

Transport Assessment

**Proposed Residential Development
Ruthin Road, Wrexham**

Prepared for Redrow Homes North West

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1.0 INTRODUCTION

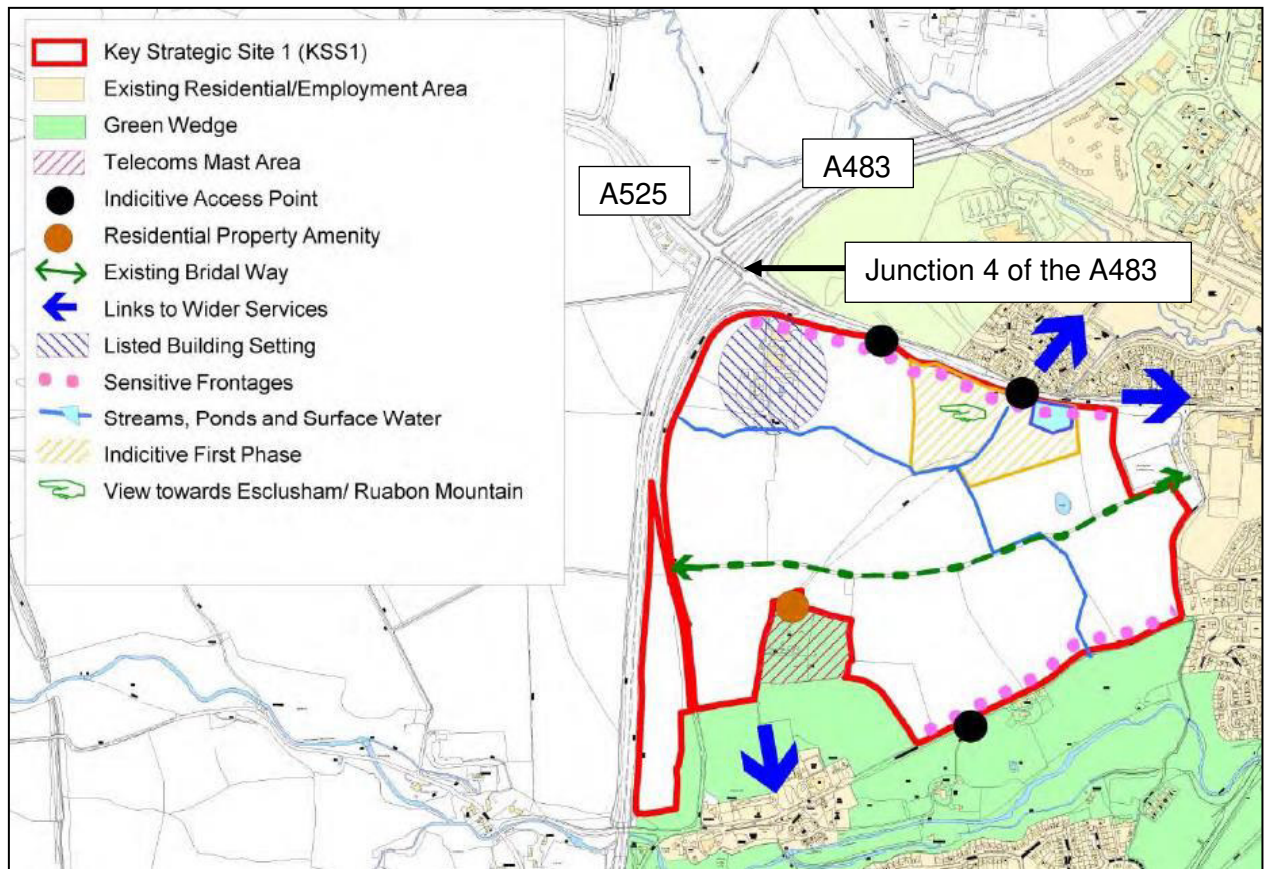
General

- 1.1 SCP have been appointed by Redrow Homes North West to provide specialist transport planning and engineering advice in support of a proposed residential development on land south of Ruthin Road, Wrexham.
- 1.2 The proposed development will provide up to 1,520 dwellings. Further details of the proposed development are provided in Chapter 3.
- 1.3 This Transport Assessment (TA) has been prepared to support the planning application and has been produced in accordance with guidance contained in TAN 18. In addition, the specific scope of this report including the study area and survey requirements have been communicated to the Highway Officer at Wrexham County Borough Council (WCBC) via a scoping note (document ref LB/210187/TN01), however a response has not been received at the time of preparing this document.

Planning Background

- 1.4 The application proposals have been developed in accordance with the Wrexham Unitary Development Plan (1996-2011). The site is referred to as a Key Strategic Site (KSS1) in Wrexham's emerging Local Development Plan (LDP) (Deposit Version 2017) which covers the period 2013-2028 however the document is currently waiting for adoption by the council. The extract of the LDP showing the location of the site is shown in **Figure 1** below:

Figure 1.1 – KSS1 Site Location Plan



Source: Wrexham LDP (Deposit Version 2017)

- 1.5 The Local Plan anticipates that the site has the potential to deliver a minimum of 1500 homes, and representations were made at the Local Plan to seek to agree the phasing and scale of the development related to the provision of off-site infrastructure works. The Local Plan initially sought to restrict any development on the site to 200 dwellings prior to 2028 although evidence presented to the examination of the Plan confirmed that 500 dwellings could be accommodated without any material detriment to traffic conditions that would otherwise be experienced.

Scope and Structure of Report

- 1.6 The structure of this report is as follows:
- Chapter 2 – summarises relevant national and local transport policies and presents an evaluated Transport Implementation Strategy;
 - Chapter 3 – provides an appraisal of the existing conditions of the site including an appraisal of the local highway network, existing traffic conditions and road safety record;

- Chapter 4 – provides an appraisal of the development proposals including the proposed site access arrangements, servicing arrangements and car parking;
- Chapter 5 – presents a review of the accessibility of the site by walking, cycling and public transport modes;
- Chapter 6 – describes the future baseline traffic conditions on the local highway network in relation to committed development traffic flows and traffic growth;
- Chapter 7 – estimates the number trips generated by existing and proposed uses of the site and distributed and assigns the proposed development trips on the local highway network;
- Chapter 8 – presents an assessment of the impact of the development on the operational performance of the local highway network; and
- Chapter 9 – provides summary and conclusions to this TA derived from the analysis presented in the above chapters.

2.0 POLICY CONTEXT AND TRANSPORT IMPLEMENTATION STRATEGY

Introduction

2.1 Technical Advice Note 18 (TAN 18) sets out the need for developments in Wales to include a Transport Implementation Strategy (TIS), which should include the following information in respect of each particular development proposal:

- Details of how the development and the TIS relate to transport planning policies and strategy. TIS's are intended to incorporate all the elements of a Travel Plan (TP) and to ensure that these are integrated with design elements of the new development;
- A set of objectives and targets relating to managing travel demand for the development;
- A framework for monitoring the objectives and targets, including the future modal split of transport to the development; and
- Details of measures proposed to improve access by public transport, walking and cycling to reduce the number and impacts of motorised journeys associated with the development.

2.2 The TIS section is therefore prepared having regard to the advice from TAN 18, as outlined above. It is considered that this TIS can be taken forward and used as a framework for a future detailed Travel Plan that can be secured as part of a planning condition, if considered necessary.

Policy Context - Planning Policy Wales (PPW)

2.3 In terms of the national transport policy that is relevant to the TIS, the latest 11th edition of PPW was published in February 2021 by the Welsh Government and sets out a framework for the Welsh planning authorities to prepare their development plans. Chapter 4 of PPW sets out the approach to Transport.

2.4 Paragraph 4.1.1 of PPW states that "*The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:*

- *Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;*

- *Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and,*
- *Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles”.*

2.5 Paragraph 4.1.9-4.1.10 of PPW states that “*The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the Well-being of Future Generations Act.*

The planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:

- *are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;*
- *are designed in a way which integrates them with existing land uses and neighbourhoods; and,*
- *make it possible for all short journeys within and beyond the development to be easily made by walking and cycling.”*

2.6 With reference to the Active Travel (Wales) Act 2013, Paragraph 4.1.26 of PPW states that walking and cycling should be promoted for shorter journeys, particularly everyday journeys to work and education establishments or to other local services and facilities. “*The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities*”.

2.7 In reference to supporting documentation with planning applications, paragraph 4.1.56 of PPW states that “*Transport Assessments are an important mechanism for setting out the scale of anticipated impacts of a proposed development, or redevelopment, is likely to have. They assist in helping to anticipate the impacts of development so that they can be understood and catered for appropriately.*”

TIS Objectives and Targets

- 2.8 The objectives of a TIS should benefit both the occupiers of a development and the wider community. The objectives will be set out in the following sections and form the basis for a TP for the development. Site specific objectives that are relevant to the proposed development are as follows:
- Increase opportunities for residents;
 - Reduce vehicle use in and around the site;
 - Improve the image of the local area;
 - Reduce the transport impact of the development upon the environment;
 - Promote more sustainable ways of travelling; and,
 - Support government policy to manage travel demand more effectively.
- 2.9 In order to achieve the objective of reducing single occupancy vehicle travel, realistic short term annual targets for mode share will be set.
- 2.10 The proposed development is located in both the Wrexham 011 and Wrexham 014 Middle Super Output Areas (MSOA). As a result, the modal split analysis is based on an average of both MSOAs.
- 2.11 The 2011 UK Census shows that single occupancy travel to work by car mode is, on average; lower in the MSOA average (65%) to both Wrexham County (69%) and Wales (71%). The existing local single occupancy modal share percentage of 65% will therefore be the initial baseline target for the residential properties on the site. The following table shows the figures obtained from the Census data:-

Table 2.1 – Mode Share from Local, Regional and National Area (2011 Census)

Travel to Work (QS701EW) Census Statistics	Wrexham	Wrexham	MSOA	Wrexham	Wales
	MSOA 011	MSOA 014	Average	County	Country
All Usual Residents Aged 16 to 74 in Employment	6,503	4,470		98,691	1,363,615
Work Mainly at or From Home	127	74		2,624	73140
Underground, Metro, Light Rail, Tram	2	1		37	1175
Train	87	15		521	27341
Bus, Minibus or Coach	222	171		3,416	62903
Taxi	36	23		449	6523
Motorcycle, Scooter or Moped	27	18		403	7694
Driving a Car or Van	2,409	2,255		44,090	918645
Passenger in a Car or Van	487	249		5,278	92727
Bicycle	60	34		832	19659
On Foot	863	173		5,621	145135
Other Method of Travel to Work	31	7		343	8673
Total Persons Travelling to Work	21,152	1,450		35,077	1,290,475
Single Occupancy Car Journeys (%)	55%	75%	65%	69%	71%
Car Shares (%)	11%	8%	10%	8%	7%
Public Transport (%)	7%	6%	7%	6%	7%
Walking (%)	20%	6%	13%	9%	11%
Bicycle (%)	1%	1%	1%	1%	2%
Taxi (%)	1%	1%	1%	1%	1%
Motorcycle (%)	1%	1%	1%	1%	1%

- 2.12 If it is demonstrated (through surveys) that the level of single occupancy car travel from the proposed development is lower than the 65% MSOA average level, the initial short term targets will be reassessed in conjunction with the local authority to try and bring levels down even further.
- 2.13 In addition to the single occupancy car travel targets, if it is demonstrated (through surveys) that the level of public transport travel usage to / from the site is less than the 7% for the MSOAs average, the initial short term targets will be to increase the public transport travel to that level. Once public transport usage from the development is at 7%, the targets will be reassessed to try to increase public transport usage levels even further.

Achieving the TIS Objectives and the Monitoring Process

- 2.14 The objectives and monitoring of the TIS will substantially be achieved through the appointment of suitable Travel Plan Co-ordinator/s (TPC/s). The TPC role for the development would most commonly be overseen by a Management Company located on the site, although in time this role could evolve to be overseen by the residents of the site themselves. Appropriate start-up funding will be provided for the TPC/s to cover the administration costs involved.

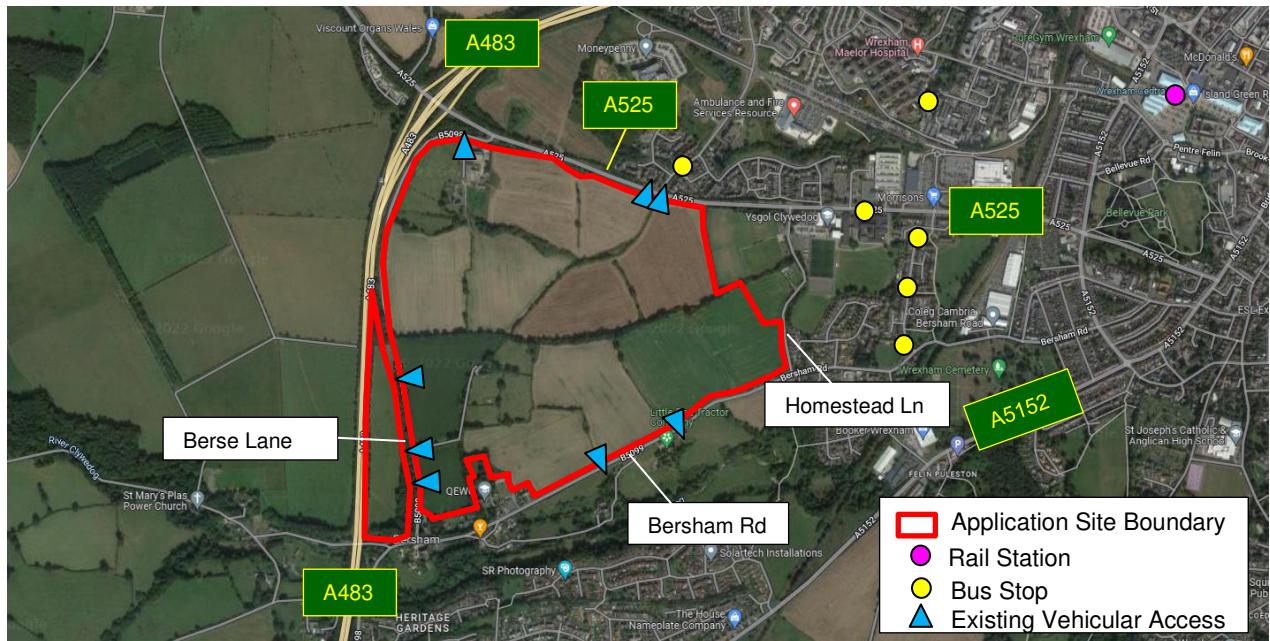
- 2.15 Once appointed, the TPC/s will act as the main contact for the TIS and will be responsible for implementing the TIS measures, involving new residents, maintaining a database and monitoring the effects of implementation. A full set of duties and responsibilities of the TPC/s is set out in the sections below.
- 2.16 The TPC/s will inform the Local Planning Authority and the appropriate local public transport operators of their contact details. Similarly, the TPC/s will obtain the contact details of the owners and complete a 'Contact' form to provide easy reference when dealing with relevant matters.
- 2.17 The TPC/s will undertake an initial resident travel survey, within three months of 30% occupation of the site, to enable a resident travel database to be set up. The TPC/s will prepare and distribute a questionnaire to each resident, to collect the following details:
- Postcode area of place of employment;
 - Normal working hours;
 - Mode of travel to work;
 - Car ownership / usage;
 - Reasons for not using public transport and other modes;
 - The anticipated take-up of a car sharing scheme, the use of public transport or other non-car modes of travel to work; and,
 - Information relating to potential areas for sustainable travel improvement, upon which the TPC/s could act and draw up measures to improve the TIS.
- 2.18 On receipt of the completed questionnaires the TPC/s will set up a travel database within 3 months of completion of the travel survey.
- 2.19 The TPC/s will agree the annual targets with the LPA within 1 month of completion of the travel survey analysis. The initial travel survey results for the proportion of residents travelling by single occupancy vehicles should be recorded along with the agreed short-term annual targets.
- 2.20 The TPC/s will ensure that any changes to the TIS or any relevant information is passed on to residents on a biannual / annual basis in the form of leaflets.
- 2.21 The TPC/s will ensure that residents are provided with information to allow ease of use of the local public transport by providing up-to-date public transport route maps and timetable information in residential 'welcome packs', and updating by leaflet drop, as necessary. Contact details for local taxi firms will also be provided by the TPC/s.

- 2.22 The TPC/s will liaise regularly with local public transport operators to ensure that information remains valid. The TPC/s will provide details of the websites and telephone advice services, such as <http://www.traveline.info/> to enable residents to obtain details on their individual journey requirements.
- 2.23 The TPC/s will also liaise with the local public transport operators and release survey data to the operators to identify travel demands and allow appropriate services to be provided. The TPC/s will check regularly to ensure that the information supplied to residents remains valid.
- 2.24 The TPC/s will encourage walking as a mode of travel to the site by implementing the following initiatives:
- Raise awareness of the health benefits of walking through promotional material;
 - Provide a map showing walking routes, indicating distances and times to the most common destinations near to the site; and,
 - Ensure that footways on site are well maintained and lit and any defects reported to the highways authority on an annual/biannual basis.
- 2.25 In conjunction with the pedestrian initiatives, the TPC/s will investigate the potential to set up a bicycle user group (BUG) to encourage residents to cycle to work.
- 2.26 The TPC/s will set up a car sharing scheme, utilising the online website www.liftshare.com, within 3 months of receiving the initial residents travel surveys. Residents will be contacted by the TPC/s to allow potential car sharers to register an interest and provide details of their journey to and from work along with their contact phone number and work location. The TPC/s will then identify suitable matches for residents that may be able to share their journeys to and from work or for shopping trips.
- 2.27 The TPC/s will make the new residents aware of the existence of the TIS by providing them with a copy of the TIS as part of a welcome pack as they move into their properties. The existence of the TIS would also be highlighted in promotional literature and advertising for the new dwellings.
- 2.28 The TPC/s will monitor travel patterns on an annual basis for the first five years of the occupation of the sites and then at suitable intervals as agreed by the Local Planning Authority. The monitoring of the plan is important for the following reasons:
- It will ensure that the Local Planning Authority can see that the aims and objectives of the TIS are being achieved;
 - It justifies the commitment of the TPC/s and of other resources;

- It maintains support for the plan by reporting successes;
 - It identifies any measures that are not working or problems with the approach of the Plan;
 - It can be shared with other organisations to refine the development of the Plan.
- 2.29 Surveys will be used to monitor travel to and from the site. The surveys can be used to monitor the number of residents walking, cycling, using cars and using public transport. The results can then be compared with the mode share targets identified earlier in this framework TIS.
- 2.30 The TPC/s will develop the monitoring programme in conjunction with the Local Planning Authority to ensure that the monitoring procedures are appropriate. The TPC/s will maintain a monitoring table of progress to key TIS targets based on the results of the monitoring travel surveys. This table will be published and distributed by leaflet to residents on the site.
- 2.31 The TPC/s will make information on mode share available to the Local Planning Authority as part of the continuous monitoring process, subject to the provisions of the Data Protection Act.
- 2.32 The TPC/s will undertake an annual review of the TIS in conjunction with the Local Planning Authority. This review will be important in assessing the effectiveness of the measures implemented and to identify areas where modification may be necessary. In particular the following will be assessed:
- The level of car/non-car usage at the site;
 - Comments received from residents.
- 2.33 When reviewing the effectiveness of the TIS, the following questions will be asked:
- Which areas offer the greatest potential for change/improvement?
 - Was the initiative implemented by the target date?
 - How well used is each scheme/initiative?
 - How much did it cost to introduce?
- 2.34 The TPC/s will compare the mode share statistics obtained from the annual monitoring to the targets set for the development. The TPC/s will set revised realistic targets for modal shifts to non-car travel modes and investigate the effectiveness of the TIS initiatives being promoted in conjunction with the Local Planning Authority.
- 2.35 In light of the data collected from the monitoring process, the TPC/s will adapt the TIS to enable the revised agreed targets to be achieved and submit a review report to be agreed with the Local Planning Authority.

2.36 It is considered that the delivery of the TIS / TP can be secured by planning condition, as appropriate.

Figure 3.2 – Site Location Plan – Local View



3.4 The application site is bounded by the A525 to the north, undeveloped land and Homestead Lane to the east, Bersham Road, Bersham Club, Bryn Tirion Hall School and residential dwellings to the south-east and the A483 to the west. Berse Lane separates the two application site parcels.

3.5 There is currently no vehicular access to the western parcel of the site. However the existing vehicular accesses to the eastern parcel of the site are shown on **Figure 3.2** above and are summarised below:-

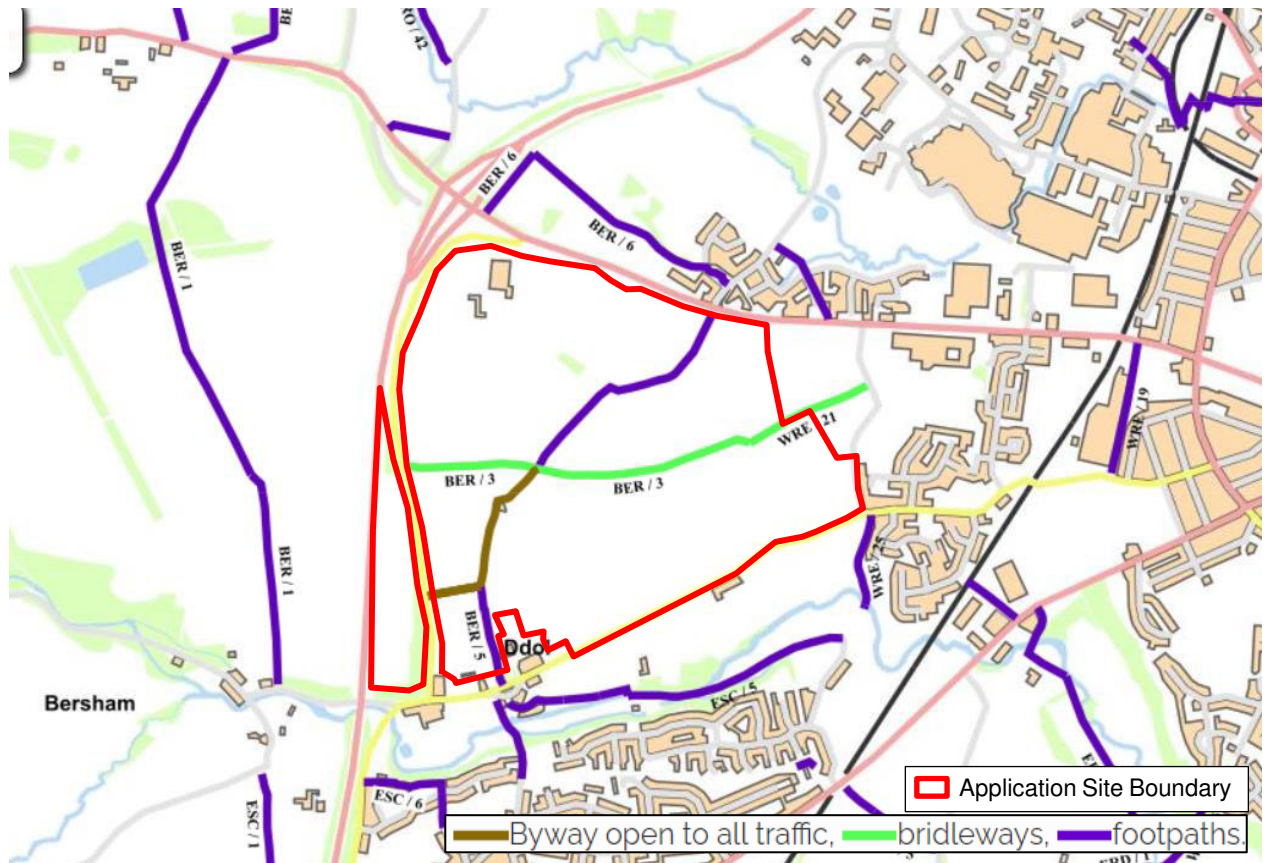
- Two gated farm accesses along the A525;
- A single priority access to the Lower Berse Farm units along Berse Lane;
- Two farm accesses (one ungated and one gated) along Berse Lane;
- A single priority access along Berse Road; and
- Two gated farm accesses along Bersham Road

3.6 There are a number of Public Rights of Way (PROW) which surround the application site, with the routes shown on **Figure 3.3** below. The PROW which route within the site are summarised below:

- Footpath Bersham 4 runs north-east/south-west through the site and provides a link between the A525 to the north-east, Berse Lane to the south-west and Bersham Road to the south-west via footpath Bersham 5; and

- Footpath Bersham 3 runs east/west through the centre of the site and provides a link between Berse Lane to the west and Homestead Lane to the east via footpath Wrexham 21.

Figure 3.3 – Public Right of Way Plan



Source: WCBC

3.7 The study area includes the following junctions:

1. A525 Ruthin Road / Croesnewydd Road Signal Junction;
2. A525 Ruthin Road / Berse Lane Priority Junction;
3. Bersham Road / Berse Lane Priority Junction;
4. B5098 / Vicarage Hill Priority Junction;
5. Bersham Road / Victoria Road / Hampden Road Priority Crossroads;
6. A5152 Ruabon Road / A525 Ruthin Road Priority Junction;

7. A525 Ruthin Road / A5152 Signalised Crossroads;
8. Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;
9. Berse Road / Rhy Broughton Lane Priority Roundabout;
10. A525 Ruthin Road / Heritage Way Priority Junction; and
11. Junction 4 of the A483.

Local Highway Network

A525 Ruthin Road

- 3.8 The A525 Ruthin Road runs along the northern boundary of the site and is a principal road, locally connecting Wrexham town centre in the east with the A483 junction 4 to the west. Beyond the A483, the A525 continues to connect to Ruthin and beyond to Denbigh.
- 3.9 Within the vicinity of the site, the A525 has a carriageway width of approximately 7.5m and benefits from continuous footway facilities along the northern section of the carriageway via a mixture of footway/footpaths. A footway is provided along the southern section of the A525 in the vicinity of and to the east of Homestead Lane. Shared footway/cycleway facilities are provided in the vicinity of Croesnewydd Road.
- 3.10 Within the vicinity of the site, the A525 is street lit and is subject to a mandatory 50mph speed limit which changes to 30mph approximately 115m to the west of the junction with Croesnewydd Road.

Homestead Lane

- 3.11 Homestead Lane is located along the eastern boundary of the site and is a through route from Ruthin Road in the north to Bersham Road in the south. At the northern it provides access to Ysgol Clywedog secondary school.
- 3.12 In the vicinity of the school access the carriageway has a width of between approximately 5.5m – 7.3m. To the south of the school access, Homestead Lane narrows significantly before widening to approximately 5.0m on the approach to the junction with Bersham Road. There are no footways on this section of the road.

- 3.13 Street lighting is provided at the northern section of Homestead Lane in the vicinity of the school access.
- 3.14 Homestead Lane is subject to a mandatory 30mph for the majority of its length except in the vicinity of the school access where the speed of the road reduces to a mandatory 20mph limit.

Bersham Road

- 3.15 Bersham Road is located along the southern boundary of the site and is a link in the B5099 which connects Wrexham town centre via the A5152 Victoria Road in the east and Rhostyllen in the west. Bersham Road passes through residential areas and Cambria College towards the town centre.
- 3.16 Within the vicinity of the site, Bersham Road has a carriageway width which varies between 6.0m-6.4m. Continuous footways are provided to the west of the Little Red Tractor Company unit and to the east of Homestead Lane.
- 3.17 Traffic calming features including chicanes and speed bumps are provided in the vicinity of the junction with Berse Lane and Y Ddol.
- 3.18 In the vicinity of the site, Bersham Road benefits from street lighting and is subject to a mandatory 30mph speed limit, despite its rural character.

Berse Lane

- 3.19 Berse Lane is a 'B' classified road (B5098) that connects Ruthin Road in the north with Bersham Road in the south. As mentioned previously, Berse Lane separates the two application site parcels.
- 3.20 Berse Lane is rural in character with no footways and no street lighting provided and is subject to a mandatory 50mph speed limit over the majority of its length.

A483

- 3.21 The A483 is a trunk road of national importance and often referred to as the Wrexham By-pass. It is located along the western boundary of the site and connects Chester in the north with the A5 at Chirk to the south, which continues to link up with the national motorway network north of Birmingham.
- 3.22 Within the vicinity of the site, the A483 is a dual carriageway which is subject to the national speed limit.

A525 Ruthin Road / Croesnewydd Road Signalised T-Junction

- 3.23 The A525 Ruthin Road / Croesnewydd Road is located along the northern boundary of the site and takes the form of a signalised T-junction, as shown on **Figure 3.4** below. Pedestrian crossing facilities including a pedestrian refuge, dropped kerbs and tactile paving are provided along the northern arm.

