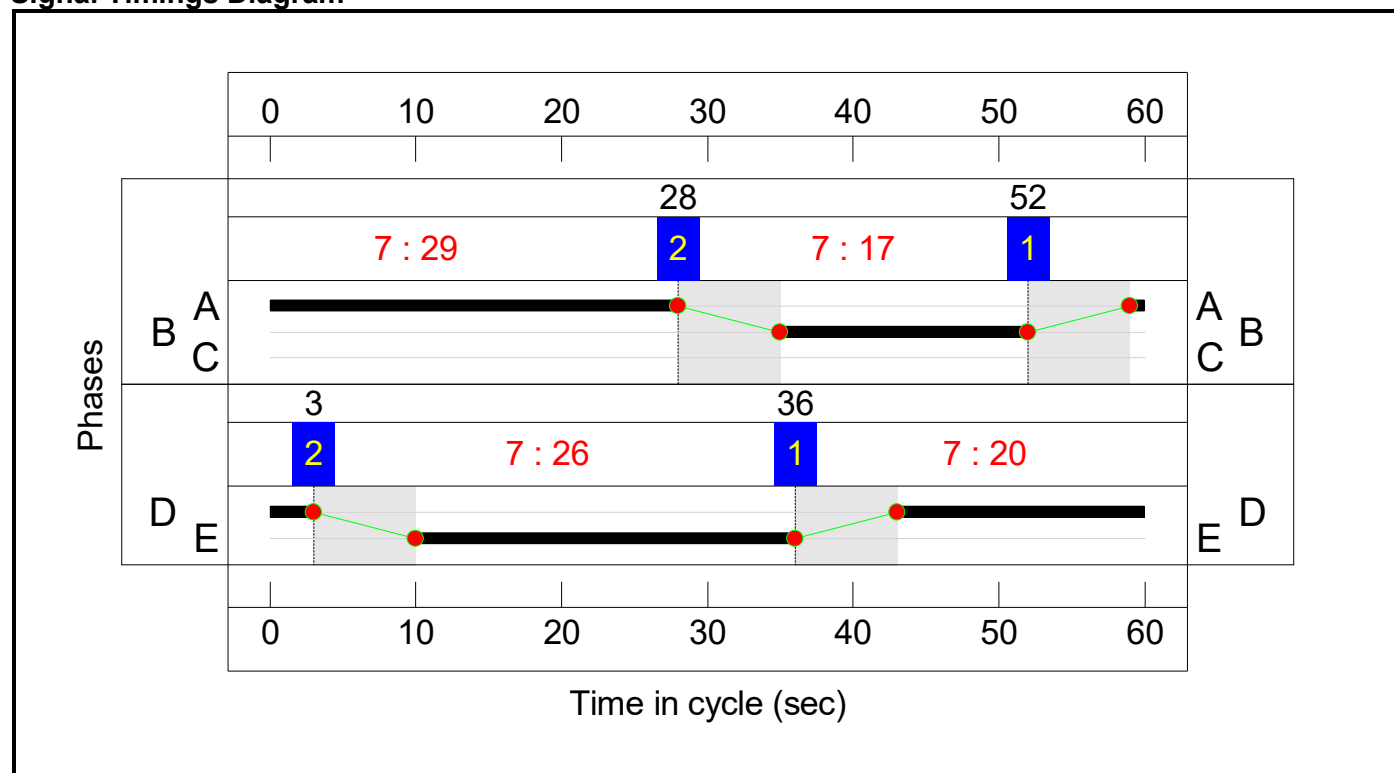
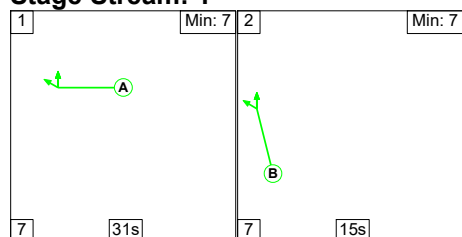
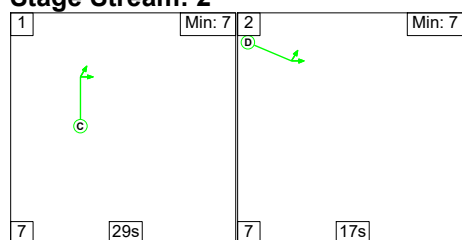
Stage Timings