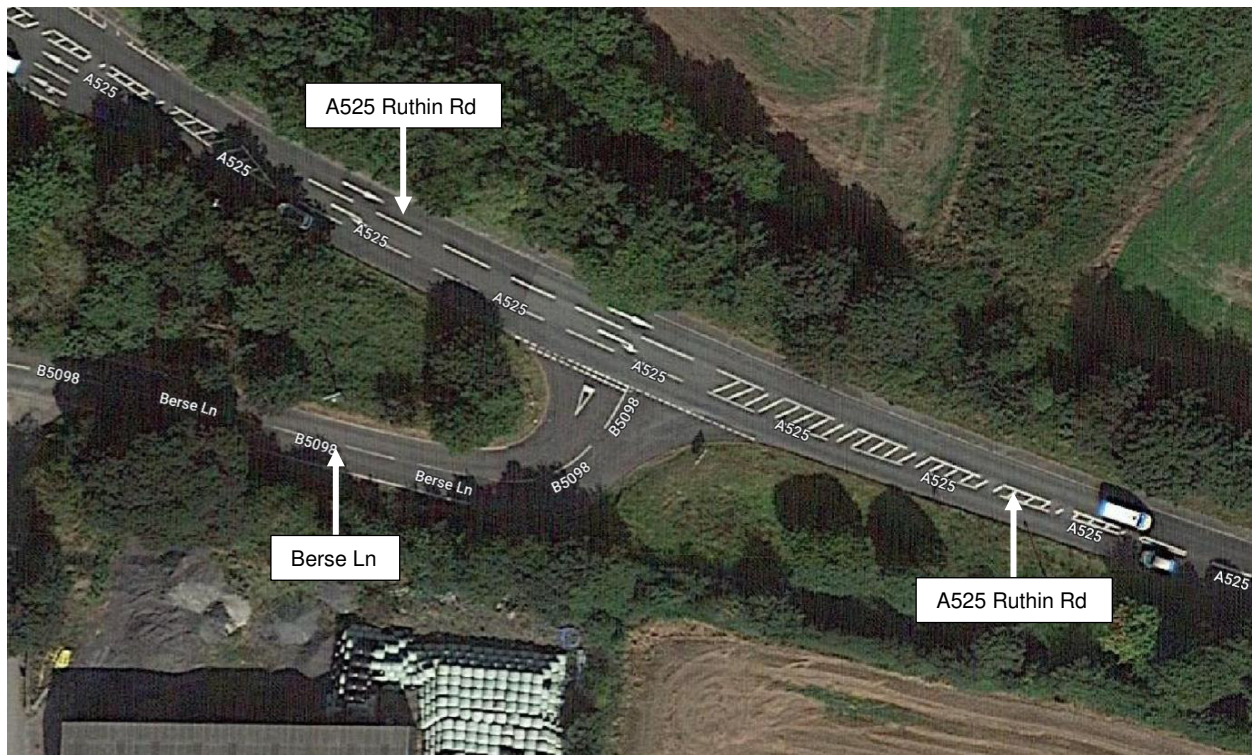
Figure 3.4 – A525 Ruthin Road / Croesnewydd Road Signalised T-Junction



A525 Ruthin Road / Berse Lane Priority Junction

- 3.24 The A525 Ruthin Road / Berse Lane junction is located along the northern boundary of the site and takes the form of a priority-controlled T-junction, with the A525 forming the major arms and Berse Lane the minor arm, as shown on **Figure 3.5** below.

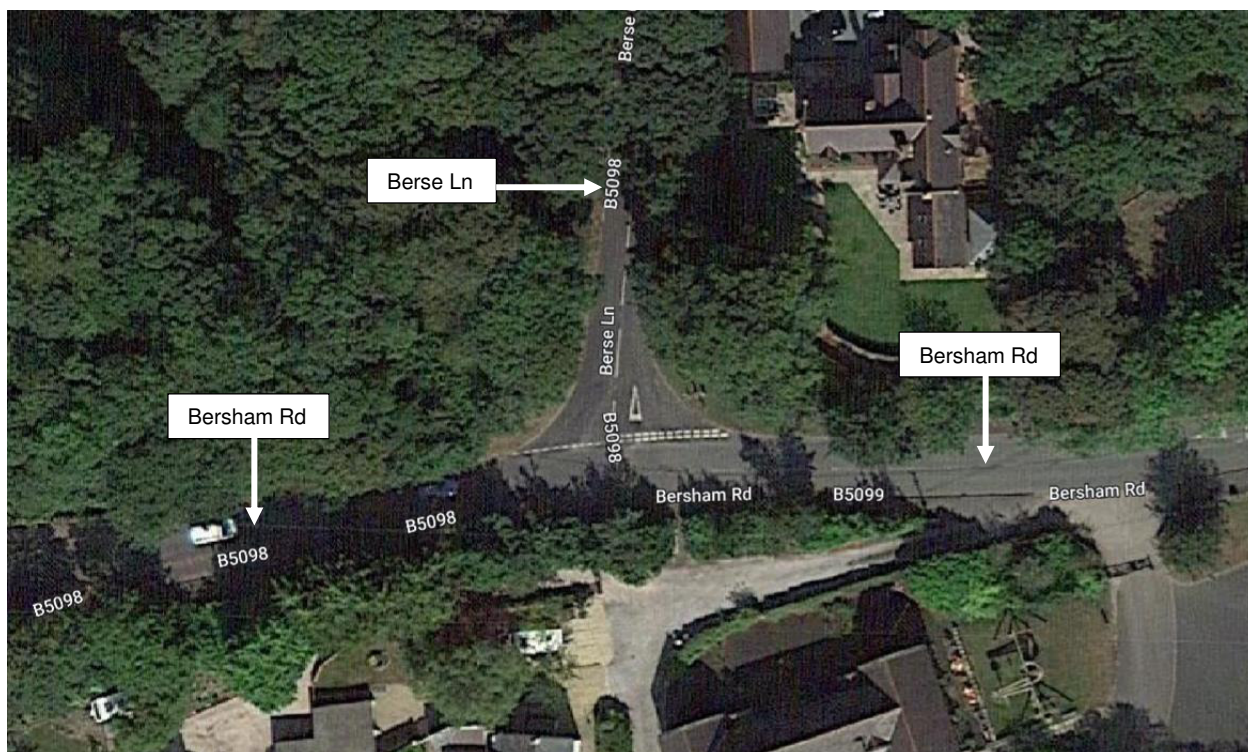
Figure 3.5 – A525 Ruthin Road / Berse Lane Priority Junction



[Bersham Road / Berse Lane Priority Junction](#)

- 3.25 The Bersham Road / Berse Lane is located to the south-west of the site and takes the form of a priority-controlled T-junction, with the A525 forming the major arms and Berse Lane the minor arm, as shown on **Figure 3.6** below.

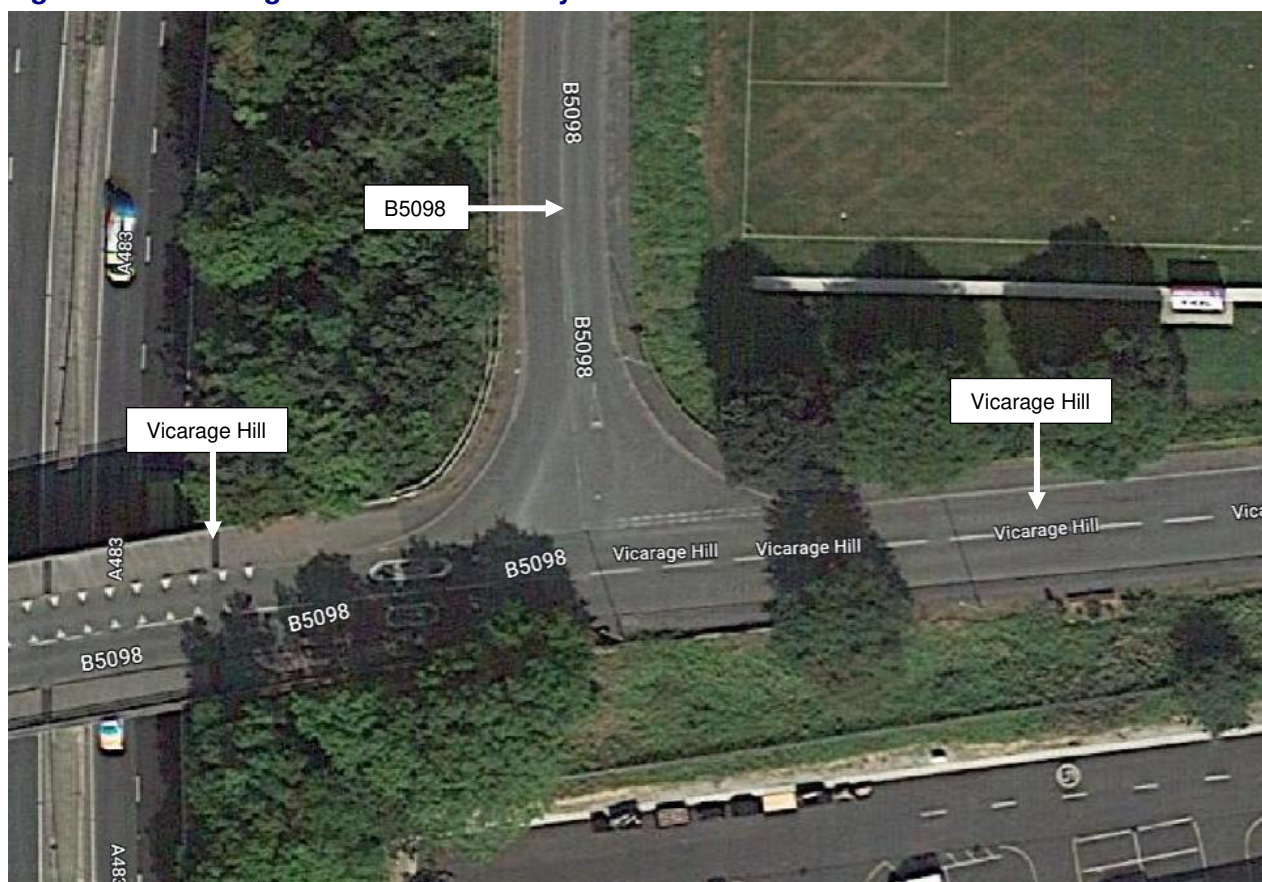
Figure 3.6 – Bersham Road / Berse Lane Priority Junction



[Vicarage Hill / B5098 Priority Junction](#)

- 3.26 The Vicarage Hill / B5098 junction is located to the south-west of the site in Rhostyllen and takes the form of a priority-controlled T-junction, with the Vicarage Hill forming the major arms and B5098 the minor arm, as shown on **Figure 3.7** below.

Figure 3.7 – Vicarage Hill / B5098 Priority Junction



[A5152 Victoria Road / Bersham Road / Hampden Road Crossroads](#)

- 3.27 The A5152 Victoria Road / Bersham Road / Hampden Road junction is located to the east of the site and takes the form of a priority-controlled crossroads, with the A5152 forming the major arms and Bersham Road / Hampden Road the minor arms, as shown on **Figure 3.8** below.

Figure 3.8 – A5152 Victoria Road / Bersham Road / Hampden Road Priority Crossroads



[A5152 Ruabon Road / A525 Ruthin Road Priority Roundabout](#)

- 3.28 The A5152 Ruabon Road / A525 Ruthin Road priority roundabout is located to the south-east of the site and takes the form of a priority-controlled 4-arm roundabout, as shown on **Figure 3.9** below. Pedestrian crossing facilities including dropped kerbs and tactile paving and provided along all arms and pedestrian refuges are provided along the northern, eastern and western arms of the roundabout.

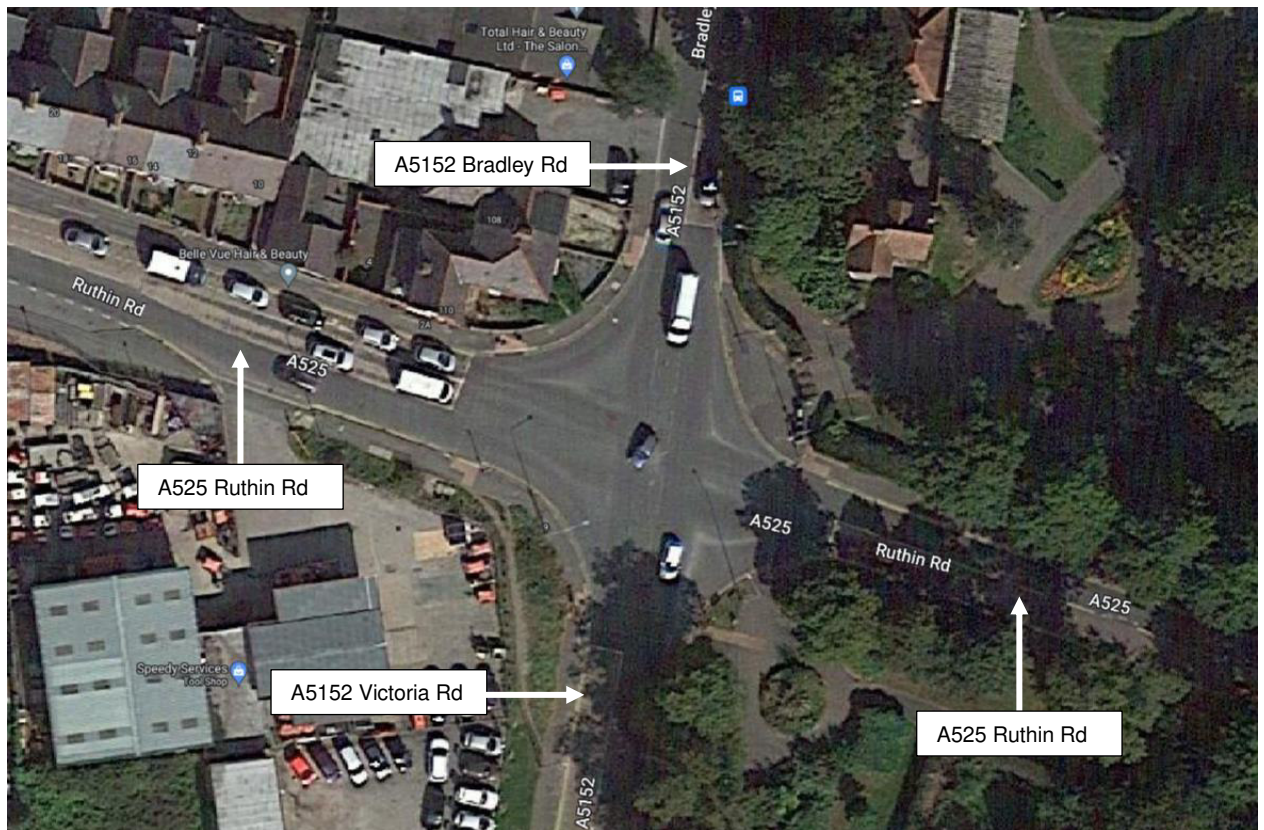
Figure 3.9 – A5152 Ruabon Road / A525 Ruthin Road Priority Roundabout



A525 Ruthin Road / A5152 Signalised Crossroads

- 3.29 The A525 Ruthin Road / A5152 junction is located to the east of the site and takes the form of a signalised crossroads, as shown on **Figure 3.10** below. Signalised pedestrian crossing facilities including dropped kerbs and tactile paving are provided along all arms of the crossroads.

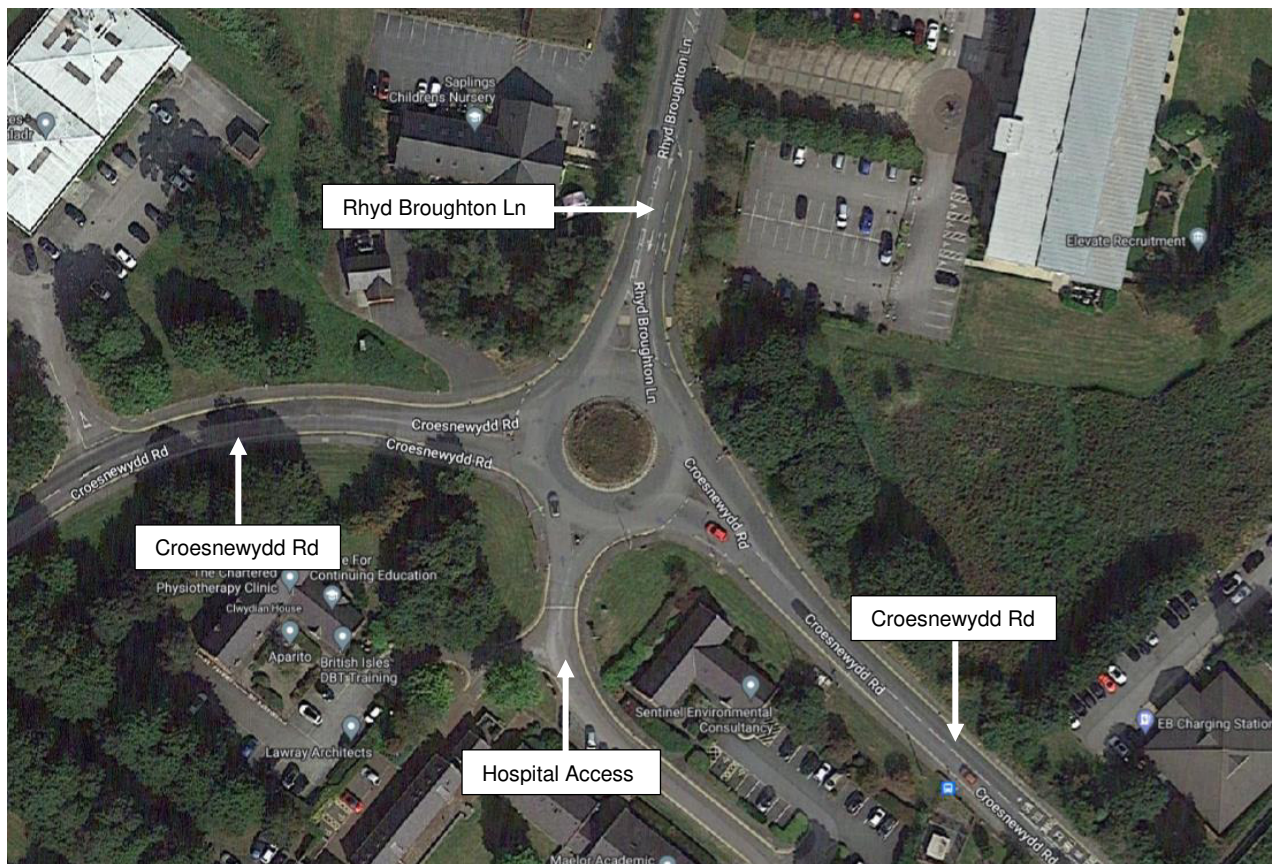
Figure 3.10 - A525 Ruthin Road / A5152 Signalised Crossroads



Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout

- 3.30 The Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital junction is located to the north-east of the site takes the form of a priority-controlled 4-arm roundabout, as shown on **Figure 3.11** below. Pedestrian crossing facilities are provided, including dropped kerbs along the southern eastern/southern arms and dropped kerbs/tactile paving along the northern arm.

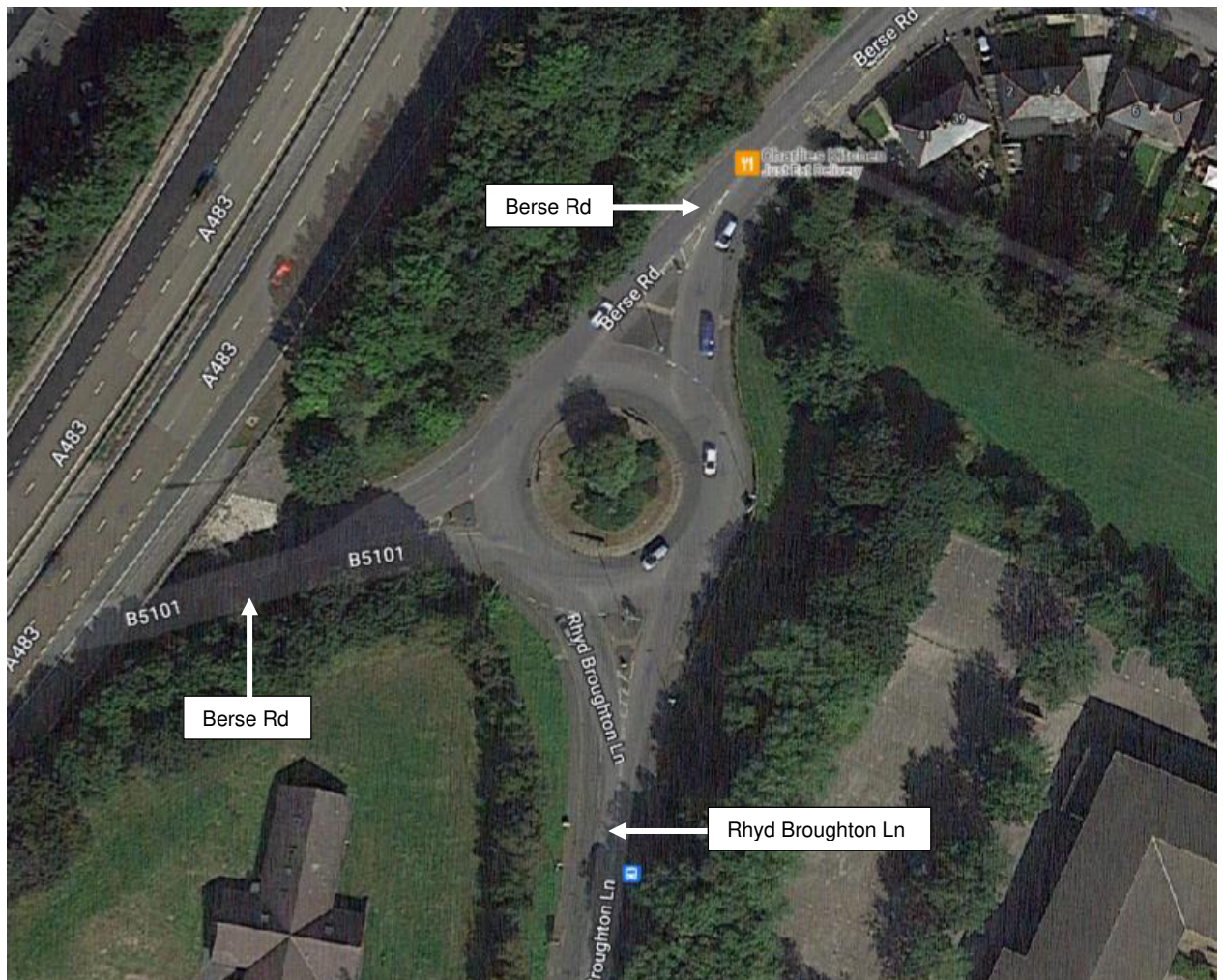
Figure 3.11 - Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout



Berse Road / Rhy Broughton Lane Priority Roundabout

- 3.31 The Berse Road / Rhy Broughton Lane junction is located to the north-east of the site takes the form of a priority-controlled 3-arm roundabout, as shown on **Figure 3.12** below. Pedestrian crossing facilities including splitter islands, dropped kerbs and tactile paving are provided along the northern and southern arms.

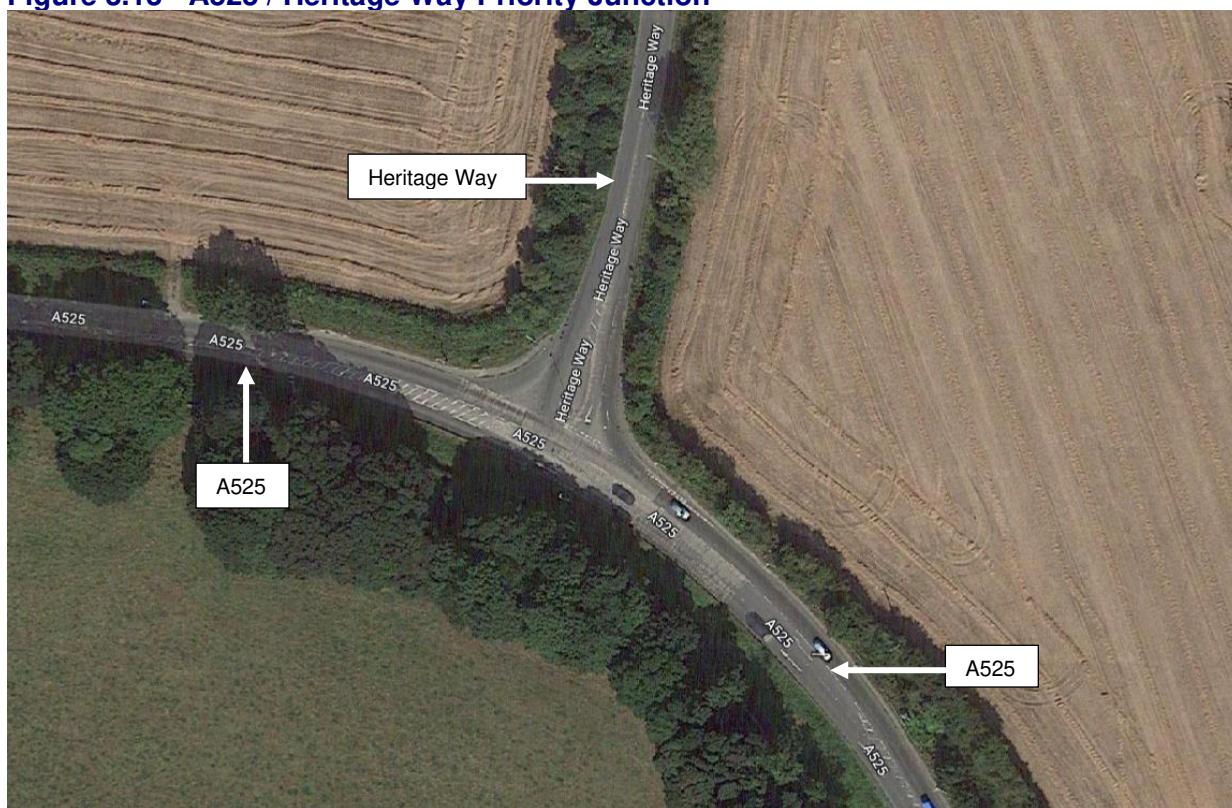
Figure 3.12 - Berse Road / Rhy Broughton Lane Priority Roundabout



A525 / Heritage Way Priority Junction

- 3.32 The A525 / Heritage Way junction is located to the west of the site takes the form of a priority-controlled T-junction with the A525 forming the minor arms and Heritage Way the minor arm, as shown on **Figure 3.13** below. Pedestrian crossing facilities including a pedestrian island and dropped kerbs are provided along the minor arm of the junction.

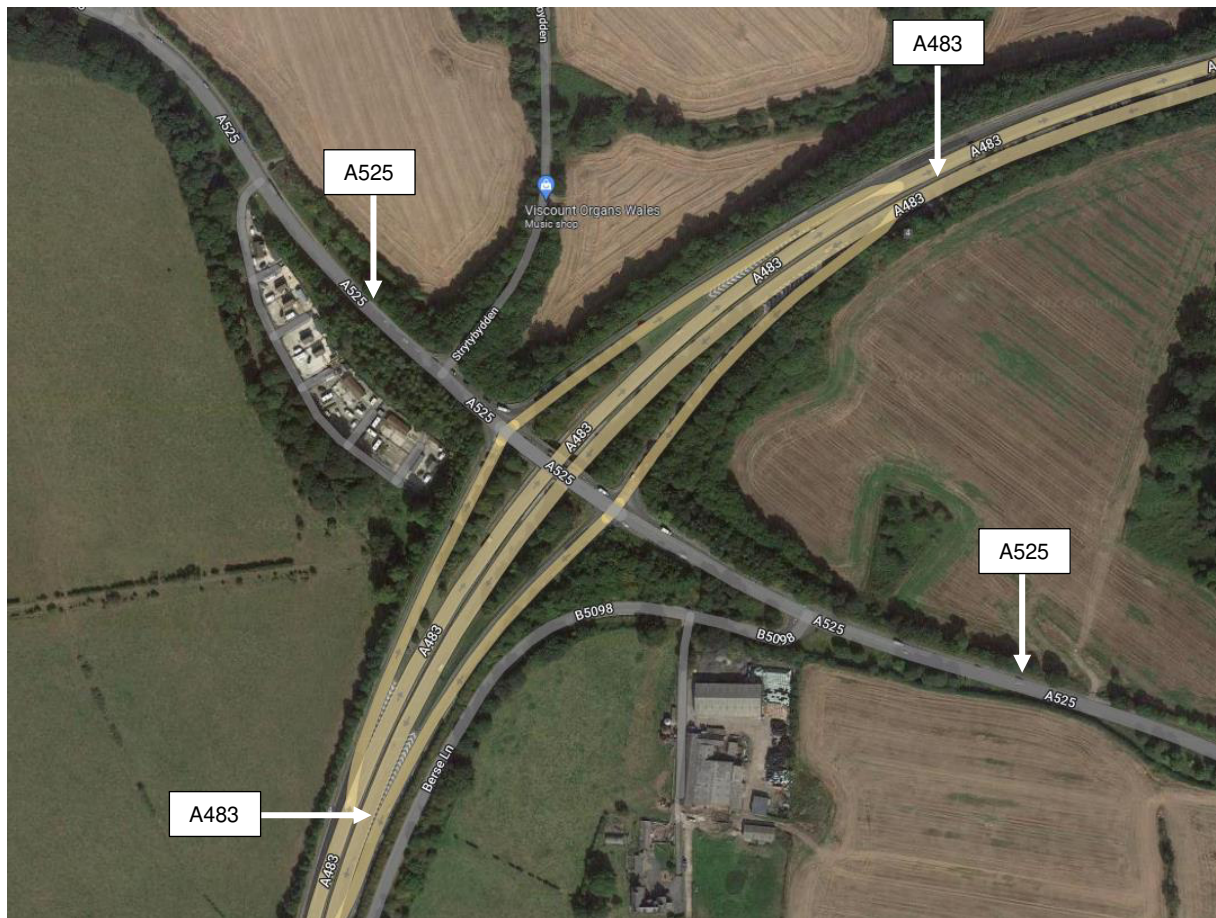
Figure 3.13 - A525 / Heritage Way Priority Junction



Junction 4 of the A483

- 3.33 Junction 4 of the A483 is located to the north-west of the site takes the form of a dual carriageway grade separated junction with slip roads provided to and from the A483.

Figure 3.14 – Junction 4 of the A483



3.34 The Welsh Government have been reviewing potential improvements to junction 4 of the A483 over a number of years. However, in June 2021, the Deputy Minister for Climate Change announced a review of new road schemes (known as the 'Roads Review') which was funded by the Welsh Government. The review was commissioned due to concerns that some road investment schemes that were in development were no longer consistent with Welsh Government's policies, particularly the declaration of a climate and nature emergency. The purpose of the review was to:

- Ensure road investment is fully aligned to the delivery of the Wales Transport Strategy ambitions and priorities, Welsh Government Programme for Government commitments and Net Zero Wales;
- Develop a set of criteria which identify appropriate circumstances for expenditure of Welsh Government funds on roads;
- Use these criteria to recommend which of current road projects should be supported, modified, or have support withdrawn;

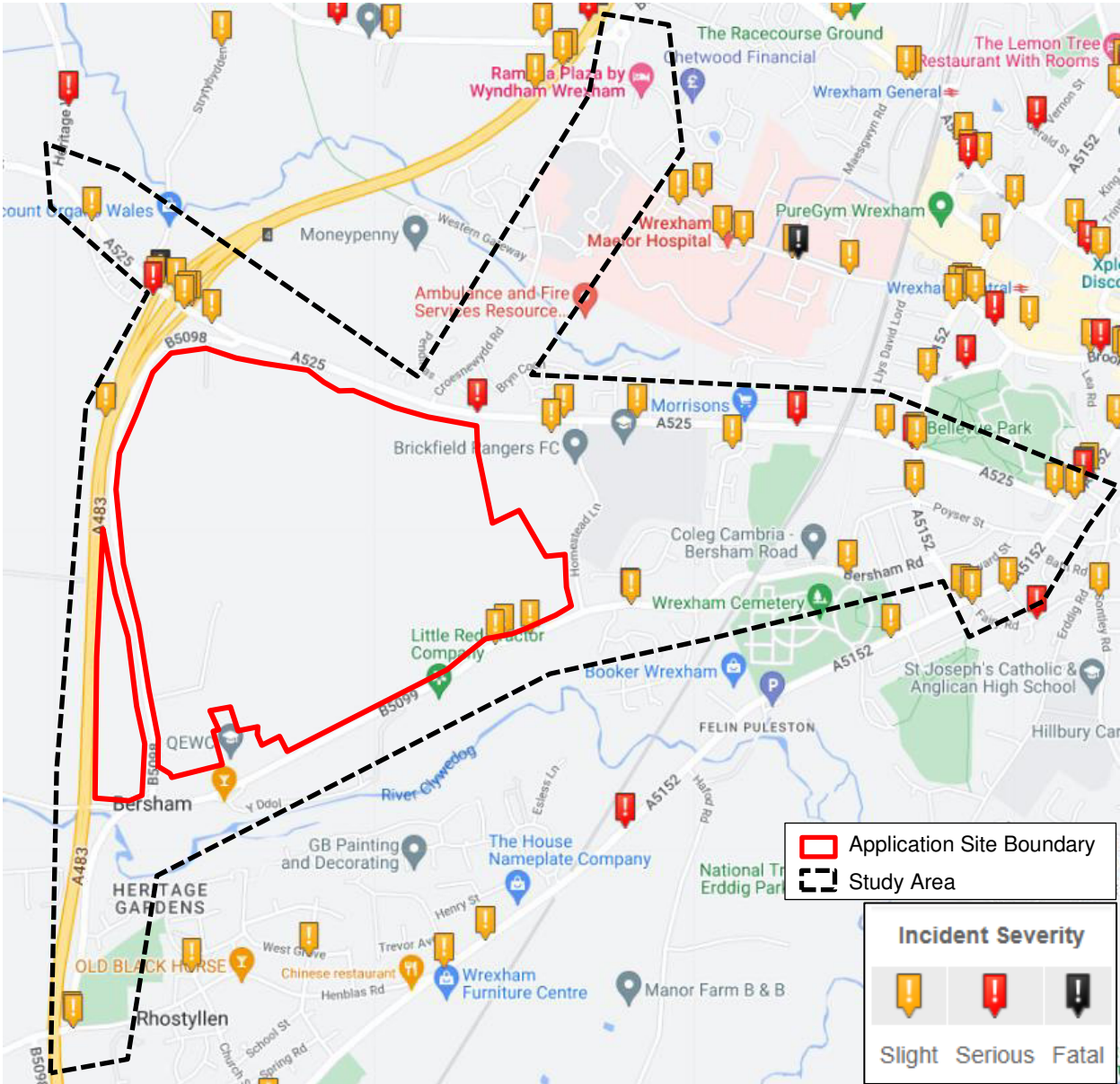
- Provide guidance on reallocating road space on parts of the road network which might in future benefit from enhancement
- Consider how any savings might be allocated, in order to ensure problems on the road network are addressed, and in particular to make recommendations on how to tackle the backlog of road maintenance
- Responding to the recommendations is a complex piece of work, which has been further complicated by the significant reduction in our spending power, caused by record high levels of inflation and the UK Government's mismanagement of the economy.
- There was no additional capital funding in the Autumn Statement for either 2023-24 or 2024-25 – this means the Welsh Government's overall capital budget will be 8.1% lower in real terms in 2024-25.

3.35 Further to the Roads Review taking place, the Welsh Government announced in February 2023 that only 15 of the major Highway infrastructure projects would be progressed whilst the rest, including the improvement scheme at Junction 4 of the A483, would be put on hold for the foreseeable future. The reasons for the decision focus on the environmental impacts of the scheme, with the aim of *“ensuring that future roads investment does not simply increase the demand for private car travel. Instead, we need to deliver schemes that contribute meaningfully to modal shift. ensuring that future roads investment does not simply increase the demand for private car travel. Instead, we need to deliver schemes that contribute meaningfully to modal shift”*.

Road Safety

3.36 In order to identify critical locations on the network with a poor accident record, the personal injury accident data has been obtained for the most recently available 5-year period (approx.), and is summarised in **Figure 3.15**.

Figure 3.15 – Accident Summary



Source: www.crashmap.co.uk

3.37 The accident analysis is summarised in **Tables 3.1** and **3.2** below:-

Table 3.1 – Accident Summary - Junctions

Junction		Severity of Collision			Total
		Slight	Serious	Fatal	
1	A525 Ruthin Road / Croesnewydd Road Signal Junction	0	0	0	0
2	A525 Ruthin Road / Berse Lane Priority Junction	0	0	0	0
3	Bersham Road / Berse Lane Priority Junction	0	0	0	0
4	B5098 / Vicarage Hill Priority Junction	2	0	0	2
5	Bersham Road / Victoria Road / Hampden Road Priority Crossroads	0	0	0	0
6	A5152 Ruabon Road / A525 Ruthin Road Priority Junction	2	0	0	2
7	A525 Ruthin Road / A5152 Signalised Crossroads	2	1	0	3
8	Croesnewydd Road / Rhyd Broughton Lane / Hospital Access Rndbt	0	0	0	0
9	Berse Road / Rhy Broughton Lane Priority Roundabout	0	0	0	0
10	A525 Ruthin Road / Heritage Way Priority Junction	0	0	0	0
11	Junction 4 of the A483	4	1	1	6

Table 3.2 – Accident Summary - Links

Link		Severity of Collision			Total
		Slight	Serious	Fatal	
1	A525 Ruthin Road (between Heritage Way and the A5152)	6	2	0	8
2	Berse Lane	0	0	0	0
3	Bersham Road / B5098 (between Vicarage Hill and Poyser St)	5	1	0	6
4	Croesnewydd Road (between A525 and Rhyd Broughton Lane)	0	0	0	0
5	Rhyd Broughton Lane	0	0	0	0

- 3.38 No accidents have occurred at Junctions 1, 2, 3, 5, 8, 9 and 10. As a result, all of these junctions are considered to be operating in a safe manner.
- 3.39 Two accidents occurred at Junction 4 (B5098 / Vicarage Hill Priority Junction) which were both of slight severity. Two accidents occurred at Junction 6 (A5152 Ruabon Road / A525 Ruthin Road junction) which were both of slight severity. Three accidents occurred at Junction 7 (A525 Ruthin Road / A5152 Signalised Crossroads) including two of slight severity and one of serious severity. Given the relatively low number of accidents which have occurred and given the majority of accidents were of slight severity, the junctions are considered to be operating in a relatively safe manner and we are not aware of any concerns from the Council to promote safety schemes at any of these locations.

- 3.40 Six accidents occurred at Junction 4 of the A483 including 4 of slight severity, 1 of serious severity and 1 fatal accident. The accident data is provided in **Appendix A** and details that the fatal accident occurred when a car turning right crashed head on with a motorcyclist proceeding normally along the carriageway. Whilst any accident is regrettable, particularly a fatal, there is nothing to suggest that the junction is generally operating in an unsafe manner.
- 3.41 No accidents have occurred at Links 1, 4 and 5. As a result, all of these links are considered to be operating in a safe manner.
- 3.42 Eight accidents occurred at Link 1 (A525 Ruthin Road) including six of slight severity and two of serious severity. Six accidents occurred at Link 3 (Bersham Road / B5098) including five of slight severity and one of serious severity. Given the majority of accidents were of slight severity, the links are considered to be operating in a generally safe manner.
- 3.43 Based on the above analysis, the existing accident record does not present a concern in the context of the proposed development.

Traffic Survey Data

- 3.44 In order to establish current existing traffic flow demand, new traffic flow surveys have been undertaken on Thursday 10th November 2022 via Rostyllen due to the delays on the A525 out of Wrexham. The recent survey flows will have captured survey data
- 3.45 at the following junctions:-
- A525 Ruthin Road / Croesnewydd Road Signal Junction;
 - A525 Ruthin Road / Berse Lane Priority Junction;
 - Bersham Road / Berse Lane Priority Junction;
 - B5098 / Vicarage Hill Priority Junction;
 - A5152 Ruabon Road / A525 Ruthin Road Priority Junction;
 - A525 Ruthin Road / A5152 Signalised Crossroads;
 - Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;
 - Berse Road / Rhyd Broughton Lane Priority Roundabout;

- A525 Ruthin Road / Heritage Way Priority Junction; and
- Junction 4 of the A483.

3.46 The traffic surveys are presented in **Appendix B** and shown diagrammatically on **Traffic Flow Figure 1**. The peak hours for the local highway network have been calculated as being between 08:00 and 09:00 and 16:30 to 17:30.

4.0 PROPOSED DEVELOPMENT

General

- 4.1 Given the application is in outline, the proposals are still to be developed in detail, however the application proposals are for up to 1,520 residential dwellings.
- 4.2 The indicative site layout plan is presented in **Appendix C**. Whilst the layout refers to 1,430 dwellings, in order to provide a robust assessment in terms of highway impact and allow for flexibility/alternative options at the site, the assessments undertaken in this report have been based on 1,520 dwellings.
- 4.3 There is potential to provide a commercial centre on the north-western section of the site with plans to be developed in detail at a later stage.
- 4.4 The proposals will include for bus penetration with services to be agreed with the Highways Authority and service provider in due course.

Proposed Site Access Arrangements

- 4.5 The vehicular access arrangement for the site is summarised below:
- The A525 Ruthin Road / A5152 signalised T-junction will be upgraded to provide a 4-arm signalised crossroads with the proposed site access forming the southern arm with a two lane exit. The proposed junction is shown on Drawing SCP/210187/F02 Rev A in **Appendix D** and the proposed southern arm will include a 6.75m carriageway in order to accommodate a potential bus route. A separate left turn lane on the approach to the junction. A 3m wide shared footway/cycleway will be provided either side of the carriageway. Signalised pedestrian crossing facilities including pedestrian refuges will be provided along all arms of the junction in order to further assist pedestrians.
 - A priority controlled 4-arm roundabout will be provided along the A525 Ruthin Road as part of the Western Gateway scheme, approximately 60m to the east of the existing junction with Berse Lane which will be closed to vehicular traffic, as on Drawing SCP/210187/D01 REV A provided in **Appendix E**. The proposed access will form the southern arm of the roundabout and will include a 7.3m wide carriageway. Pedestrian crossing facilities includes dropped kerbs and tactile paving will be provided along all arms of the roundabout. Pending the provision of the Western Gateway roundabout, the proposals will be assessed with an interim T-junction solution that can be incorporated

into the roundabout at a later stage. This interim solution is shown on Drawing SCP/210187/F04 also provided in [Appendix E](#).

- A priority T-junction will be provided along Bersham Road, approximately 450m to the west of the junction with Homestead Lane, as on Drawing SCP/210187/F03 Rev A provided in [Appendix F](#). The proposed access will include a 6.75m wide carriageway and shared footway/cycleway facilities which will tie onto Bersham Road.
- A priority T-junction will be provided along Bersham Road, approximately 190m to the west of the junction with Homestead Lane, as on Drawing SCP/210187/F06 Rev A provided in [Appendix G](#). The proposed access will include a 6.75m wide carriageway and shared footway/cycleway facilities which will tie onto Bersham Road.
- Shared footways/cycleways will be provided along the site's frontage to the A525 Ruthin Road and to Bersham Road. Footway widening will be provided at the Bersham Road / Homestead Lane junction and a pedestrian crossing including dropped kerbs and tactile paving will be provide at the western arm of the junction.
- As shown on drawing SCP/210187/F10 provided in [Appendix H](#), the 30mph traffic speed limit along the A525 Ruthin Road will be relocated approximately 445m to the west of the existing location. As a result, the entirety of Berse Lane will also be reduced from 50mph to 30mph. All proposed accesses will therefore be along a road with a mandatory speed limit of 30mph. Based on the guidance presented in Manual for Streets (MfS), visibility requirements of 2.4m x 43m are required from each access and [Appendices D - H](#) demonstrate this is achievable.

- 4.6 As noted in the Manual for Streets (MfS) 2 document, development should aim to create networks of streets that provide permeability and connectivity to main destinations and a choice of routes. The provision of access points onto both the A525 and Bersham Road therefore increases the permeability of the site for all transport users.

Internal Site Layout and Servicing

- 4.7 As mentioned previously, the application is in outline and therefore the internal layout is to be determined at a later stage, however the internal road network will be designed to ensure the movements of service and refuse vehicles will be accommodated without allowing their requirements to dominate the layout of the site.

Parking

- 4.8 Similarly, given the application is in outline the parking arrangement is still being developed, however the proposed parking will be provided in accordance with WCBC's parking standards.

5.0 ACCESSIBILITY

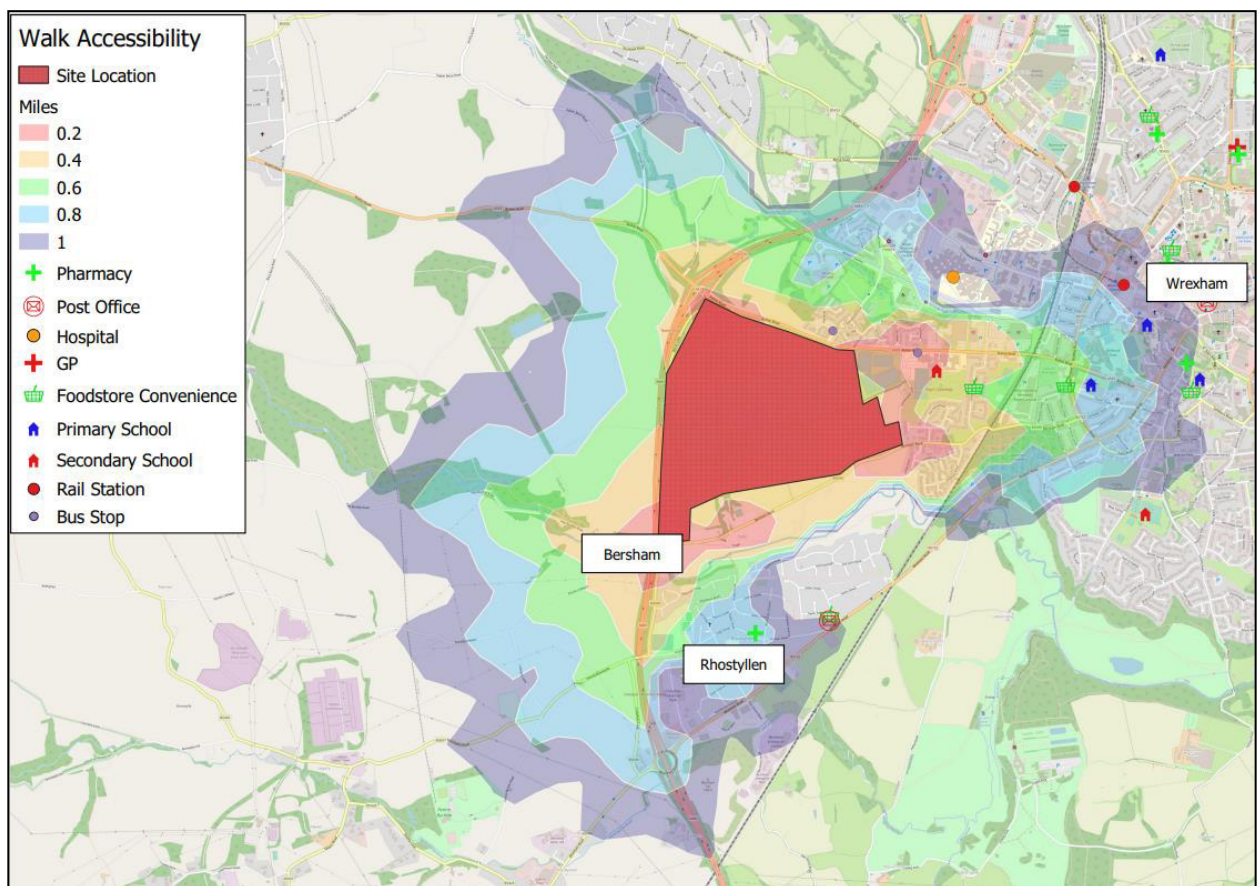
General

- 5.1 This Chapter presents a review of the accessibility of the site by walking, cycling and public transport modes.

Pedestrian Accessibility

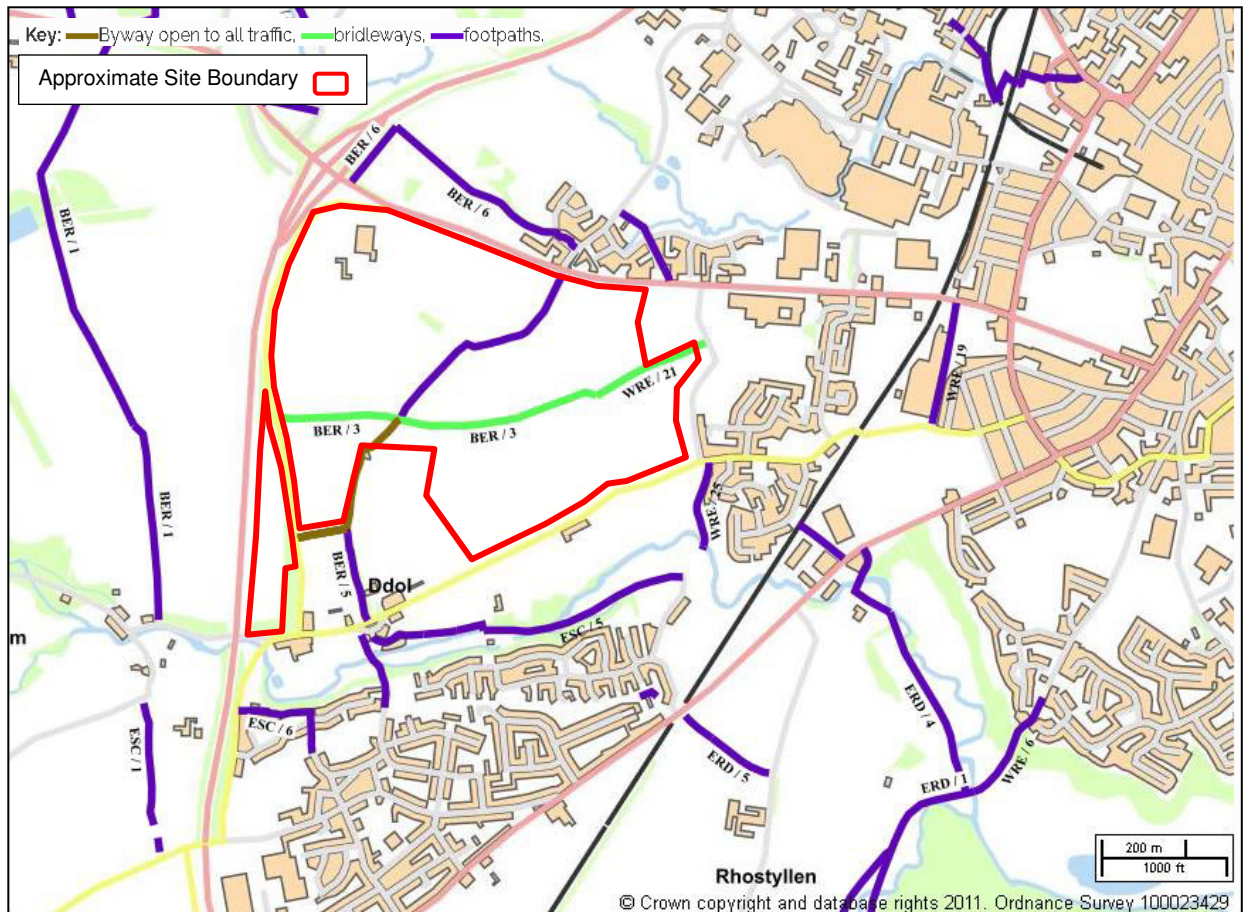
- 5.2 Industry standard GIS TRACC software has been used to assess the accessibility of the development by foot for a 1 mile walk distance from the site, as shown on **Figure 4.1** below. The plan shows the reachable areas within 400m coloured bands from the site.

Figure 4.1 – Walking Accessibility 2km Isochrone



- 5.3 The site is within acceptable walking distance of Wrexham town centre, and the amenities on offer. The closest bus stops are located on Croesnewydd Road, approximately 100m north of the site.
- 5.4 The site will be developed with the highest importance given to the movement of pedestrians through the site and connecting to the existing pedestrian infrastructure outside of the site.

- 5.5 Two Public Right of Way (4 & 5) are located within the site. Public Footpath 4 creates a pedestrian route from the A525 in the north to the B5098 Berse Lane to the south-west. Public Footpath 5 creates a pedestrian route between Public Footpath 4 in the north with Bersham Road to the south. In addition, a bridleway (3) crosses the site and provides a connecting from the B5098 Berse Lane to the west, with Homestead Lane to the east.

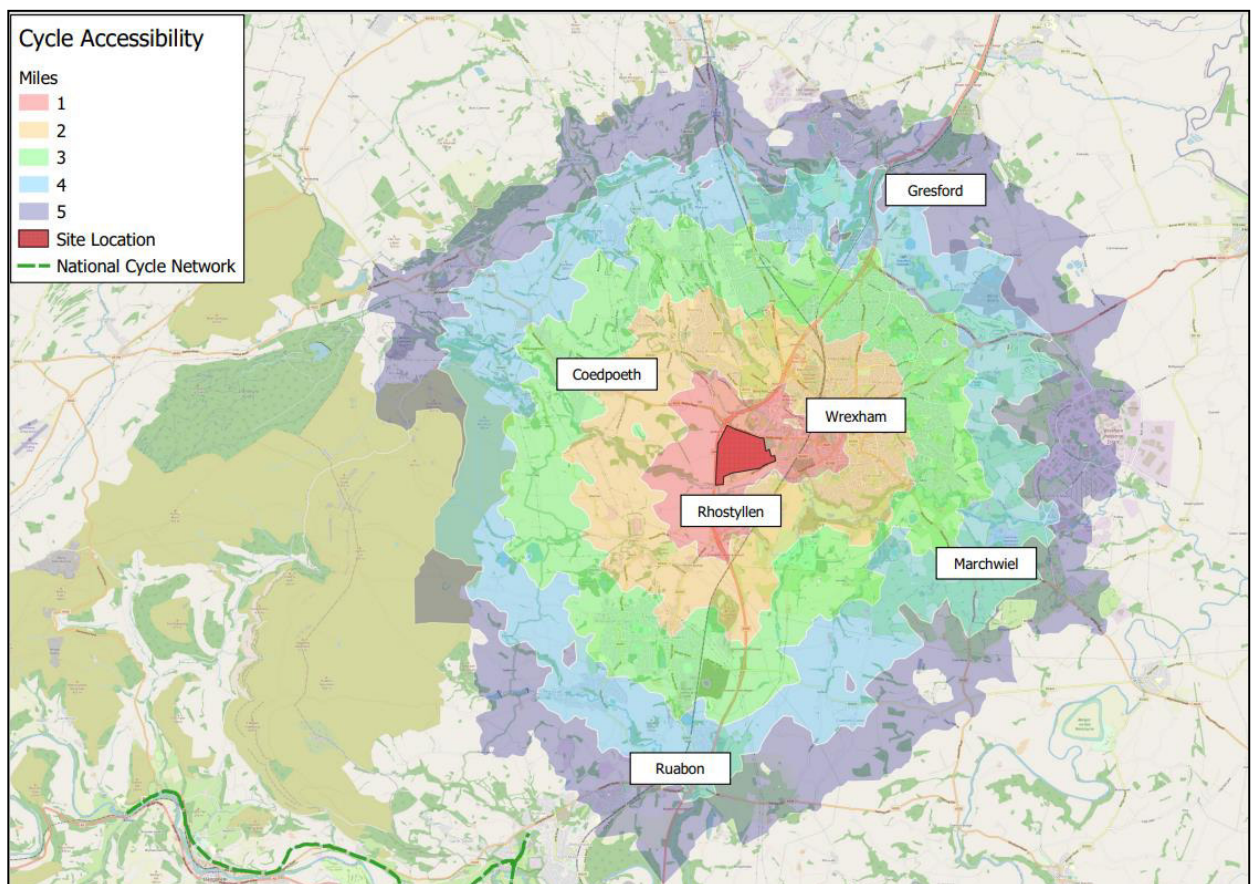


- 5.6 The topography of the local area is generally flat and conducive to pedestrian trips, and the area benefits from natural surveillance from the businesses and residential properties that abut all the main walking routes.
- 5.7 Overall, the site benefits from high levels of accessibility by foot, with the area of Wrexham within walking distance from the site, providing opportunities for linked shopping, leisure, and recreation trips as well as transport connections.