Stage Stream: 1

Stage	1	2
Duration	29	17
Change Point	52	28

Stage Stream: 2

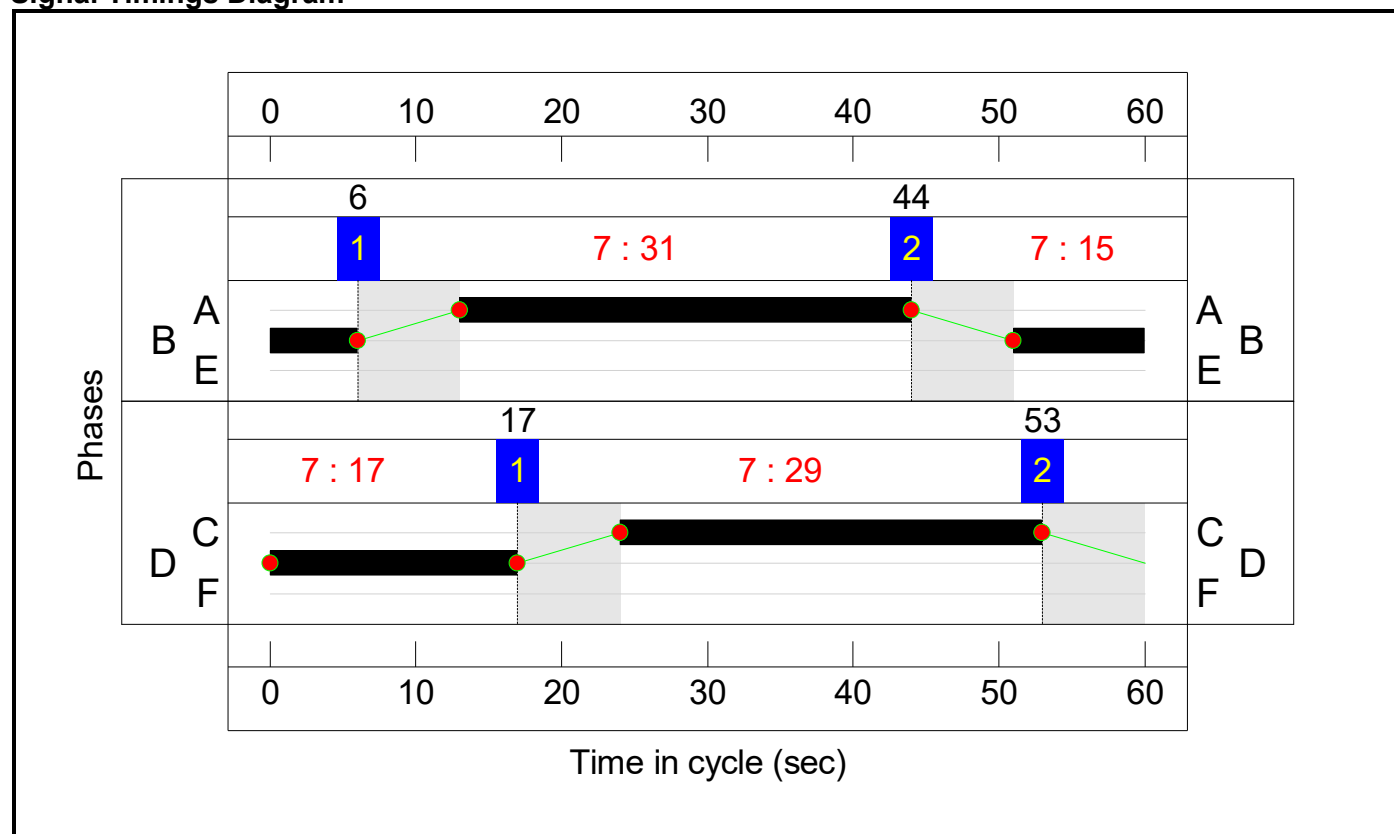
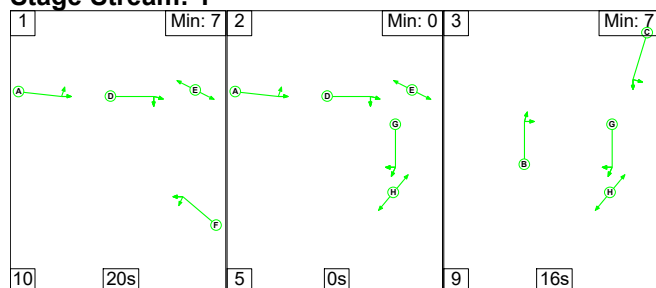
Stage	1	2
Duration	20	26
Change Point	36	3