Cycle Accessibility

- 5.8 Transport policy identifies that cycling represents a realistic and healthy option to use of the private car for making journeys up to 5 miles as a whole journey or as part of a longer journey by public transport.
- 5.9 Again, the internal layout of the site and its immediate surroundings will be developed to give a high priority to safe and convenient cycle access.
- 5.10 GIS TRACC software has again been used to assess the accessibility of the site by bicycle, for a 5 mile cycle distance and is shown on Figure 4.2 below.

Figure 4.2 - Cycle Accessibility 5 Miles Isochrone



- 5.11 In addition to Wrexham town centre and the employment areas of the town, the plan demonstrates that the nearby areas of Rhostyllen, Marchwiel, and Ruabon, amongst others, are all located within the 5 mile catchment area from the development site. The topography of the area is generally conducive to cycling, so the site is therefore well located to encourage prospective residents to travel via bicycle.

- 5.12 As the application site is within an acceptable cycle distance of a range of areas and associated facilities, cycling is considered to be a viable alternative to private car use for prospective residents of the site, particularly given that secure cycle parking is proposed.

Public Transport

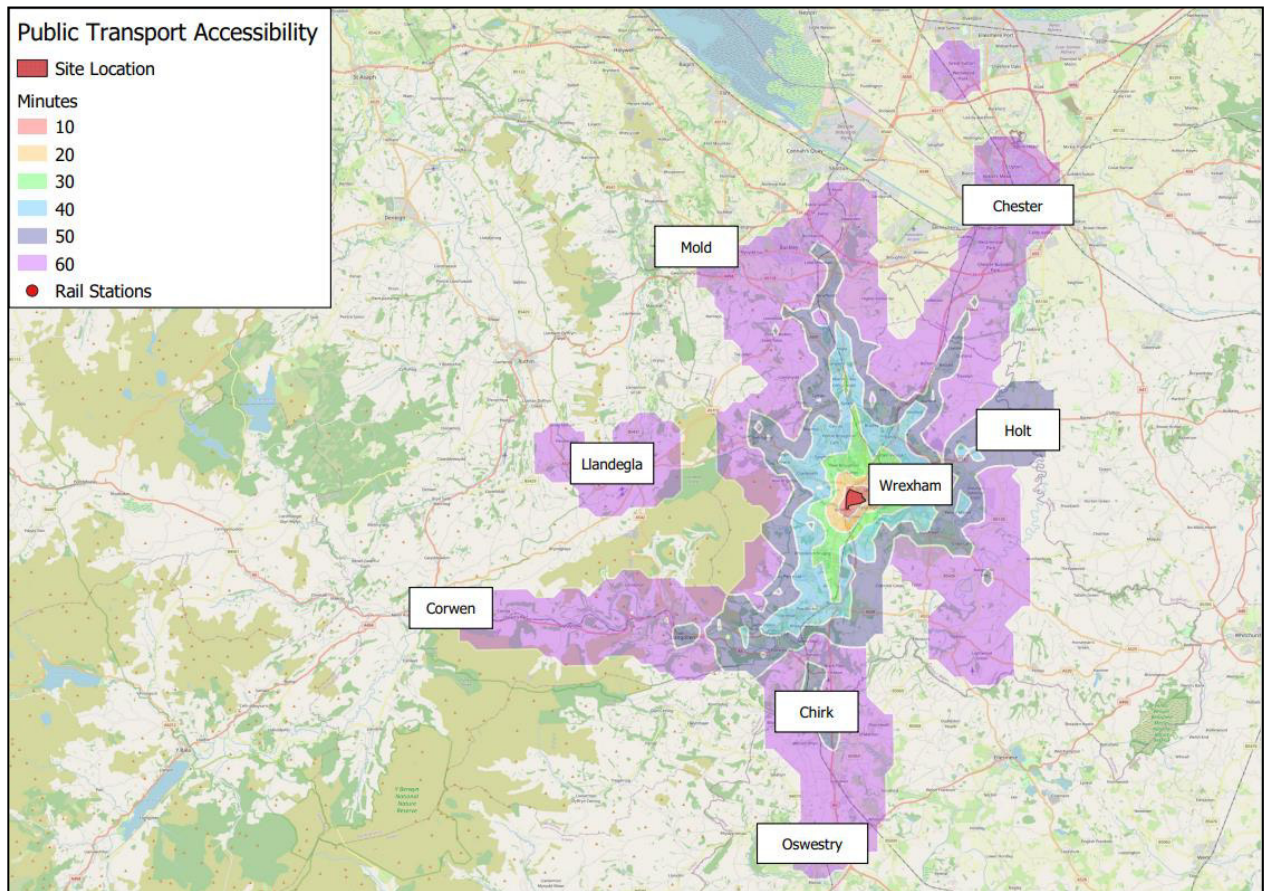
Bus

- 5.13 The nearest bus stops are located on Croesnewydd Road, approximately 100m north of the site. The bus stops are served by the TL2 bus service which provides around 3 services per day and is a circular service which operates in a clockwise direction. The TL2 service routes via Wrexham town centre, Pentre back and Pen y Bryn and serves a large number of key facilities including the Wrexham General and Wrexham Central rail stations.
- 5.14 There are numerous and more frequent bus services located along the A5152 (within 900m walking distance to the south of the site) and Croesnewydd Road (within 900m walking distance to the north of the site). Both sets of bus stops provide over 10 services per hour in either direction with links to destinations throughout the wider region.

Train

- 5.15 Wrexham Central Train Station can be accessed in under a 10-minute cycle time (or <2mile cycle distance) from the site and is therefore within an acceptable cycling distance. Wrexham Central Train Station provides direct frequent train services throughout the week to destinations including Bidston.
- 5.16 In addition, Wrexham General Train Station can be accessed in under a 12-minute cycle time (or <2.1mile cycle distance) from the site and is therefore within an acceptable walking and cycling distance. This train station provides regular services throughout the week to destinations including Holyhead, Wrexham Central, Bidston, Birmingham and Cardiff Central.
- 5.17 The level of accessibility by public transport has been analysed using GIS TRACC software to assess the accessibility of the site and is shown on **Figure 4.4** below. The figure illustrates the distance that can be travelled within 60 minutes by public transport to and from the site, which includes the time taken to walk to the bus, and railway stops.

Figure 4.4 – 60 Minute Public Transport Catchment Isochrone



- 5.18 The above demonstrates that the site is within a reach of a number of bus, and rail links, serving Wrexham town centre, Wrexham Industrial Estate and other destinations further afield. The figure shows that key areas of Oswestry, Chester and Holt, amongst others, are in an acceptable 60-minute commute time of the site.

Accessibility Summary

- 5.19 Having regard to the above, it is confirmed that the site is accessible by sustainable modes and has a range of local amenities within close reach. The site layout will be designed with pedestrians, cyclists and public transport users in mind to further support these modes of travel.

6.0 FUTURE BASELINE TRAFFIC CONDITIONS

Introduction

- 6.1 This chapter describes the future baseline traffic conditions on the local highway network in relation to traffic growth and committed development traffic flows.

Traffic Growth

- 6.2 Capacity assessments have been undertaken for the end of the Local Plan period (2028).
- 6.3 In order to quantify the level of background traffic growth that could occur on the local network, National Traffic Model (NTM) growth factors, modified by TEMPRO local growth factors, have been used for the Wrexham dataset.
- 6.4 The traffic generated by the proposed allocation site, committed developments and other allocated sites have been specifically estimated and included in the capacity assessments. In order to avoid double counting, the traffic growth factor has been adjusted in TEMPRO to remove the housing and job numbers that will be delivered by these sites. The resultant TEMPRO growth factors are summarised in **Table 6.1** below:-

Table 1 – Traffic Growth Factors

Period	AM Peak	PM Peak
2022 - 2028	1.0627	1.0651

- 6.5 The above growth factors are applied to the surveys traffic flow to obtain the 2028 growthed surveyed traffic flows, as shown in the **Traffic Flow Figure 2**.

Committed Development

- 6.6 The following committed developments have been taken into account and included in the assessments given the scale, location to the application site and impact on the study area:-
- 112 dwellings along Gatewen Road (LPA Ref: P/2021/0955);
 - 70 dwellings along Heritage Way (LPA Ref: PP/2021/0255);
 - 189 dwellings along Main Road (LPA Ref: 2021/0135);
 - 455 dwellings along Chain Road (LPA Ref: P/2019/0923) – application pending; and

- 450 dwellings at Brymbo Park (LPA Ref: P/2019/0546) – appeal pending.
- Western Gateway Employment Site (LPA Ref: P/2014/0665).

6.7 The traffic flows from the above committed developments have been obtained from the supporting Transport Assessments (TA's) and are shown on **Traffic Flow Figures 3-9**.

7.0 TRIP GENERATION

General

- 7.1 This Chapter provides an estimation and comparison of the trip generating potential of the proposed residential development during the worst-case weekday highway peak hours.

Proposed Residential Development

- 7.2 Vehicular trip rates for residential development are taken from the Council's consultant report and are provided in **Table 7.1** below.

Table 7.1 – Residential Trip Rates (per dwelling)

Time Period	Arrivals	Departures
AM Peak Period	0.153	0.396
PM Peak Period	0.353	0.212

- 7.3 The above trip rates have been applied to the 1,520 dwellings to determine the maximum potential vehicular trip generation for the proposed development, as summarised in **Table 7.2** below.

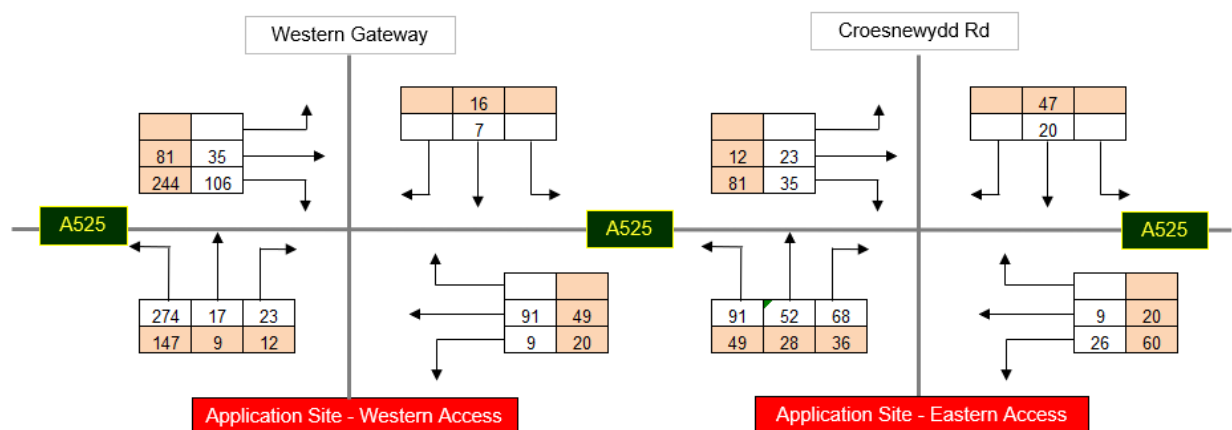
Table 7.2 – Proposed Trip Generation based on 1,520 dwellings

Time Period	Arrivals	Departures
AM Peak Period	233	602
PM Peak Period	537	322

- 7.4 It is anticipated that the proposed local centre will not generate significant external trips, however, a number of the proposed residential dwellings will access the site internally via non-car modes. As a result, the above residential trip rates are considered robust.
- 7.5 Trips to and from the site have been distributed using a travel to work model based upon 2011 Census data for the Wrexham 011 MSOA. The model calculation and resulting distribution is shown at **Appendix I**.
- 7.6 The trip distribution routes and proportions are shown on **Traffic Flow Figure 10**.

- 7.7 The development related traffic for the proposed residential use has been assigned to the above distribution method for the wider highway network and is shown in **Traffic Flow Figure 11**.
- 7.8 Given the proposed layout is still indicative, it has been assumed that the western accesses will accommodate 75% of the traffic heading west, 25% of the traffic heading east and visa versa for the eastern accesses. The trips associated with the western access intending to route via Croesnewydd Road have been redistributed along the Western Access Gateway.
- 7.9 Similarly, based on the indicative layout in **Appendix C** it has been assumed that approximately 66.6% of properties will route via the northern accesses and 33.3% of properties will route via the southern accesses when travelling to/from Wrexham Town Centre.
- 7.10 Based on this, an initial development trip distribution has been assigned to the proposed accesses along the A525 Ruthin Road and is illustrated on **Figure 7.1** below:

Figure 7.1 – Traffic Assignment for the Northern Accesses along the A525 Ruthin Road



8.0 HIGHWAY IMPACT

Introduction

8.1 This Chapter describes the impact of the additional trips generated by the proposed development on the operation of the local highway network. As stated earlier, the study area for the TA includes the following junctions:-

1. Proposed A525 Ruthin Road / Croesnewydd Road / Site Access Signal Junction;
2. Proposed North-Western Site Access/Western Gateway Proposed Roundabout;
3. Proposed South-Western Priority Access along Bersham Road;
4. Proposed South-Eastern Priority Access along Bersham Road;
5. A525 Ruthin Road / Berse Lane Priority Junction;
6. Bersham Road / Berse Lane Priority Junction;
7. B5098 / Vicarage Hill Priority Junction;
8. Bersham Road / Victoria Road / Hampden Road Priority Crossroads;
9. A5152 Ruabon Road / A525 Ruthin Road Priority Junction;
10. A525 Ruthin Road / A5152 Signalised Crossroads;
11. Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;
12. Berse Road / Rhy Broughton Lane Priority Roundabout;
13. A525 Ruthin Road / Heritage Way Priority Junction; and
14. Junction 4 of the A483.

8.2 It is noted at this stage that the proposals for this development site, along with those for the Western Gateway site, will provide an opportunity for existing traffic to divert to find more convenient routes.

- 8.3 For this development site, the existing Berse Lane/A525 junction can be difficult for right turning traffic out of Berse Lane to negotiate two busy lanes of traffic on Ruthin Road. With the development in place, there will be an opportunity for the Berse Lane traffic to divert through the development site to reach the A525, Ruthin Road, with no increase in journey length. The roundabout junction that is proposed for this residential site and Western Gateway site will provide a far more convenient route for traffic turning right on to Ruthin Road, and therefore a significant portion of the current right turns out of Berse Lane can be expected to divert through the site, to the roundabout.
- 8.4 Similarly, the Western Gateway site will provide a new link from Ruthin Road, at the proposed site access roundabout, to Croesnewydd Road. This will provide an opportunity for existing traffic travelling between Ruthin Road and Croesnewydd Road to avoid the current signalised T-junction where the two roads meet, and instead travel through the Western Gateway site to avoid the traffic signals.
- 8.5 For the purposes of this report, all existing traffic heading along Berse Lane has been redistributed via the proposed site accesses and internal site link roads.
- 8.6 The 2028 'without development' baseline traffic flows are the sum of the growthed traffic flows plus the committed development flows and are shown on **Traffic Flow Figure 12**.
- 8.7 The 2028 'without development' redistributed baseline traffic flows are the sum of the redistributed growthed traffic flows plus the committed development flows and are shown on **Traffic Flow Figure 13**.
- 8.8 The 2028 'with development' assessment traffic flows are the sum of the redistributed baseline traffic flows and the proposed development traffic flows, as shown on **Traffic Flow Figure 14**.

Assessment Methodology

- 8.9 Assessments of the priority-controlled and roundabout junctions within the study area have been undertaken using Junctions 9 (ARCADY and PICADY) software and for the signal junctions LINSIG software.
- 8.10 With the Junctions 9 models the results generated provide a Ratio to Flow capacity (RFC) along with an estimate of the likely traffic queues. RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions. Values between 0.85 and one and represents variable operation (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 one represents overloaded conditions (i.e. congested conditions).

- 8.11 LINSIG software presents results as a percentage Degree of Saturation (DoS) and corresponding likely traffic queues for each modelled link at the junction. For Traffic Signals it is generally accepted that DoS of 90% or less on individual links represents satisfactory signal operation. DoS of between 90% and 100% represent variable operation which warrants further investigation and values in excess of 100% represent overloaded conditions.

Proposed Signalised A525 Ruthin Road / Croesnewydd Road / Site Access Crossroads

- 8.12 LINSIG has been used in the assessment of the proposed signalised A525 Ruthin Road / Croesnewydd Road / Site Access crossroads.
- 8.13 The LINSIG results are presented in **Appendix J** with the results summarised in **Table 8.1** as follows.

Table 8.1 – Proposed Signalised A525 Ruthin Road / Croesnewydd Road / Site Access Crossroads 2028 ‘With Development’ LINSIG Results

Approach	AM PEAK		PM PEAK	
	DoS	MMQ	DoS	MMQ
A525 (EB) Ahead Left	60.2%	13.3	37.9%	6.1
A525 (EB) Ahead Right	77.2%	16.9	34.2%	5.4
Croesnewydd Rd Right Left Ahead	74.8%	6.1	57.3%	5.2
A525 (WB) Ahead Right Left	76.3%	12.1	58.9%	8.9
Site Access Left Right Ahead	54.6%	3.7	23.0%	1.5
Overall PRC	16.5%		52.9%	

- 8.14 The capacity assessment shows that this junction will operate within capacity in the 2028 assessments year with all committed developments completed.

Proposed North-Western Accesses along the A525 Ruthin Road

- 8.15 As mentioned previously, there are currently two potential options for the north-western site access. ‘North-Western Site Access Option 1’ would form the southern arm of the roundabout proposed as part of the committed Western Gateway Scheme. ‘North-Western Site Access Option 2’ would provide a priority T-junction and would include a ghost island right turn for vehicles turning into the site.

North-Western Access Option 1

- 8.16 ARCADY has been used in the assessment of the proposed north-western site roundabout along the A525 Ruthin Road which is associated with the Western Gateway Scheme. The ARCADY results are presented in **Appendix K** with the results summarised in **Table 8.2** as follows.

Table 8.2 – Proposed North-Western Access Option 1 - 2028 ‘With Development’ ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	Max Q	RFC	Max Q
A525 East	0.56	1.3	0.11	0.1
Site Access	0.45	0.8	0.23	0.3
A525 West	0.84	5.2	0.50	1.0
Western Gateway Access	0.04	0.0	0.34	0.5

- 8.17 The capacity assessment shows that this roundabout will operate within capacity in the 2028 assessments year

North-Western Access Option 2

- 8.18 If the development were to commence ahead of the Western Gateway roundabout being provided on Ruthin Road, the residential site access would take the form of a priority T-junction with a ghost island type right turning lane. PICADY has been used to model this potential junction and the results are also presented in **Appendix K** and summarised in **Table 8.3** below:

Table 8.3 – Proposed North-Western Access Option 2 - 2028 ‘With Development’ PICADY Results

Approach	AM PEAK		PM PEAK	
	RFC	Max Q	RFC	Max Q
A525 West	0.83	4.3	0.38	0.6
Site Access	0.61	1.5	0.12	0.1
A525 East	0.38	0.6	0.51	1.0

- 8.19 The above results demonstrate that the interim junction will operate satisfactorily ahead of the Western Gateway, along with its associated roundabout junction being provided.

Proposed Western Priority Site Access along the B5099 Bersham Road Site Access

- 8.20 PICADY has been used in the assessment of the proposed western B5099 Bersham Road priority site access. The PICADY results are presented in **Appendix L** with the results summarised in **Table 8.4** as follows:

Table 8.4 – Proposed Western Priority Site Access along the B5099 Bersham Road 2028 ‘With Development’ PICADY Results

Approach	AM PEAK		PM PEAK	
	RFC	Max Q	RFC	Max Q
Site Access (N) - B5099 Bersham Road (W), B5099 Bersham Road (E)	0.18	0.2	0.18	0.2
B5099 Bersham Road (E) - B5099 Bersham Road (W), Site Access (N)	0.02	0.0	0.04	0.1

- 8.21 The above results clearly show that the junction will operate within its practical capacity in the future assessment year of 2028, with minimal queuing and delay.

Proposed Eastern Priority Site Access along the B5099 Bersham Road

- 8.22 PICADY has been used in the assessment of the proposed eastern B5099 Bersham Road priority site access. The PICADY results are presented in **Appendix M** with the results summarised in **Table 8.5** as follows.

Table 8.5 – Proposed Eastern Priority Site Access along the B5099 Bersham Road 2028 ‘With Development’ PICADY Results

Approach	AM PEAK		PM PEAK	
	RFC	Max Q	RFC	Max Q
Site Access North - B5099 Bersham Road (W), C	0.17	0.2	0.09	0.1
B5099 Bersham Road (W) - B5099 Bersham Road (W), Site Access North	0.08	0.1	0.13	0.2

- 8.23 The junction is predicted to continue to operate within capacity with development scenarios.

B5098 / Vicarage Hill Priority Junction

- 8.24 PICADY has been used in the assessment of the B5098 / Vicarage Hill priority junction. The PICADY results are presented in **Appendix N** with the results summarised in **Table 8.6** as follows.

Table 8.6 – B5098 / Vicarage Hill Priority Junction 2028 ‘With Development’ PICADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
B5098 (N) - Vicarage Hill (W)	0.07	0.1	0.09	0.1
B5098 (N)- B5098 (W)	0.18	0.2	0.23	0.3
Vicarage Hill (W) - B5098 (W) & B5098 (N)	0.11	0.1	0.07	0.1

- 8.25 The above results clearly show that the junction will operate well within its practical capacity in the future assessment year of 2028, with minimal queuing and delay.

Bersham Road / Victoria Rd/ Hampden Road Crossroads

- 8.26 Our assessment demonstrates that the proposed development will result in an increase of 54 two-way vehicles during the AM peak hour and 56 two-way vehicles during the PM peak hour. This equates to a maximum increase of approximately one additional vehicle every 1-2 minutes which will not have a significant impact on the operation of the junction. As a result, no further assessment of the operation of the junction has been undertaken.

A5152 Ruabon Road/ A525 Ruthin Road Priority Junction

- 8.27 PICADY has been used in the assessment of the A5152 Ruabon Road / A525 Ruthin Road priority junction. The PICADY results are presented in **Appendix O** with the results summarised in **Table 8.7** as follows.

Table 8.7 – A5152 Ruabon Road/ A525 Ruthin Road 2028 ‘With Development’ PICADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
A525 Ruthin Rd - A5152 Ruabon Road (S), A5152 Ruabon Road (N)	0.77	3.2	0.59	1.4
A5152 Ruabon Road (N) - A5152 Ruabon Road (S) & A525 Ruthin Rd	0.44	1.0	0.67	2.8

- 8.28 The above results clearly show that the junction will operate within its practical capacity in the future assessment year of 2028, with minimal queuing and delay.

A525 Ruthin Road / A5152 Crossroads

8.29 LINSIG has been used in the assessment of the A525 Ruthin Road / A5152 crossroads. The LINSIG results are presented in **Appendix R** with the results summarised in **Table 8.8** as follows.

Table 8.8 – A525 Ruthin Road / A5152 Crossroads 2028 ‘With Development’ LINSIG Results

Approach	AM PEAK		PM PEAK	
	DoS	MMQ	DoS	MMQ
A525 (EB) Ahead Right Left	54.8%	7.5	51.6%	6.6
A5152 (SB) Left Ahead Right	38.8%	6.0	56.6%	11.0
A525 (WB) Left Ahead Right	55.0%	5.2	55.4%	6.9
A5152 (NB) Right Left Ahead	38.5%	6.0	36.8%	6.0
Overall PRC	63.5%		59.1%	

8.30 The above results clearly show that the junction will operate well within its practical capacity in the future assessment year of 2028, with minimal queuing and delay.

Croesnewydd Road / Rhyd Broughton Lane / Hospital Access Priority Roundabout

8.31 ARCADY has been used in the assessment of the Croesnewydd Road / Rhyd Broughton Lane / Hospital Access priority roundabout. The ARCADY results are presented in **Appendix P** with the results summarised in **Table 8.9** below.

Table 8.9 – Croesnewydd Rd / Rhyd Broughton Lane / Hospital Access Priority Roundabout 2028 ‘With Development’ ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
Rhyd Broughton Lane	0.81	4.1	0.29	0.4
Croesnewydd Rd (E)	0.35	0.5	0.57	1.3
Hospital Access	0.01	0.0	0.06	0.1
Croesnewydd Rd (W)	0.39	0.6	0.44	0.8

8.32 The above results clearly show that the junction will operate within its practical capacity in the future assessment year of 2028, with minimal queuing and delay.

B5101 Berse Road / Rhyd Broughton Lane Roundabout

- 8.33 ARCADY has been used in the assessment of the B5101 Berse Road / Rhyd Broughton Lane roundabout. The ARCADY results are presented in **Appendix Q** with the results summarised in **Table 8.10** below.

Table 8.10 – B5101 Berse Road / Rhyd Broughton Lane Priority Roundabout 2028 ‘With Development’ ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
Berse Road (N)	0.76	2.7	0.58	1.4
Rhyd Broughton Lane	0.74	2.8	0.67	2.0
B5101 Berse Road (W)	0.40	0.7	0.38	0.6

- 8.34 The above results clearly show that the junction will operate within its practical capacity in the future assessment year of 2028, with minimal queuing and delay.

Junction 4 of the A483

- 8.35 LINSIG has been used in the assessment of the existing layout of Junction 4 of the A483. WMBC have provided the LINSIG model used by Capita for previous highway impact assessments at the junction. The LINSIG results are presented in **Appendix U** with the results summarised in **Table 8.11** as follows:

Table 8.11 – Junction 4 of the A483 (Existing Layout) 2028 ‘With and Without Development’ LINSIG Results

Approach	2028 Assessment (Without Development)			
	AM PEAK		PM PEAK	
	DoS	MMQ	DoS	MMQ
A483 Off-slip SB Left	108.2%	37.4	57.8%	7.9
A483 Off-slip SB Right Ahead	72.3%	10.9	129.1%	86.6
A525 WB Approach Ahead Left	58.7%	12.5	129.0%	230.1
A483 Off-slip NB Ahead Left	57.4%	8.5	79.4%	13.0
A483 Off-slip NB Right	115.8%	58.5	31.5%	4.1
A525 EB Approach Ahead Left	118.9%	170.9	49.9%	6.7
A525 EB Approach Ahead	21.8%	4.3	18.1%	3.2
Bridge WB Ahead	67.5%	17.7	92.3%	29.3
Bridge WB Right	111.2%	13.6	82.8%	6.7
Bridge EB Ahead	99.7%	29.3	41.7%	5.0
Bridge EB Right	81.7%	2.9	127.7%	34.9
Overall PRC	-32.1%		-43.5%	

Approach	2028 Assessment (With Development)			
	AM PEAK		PM PEAK	
	DoS	MMQ	DoS	MMQ
A483 Off-slip SB Left	222.2%	177.2	132.5%	85.7
A483 Off-slip SB Right Ahead	116.5%	35.4	138.4%	103.5
A525 WB Approach Ahead Left	72.3%	12.3	137.7%	303.1
A483 Off-slip NB Ahead Left	82.3%	10.8	97.8%	19.4
A483 Off-slip NB Right	173.5%	141.8	53.1%	6.4
A525 EB Approach Ahead Left	112.5%	136.1	48.5%	6.1
A525 EB Approach Ahead	20.4%	3.9	16.9%	2.8
Bridge WB Ahead	58.9%	21.7	81.3%	32.8
Bridge WB Right	216.5%	144.8	122.5%	40.5
Bridge EB Ahead	83.4%	11.5	45.8%	9.1
Bridge EB Right	226.4%	80.2	138.2%	42.2
Overall PRC	-151.6%		-53.7%	

- 8.36 The junction is known to be operating beyond its theoretical capacity without the development and queues and delays will inevitably be increased by the addition of all committed development within Wrexham, without any mitigation works.

8.37 Whilst the Welsh Government policy was set out, following the roads review, to be that no additional highway capacity is to be created on the trunk road network to accommodate increases in traffic demand, we have investigated a scheme of works that would leave the highway network around the A483/A525 intersection in a no worse position than it would be without the development.

8.38 The improvement scheme is included as **Appendix R** and includes the following:

- Introduction of a left turn lane on the southbound slip road off the A483;
- Extension of left turn lane on the A525 west arm, which will be uncontrolled and allow traffic to access the A483 in free flow;
- Introduction of a left turn lane on the A525 east arm;
- Extension of the two ahead lanes on the A525 east arm to provide two full ahead lanes. This is achieved through the re-routing of Berse Lane traffic through the development site and removal of the existing ghost island right turn junction on the A525; and
- An additional A483 (westbound exit) arm.