Signal Timings Diagram
C2 - Junction 5 (West)
Stage Sequence Diagram
Stage Stream: 1
**Stage Stream: 2**
Stage Timings
Stage Stream: 1

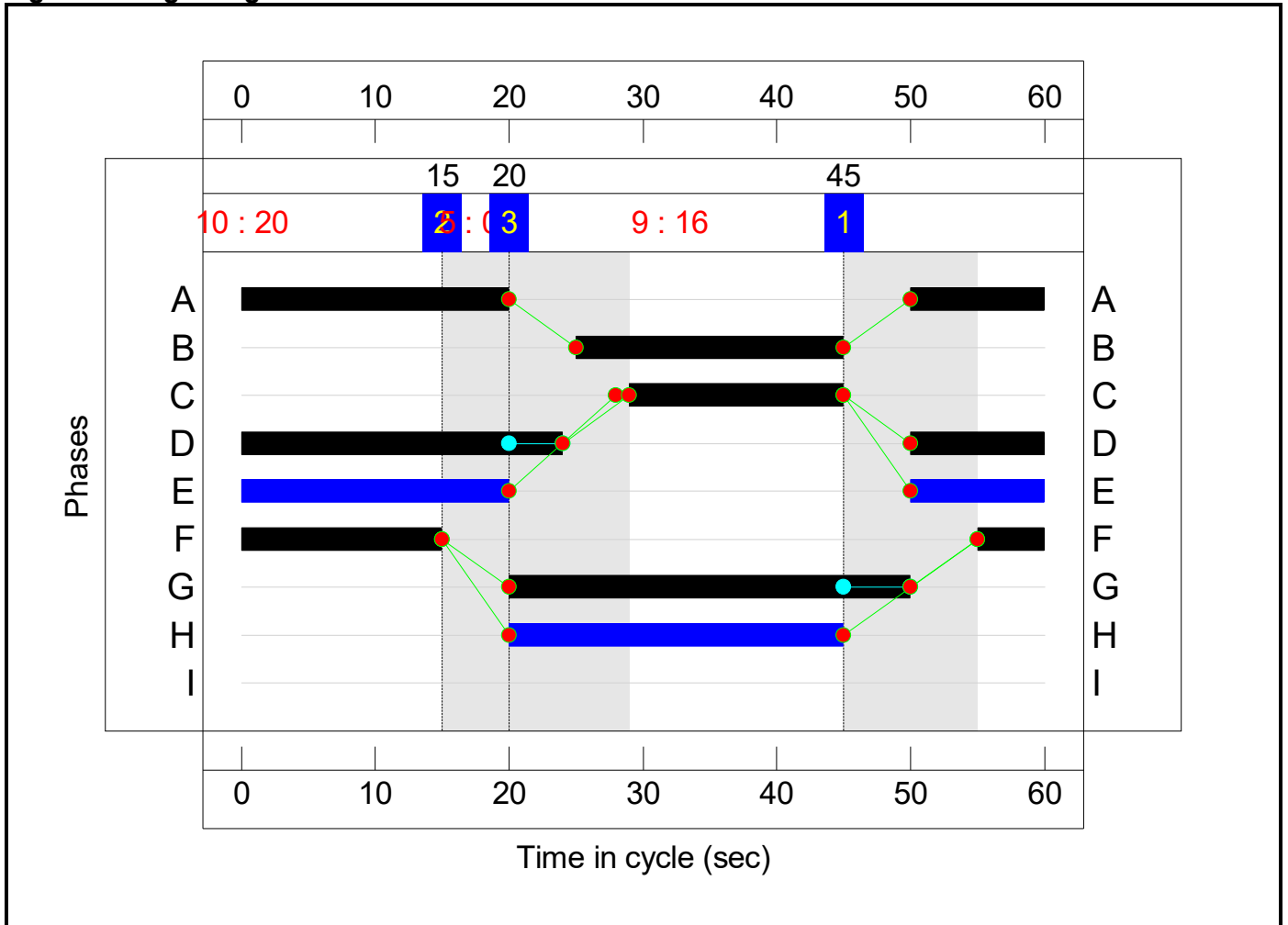
Stage	1	2
Duration	31	15
Change Point	6	44