8.39 The Linsig model for this mitigation scheme is included in **Appendix R** and the results summarised in **Table 8.12** below:

Table 8.12 - Junction 4 of the A483 2028 'With Development and Mitigation' LINSIG Results

Approach	2028 Assessment (With Development and Mitigation)			
	AM PEAK		PM PEAK	
	DoS	MMQ	DoS	MMQ
A483 Off-slip SB Left	96.6%	21.2	61.9%	9.0
A483 Off-slip SB Right Ahead	77.6%	11.5	90.1%	22.2
A525 WB Approach Left	13.0%	1.9	37.7%	7.1
A525 WB Approach Ahead	39.6%	8.7	92.2%	32.6
A525 WB Approach Ahead	33.2%	6.4	70.5%	17.9
A483 Off-slip NB Ahead Left	57.4%	8.5	97.8%	19.4
A483 Off-slip NB Right	120.9%	70.5	53.1%	6.4
A525 EB Approach Ahead	121.6%	138.2	31.2%	5.8
A525 EB Approach Ahead	27.5%	5.5	16.9%	2.8
Bridge WB Ahead	69.1%	26.1	99.4%	54.1
Bridge WB Right	120.4%	58.7	99.1%	31.2
Overall PRC	-35.1%		-10.4%	

- 8.40 The above results show that the junction will still operate over its practical capacity in the future assessment year of 2028. However, when comparing the performance of the junction 'without development' scenario and the existing layout, the mitigation scheme shows that there is no significant change during the AM peak hour and a significant improvement during the PM peak hour.
- 8.41 On the basis of the assessments and with the improvement in place, the proposed development can be fully accommodated at Junction 4 of the A483 with no detriment to conditions that would otherwise exist.

9.0 SUMMARY AND CONCLUSIONS

- 9.1 SCP have been appointed by Redrow Homes North West to provide specialist transport planning and engineering advice in support of a proposed residential development of up to 1520 dwellings and a local centre on land south of Ruthin Road, Wrexham.
- 9.2 The site is an allocation for a minimum of 1500 homes in the draft Local Plan and at the examination of the Local Plan the site was fully supported by the Council, along with our Client.
- 9.3 The principle of development has been fully examined and it has been concluded that the site meets with the national and local policies in that it is a sustainable location.
- 9.4 The impact of the development related traffic movements has been tested on the surrounding highway network. The development related traffic is to be distributed over a number of access points, including two principal accesses to Ruthin Road (A525) and further accesses to Bersham Road and Berse Lane. Traffic from the development has been distributed in accordance with existing patterns of travel within Wrexham, including movements towards the town centre, Wrexham Industrial Estate, the hospital site, Ruthin, Chester and other destinations north and south along the A483.
- 9.5 With the development traffic added to the highway network, it has been found that the highway network can accommodate the development related traffic movements, albeit with some improvements along the A525 at the site access points and at the A483 intersection. The proposals and the nearby Western Gateway site will include the opportunity to re-route some traffic both through this development site, for movements between the A525 and Bersham Road, and also through the Western Gateway site, for movements between the A525 and Croesnewydd Road.
- 9.6 A key element of the proposals will be supporting sustainable travel modes. The internal site layout will be designed to give pedestrians and cyclists the highest priority, and bus services will be enhanced as part of the development to provide convenient links to the town centre and major employment locations. Further sustainable travel improvements can be supported by the development proposals, to bring forward more strategic proposals that may be developed by Wrexham CBC.
- 9.7 Overall, there are no highway, traffic or transport reasons to prevent the development proposals from being brought forward as envisaged by the Local Development Plan for Wrexham.

S|C|P

APPENDIX A



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Validated Data

Crash Date: Friday, May 04, 2018 **Time of Crash:** 4:10:00 PM **Crash Reference:** 201860W057541

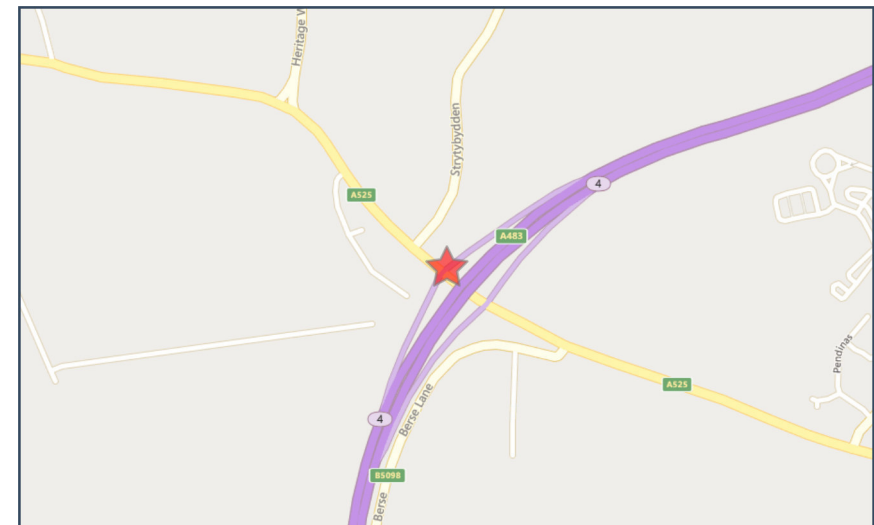
Highest Injury Severity: Fatal
Highway Authority: Wrexham
Local Authority: Wrexham County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 50
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Crossroads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

Road Number: A525

Number of Casualties: 1

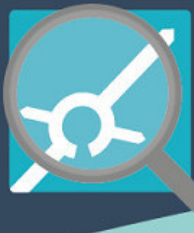
Number of Vehicles: 2

OS Grid Reference: 331143 350386



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

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Validated Data

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	46 - 55	Vehicle is in the act of turning right	Nearside	Unknown	None	None
2	Motorcycle over 500cc	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Fatal	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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S|C|P

APPENDIX B



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 1 - SITE PLAN





1 1 1.5 2.3 2 0.4 0.2

			MOVEMENT A									MOVEMENT B				
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE			PCU	HR	CAR	LGV	OGV 1
07:30	-	07:45	63	18	1	0	0	0	0	82.5		77	6	0	0	0
07:45	-	08:00	69	16	0	2	2	0	0	93.6		128	10	0	0	0
08:00	-	08:15	95	15	1	1	3	0	0	120		119	3	0	0	0
08:15	-	08:30	103	9	0	0	3	0	0	118	414	155	7	1	0	0
08:30	-	08:45	146	7	1	0	2	0	0	159	490	141	6	0	0	0
08:45	-	09:00	106	12	0	0	1	0	0	120	516	134	6	0	0	0
09:00	-	09:15	98	8	0	1	0	0	0	108	505	85	3	0	0	0
09:15	-	09:30	88	15	2	0	0	0	0	106	493	60	6	0	0	0
										PCU	HR					
16:30	-	16:45	85	13	0	0	1	0	0	100		35	2	0	0	0
16:45	-	17:00	81	11	1	0	0	0	0	93.5		24	5	0	0	0
17:00	-	17:15	76	12	0	0	0	0	0	88		22	3	0	0	0
17:15	-	17:30	89	9	0	0	0	2	0	98.8	380	28	2	0	0	0
17:30	-	17:45	85	8	0	0	0	0	0	93	373	27	2	0	0	0
17:45	-	18:00	117	6	1	0	0	0	0	125	404	57	1	1	0	0
18:00	-	18:15	94	8	1	0	0	0	0	104	420	30	1	0	0	0
18:15	-	18:30	84	3	1	0	0	1	0	88.9	410	31	1	0	0	0

M/C	CYCLE	PCU	HR
1	0	83.4	
0	0	138	
0	0	122	
0	0	164	507
0	0	147	571
0	1	140	573
1	0	88.4	539
0	0	66	442
		PCU	HR
0	0	37	
0	0	29	
0	0	25	
0	0	30	121
0	0	29	113
0	0	59.5	144
0	0	31	150
0	0	32	152



1 1 1.5 2.3 2 0.4 0.2

			MOVEMENT C									MOVEMENT D				
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE			PCU	HR	CAR	LGV	OGV 1
07:30	-	07:45	19	7	0	0	0	0	0	26		20	0	0	0	0
07:45	-	08:00	40	4	1	0	0	0	0	45.5		19	4	0	0	0
08:00	-	08:15	42	3	0	0	0	0	0	45		30	3	0	0	0
08:15	-	08:30	26	3	1	1	0	0	0	32.8	149	38	3	0	0	0
08:30	-	08:45	24	5	0	0	0	0	0	29	152	44	3	0	0	1
08:45	-	09:00	23	2	1	0	0	0	0	26.5	133	16	2	0	0	0
09:00	-	09:15	20	6	0	0	0	0	0	26	114	18	2	2	0	0
09:15	-	09:30	20	3	1	0	0	0	1	24.7	106	13	1	0	0	0
										PCU	HR					
16:30	-	16:45	81	4	0	0	0	0	0	85		35	0	0	0	0
16:45	-	17:00	73	1	0	0	0	0	0	74		42	4	0	0	0
17:00	-	17:15	86	2	0	0	0	0	0	88		35	1	0	0	0
17:15	-	17:30	55	1	0	0	0	0	0	56	303	23	0	0	0	0
17:30	-	17:45	69	3	0	0	0	1	0	72.4	290	64	0	0	0	0
17:45	-	18:00	45	2	0	0	0	0	0	47	263	38	3	0	0	0
18:00	-	18:15	64	5	0	0	0	1	0	69.4	245	17	1	0	0	0
18:15	-	18:30	40	1	0	0	0	0	0	41	230	17	2	0	0	0

M/C	CYCLE	PCU	HR
0	0	20	
0	0	23	
0	0	33	
0	0	41	117
0	0	49	146
0	0	18	141
0	0	23	131
0	0	14	104
		PCU	HR
0	0	35	
1	0	46.4	
0	0	36	
0	0	23	140
0	0	64	169
0	0	41	164
0	0	18	146
0	0	19	142



1 1 1.5 2.3 2 0.4 0.2

			MOVEMENT E									MOVEMENT F				
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE			PCU	HR	CAR	LGV	OGV 1
07:30	-	07:45	11	1	0	0	0	0	0	12		37	6	1	1	0
07:45	-	08:00	15	2	0	0	0	0	0	17		45	12	1	0	1
08:00	-	08:15	16	2	0	0	0	0	0	18		48	12	1	1	2
08:15	-	08:30	27	2	0	0	0	0	0	29	76	51	5	0	0	1
08:30	-	08:45	37	3	2	0	0	0	0	43	107	74	11	2	0	6
08:45	-	09:00	38	0	0	0	0	0	1	38.2	128	59	8	2	0	1
09:00	-	09:15	29	2	0	0	0	0	0	31	141	62	9	1	0	1
09:15	-	09:30	17	0	0	0	0	0	0	17	129	57	8	1	1	0
										PCU	HR					
16:30	-	16:45	36	3	0	0	0	1	0	39.4		73	11	0	0	0
16:45	-	17:00	38	3	0	0	0	0	0	41		71	15	0	1	0
17:00	-	17:15	29	0	0	0	0	1	0	29.4		70	13	0	0	0
17:15	-	17:30	34	3	0	0	0	0	0	37	147	76	8	0	0	0
17:30	-	17:45	18	2	0	0	0	0	0	20	127	84	7	0	0	0
17:45	-	18:00	19	1	0	0	0	0	0	20	106	89	5	0	0	0
18:00	-	18:15	22	0	0	0	0	0	0	22	99	95	4	0	0	0
18:15	-	18:30	20	0	0	0	0	0	0	20	82	66	11	1	0	0

02

NOV 2022

M/C	CYCLE	PCU	HR
0	0	46.8	
0	0	60.5	
1	0	68.2	
0	0	58	233.5
0	0	100	286.7
0	0	72	298.2
0	0	74.5	304.5
1	0	69.2	315.7
		PCU	HR
0	0	84	
0	0	88.3	
0	0	83	
1	0	84.4	339.7
0	0	91	346.7
0	0	94	352.4
0	0	99	368.4
1	0	78.9	362.9



MERCURY
TRAFFIC SURVEYS LTD

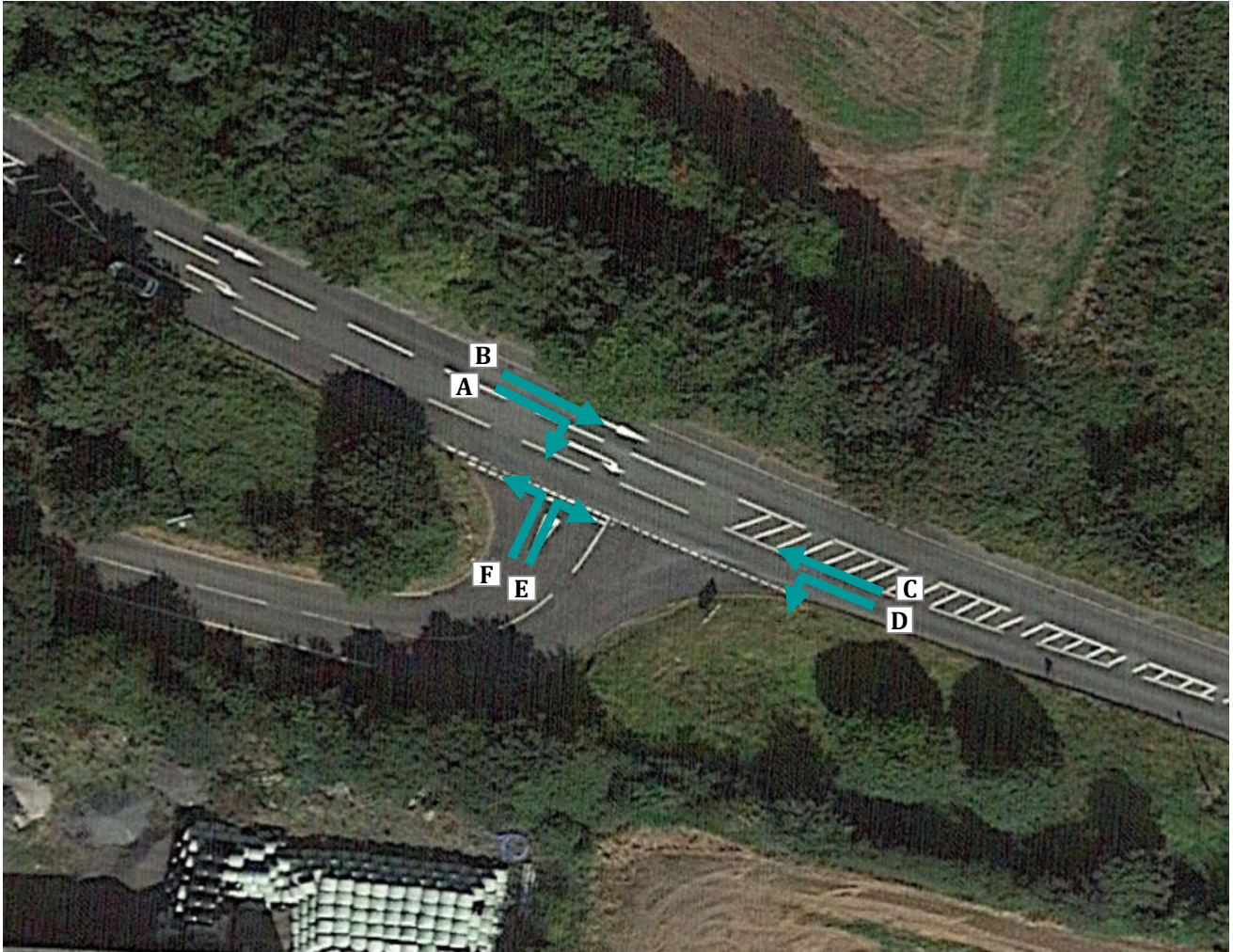
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 2 - SITE PLAN





PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 2

			MOVEMENT A						MOVEMENT B							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	4	2	0	0	0	0	0	142	21	1	0	0	0	0
07:45	-	08:00	10	2	0	0	0	0	0	178	26	0	2	2	1	0
TOTAL			14	4	0	0	0	0	0	320	47	1	2	2	1	0
08:00	-	08:15	14	3	1	0	0	1	0	202	19	1	1	3	0	0
08:15	-	08:30	10	1	0	0	0	0	0	232	16	1	0	5	0	0
08:30	-	08:45	14	0	0	0	0	0	0	269	14	1	0	0	0	1
08:45	-	09:00	25	1	0	0	0	0	1	229	18	0	0	1	0	1
TOTAL			63	5	1	0	0	1	1	932	67	3	1	9	0	2
09:00	-	09:15	7	2	0	0	0	0	0	165	13	0	1	0	1	0
09:15	-	09:30	3	1	0	0	0	0	0	138	19	2	0	0	0	0
TOTAL			10	3	0	0	0	0	0	303	32	2	1	0	1	0
PERIOD TOTAL			87	12	1	0	0	1	1	1555	146	6	4	11	2	2
16:30	-	16:45	14	1	0	0	0	0	0	120	18	0	0	1	0	0
16:45	-	17:00	8	2	0	0	0	0	0	106	13	1	0	0	0	0
TOTAL			22	3	0	0	0	0	0	226	31	1	0	1	0	0
17:00	-	17:15	11	1	0	0	0	0	0	94	15	0	0	0	0	0
17:15	-	17:30	11	3	0	0	0	1	0	122	8	0	0	0	2	0
17:30	-	17:45	4	1	0	0	0	0	0	106	8	0	0	0	0	0
17:45	-	18:00	9	2	0	0	0	0	0	163	9	2	0	0	0	0
TOTAL			35	7	0	0	0	1	0	485	40	2	0	0	2	0
18:00	-	18:15	9	3	0	1	0	0	0	123	5	1	0	0	0	0
18:15	-	18:30	8	2	0	0	0	0	0	104	6	1	0	0	1	0
TOTAL			17	5	0	1	0	0	0	227	11	2	0	0	1	0
PERIOD TOTAL			74	15	0	1	0	1	0	938	82	5	0	1	3	0
DAILY TOTAL			161	27	1	1	0	2	1	2493	228	11	4	12	5	2
GRAND TOTAL			193						2755							



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 2

			MOVEMENT C						MOVEMENT D							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	55	14	1	1	0	0	0	2	0	0	0	0	0	0
07:45	-	08:00	76	13	2	0	1	0	0	8	1	0	0	0	0	0
TOTAL			131	27	3	1	1	0	0	10	1	0	0	0	0	0
08:00	-	08:15	86	17	1	1	2	1	0	2	0	0	0	0	0	0
08:15	-	08:30	73	8	0	1	1	0	0	4	0	1	0	0	0	0
08:30	-	08:45	90	17	2	0	6	0	0	7	1	0	0	0	0	0
08:45	-	09:00	78	8	3	0	1	0	0	5	0	0	0	0	0	0
TOTAL			327	50	6	2	10	1	0	18	1	1	0	0	0	0
09:00	-	09:15	83	9	2	0	1	0	0	5	2	0	0	0	0	0
09:15	-	09:30	68	14	1	1	0	1	0	4	1	0	0	0	0	1
TOTAL			151	23	3	1	1	1	0	9	3	0	0	0	0	1
PERIOD TOTAL			609	100	12	4	12	2	0	37	5	1	0	0	0	1
16:30	-	16:45	130	16	0	0	0	0	0	8	0	0	0	0	0	0
16:45	-	17:00	127	14	0	1	0	0	0	12	2	0	0	0	0	0
TOTAL			257	30	0	1	0	0	0	20	2	0	0	0	0	0
17:00	-	17:15	141	12	0	0	0	0	0	11	0	0	0	0	0	0
17:15	-	17:30	122	12	0	0	0	0	0	7	1	0	0	0	1	0
17:30	-	17:45	152	6	0	0	0	0	0	7	0	0	0	0	1	0
17:45	-	18:00	142	11	0	0	0	0	0	9	2	0	0	0	0	0
TOTAL			557	41	0	0	0	0	0	34	3	0	0	0	2	0
18:00	-	18:15	155	7	0	0	0	0	0	7	0	0	0	0	0	0
18:15	-	18:30	100	9	0	0	0	2	0	5	1	0	0	0	0	0
TOTAL			255	16	0	0	0	2	0	12	1	0	0	0	0	0
PERIOD TOTAL			1069	87	0	1	0	2	0	66	6	0	0	0	2	0
DAILY TOTAL			1678	187	12	5	12	4	0	103	11	1	0	0	2	1
GRAND TOTAL			1898						118							



PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 2

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	5	3	0	0	0	0	0	10	2	0	0	0	0	0
07:45	-	08:00	22	0	0	0	0	0	0	7	2	0	0	0	0	0
TOTAL			27	3	0	0	0	0	0	17	4	0	0	0	0	0
08:00	-	08:15	8	1	0	0	0	0	0	10	2	0	0	0	0	0
08:15	-	08:30	18	1	0	0	0	0	0	8	1	0	0	0	0	0
08:30	-	08:45	13	0	0	0	0	0	0	9	2	0	0	0	0	0
08:45	-	09:00	14	0	0	0	0	0	0	26	1	0	0	1	0	0
TOTAL			53	2	0	0	0	0	0	53	6	0	0	1	0	0
09:00	-	09:15	15	0	0	0	0	0	0	7	3	0	0	0	0	0
09:15	-	09:30	9	0	0	0	0	0	0	3	1	0	0	0	0	0
TOTAL			24	0	0	0	0	0	0	10	4	0	0	0	0	0
PERIOD TOTAL			104	5	0	0	0	0	0	80	14	0	0	1	0	0
16:30	-	16:45	8	0	0	0	0	0	0	27	3	0	0	0	2	0
16:45	-	17:00	3	0	0	0	0	0	0	8	1	0	0	0	0	0
TOTAL			11	0	0	0	0	0	0	35	4	0	0	0	2	0
17:00	-	17:15	5	1	0	0	0	0	0	18	2	0	0	0	0	0
17:15	-	17:30	3	0	0	0	0	0	0	11	4	0	0	0	0	0
17:30	-	17:45	2	0	0	0	0	0	0	9	1	0	0	0	0	0
17:45	-	18:00	8	0	0	0	0	0	0	4	1	0	0	0	0	0
TOTAL			18	1	0	0	0	0	0	42	8	0	0	0	0	0
18:00	-	18:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0
18:15	-	18:30	4	1	0	0	0	0	0	9	0	0	0	0	0	0
TOTAL			9	1	0	0	0	0	0	14	0	0	0	0	0	0
PERIOD TOTAL			38	2	0	0	0	0	0	91	12	0	0	0	2	0
DAILY TOTAL			142	7	0	0	0	0	0	171	26	0	0	1	2	0
GRAND TOTAL			149						200							



MERCURY
TRAFFIC SURVEYS LTD

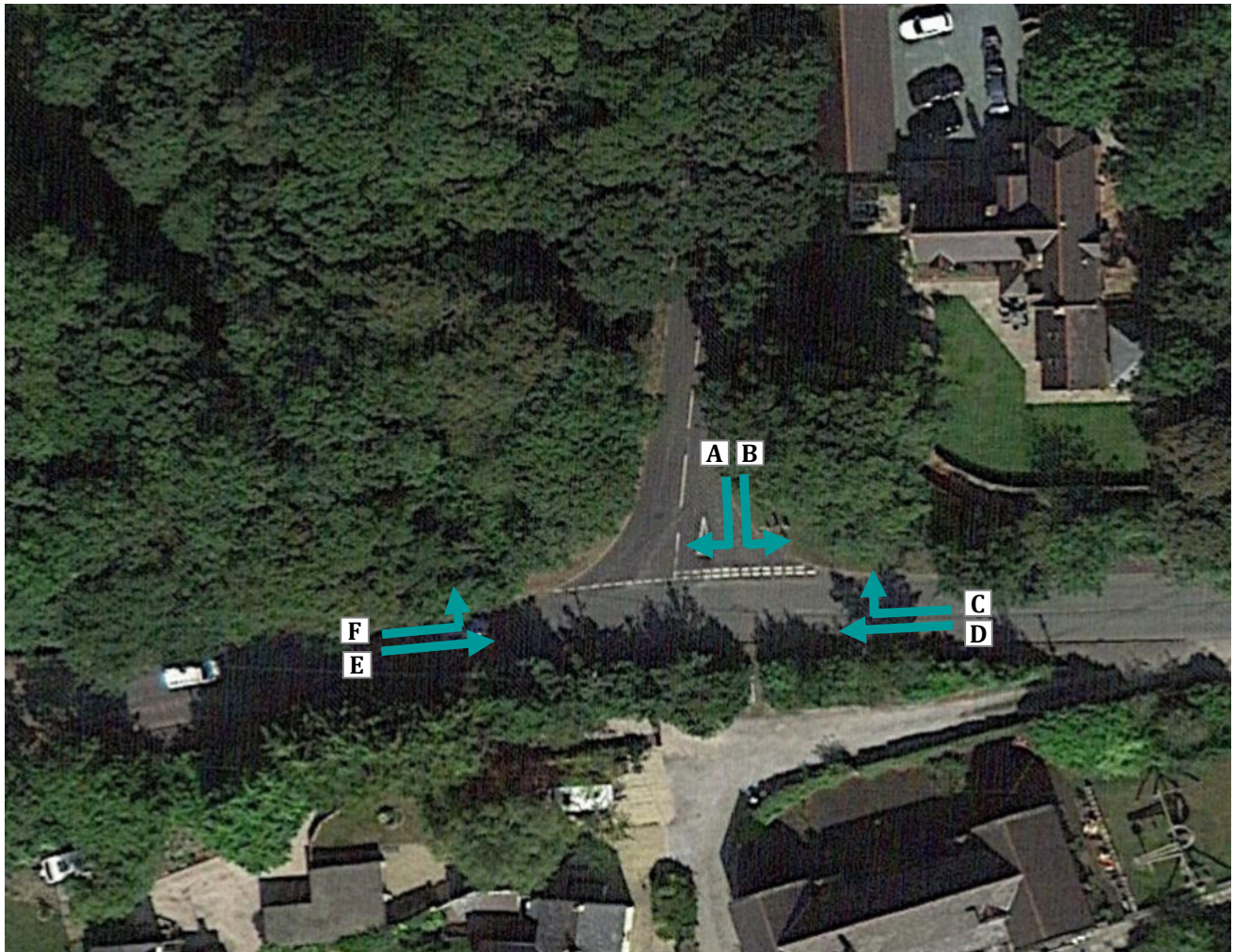
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 3 - SITE PLAN





PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 3

			MOVEMENT A						MOVEMENT B						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C
07:30	-	07:45	2	0	0	0	0	0	3	1	0	0	0	0	0
07:45	-	08:00	11	3	0	0	0	0	4	1	0	0	0	0	0
TOTAL			13	3	0	0	0	0	7	2	0	0	0	0	0
08:00	-	08:15	11	3	1	0	0	0	10	1	0	0	0	1	0
08:15	-	08:30	7	0	0	0	0	0	9	1	1	0	0	0	0
08:30	-	08:45	7	0	0	0	0	0	11	0	0	0	0	0	0
08:45	-	09:00	12	1	0	0	0	0	18	1	0	0	0	0	0
TOTAL			37	4	1	0	0	0	48	3	1	0	0	1	0
09:00	-	09:15	6	3	0	0	0	0	6	0	0	0	0	0	0
09:15	-	09:30	7	1	0	0	0	1	1	1	0	0	0	0	0
TOTAL			13	4	0	0	0	1	7	1	0	0	0	0	0
PERIOD TOTAL			63	11	1	0	0	1	62	6	1	0	0	1	0
16:30	-	16:45	19	1	0	0	0	0	3	0	0	0	0	0	0
16:45	-	17:00	19	2	0	0	0	0	1	1	0	0	0	0	0
TOTAL			38	3	0	0	0	0	4	1	0	0	0	0	0
17:00	-	17:15	20	1	0	0	0	0	2	1	0	0	0	0	0
17:15	-	17:30	12	2	0	0	2	0	4	1	0	0	0	0	0
17:30	-	17:45	10	1	0	0	0	0	1	0	0	0	0	0	0
17:45	-	18:00	19	2	0	0	1	0	1	0	0	0	0	0	0
TOTAL			61	6	0	0	3	0	8	2	0	0	0	0	0
18:00	-	18:15	14	2	0	0	0	0	4	1	0	0	0	0	0
18:15	-	18:30	9	2	0	0	0	0	4	0	0	0	0	0	0
TOTAL			23	4	0	0	0	0	8	1	0	0	0	0	0
PERIOD TOTAL			122	13	0	0	3	0	20	4	0	0	0	0	0
DAILY TOTAL			185	24	1	0	3	1	82	10	1	0	0	1	0
GRAND TOTAL			214						94						