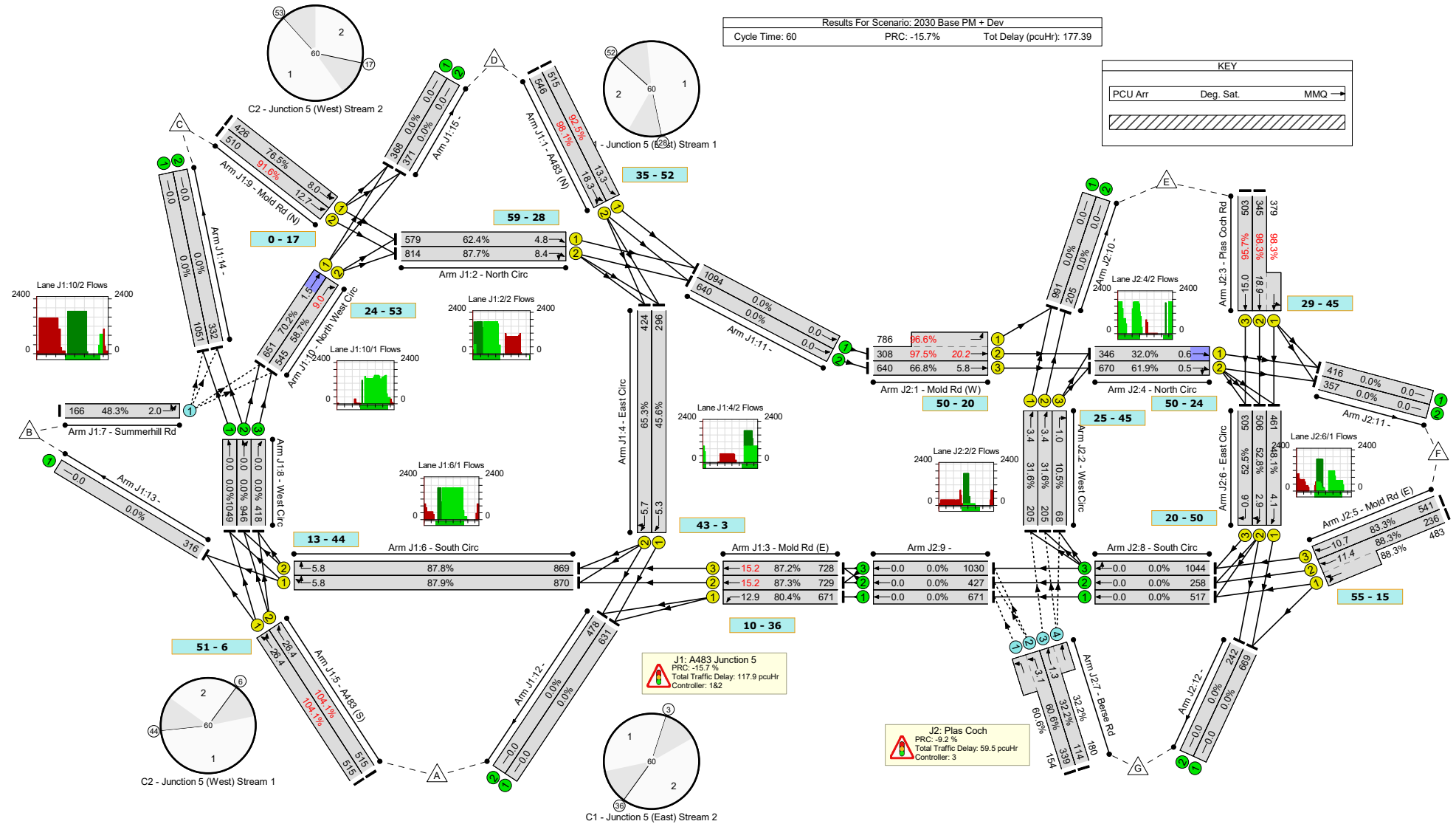
Stage Stream: 2

Stage	1	2
Duration	29	17
Change Point	17	53

Signal Timings Diagram**C3 - Plas Coch****Stage Sequence Diagram****Stage Stream: 1****Stage Timings****Stage Stream: 1**

Stage	1	2	3
Duration	20	0	16
Change Point	45	15	20

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Proposed 2	-	-	N/A	-	-		-	-	-	-	-	-	104.1%
J1: A483 Junction 5	-	-	N/A	-	-		-	-	-	-	-	-	104.1%
1/1	A483 (N) Ahead	U	1:1	N/A	C1:B		1	17	-	515	1855	556	92.5%
1/2	A483 (N) Ahead Ahead2	U	1:1	N/A	C1:B		1	17	-	546	1855	556	98.1%
2/1	North Circ Ahead	U	1:1	N/A	C1:A		1	29	-	587	1855	928	62.4%
2/2	North Circ Right Ahead	U	1:1	N/A	C1:A		1	29	-	823	1855	928	87.7%
3/1	Mold Rd (E) Left	U	1:2	N/A	C1:E		1	26	-	671	1855	835	80.4%
3/2	Mold Rd (E) Ahead	U	1:2	N/A	C1:E		1	26	-	729	1855	835	87.3%
3/3	Mold Rd (E) Ahead	U	1:2	N/A	C1:E		1	26	-	728	1855	835	87.2%
4/1	East Circ Ahead	U	1:2	N/A	C1:D		1	20	-	296	1855	649	45.6%
4/2	East Circ Right Ahead	U	1:2	N/A	C1:D		1	20	-	424	1855	649	65.3%
5/1	A483 (S) Ahead Ahead2	U	2:1	N/A	C2:B		1	15	-	515	1855	495	104.1%
5/2	A483 (S) Ahead	U	2:1	N/A	C2:B		1	15	-	515	1855	495	104.1%
6/1	South Circ Right Ahead	U	2:1	N/A	C2:A		1	31	-	870	1855	989	87.9%
6/2	South Circ Right	U	2:1	N/A	C2:A		1	31	-	869	1855	989	87.8%
7/1	Summerhill Rd Left Left2	O	N/A	N/A	-		-	-	-	166	Inf	343	48.3%
8/1	West Circ Ahead	U	N/A	N/A	-		-	-	-	1067	Inf	Inf	0.0%