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 3

			MOVEMENT C						MOVEMENT D							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	3	1	0	0	0	0	0	4	0	0	0	0	0	0
07:45	-	08:00	2	0	0	0	0	0	0	4	1	0	0	0	0	0
TOTAL			5	1	0	0	0	0	0	8	1	0	0	0	0	0
08:00	-	08:15	3	1	0	0	0	0	0	5	0	0	0	0	0	1
08:15	-	08:30	3	0	0	0	0	0	0	11	1	0	0	0	0	0
08:30	-	08:45	6	1	0	0	0	0	0	8	2	1	0	0	0	0
08:45	-	09:00	14	0	0	0	1	0	0	8	2	0	0	0	0	0
TOTAL			26	2	0	0	1	0	0	32	5	1	0	0	0	1
09:00	-	09:15	6	1	0	0	0	0	0	8	0	0	0	0	0	0
09:15	-	09:30	2	1	0	0	0	0	0	5	0	0	0	0	0	0
TOTAL			8	2	0	0	0	0	0	13	0	0	0	0	0	0
PERIOD TOTAL			39	5	0	0	1	0	0	53	6	1	0	0	0	1
16:30	-	16:45	23	2	0	0	0	1	0	29	1	0	0	0	1	0
16:45	-	17:00	4	1	0	0	0	0	0	25	0	0	0	0	0	1
TOTAL			27	3	0	0	0	1	0	54	1	0	0	0	1	1
17:00	-	17:15	8	1	0	0	0	0	0	28	0	0	0	0	2	0
17:15	-	17:30	5	1	0	0	0	0	0	20	1	0	0	0	1	1
17:30	-	17:45	7	1	0	0	0	0	0	11	1	0	0	0	0	0
17:45	-	18:00	1	1	0	0	0	0	0	9	0	0	0	0	0	0
TOTAL			21	4	0	0	0	0	0	68	2	0	0	0	3	1
18:00	-	18:15	0	0	0	0	0	0	0	16	0	0	0	0	0	0
18:15	-	18:30	1	0	0	0	0	0	0	4	0	0	0	0	0	0
TOTAL			1	0	0	0	0	0	0	20	0	0	0	0	0	0
PERIOD TOTAL			49	7	0	0	0	1	0	142	3	0	0	0	4	2
DAILY TOTAL			88	12	0	0	1	1	0	195	9	1	0	0	4	3
GRAND TOTAL			102						212							

**PROJECT NUMBER: 221102**

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 3

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	7	0	0	0	0	0	15	4	0	0	0	0	0	
07:45	-	08:00	10	2	0	0	0	1	23	2	0	0	0	0	0	
TOTAL			17	2	0	0	0	1	38	6	0	0	0	0	0	
08:00	-	08:15	29	1	0	0	0	2	14	1	0	0	0	0	0	
08:15	-	08:30	45	0	0	0	0	2	23	2	0	0	0	0	0	
08:30	-	08:45	65	3	0	0	0	1	21	1	0	0	0	0	0	
08:45	-	09:00	37	2	0	0	0	1	22	1	0	0	0	0	0	
TOTAL			176	6	0	0	0	1	80	5	0	0	0	0	0	
09:00	-	09:15	19	3	0	0	0	1	15	1	0	0	0	0	0	
09:15	-	09:30	9	3	0	0	0	0	12	0	0	0	0	0	0	
TOTAL			28	6	0	0	0	1	27	1	0	0	0	0	0	
PERIOD TOTAL			221	14	0	0	0	2	6	145	12	0	0	0	0	0
16:30	-	16:45	12	2	0	0	0	2	14	1	0	0	0	1	0	
16:45	-	17:00	7	1	0	0	0	1	5	0	0	0	0	0	0	
TOTAL			19	3	0	0	0	1	2	19	1	0	0	0	1	0
17:00	-	17:15	7	0	0	0	0	0	18	1	0	0	0	0	0	
17:15	-	17:30	7	1	0	0	0	1	9	2	0	0	0	0	0	
17:30	-	17:45	10	1	0	0	0	1	6	1	0	0	0	0	0	
17:45	-	18:00	5	0	0	0	0	0	10	0	0	0	0	0	0	
TOTAL			29	2	0	0	0	1	1	43	4	0	0	0	0	0
18:00	-	18:15	8	0	0	0	0	0	10	0	0	0	0	0	0	
18:15	-	18:30	10	0	0	0	0	1	9	1	0	0	0	0	0	
TOTAL			18	0	0	0	0	1	1	19	1	0	0	0	0	0
PERIOD TOTAL			66	5	0	0	0	2	4	81	6	0	0	0	1	0
DAILY TOTAL			287	19	0	0	0	4	10	226	18	0	0	0	1	0
GRAND TOTAL			320						245							



MERCURY
TRAFFIC SURVEYS LTD

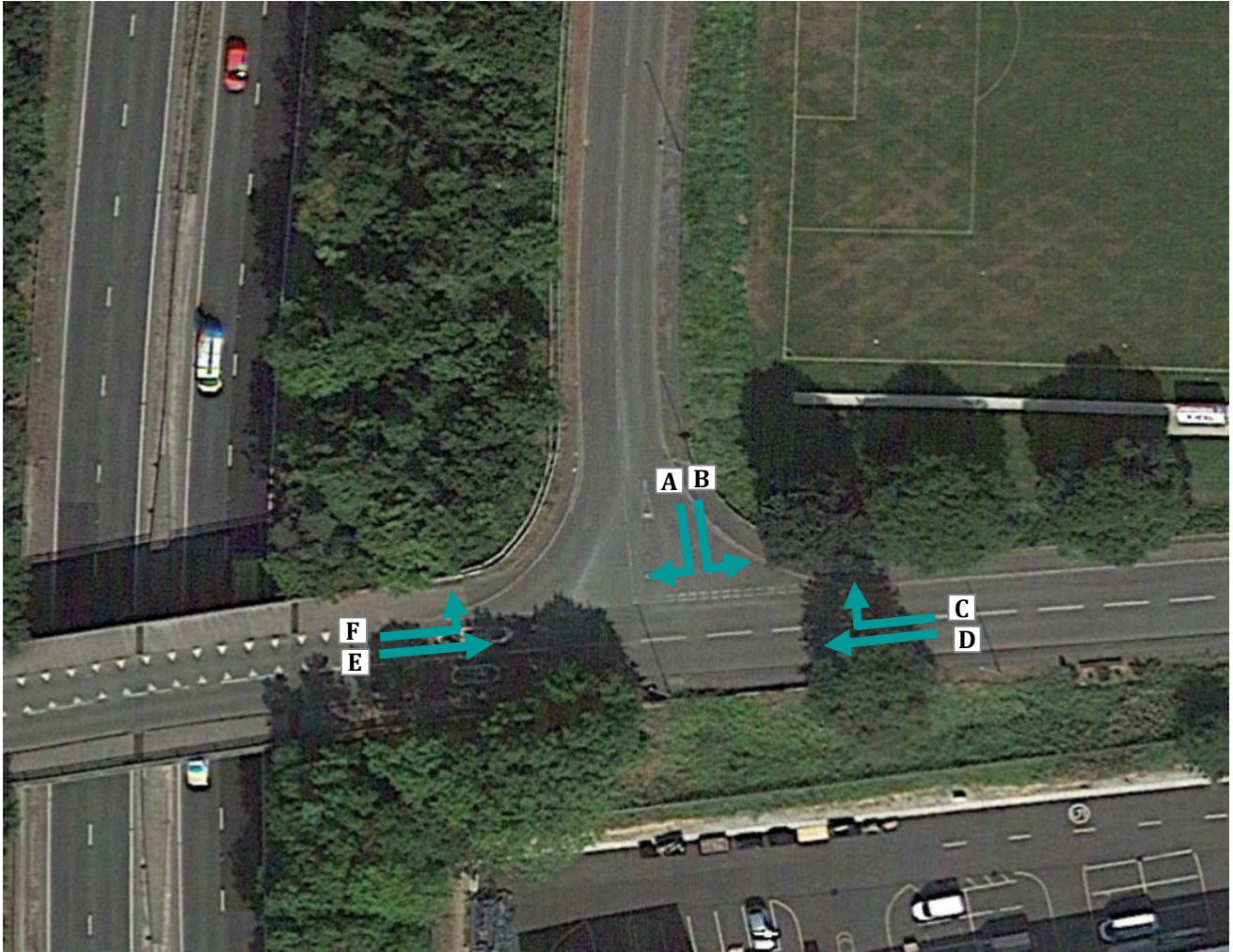
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 4 - SITE PLAN





PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 4

			MOVEMENT A						MOVEMENT B						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C
07:30	-	07:45	5	0	0	0	0	0	0	1	0	0	0	0	0
07:45	-	08:00	17	3	0	0	0	0	4	1	0	0	0	0	0
TOTAL			22	3	0	0	0	0	4	2	0	0	0	0	0
08:00	-	08:15	20	2	1	0	0	1	13	0	0	0	0	0	0
08:15	-	08:30	17	3	0	0	0	0	6	1	0	0	0	0	0
08:30	-	08:45	12	5	0	0	0	0	7	3	0	0	0	0	0
08:45	-	09:00	14	2	1	0	0	0	8	0	0	0	0	0	0
TOTAL			63	12	2	0	0	1	34	4	0	0	0	0	0
09:00	-	09:15	8	2	0	0	0	0	6	1	0	0	0	0	0
09:15	-	09:30	4	1	0	0	0	0	5	0	0	0	0	0	0
TOTAL			12	3	0	0	0	0	11	1	0	0	0	0	0
PERIOD TOTAL			97	18	2	0	0	1	49	7	0	0	0	0	0
16:30	-	16:45	27	1	0	0	1	1	15	1	0	0	0	0	0
16:45	-	17:00	26	3	0	0	0	0	11	0	0	0	0	0	0
TOTAL			53	4	0	0	1	1	26	1	0	0	0	0	0
17:00	-	17:15	26	0	0	0	0	0	14	1	0	0	0	1	0
17:15	-	17:30	18	3	0	0	1	0	8	0	0	0	0	2	1
17:30	-	17:45	16	2	0	0	1	0	4	0	0	0	0	0	0
17:45	-	18:00	16	1	0	0	0	0	10	2	0	0	0	0	0
TOTAL			76	6	0	0	2	0	36	3	0	0	0	3	1
18:00	-	18:15	12	1	0	0	0	0	13	0	0	0	0	1	0
18:15	-	18:30	10	0	0	0	0	0	6	0	0	0	0	0	0
TOTAL			22	1	0	0	0	0	19	0	0	0	0	1	0
PERIOD TOTAL			151	11	0	0	3	1	81	4	0	0	0	4	1
DAILY TOTAL			248	29	2	0	3	2	130	11	0	0	0	4	1
GRAND TOTAL			284						146						



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 4

			MOVEMENT C						MOVEMENT D							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	6	2	0	0	0	0	0	5	2	0	0	0	0	0
07:45	-	08:00	7	1	0	0	0	0	0	6	2	0	0	0	0	0
TOTAL			13	3	0	0	0	0	0	11	4	0	0	0	0	0
08:00	-	08:15	10	1	0	0	0	0	0	4	0	0	0	0	0	0
08:15	-	08:30	10	1	0	0	0	0	0	8	1	0	0	0	0	0
08:30	-	08:45	16	2	0	0	0	0	0	14	3	1	0	0	0	0
08:45	-	09:00	14	0	0	0	0	0	0	9	2	0	0	1	0	0
TOTAL			50	4	0	0	0	0	0	35	6	1	0	1	0	0
09:00	-	09:15	11	1	0	0	0	0	0	4	4	0	0	0	0	0
09:15	-	09:30	5	0	0	0	0	0	0	6	0	0	0	0	0	0
TOTAL			16	1	0	0	0	0	0	10	4	0	0	0	0	0
PERIOD TOTAL			79	8	0	0	0	0	0	56	14	1	0	1	0	0
16:30	-	16:45	11	2	0	0	0	0	0	9	1	0	0	0	0	0
16:45	-	17:00	6	1	0	0	0	0	0	8	0	0	0	0	0	0
TOTAL			17	3	0	0	0	0	0	17	1	0	0	0	0	0
17:00	-	17:15	8	2	0	0	0	0	0	10	1	0	0	0	0	0
17:15	-	17:30	3	0	0	0	0	0	0	7	0	0	0	0	0	0
17:30	-	17:45	7	1	0	0	0	0	0	8	1	0	0	0	0	0
17:45	-	18:00	13	0	0	0	0	0	0	4	1	0	0	0	0	0
TOTAL			31	3	0	0	0	0	0	29	3	0	0	0	0	0
18:00	-	18:15	12	0	0	0	0	0	0	6	0	0	0	0	0	0
18:15	-	18:30	3	0	0	0	0	0	0	4	0	0	0	0	0	0
TOTAL			15	0	0	0	0	0	0	10	0	0	0	0	0	0
PERIOD TOTAL			63	6	0	0	0	0	0	56	4	0	0	0	0	0
DAILY TOTAL			142	14	0	0	0	0	0	112	18	1	0	1	0	0
GRAND TOTAL			156						132							



PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 4

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	4	1	0	0	0	0	0	8	1	0	0	0	0	0
07:45	-	08:00	8	2	0	0	0	0	0	19	3	0	0	0	1	0
TOTAL			12	3	0	0	0	0	0	27	4	0	0	0	1	0
08:00	-	08:15	5	1	0	0	0	0	0	22	2	0	0	0	0	0
08:15	-	08:30	11	1	0	0	0	0	0	31	1	0	0	0	2	0
08:30	-	08:45	13	1	0	0	0	0	0	49	1	0	0	0	0	0
08:45	-	09:00	11	2	0	0	0	0	0	37	2	0	0	0	1	0
TOTAL			40	5	0	0	0	0	0	139	6	0	0	0	3	0
09:00	-	09:15	7	0	0	0	0	0	0	18	3	0	0	0	0	0
09:15	-	09:30	2	2	2	0	0	0	0	10	2	0	0	0	0	0
TOTAL			9	2	2	0	0	0	0	28	5	0	0	0	0	0
PERIOD TOTAL			61	10	2	0	0	0	0	194	15	0	0	0	4	0
16:30	-	16:45	8	3	0	0	0	0	0	14	3	0	0	0	2	2
16:45	-	17:00	4	1	0	0	0	0	0	10	0	0	0	0	0	0
TOTAL			12	4	0	0	0	0	0	24	3	0	0	0	2	2
17:00	-	17:15	4	1	0	0	0	0	0	11	1	0	0	0	0	0
17:15	-	17:30	1	0	0	0	0	0	0	13	3	0	0	0	0	0
17:30	-	17:45	5	0	0	0	0	0	0	12	0	0	0	0	0	0
17:45	-	18:00	6	1	0	0	0	0	0	6	1	0	0	0	0	0
TOTAL			16	2	0	0	0	0	0	42	5	0	0	0	0	0
18:00	-	18:15	6	2	0	0	0	0	0	3	0	0	0	0	0	0
18:15	-	18:30	5	0	0	0	0	0	0	12	2	0	0	0	0	0
TOTAL			11	2	0	0	0	0	0	15	2	0	0	0	0	0
PERIOD TOTAL			39	8	0	0	0	0	0	81	10	0	0	0	2	2
DAILY TOTAL			100	18	2	0	0	0	0	275	25	0	0	0	6	2
GRAND TOTAL			120						308							



MERCURY
TRAFFIC SURVEYS LTD

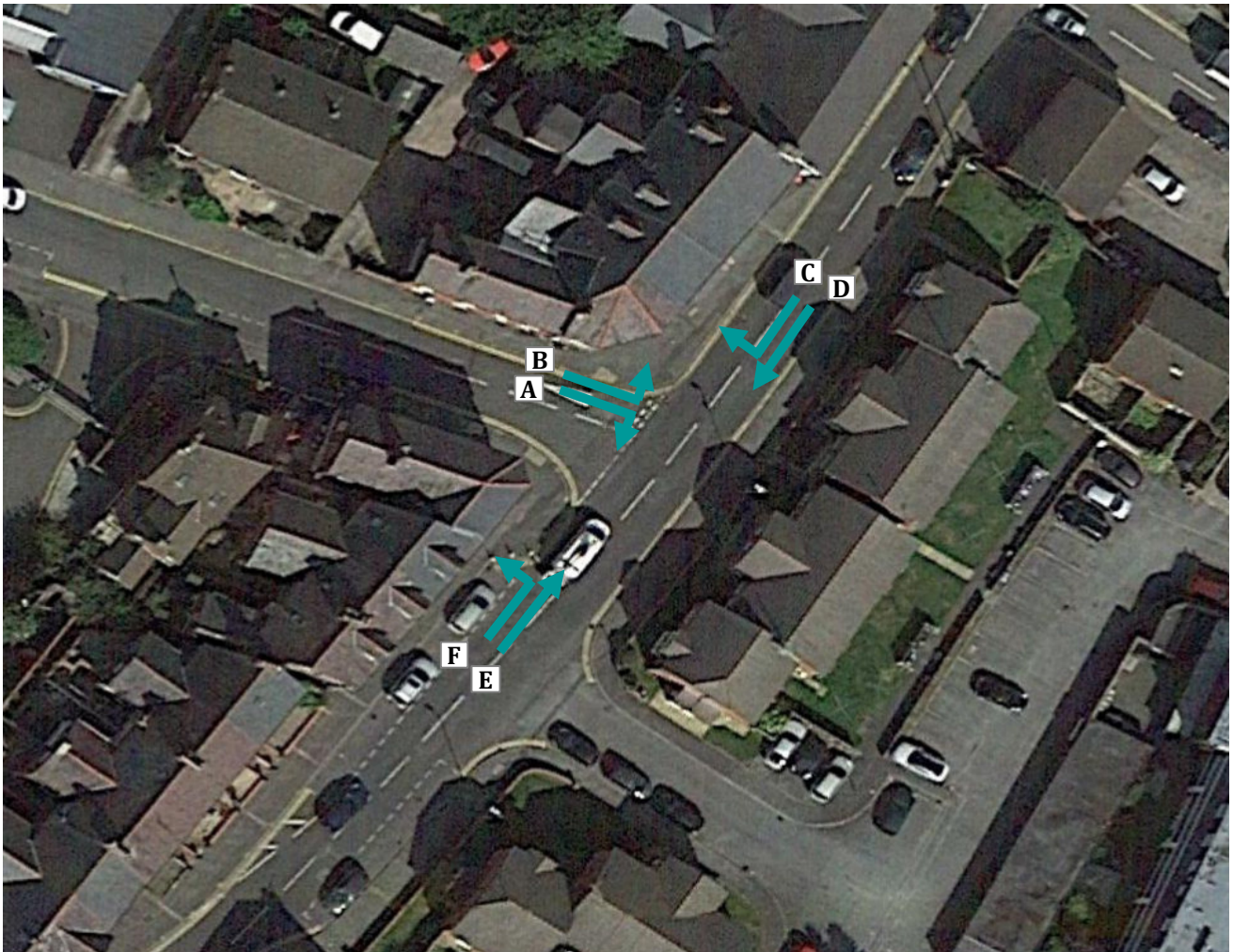
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 6 - SITE PLAN





PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 6

			MOVEMENT A						MOVEMENT B						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C
07:30	-	07:45	0	0	0	0	0	0	30	8	0	0	0	0	0
07:45	-	08:00	0	0	0	0	0	0	25	6	1	0	0	0	0
TOTAL			0	0	0	0	0	0	55	14	1	0	0	0	0
08:00	-	08:15	1	0	0	0	0	0	29	11	0	0	0	0	0
08:15	-	08:30	0	0	0	0	0	0	27	3	1	0	0	0	0
08:30	-	08:45	1	0	0	0	0	0	38	3	0	0	1	0	0
08:45	-	09:00	0	2	0	0	0	0	43	3	0	0	1	0	0
TOTAL			2	2	0	0	0	0	137	20	1	0	2	0	0
09:00	-	09:15	1	0	0	0	0	0	28	4	1	0	0	0	0
09:15	-	09:30	1	0	0	0	0	0	36	6	0	0	0	0	0
TOTAL			2	0	0	0	0	0	64	10	1	0	0	0	0
PERIOD TOTAL			4	2	0	0	0	0	256	44	3	0	2	0	0
16:30	-	16:45	1	1	0	0	0	0	31	4	0	0	0	0	0
16:45	-	17:00	4	2	0	0	0	0	37	3	0	0	0	0	0
TOTAL			5	3	0	0	0	0	68	7	0	0	0	0	0
17:00	-	17:15	3	0	0	0	0	0	33	5	0	0	0	0	0
17:15	-	17:30	3	0	0	0	0	0	35	5	0	0	0	1	0
17:30	-	17:45	1	0	0	0	0	0	41	4	0	0	0	0	0
17:45	-	18:00	2	0	0	0	1	0	37	3	0	0	0	0	0
TOTAL			9	0	0	0	1	0	146	17	0	0	0	1	0
18:00	-	18:15	1	1	0	0	0	0	38	2	0	0	0	0	0
18:15	-	18:30	1	0	0	0	0	0	43	1	0	0	0	0	0
TOTAL			2	1	0	0	0	0	81	3	0	0	0	0	0
PERIOD TOTAL			16	4	0	0	0	1	295	27	0	0	0	1	0
DAILY TOTAL			20	6	0	0	0	1	551	71	3	0	2	1	0
GRAND TOTAL			27						628						



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 6

			MOVEMENT C						MOVEMENT D							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	8	0	0	0	0	0	1	12	12	0	0	0	0	0
07:45	-	08:00	14	3	0	0	0	0	0	26	8	0	0	0	0	0
TOTAL			22	3	0	0	0	0	1	38	20	0	0	0	0	0
08:00	-	08:15	15	2	0	0	0	0	0	20	4	0	0	0	0	0
08:15	-	08:30	19	4	0	0	0	0	0	21	6	1	0	1	0	0
08:30	-	08:45	29	2	1	0	0	0	0	36	11	0	0	1	0	0
08:45	-	09:00	29	3	0	0	0	1	0	46	12	0	0	0	0	0
TOTAL			92	11	1	0	0	1	0	123	33	1	0	2	0	0
09:00	-	09:15	22	4	1	0	1	0	0	28	9	1	0	0	0	0
09:15	-	09:30	11	6	0	0	1	0	0	19	10	3	0	0	0	0
TOTAL			33	10	1	0	2	0	0	47	19	4	0	0	0	0
PERIOD TOTAL			147	24	2	0	2	1	1	208	72	5	0	2	0	0
16:30	-	16:45	23	5	0	0	0	0	1	63	13	0	0	0	0	0
16:45	-	17:00	25	4	0	0	0	1	1	62	6	0	0	0	0	0
TOTAL			48	9	0	0	0	1	2	125	19	0	0	0	0	0
17:00	-	17:15	31	4	0	0	0	1	1	71	7	0	1	1	1	1
17:15	-	17:30	17	2	0	0	0	0	0	70	5	0	0	0	0	0
17:30	-	17:45	27	1	0	0	0	0	0	78	10	0	0	0	1	1
17:45	-	18:00	29	2	0	0	0	1	0	57	4	0	0	0	1	0
TOTAL			104	9	0	0	0	2	1	276	26	0	1	1	3	2
18:00	-	18:15	26	2	0	0	0	0	0	71	5	0	0	0	1	0
18:15	-	18:30	15	1	0	0	0	0	0	50	2	0	0	0	0	0
TOTAL			41	3	0	0	0	0	0	121	7	0	0	0	1	0
PERIOD TOTAL			193	21	0	0	0	3	3	522	52	0	1	1	4	2
DAILY TOTAL			340	45	2	0	2	4	4	730	124	5	1	3	4	2
GRAND TOTAL			397						869							



PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 6

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	33	11	0	0	0	0	0	4	0	0	0	0	0	0
07:45	-	08:00	69	12	2	0	0	2	0	2	0	0	0	0	0	0
TOTAL			102	23	2	0	0	2	0	6	0	0	0	0	0	0
08:00	-	08:15	64	14	1	0	0	1	0	4	0	0	0	0	0	1
08:15	-	08:30	87	14	1	0	1	0	0	5	0	0	0	0	0	0
08:30	-	08:45	102	15	0	0	0	0	0	4	1	0	0	0	0	0
08:45	-	09:00	89	11	0	0	0	0	0	14	2	0	0	0	0	0
TOTAL			342	54	2	0	1	1	0	27	3	0	0	0	0	1
09:00	-	09:15	90	15	0	0	0	0	0	17	1	0	0	0	0	0
09:15	-	09:30	67	14	1	1	0	0	0	1	0	0	0	0	0	0
TOTAL			157	29	1	1	0	0	0	18	1	0	0	0	0	0
PERIOD TOTAL			601	106	5	1	1	3	0	51	4	0	0	0	0	1
16:30	-	16:45	74	16	0	0	0	0	0	1	0	0	0	0	0	0
16:45	-	17:00	63	17	0	0	0	1	0	9	0	0	0	0	0	0
TOTAL			137	33	0	0	0	1	0	10	0	0	0	0	0	0
17:00	-	17:15	76	2	0	0	0	1	0	4	0	0	0	0	0	0
17:15	-	17:30	50	3	0	0	0	0	0	3	0	0	0	0	0	0
17:30	-	17:45	62	2	0	0	0	1	0	2	0	0	0	0	0	0
17:45	-	18:00	59	6	0	0	0	2	0	3	0	0	0	0	0	0
TOTAL			247	13	0	0	0	4	0	12	0	0	0	0	0	0
18:00	-	18:15	61	6	0	0	0	2	0	1	0	0	0	0	0	0
18:15	-	18:30	64	5	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			125	11	0	0	0	2	0	1	0	0	0	0	0	0
PERIOD TOTAL			509	57	0	0	0	7	0	23	0	0	0	0	0	0
DAILY TOTAL			1110	163	5	1	1	10	0	74	4	0	0	0	0	1
GRAND TOTAL			1290						79							



MERCURY
TRAFFIC SURVEYS LTD

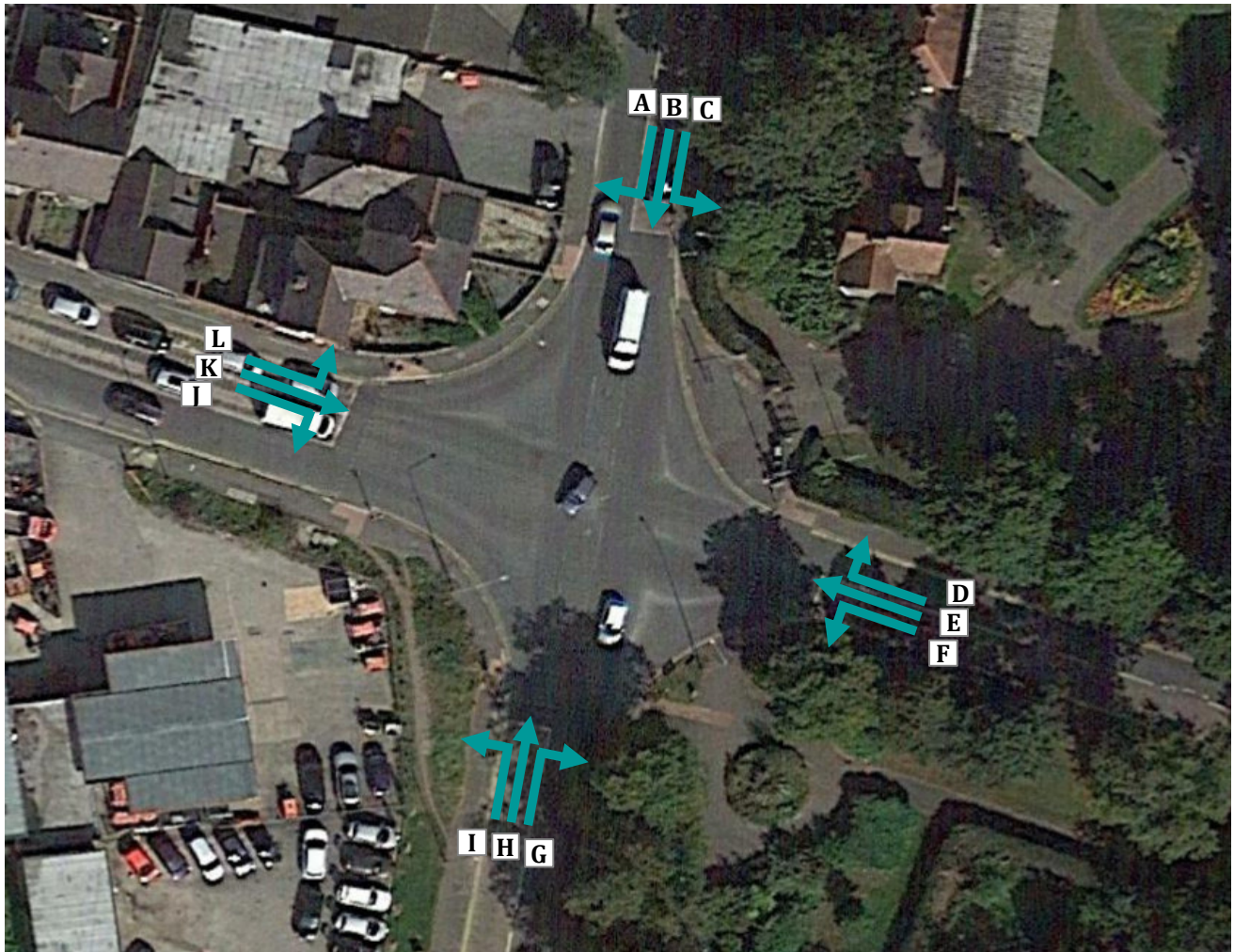
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 7 - SITE PLAN





PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 7

			MOVEMENT A							MOVEMENT B							MOVEMENT C						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	8	1	0	0	0	0	0	20	4	0	0	1	1	0	2	0	0	0	0	0	0
07:45	-	08:00	19	3	0	0	0	0	0	41	5	1	0	2	0	1	2	0	1	0	0	0	0
TOTAL			27	4	0	0	0	0	0	61	9	1	0	3	1	1	4	0	1	0	0	0	0
08:00	-	08:15	13	1	0	0	0	0	0	45	12	0	0	3	1	0	4	1	0	0	0	0	0
08:15	-	08:30	15	1	0	0	0	0	0	63	9	1	0	4	0	0	6	0	0	0	0	0	0
08:30	-	08:45	25	1	1	0	3	0	0	81	5	1	0	3	1	0	6	0	0	0	0	0	0
08:45	-	09:00	25	5	1	0	0	0	0	77	6	0	0	2	2	1	1	0	0	0	0	0	0
TOTAL			78	8	2	0	3	0	0	266	32	2	0	12	4	1	17	1	0	0	0	0	0
09:00	-	09:15	25	5	1	0	0	0	0	47	6	0	0	4	0	1	4	1	0	0	0	0	0
09:15	-	09:30	16	2	0	0	0	0	0	40	8	0	0	1	0	0	5	0	0	0	0	0	0
TOTAL			41	7	1	0	0	0	0	87	14	0	0	5	0	1	9	1	0	0	0	0	0
PERIOD TOTAL			146	19	3	0	3	0	0	414	55	3	0	20	5	3	30	2	1	0	0	0	0
16:30	-	16:45	37	2	0	0	0	0	0	76	5	0	0	2	0	0	4	0	0	0	0	0	0
16:45	-	17:00	43	2	0	0	0	1	0	75	6	0	0	1	0	0	5	0	0	0	0	0	0
TOTAL			80	4	0	0	0	1	0	151	11	0	0	3	0	0	9	0	0	0	0	0	0
17:00	-	17:15	50	3	0	0	0	1	0	90	8	0	0	3	1	0	2	0	0	0	0	0	0
17:15	-	17:30	32	3	0	0	0	0	0	72	4	0	0	4	0	1	1	1	0	0	0	0	0
17:30	-	17:45	36	1	0	0	0	0	0	64	4	0	0	2	1	0	5	1	0	0	0	0	0
17:45	-	18:00	36	2	0	0	0	0	0	63	2	0	0	1	0	0	4	0	0	0	0	1	0
TOTAL			154	9	0	0	0	1	0	289	18	0	0	10	2	1	12	2	0	0	0	1	0
18:00	-	18:15	32	4	0	0	0	0	0	62	6	0	0	3	0	1	8	0	0	0	0	0	0
18:15	-	18:30	27	3	0	0	0	0	0	56	2	0	0	2	0	0	6	0	0	0	0	0	0
TOTAL			59	7	0	0	0	0	0	118	8	0	0	5	0	1	14	0	0	0	0	0	0
PERIOD TOTAL			293	20	0	0	0	2	0	558	37	0	0	18	2	2	35	2	0	0	0	1	0
DAILY TOTAL			439	39	3	0	3	2	0	972	92	3	0	38	7	5	65	4	1	0	0	1	0
GRAND TOTAL			486							1117							71						



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 7

			MOVEMENT D							MOVEMENT E							MOVEMENT F						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	2	0	0	0	0	0	10	0	0	0	0	0	1	1	0	0	0	0	0	0	
07:45	-	08:00	1	0	0	0	0	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL			3	0	0	0	0	0	24	3	0	0	0	0	1	1	0	0	0	0	0	0	
08:00	-	08:15	0	0	0	0	0	0	16	2	0	0	0	0	0	1	0	0	0	0	0	0	
08:15	-	08:30	2	0	0	0	0	0	15	3	0	0	0	0	1	1	0	0	0	0	0	0	
08:30	-	08:45	3	2	0	0	0	0	30	2	1	0	0	0	0	1	0	0	0	0	0	0	
08:45	-	09:00	9	1	0	0	0	0	29	3	0	0	0	0	0	2	0	0	0	0	0	0	
TOTAL			14	3	0	0	0	0	90	10	1	0	0	0	1	5	0	0	0	0	0	0	
09:00	-	09:15	8	0	0	0	0	0	32	6	1	0	1	0	0	4	0	0	0	0	1	0	
09:15	-	09:30	2	1	0	0	1	0	8	4	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL			10	1	0	0	1	0	40	10	1	0	1	0	0	4	0	0	0	0	1	0	
PERIOD TOTAL			27	4	0	0	1	0	0	154	23	2	0	1	0	2	10	0	0	0	0	1	0
16:30	-	16:45	1	1	0	0	0	1	24	3	0	0	0	1	0	3	0	0	0	0	0	0	
16:45	-	17:00	3	0	0	0	0	1	26	6	0	0	0	0	0	3	0	0	0	0	0	0	
TOTAL			4	1	0	0	0	1	50	9	0	0	0	1	0	6	0	0	0	0	0	0	
17:00	-	17:15	5	0	0	0	0	1	25	4	0	0	0	1	0	0	0	0	0	0	0	0	
17:15	-	17:30	3	0	0	0	0	0	23	2	0	0	0	0	0	0	0	0	0	0	0	0	
17:30	-	17:45	5	0	0	0	0	0	24	2	0	0	0	0	0	2	0	0	0	0	0	0	
17:45	-	18:00	5	0	0	0	0	0	25	0	0	0	0	0	0	1	1	0	0	0	0	0	
TOTAL			18	0	0	0	0	1	97	8	0	0	0	1	0	3	1	0	0	0	0	0	
18:00	-	18:15	3	0	0	0	0	0	26	3	0	0	0	0	0	1	0	0	0	0	0	0	
18:15	-	18:30	1	0	0	0	0	0	13	0	0	0	0	0	0	1	0	0	0	0	0	0	
TOTAL			4	0	0	0	0	0	39	3	0	0	0	0	0	2	0	0	0	0	0	0	
PERIOD TOTAL			26	1	0	0	0	1	2	186	20	0	0	0	2	0	11	1	0	0	0	0	
DAILY TOTAL			53	5	0	0	1	1	2	340	43	2	0	1	2	2	21	1	0	0	0	1	0
GRAND TOTAL			62							390							23						



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 7

			MOVEMENT G							MOVEMENT H							MOVEMENT I						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	1	0	0	0	0	0	41	7	1	0	2	0	0	15	8	0	0	0	0	0	
07:45	-	08:00	0	0	0	0	0	0	50	9	0	0	3	1	0	18	1	0	0	0	0	0	
TOTAL			1	0	0	0	0	0	91	16	1	0	5	1	0	33	9	0	0	0	0	0	
08:00	-	08:15	0	0	0	0	0	0	53	4	0	0	3	0	1	24	2	0	0	0	0	0	
08:15	-	08:30	2	0	0	0	0	0	65	4	0	0	3	0	1	30	1	0	0	0	0	0	
08:30	-	08:45	0	0	0	0	1	0	70	9	0	0	1	0	0	33	2	1	0	1	0	0	
08:45	-	09:00	1	0	0	0	1	0	54	4	0	0	3	0	0	21	2	1	0	0	0	0	
TOTAL			3	0	0	0	2	0	242	21	0	0	10	0	2	108	7	2	0	1	0	0	
09:00	-	09:15	0	0	0	0	0	0	85	2	0	0	2	0	0	32	1	0	0	0	0	0	
09:15	-	09:30	0	0	0	0	0	0	52	4	0	0	4	0	0	23	1	1	0	0	0	0	
TOTAL			0	0	0	0	0	0	137	6	0	0	6	0	0	55	2	1	0	0	0	0	
PERIOD TOTAL			4	0	0	0	2	0	470	43	1	0	21	1	2	196	18	3	0	1	0	0	
16:30	-	16:45	0	0	0	0	0	0	55	8	0	0	2	0	0	29	5	0	0	0	0	0	
16:45	-	17:00	2	0	0	0	0	0	47	8	0	0	3	0	1	33	4	0	0	0	0	0	
TOTAL			2	0	0	0	0	0	102	16	0	0	5	0	1	62	9	0	0	0	0	0	
17:00	-	17:15	1	0	0	0	0	0	45	4	0	0	2	1	0	39	4	0	0	0	0	0	
17:15	-	17:30	0	0	0	0	0	0	49	4	0	0	1	0	0	23	2	0	0	0	0	0	
17:30	-	17:45	0	0	0	0	0	0	33	6	0	0	0	0	0	29	5	0	0	0	0	0	
17:45	-	18:00	0	0	0	0	0	0	61	2	0	0	4	0	0	29	2	0	0	0	0	0	
TOTAL			1	0	0	0	0	0	188	16	0	0	7	1	0	120	13	0	0	0	0	0	
18:00	-	18:15	2	0	0	0	0	0	47	6	0	0	1	0	0	23	3	0	0	0	0	0	
18:15	-	18:30	2	0	0	0	0	0	46	2	0	0	1	0	1	22	0	0	0	0	0	0	
TOTAL			4	0	0	0	0	0	93	8	0	0	2	0	1	45	3	0	0	0	0	0	
PERIOD TOTAL			7	0	0	0	0	0	383	40	0	0	14	1	2	227	25	0	0	0	0	0	
DAILY TOTAL			11	0	0	0	2	0	853	83	1	0	35	2	4	423	43	3	0	1	0	0	
GRAND TOTAL			13							978							470						



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 7

			MOVEMENT J							MOVEMENT K							MOVEMENT L						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	21	4	1	0	0	0	0	26	6	0	0	0	0	0	13	3	1	0	0	0	0
07:45	-	08:00	14	2	0	0	0	0	0	25	9	0	0	0	0	0	19	1	0	0	0	0	0
TOTAL			35	6	1	0	0	0	0	51	15	0	0	0	0	0	32	4	1	0	0	0	0
08:00	-	08:15	29	3	0	0	1	0	0	26	7	0	0	0	0	0	21	8	0	2	1	0	0
08:15	-	08:30	41	5	0	0	1	0	0	23	3	1	0	0	0	0	22	2	0	0	0	0	0
08:30	-	08:45	42	2	0	0	1	0	0	36	3	0	0	0	0	0	39	7	1	0	1	0	0
08:45	-	09:00	36	1	0	0	0	0	0	41	6	0	0	0	0	0	63	5	0	1	0	0	0
TOTAL			148	11	0	0	3	0	0	126	19	1	0	0	0	0	145	22	1	3	2	0	0
09:00	-	09:15	19	3	0	0	0	0	0	23	4	1	0	0	0	0	32	4	0	0	0	0	0
09:15	-	09:30	20	3	0	0	0	0	0	32	4	0	0	0	0	0	37	6	1	0	0	0	0
TOTAL			39	6	0	0	0	0	0	55	8	1	0	0	0	0	69	10	1	0	0	0	0
PERIOD TOTAL			222	23	1	0	3	0	0	232	42	2	0	0	0	0	246	36	3	3	2	0	0
16:30	-	16:45	32	1	0	0	0	0	0	35	4	0	0	0	0	0	28	3	0	0	1	0	0
16:45	-	17:00	47	3	0	0	0	0	0	26	5	0	0	0	0	0	23	5	0	0	0	0	0
TOTAL			79	4	0	0	0	0	0	61	9	0	0	0	0	0	51	8	0	0	1	0	0
17:00	-	17:15	36	3	1	0	0	0	0	34	6	0	0	0	0	0	30	5	0	0	0	0	0
17:15	-	17:30	36	4	0	0	0	0	0	36	2	0	0	0	0	0	42	6	0	0	0	1	0
17:30	-	17:45	35	2	0	0	0	0	0	37	3	0	0	0	0	0	29	4	0	0	0	0	0
17:45	-	18:00	34	1	0	0	0	0	0	34	3	0	0	0	0	0	34	3	0	0	0	0	0
TOTAL			141	10	1	0	0	0	0	141	14	0	0	0	0	0	135	18	0	0	0	1	0
18:00	-	18:15	25	4	0	0	0	0	0	38	1	0	0	0	0	0	39	2	0	1	0	0	0
18:15	-	18:30	17	1	0	0	0	0	0	33	2	0	0	0	0	0	33	2	0	0	0	0	0
TOTAL			42	5	0	0	0	0	0	71	3	0	0	0	0	0	72	4	0	1	0	0	0
PERIOD TOTAL			262	19	1	0	0	0	0	273	26	0	0	0	0	0	258	30	0	1	1	1	0
DAILY TOTAL			484	42	2	0	3	0	0	505	68	2	0	0	0	0	504	66	3	4	3	1	0
GRAND TOTAL			531							575							581						



MERCURY
TRAFFIC SURVEYS LTD

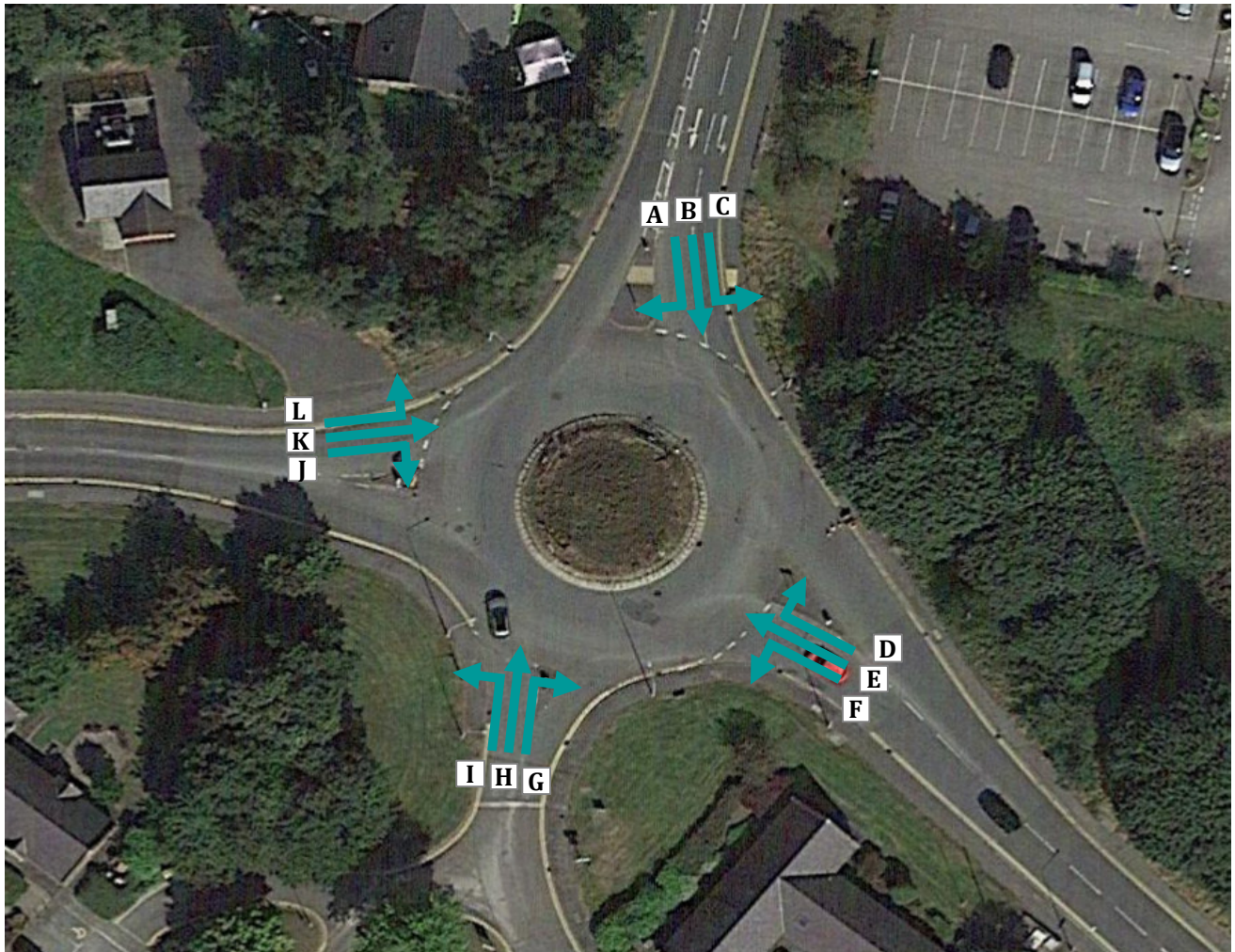
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 8 - SITE PLAN





PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 8

			MOVEMENT A							MOVEMENT B							MOVEMENT C						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	40	4	0	0	0	0	0	2	0	0	0	0	0	0	114	9	1	0	3	1	0
07:45	-	08:00	75	3	1	0	0	0	0	6	0	0	0	0	0	0	196	15	0	0	1	0	0
TOTAL			115	7	1	0	0	0	0	8	0	0	0	0	0	0	310	24	1	0	4	1	0
08:00	-	08:15	52	8	0	0	0	0	0	7	0	0	0	0	0	0	184	13	0	1	3	0	0
08:15	-	08:30	68	5	0	0	0	0	0	5	0	0	0	0	0	0	184	10	1	0	3	0	0
08:30	-	08:45	63	4	1	0	1	0	0	9	2	0	0	0	0	0	185	8	1	0	1	1	0
08:45	-	09:00	55	4	1	0	0	0	0	11	0	0	0	0	0	0	140	5	1	1	3	0	0
TOTAL			238	21	2	0	1	0	0	32	2	0	0	0	0	0	693	36	3	2	10	1	0
09:00	-	09:15	50	6	2	0	0	0	0	10	0	0	0	0	0	0	114	8	1	0	3	0	0
09:15	-	09:30	30	6	0	0	0	0	0	6	0	0	0	0	0	0	91	7	0	0	2	0	0
TOTAL			80	12	2	0	0	0	0	16	0	0	0	0	0	0	205	15	1	0	5	0	0
PERIOD TOTAL			433	40	5	0	1	0	0	56	2	0	0	0	0	0	1208	75	5	2	19	2	0
16:30	-	16:45	32	0	0	0	0	0	0	2	0	0	0	0	0	0	49	5	0	0	3	0	0
16:45	-	17:00	22	2	0	0	0	0	0	4	0	0	0	0	0	0	63	7	0	0	3	1	0
TOTAL			54	2	0	0	0	0	0	6	0	0	0	0	0	0	112	12	0	0	6	1	0
17:00	-	17:15	30	1	0	0	0	0	0	1	0	0	0	0	0	0	57	9	0	0	1	0	0
17:15	-	17:30	40	1	0	0	0	0	0	0	0	0	0	0	0	0	65	3	0	0	3	0	0
17:30	-	17:45	35	1	0	0	0	0	0	0	0	0	0	0	0	0	56	6	0	0	1	0	0
17:45	-	18:00	41	2	0	0	0	0	0	1	0	0	0	0	0	0	62	5	0	0	2	0	0
TOTAL			146	5	0	0	0	0	0	2	0	0	0	0	0	0	240	23	0	0	7	0	0
18:00	-	18:15	18	1	0	0	0	0	1	0	0	0	0	0	0	0	55	4	0	0	2	1	0
18:15	-	18:30	26	3	0	0	0	0	0	2	0	0	0	0	0	0	46	2	0	0	3	0	0
TOTAL			44	4	0	0	0	0	1	2	0	0	0	0	0	0	101	6	0	0	5	1	0
PERIOD TOTAL			244	11	0	0	0	0	1	10	0	0	0	0	0	0	453	41	0	0	18	2	0
DAILY TOTAL			677	51	5	0	1	0	1	66	2	0	0	0	0	0	1661	116	5	2	37	4	0
GRAND TOTAL			735							68							1825						



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 8

			MOVEMENT D							MOVEMENT E							MOVEMENT F						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	30	5	0	0	0	0	0	13	4	1	0	0	0	0	0	0	0	0	0	0	0
07:45	-	08:00	44	6	0	0	2	0	0	25	2	0	0	0	0	0	0	1	0	0	0	0	0
TOTAL			74	11	0	0	2	0	0	38	6	1	0	0	0	0	0	0	1	0	0	0	0
08:00	-	08:15	63	5	0	0	2	0	1	24	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	-	08:30	41	7	2	0	1	0	0	21	3	0	0	0	0	0	3	1	0	0	0	0	0
08:30	-	08:45	32	4	0	0	2	0	0	15	5	0	0	0	0	0	4	1	0	0	0	0	0
08:45	-	09:00	31	4	1	0	2	0	0	18	4	0	0	0	0	0	4	0	0	0	0	0	0
TOTAL			167	20	3	0	7	0	1	78	12	0	0	0	0	0	11	2	0	0	0	0	0
09:00	-	09:15	32	9	1	0	2	0	0	14	2	0	0	0	0	0	2	1	0	0	0	0	0
09:15	-	09:30	37	13	1	0	4	0	0	9	2	0	0	0	0	0	3	0	0	0	0	0	0
TOTAL			69	22	2	0	6	0	0	23	4	0	0	0	0	0	5	1	0	0	0	0	0
PERIOD TOTAL			310	53	5	0	15	0	1	139	22	1	0	0	0	0	16	4	0	0	0	0	0
16:30	-	16:45	134	5	0	0	2	0	0	31	2	0	0	0	0	0	0	0	0	0	0	0	0
16:45	-	17:00	104	4	1	1	2	0	0	38	1	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL			238	9	1	1	4	0	0	69	3	0	0	0	1	0	0	0	0	0	0	0	0
17:00	-	17:15	85	3	0	0	2	1	0	22	2	0	0	0	0	0	0	1	0	0	0	0	0
17:15	-	17:30	97	6	0	0	4	0	0	16	1	0	0	0	0	0	1	0	0	0	0	0	0
17:30	-	17:45	81	6	0	0	3	1	0	22	1	0	0	0	1	0	1	0	0	0	0	0	0
17:45	-	18:00	71	2	0	0	4	0	0	28	2	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL			334	17	0	0	13	2	0	88	6	0	0	0	1	0	3	1	0	0	0	0	0
18:00	-	18:15	80	5	0	0	1	0	0	28	6	0	0	0	0	0	0	0	0	0	0	0	0
18:15	-	18:30	59	4	0	0	3	0	0	18	2	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			139	9	0	0	4	0	0	46	8	0	0	0	0	0	0	0	0	0	0	0	0
PERIOD TOTAL			711	35	1	1	21	2	0	203	17	0	0	0	2	0	3	1	0	0	0	0	0
DAILY TOTAL			1021	88	6	1	36	2	1	342	39	1	0	0	2	0	19	5	0	0	0	0	0
GRAND TOTAL			1155							384							24						



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 8

			MOVEMENT G							MOVEMENT H							MOVEMENT I						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	-	08:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
08:00	-	08:15	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
08:15	-	08:30	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	-	08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
08:45	-	09:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	0	0	0
TOTAL			0	1	0	0	0	0	0	4	2	0	0	0	0	0	3	3	0	0	0	0	0
09:00	-	09:15	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0
09:15	-	09:30	0	0	0	0	0	0	0	6	0	0	0	0	0	0	2	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	8	0	0	0	0	0	0	3	1	0	0	0	0	0
PERIOD TOTAL			0	1	0	0	0	0	0	13	2	0	0	0	0	0	6	5	0	0	0	0	0
16:30	-	16:45	3	0	0	0	0	0	0	10	0	0	0	0	0	0	6	0	0	0	0	0	0
16:45	-	17:00	0	0	0	0	0	0	0	5	0	0	0	0	0	0	2	0	0	0	0	0	0
TOTAL			3	0	0	0	0	0	0	15	0	0	0	0	0	0	8	0	0	0	0	0	0
17:00	-	17:15	2	1	0	0	0	0	0	8	0	0	0	0	0	0	5	1	0	0	0	0	0
17:15	-	17:30	1	0	0	0	0	0	0	4	0	0	0	0	0	0	2	0	0	0	0	0	0
17:30	-	17:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0
17:45	-	18:00	2	0	0	0	0	0	0	2	0	0	0	0	0	0	4	0	0	0	0	0	0
TOTAL			5	1	0	0	0	0	0	16	0	0	0	0	0	0	13	1	0	0	0	0	0
18:00	-	18:15	0	0	0	0	0	0	0	4	0	0	0	0	0	0	3	0	0	0	0	0	0
18:15	-	18:30	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	0	0	0
PERIOD TOTAL			8	1	0	0	0	0	0	37	0	0	0	0	0	0	25	1	0	0	0	0	0
DAILY TOTAL			8	2	0	0	0	0	0	50	2	0	0	0	0	0	31	6	0	0	0	0	0
GRAND TOTAL			10							52							37						



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 8

			MOVEMENT J							MOVEMENT K							MOVEMENT L						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	1	0	0	0	0	0	0	31	8	0	0	0	0	0	12	4	1	0	0	0	0
07:45	-	08:00	3	0	0	0	0	0	0	39	6	0	0	0	0	0	29	3	0	0	0	0	0
TOTAL			4	0	0	0	0	0	0	70	14	0	0	0	0	0	41	7	1	0	0	0	0
08:00	-	08:15	4	0	0	0	0	0	0	35	2	0	0	0	0	0	38	5	0	0	0	0	0
08:15	-	08:30	9	0	0	0	0	0	0	44	3	0	0	0	0	0	35	2	0	0	0	0	0
08:30	-	08:45	2	0	0	0	0	0	0	60	4	0	0	0	0	0	51	4	2	0	0	0	0
08:45	-	09:00	5	1	0	0	0	0	0	48	5	0	0	0	0	0	49	2	0	0	0	0	0
TOTAL			20	1	0	0	0	0	0	187	14	0	0	0	0	0	173	13	2	0	0	0	0
09:00	-	09:15	3	1	0	0	0	0	0	30	1	0	0	0	0	0	35	8	0	0	0	0	0
09:15	-	09:30	8	0	0	0	0	0	0	35	3	0	0	0	0	0	35	3	0	0	0	0	0
TOTAL			11	1	0	0	0	0	0	65	4	0	0	0	0	0	70	11	0	0	0	0	0
PERIOD TOTAL			35	2	0	0	0	0	0	322	32	0	0	0	0	0	284	31	3	0	0	0	0
16:30	-	16:45	1	0	0	0	0	0	0	17	2	0	0	0	0	0	70	4	1	0	0	1	0
16:45	-	17:00	0	0	0	0	0	0	0	21	2	0	0	0	0	0	72	2	0	0	0	0	0
TOTAL			1	0	0	0	0	0	0	38	4	0	0	0	0	0	142	6	1	0	0	1	0
17:00	-	17:15	0	0	0	0	0	0	0	11	2	0	0	0	0	0	46	0	0	0	0	1	0
17:15	-	17:30	0	0	0	0	0	0	0	22	2	0	0	0	0	0	74	5	0	0	0	1	0
17:30	-	17:45	0	0	0	0	0	0	0	20	0	0	0	0	0	0	73	6	0	0	0	0	0
17:45	-	18:00	0	0	0	0	0	0	0	22	1	0	0	0	0	0	41	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	75	5	0	0	0	0	0	234	11	0	0	0	2	0
18:00	-	18:15	2	0	0	0	0	0	0	13	0	0	0	0	0	0	55	1	0	0	0	0	0
18:15	-	18:30	1	0	0	0	0	0	0	17	2	0	0	0	0	0	39	1	0	0	0	0	0
TOTAL			3	0	0	0	0	0	0	30	2	0	0	0	0	0	94	2	0	0	0	0	0
PERIOD TOTAL			4	0	0	0	0	0	0	143	11	0	0	0	0	0	470	19	1	0	0	3	0
DAILY TOTAL			39	2	0	0	0	0	0	465	43	0	0	0	0	0	754	50	4	0	0	3	0
GRAND TOTAL			41							508							811						