8/2	West Circ Ahead Ahead2	U	N/A	N/A	-		-	-	-	949	Inf	Inf	0.0%
8/3	West Circ Ahead	U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
9/1	Mold Rd (N) Ahead Left	U	2:2	N/A	C2:D		1	17	-	426	1855	556	76.5%
9/2	Mold Rd (N) Ahead	U	2:2	N/A	C2:D		1	17	-	510	1855	556	91.6%
10/1	North West Circ Ahead	U	2:2	N/A	C2:C		1	29	-	651	1855	928	70.2%
10/2	North West Circ Right	U	2:2	N/A	C2:C		1	29	-	562	1855	928	58.7%
11/1	Ahead	U	N/A	N/A	-		-	-	-	1102	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	649	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	631	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	478	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	1069	Inf	Inf	0.0%
14/2		U	N/A	N/A	-		-	-	-	335	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	368	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	371	Inf	Inf	0.0%
J2: Plas Coch	-	-	N/A	-	-		-	-	-	-	-	-	98.3%
1/2+1/1	Mold Rd (W) Ahead Left	U	3:1	N/A	C3:A		1	30	-	1102	1855:1855	316+814	97.5 : 96.6%
1/3	Mold Rd (W) Ahead	U	3:1	N/A	C3:A		1	30	-	649	1855	958	66.8%
2/1	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	205	1855	649	31.6%
2/2	West Circ Ahead	U	3:1	N/A	C3:B		1	20	-	205	1855	649	31.6%
2/3	West Circ Right	U	3:1	N/A	C3:B		1	20	-	68	1855	649	10.5%
3/2+3/1	Plas Coch Rd Ahead Left	U	3:1	N/A	C3:C		1	16	-	724	1855:1855	351+386	98.3 : 98.3%

3/3	Plas Coch Rd Ahead	U	3:1	N/A	C3:C		1	16	-	503	1855	526	95.7%
4/1	North Circ Ahead	U	3:1	N/A	C3:D		1	34	-	346	1855	1082	32.0%
4/2	North Circ Right Ahead	U	3:1	N/A	C3:D		1	34	-	679	1855	1082	61.9%
5/2+5/1	Mold Rd (E) Ahead Ahead2	U	3:1	N/A	C3:F		1	20	-	719	1855:1855	267+547	88.3 : 88.3%
5/3	Mold Rd (E) Ahead	U	3:1	N/A	C3:F		1	20	-	541	1855	649	83.3%
6/1	East Circ Ahead	U	3:1	N/A	C3:G		1	30	-	464	1855	958	48.1%
6/2	East Circ Right Ahead	U	3:1	N/A	C3:G		1	30	-	507	1855	958	52.8%
6/3	East Circ Right	U	3:1	N/A	C3:G		1	30	-	503	1855	958	52.5%
7/2+7/1	Berse Rd Left	O	N/A	N/A	-		-	-	-	493	Inf : Inf	559+254	60.6 : 60.6%
7/3+7/4	Berse Rd Ahead	O	N/A	N/A	-		-	-	-	294	Inf : Inf	354+559	32.2 : 32.2%
8/1	South Circ Ahead	U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
8/2	South Circ Ahead	U	N/A	N/A	-		-	-	-	258	Inf	Inf	0.0%
8/3	South Circ Right Ahead	U	N/A	N/A	-		-	-	-	1044	Inf	Inf	0.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	671	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	427	Inf	Inf	0.0%
9/3	Ahead	U	N/A	N/A	-		-	-	-	1030	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	999	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	205	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	416	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	672	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	243	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Proposed 2	-	-	1740	0	0	61.2	116.2	0.0	177.4	-	-	-	-
J1: A483 Junction 5	-	-	166	0	0	39.1	78.8	0.0	117.9	-	-	-	-
1/1	515	515	-	-	-	2.9	5.0	-	7.9	55.3	8.3	5.0	13.3
1/2	546	546	-	-	-	3.2	9.3	-	12.5	82.5	8.9	9.3	18.3
2/1	579	579	-	-	-	1.4	0.8	-	2.2	13.6	4.0	0.8	4.8
2/2	814	814	-	-	-	1.8	3.4	-	5.2	23.1	5.1	3.4	8.4
3/1	671	671	-	-	-	2.9	2.0	-	4.9	26.2	10.9	2.0	12.9
3/2	729	729	-	-	-	3.1	3.2	-	6.4	31.5	12.0	3.2	15.2
3/3	728	728	-	-	-	3.3	3.2	-	6.5	32.0	12.0	3.2	15.2
4/1	296	296	-	-	-	1.9	0.4	-	2.3	28.3	4.9	0.4	5.3
4/2	424	424	-	-	-	0.9	0.9	-	1.8	15.5	4.8	0.9	5.7
5/1	515	495	-	-	-	3.8	17.5	-	21.3	149.2	8.9	17.5	26.4
5/2	515	495	-	-	-	3.8	17.5	-	21.3	149.2	8.9	17.5	26.4
6/1	870	870	-	-	-	0.6	3.4	-	4.0	16.6	2.4	3.4	5.8
6/2	869	869	-	-	-	0.6	3.4	-	4.0	16.5	2.4	3.4	5.8
7/1	166	166	166	0	0	0.5	0.5	-	0.9	20.5	1.5	0.5	2.0
8/1	1049	1049	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	946	946	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	418	418	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	426	426	-	-	-	2.3	1.6	-	3.9	32.6	6.4	1.6	8.0
9/2	510	510	-	-	-	2.9	4.6	-	7.5	52.6	8.1	4.6	12.7
10/1	651	651	-	-	-	0.1	1.2	-	1.3	7.0	0.4	1.2	1.5
10/2	545	545	-	-	-	3.3	0.7	-	4.0	26.5	8.3	0.7	9.0
11/1	1094	1094	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	640	640	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	631	631	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1051	1051	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Plas Coch	-	-	1574	0	0	22.1	37.4	0.0	59.5	-	-	-	-
1/2+1/1	1094	1094	-	-	-	2.9	9.8	-	12.8	42.0	10.4	9.8	20.2
1/3	640	640	-	-	-	0.8	1.0	-	1.8	10.2	4.8	1.0	5.8
2/1	205	205	-	-	-	1.0	0.2	-	1.2	21.1	3.2	0.2	3.4
2/2	205	205	-	-	-	1.0	0.2	-	1.2	20.8	3.2	0.2	3.4
2/3	68	68	-	-	-	0.2	0.1	-	0.3	16.2	0.9	0.1	1.0
3/2+3/1	724	724	-	-	-	4.0	10.6	-	14.6	72.8	8.2	10.6	18.9
3/3	503	503	-	-	-	3.0	6.9	-	9.9	70.6	8.1	6.9	15.0
4/1	346	346	-	-	-	0.2	0.0	-	0.2	2.1	0.6	0.0	0.6
4/2	670	670	-	-	-	0.2	0.0	-	0.2	0.9	0.5	0.0	0.5
5/2+5/1	719	719	-	-	-	3.3	3.5	-	6.8	34.2	7.9	3.5	11.4
5/3	541	541	-	-	-	2.7	2.4	-	5.1	33.8	8.3	2.4	10.7
6/1	461	461	-	-	-	0.8	0.5	-	1.3	10.2	3.6	0.5	4.1
6/2	506	506	-	-	-	0.6	0.6	-	1.2	8.5	2.4	0.6	2.9
6/3	503	503	-	-	-	0.0	0.6	-	0.6	3.9	0.0	0.6	0.6
7/2+7/1	493	493	986	0	0	0.9	0.8	-	1.7	12.3	2.4	0.8	3.1
7/3+7/4	294	294	588	0	0	0.5	0.2	-	0.7	8.8	1.1	0.2	1.3
8/1	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	258	258	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/3	1044	1044	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	671	671	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	427	427	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	1030	1030	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

10/1	991	991	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	205	205	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/2	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
C1 - Junction 5 (East)			Stream: 1 PRC for Signalled Lanes (%):			-9.0	Total Delay for Signalled Lanes (pcuHr):			27.83	Cycle Time (s):			60
C1 - Junction 5 (East)			Stream: 2 PRC for Signalled Lanes (%):			3.1	Total Delay for Signalled Lanes (pcuHr):			21.87	Cycle Time (s):			60
C2 - Junction 5 (West)			Stream: 1 PRC for Signalled Lanes (%):			-15.7	Total Delay for Signalled Lanes (pcuHr):			50.66	Cycle Time (s):			60
C2 - Junction 5 (West)			Stream: 2 PRC for Signalled Lanes (%):			-1.8	Total Delay for Signalled Lanes (pcuHr):			16.58	Cycle Time (s):			60
C3 - Plas Coch			Stream: 1 PRC for Signalled Lanes (%):			-9.2	Total Delay for Signalled Lanes (pcuHr):			57.10	Cycle Time (s):			60
			PRC Over All Lanes (%):			-15.7	Total Delay Over All Lanes(pcuHr):			177.39				