		ABC							DEF							GHI							JKL							
		CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	
07:30	- 07:45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
07:45	- 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:00	- 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	- 08:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	- 08:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:45	- 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
09:00	- 09:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	- 09:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERIOD TOTAL		5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
16:30	- 16:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	- 17:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	- 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	- 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	- 17:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	- 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	- 18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	- 18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
PERIOD TOTAL		2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
DAILY TOTAL		7	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
GRAND TOTAL		8							1							0							3							



MERCURY
TRAFFIC SURVEYS LTD

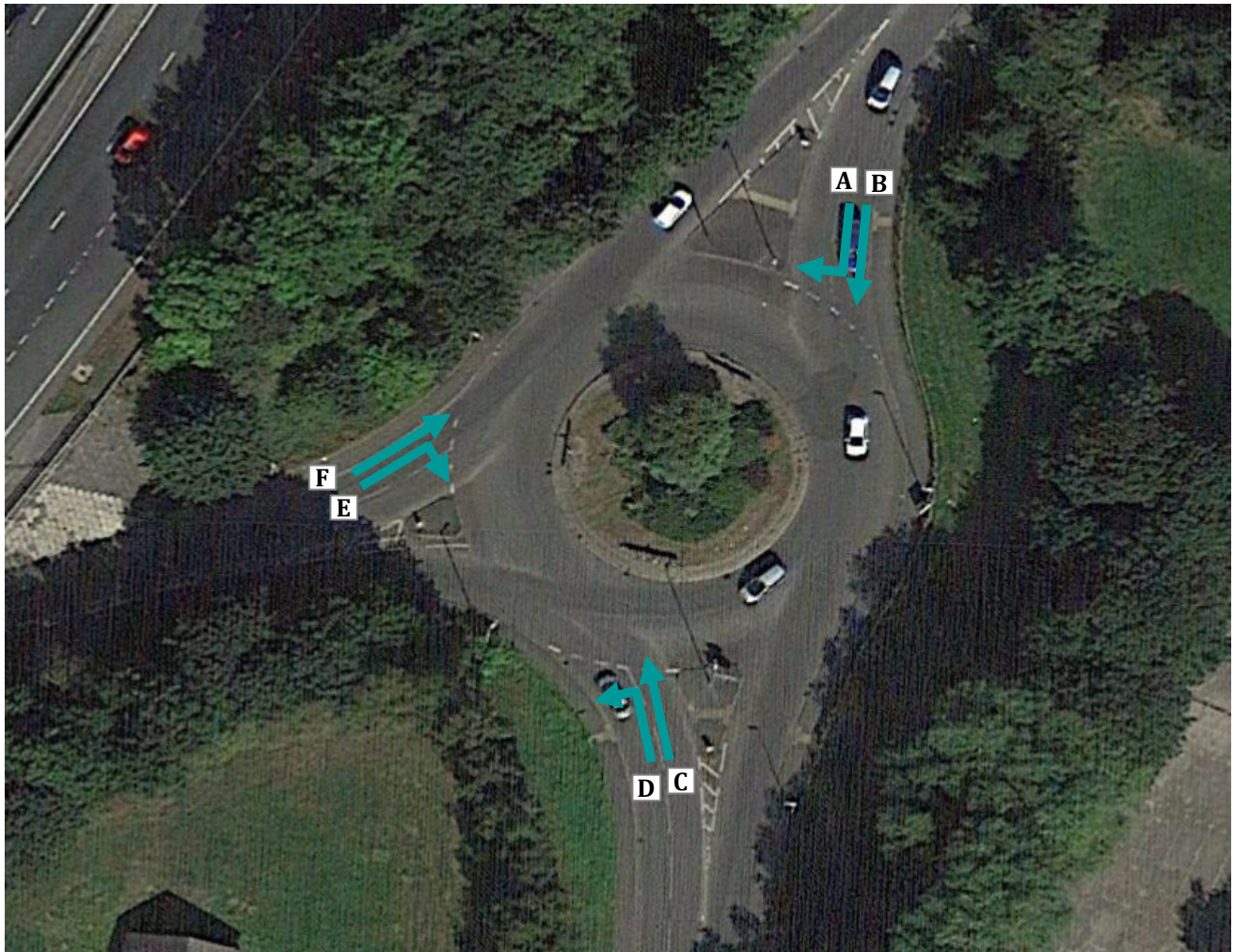
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 9 - SITE PLAN





PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 9

			MOVEMENT A						MOVEMENT B							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	18	4	0	0	0	0	129	7	1	0	2	0	0	
07:45	-	08:00	15	3	0	0	0	1	0	226	18	1	0	1	0	
TOTAL			33	7	0	0	0	1	0	355	25	2	0	3	1	0
08:00	-	08:15	22	10	1	0	1	0	0	171	10	1	1	0	0	0
08:15	-	08:30	27	5	1	0	0	0	0	182	6	0	0	2	0	0
08:30	-	08:45	28	4	0	0	0	0	0	193	9	2	0	0	0	0
08:45	-	09:00	36	5	0	0	2	0	0	158	9	1	0	2	0	0
TOTAL			113	24	2	0	3	0	0	704	34	4	1	4	0	0
09:00	-	09:15	43	6	0	0	0	0	0	151	10	3	0	1	0	0
09:15	-	09:30	37	11	1	0	0	0	0	110	11	0	0	0	1	0
TOTAL			80	17	1	0	0	0	0	261	21	3	0	1	1	0
PERIOD TOTAL			226	48	3	0	3	1	0	1320	80	9	1	8	2	0
16:30	-	16:45	101	13	0	0	1	1	1	55	4	0	0	1	0	0
16:45	-	17:00	110	18	0	0	0	0	0	52	9	0	0	1	1	0
TOTAL			211	31	0	0	1	1	1	107	13	0	0	2	1	0
17:00	-	17:15	124	13	0	0	2	0	0	56	5	0	0	0	0	0
17:15	-	17:30	133	13	0	0	0	0	1	55	4	0	0	1	0	0
17:30	-	17:45	106	7	0	0	1	1	0	50	5	0	0	1	0	0
17:45	-	18:00	97	14	0	0	0	0	1	71	6	0	0	0	0	0
TOTAL			460	47	0	0	3	1	2	232	20	0	0	2	0	0
18:00	-	18:15	91	7	0	0	3	0	1	48	0	0	0	1	0	1
18:15	-	18:30	67	10	0	0	3	0	0	47	4	0	0	1	0	0
TOTAL			158	17	0	0	6	0	1	95	4	0	0	2	0	1
PERIOD TOTAL			829	95	0	0	10	2	4	434	37	0	0	6	1	1
DAILY TOTAL			1055	143	3	0	13	3	4	1754	117	9	1	14	3	1
GRAND TOTAL			1221						1899							

**PROJECT NUMBER: 221102**

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 9

			MOVEMENT C						MOVEMENT D							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	30	4	1	0	1	0	0	10	2	0	0	0	0	0
07:45	-	08:00	56	4	0	0	1	0	0	14	3	0	0	1	0	0
TOTAL			86	8	1	0	2	0	0	24	5	0	0	1	0	0
08:00	-	08:15	80	7	0	0	0	0	0	18	3	0	0	1	0	0
08:15	-	08:30	48	5	1	0	0	0	0	12	4	1	0	2	0	0
08:30	-	08:45	63	5	1	0	1	0	0	15	2	1	0	1	0	0
08:45	-	09:00	46	4	1	0	0	0	0	15	3	0	0	2	0	0
TOTAL			237	21	3	0	1	0	0	60	12	2	0	6	0	0
09:00	-	09:15	49	9	2	0	2	0	0	14	1	0	0	0	0	0
09:15	-	09:30	53	12	1	0	1	0	0	21	0	0	0	3	0	0
TOTAL			102	21	3	0	3	0	0	35	1	0	0	3	0	0
PERIOD TOTAL			425	50	7	0	6	0	0	119	18	2	0	10	0	0
16:30	-	16:45	145	7	0	0	0	0	0	67	3	0	0	0	1	0
16:45	-	17:00	134	3	2	0	2	0	0	69	3	0	0	2	0	0
TOTAL			279	10	2	0	2	0	0	136	6	0	0	2	1	0
17:00	-	17:15	93	0	0	0	1	0	0	52	1	0	0	1	2	0
17:15	-	17:30	115	5	0	0	0	0	0	68	5	0	0	3	2	0
17:30	-	17:45	123	8	0	0	3	0	0	63	4	0	0	1	0	0
17:45	-	18:00	89	3	0	0	1	0	0	65	1	0	0	3	0	0
TOTAL			420	16	0	0	5	0	0	248	11	0	0	8	4	0
18:00	-	18:15	106	4	0	0	0	0	0	41	2	0	0	1	1	0
18:15	-	18:30	67	3	0	0	0	0	0	40	4	0	0	3	0	0
TOTAL			173	7	0	0	0	0	0	81	6	0	0	4	1	0
PERIOD TOTAL			872	33	2	0	7	0	0	465	23	0	0	14	6	0
DAILY TOTAL			1297	83	9	0	13	0	0	584	41	2	0	24	6	0
GRAND TOTAL			1402						657							



PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 9

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	46	5	0	0	1	0	1	100	18	0	0	2	2	0
07:45	-	08:00	76	11	0	0	0	0	0	136	26	1	0	0	0	1
TOTAL			122	16	0	0	1	0	1	236	44	1	0	2	2	1
08:00	-	08:15	98	4	0	0	3	0	0	152	17	0	0	2	1	0
08:15	-	08:30	109	8	0	0	1	0	0	149	17	1	0	3	2	0
08:30	-	08:45	108	7	1	0	2	0	0	124	20	1	0	0	0	0
08:45	-	09:00	80	1	1	1	2	0	0	104	7	1	0	0	0	0
TOTAL			395	20	2	1	8	0	0	529	61	3	0	5	3	0
09:00	-	09:15	49	3	0	0	1	0	0	80	11	1	0	0	0	0
09:15	-	09:30	32	1	0	0	2	1	0	67	4	0	0	0	0	0
TOTAL			81	4	0	0	3	1	0	147	15	1	0	0	0	0
PERIOD TOTAL			598	40	2	1	12	1	1	912	120	5	0	7	5	1
16:30	-	16:45	29	2	0	0	1	0	0	48	8	0	0	0	0	0
16:45	-	17:00	31	2	0	0	2	0	0	56	5	0	0	0	1	0
TOTAL			60	4	0	0	3	0	0	104	13	0	0	0	1	0
17:00	-	17:15	25	2	0	0	1	0	0	43	3	0	0	0	0	0
17:15	-	17:30	42	2	0	0	2	0	0	52	3	0	0	0	1	0
17:30	-	17:45	32	1	0	0	0	0	0	64	4	0	0	0	0	0
17:45	-	18:00	34	0	0	0	2	0	0	65	3	0	0	0	0	0
TOTAL			133	5	0	0	5	0	0	224	13	0	0	0	1	0
18:00	-	18:15	30	6	0	0	1	0	0	53	5	0	0	0	0	0
18:15	-	18:30	31	2	0	0	2	1	0	49	6	0	0	1	0	0
TOTAL			61	8	0	0	3	1	0	102	11	0	0	1	0	0
PERIOD TOTAL			254	17	0	0	11	1	0	430	37	0	0	1	2	0
DAILY TOTAL			852	57	2	1	23	2	1	1342	157	5	0	8	7	1
GRAND TOTAL			938						1520							



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 9

			AB							CD							EF						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	-	08:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	-	08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	-	08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	-	08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	-	09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	-	09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	-	09:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERIOD TOTAL			2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	-	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	-	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	-	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	-	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	-	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	-	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	-	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	-	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERIOD TOTAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAILY TOTAL			2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL			2							1							0						



MERCURY
TRAFFIC SURVEYS LTD

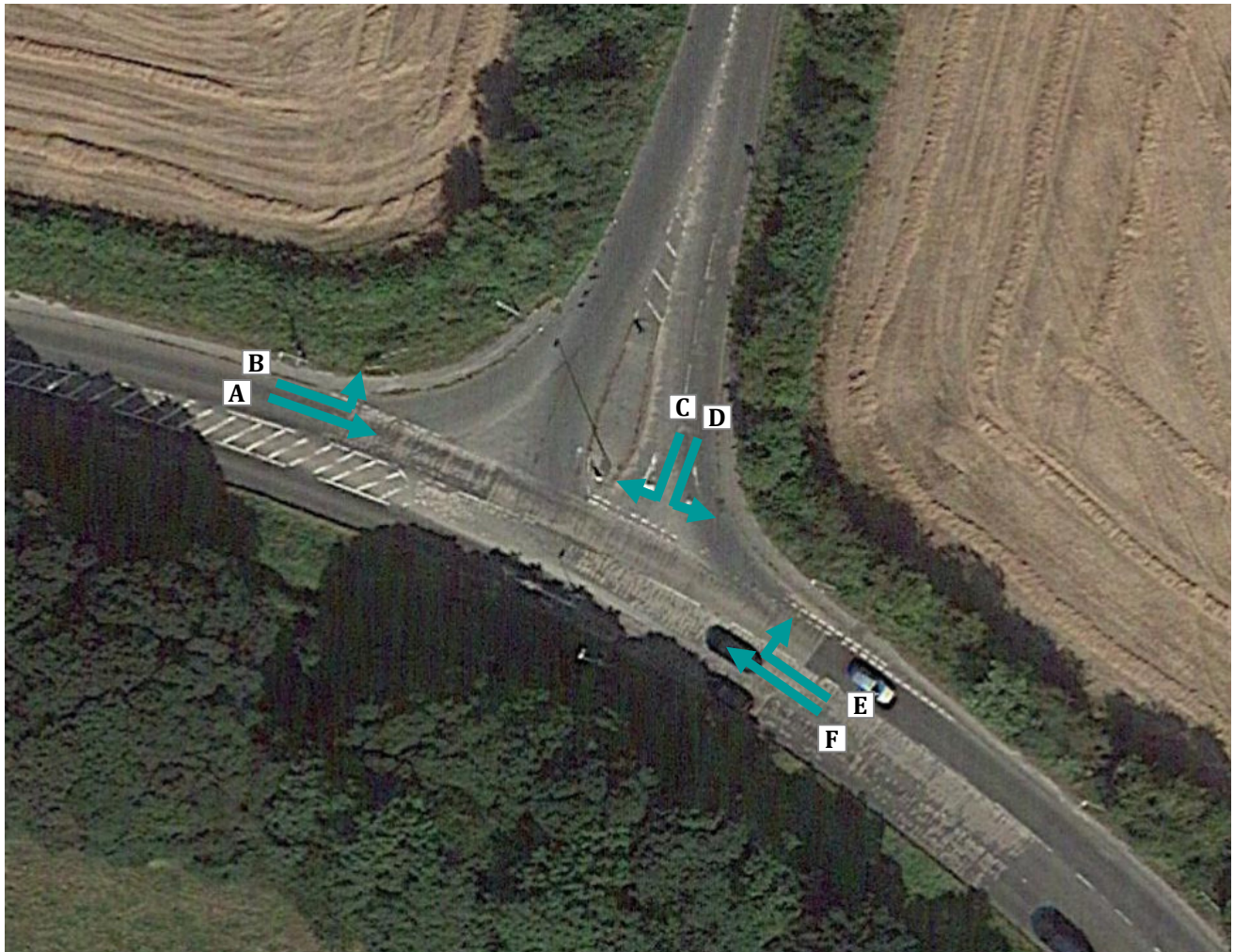
CLIENT: SCP

PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 10 - SITE PLAN





PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 10

			MOVEMENT A						MOVEMENT B						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C
07:30	-	07:45	102	22	1	1	2	2	0	0	0	0	0	0	0
07:45	-	08:00	86	20	3	2	2	1	0	3	1	0	0	0	0
TOTAL			188	42	4	3	4	3	0	3	1	0	0	0	0
08:00	-	08:15	77	25	3	3	2	0	0	0	1	0	0	0	0
08:15	-	08:30	86	9	1	2	4	0	0	0	0	0	0	0	0
08:30	-	08:45	80	20	0	1	0	0	0	1	1	0	0	0	0
08:45	-	09:00	92	9	0	0	0	0	0	3	0	0	0	0	0
TOTAL			335	63	4	6	6	0	0	4	2	0	0	0	0
09:00	-	09:15	85	22	1	6	0	0	0	2	2	0	0	0	0
09:15	-	09:30	71	17	2	2	0	0	0	2	0	0	0	0	0
TOTAL			156	39	3	8	0	0	0	4	2	0	0	0	0
PERIOD TOTAL			679	144	11	17	10	3	0	11	5	0	0	0	0
16:30	-	16:45	82	16	1	1	1	0	0	2	1	0	0	0	0
16:45	-	17:00	79	16	0	1	0	0	0	1	2	0	0	0	0
TOTAL			161	32	1	2	1	0	0	3	3	0	0	0	0
17:00	-	17:15	86	20	0	2	1	0	0	4	0	0	0	1	0
17:15	-	17:30	99	13	0	0	0	1	0	0	0	0	0	0	0
17:30	-	17:45	101	17	1	0	0	0	0	2	0	0	0	0	0
17:45	-	18:00	98	16	2	1	0	1	0	2	0	0	0	0	0
TOTAL			384	66	3	3	1	2	0	8	0	0	0	1	0
18:00	-	18:15	96	11	0	2	0	0	0	1	0	0	0	0	0
18:15	-	18:30	91	6	1	0	0	1	0	1	0	0	0	0	0
TOTAL			187	17	1	2	0	1	0	2	0	0	0	0	0
PERIOD TOTAL			732	115	5	7	2	3	0	13	3	0	0	1	0
DAILY TOTAL			1411	259	16	24	12	6	0	24	8	0	0	1	0
GRAND TOTAL			1728						33						



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 10

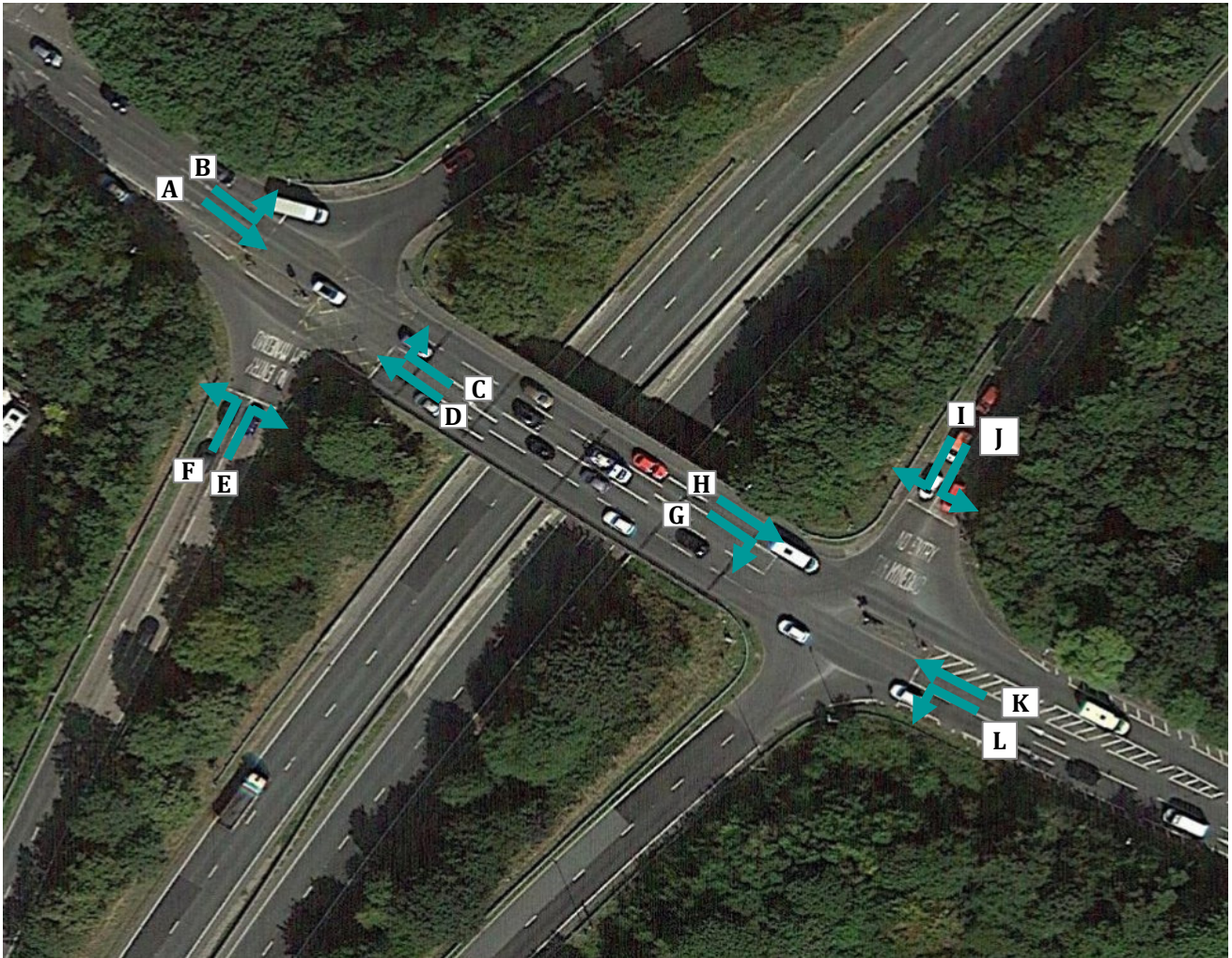
			MOVEMENT C						MOVEMENT D						
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C
07:30	-	07:45	1	0	0	0	0	0	79	19	1	0	2	1	0
07:45	-	08:00	0	0	0	0	0	0	100	18	0	1	1	0	0
TOTAL			1	0	0	0	0	0	179	37	1	1	3	1	0
08:00	-	08:15	1	1	0	0	0	0	104	13	0	0	1	0	0
08:15	-	08:30	0	0	0	0	0	0	102	7	0	0	1	0	0
08:30	-	08:45	0	0	0	0	0	0	92	5	1	1	0	0	0
08:45	-	09:00	0	0	0	0	0	0	72	10	0	0	1	0	0
TOTAL			1	1	0	0	0	0	370	35	1	1	3	0	0
09:00	-	09:15	1	0	0	0	0	0	57	4	0	1	0	0	0
09:15	-	09:30	3	1	0	0	0	0	52	17	2	0	0	0	0
TOTAL			4	1	0	0	0	0	109	21	2	1	0	0	0
PERIOD TOTAL			6	2	0	0	0	0	658	93	4	3	6	1	0
16:30	-	16:45	0	0	0	0	0	0	47	9	1	0	0	0	0
16:45	-	17:00	1	0	0	0	0	0	56	8	0	0	0	0	0
TOTAL			1	0	0	0	0	0	103	17	1	0	0	0	0
17:00	-	17:15	1	0	0	0	0	0	66	11	0	0	0	0	0
17:15	-	17:30	0	0	0	0	0	0	70	13	0	0	0	0	0
17:30	-	17:45	1	0	0	0	0	0	63	11	0	0	0	0	0
17:45	-	18:00	0	0	0	0	0	0	58	9	1	0	1	0	0
TOTAL			2	0	0	0	0	0	257	44	1	0	1	0	0
18:00	-	18:15	1	0	0	0	0	0	49	8	0	0	0	1	0
18:15	-	18:30	0	0	0	0	0	0	47	4	0	0	0	0	0
TOTAL			1	0	0	0	0	0	96	12	0	0	0	1	0
PERIOD TOTAL			4	0	0	0	0	0	456	73	2	0	1	1	0
DAILY TOTAL			10	2	0	0	0	0	1114	166	6	3	7	2	0
GRAND TOTAL			12						1298						

**PROJECT NUMBER: 221102**

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 10

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	16	10	1	1	0	0	0	39	20	3	0	0	0	0
07:45	-	08:00	39	6	1	0	2	0	0	62	18	10	2	0	0	0
TOTAL			55	16	2	1	2	0	0	101	38	13	2	0	0	0
08:00	-	08:15	58	9	0	0	1	1	0	55	24	0	2	0	0	0
08:15	-	08:30	59	16	0	1	1	0	0	81	26	1	3	2	0	0
08:30	-	08:45	58	8	0	0	1	0	0	74	27	5	0	6	0	0
08:45	-	09:00	62	10	2	0	0	0	0	65	18	1	2	3	0	0
TOTAL			237	43	2	1	3	1	0	275	95	7	7	11	0	0
09:00	-	09:15	51	8	0	1	4	0	0	65	17	4	1	0	0	0
09:15	-	09:30	28	9	3	2	0	1	0	55	23	4	2	0	0	0
TOTAL			79	17	3	3	4	1	0	120	40	8	3	0	0	0
PERIOD TOTAL			371	76	7	5	9	2	0	496	173	28	12	11	0	0
16:30	-	16:45	80	16	0	0	0	2	0	140	27	1	1	0	2	1
16:45	-	17:00	103	17	0	0	0	0	0	138	22	1	0	0	0	0
TOTAL			183	33	0	0	0	2	0	278	49	2	1	0	2	1
17:00	-	17:15	93	13	0	0	0	1	0	139	23	0	0	0	0	0
17:15	-	17:30	95	16	0	0	0	0	0	160	18	1	1	0	0	0
17:30	-	17:45	87	12	0	0	0	0	0	141	16	0	1	1	0	0
17:45	-	18:00	82	9	0	1	0	0	0	146	12	0	0	1	0	0
TOTAL			357	50	0	1	0	1	0	586	69	1	2	2	0	0
18:00	-	18:15	78	10	0	1	0	0	0	144	14	0	0	1	0	0
18:15	-	18:30	64	8	0	0	0	0	0	109	13	0	0	1	1	0
TOTAL			142	18	0	1	0	0	0	253	27	0	0	2	1	0
PERIOD TOTAL			682	101	0	2	0	3	0	1117	145	3	3	4	3	1
DAILY TOTAL			1053	177	7	7	9	5	0	1613	318	31	15	15	3	1
GRAND TOTAL			1258						1996							





PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 11

			MOVEMENT A						MOVEMENT B							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	89	21	1	0	2	2	0	88	15	1	2	0	0	0
07:45	-	08:00	88	30	3	2	4	0	0	85	11	1	0	0	2	0
TOTAL			177	51	4	2	6	2	0	173	26	2	2	0	2	0
08:00	-	08:15	113	27	2	1	3	0	0	57	11	1	3	1	0	0
08:15	-	08:30	130	18	1	0	5	0	0	74	3	0	0	0	0	0
08:30	-	08:45	132	18	1	1	0	0	1	53	8	0	3	0	0	0
08:45	-	09:00	132	10	0	0	0	0	1	66	10	0	0	1	0	0
TOTAL			507	73	4	2	8	0	2	250	32	1	6	2	0	0
09:00	-	09:15	92	13	0	5	0	0	0	40	9	1	0	0	0	0
09:15	-	09:30	83	19	4	2	0	0	0	38	13	1	0	0	0	0
TOTAL			175	32	4	7	0	0	0	78	22	2	0	0	0	0
PERIOD TOTAL			859	156	12	11	14	2	2	501	80	5	8	2	2	0
16:30	-	16:45	84	23	0	0	1	0	0	65	7	1	1	0	0	0
16:45	-	17:00	80	12	1	1	0	0	0	49	7	0	0	0	0	0
TOTAL			164	35	1	1	1	0	0	114	14	1	1	0	0	0
17:00	-	17:15	89	25	0	2	0	1	0	67	11	0	0	1	0	0
17:15	-	17:30	86	20	0	0	0	2	0	67	9	0	0	0	0	0
17:30	-	17:45	92	14	0	0	0	0	0	74	10	1	0	0	0	0
17:45	-	18:00	102	11	0	0	1	0	0	55	12	2	1	0	1	0
TOTAL			369	70	0	2	1	3	0	263	42	3	1	1	1	0
18:00	-	18:15	99	14	0	2	0	0	0	44	6	0	0	0	1	0
18:15	-	18:30	99	3	1	0	0	1	0	39	5	0	0	0	0	0
TOTAL			198	17	1	2	0	1	0	83	11	0	0	0	1	0
PERIOD TOTAL			731	122	2	5	2	4	0	460	67	4	2	1	2	0
DAILY TOTAL			1590	278	14	16	16	6	2	961	147	9	10	3	4	0
GRAND TOTAL			1922						1134							



PROJECT NUMBER: 221102

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 11

			MOVEMENT C						MOVEMENT D							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	28	5	1	0	0	0	0	32	17	3	0	0	0	0
07:45	-	08:00	27	6	1	0	0	0	0	69	14	7	1	1	0	0
TOTAL			55	11	2	0	0	0	0	101	31	10	1	1	0	0
08:00	-	08:15	26	4	1	0	0	0	0	76	24	0	1	1	1	0
08:15	-	08:30	28	2	0	0	0	0	0	90	29	1	2	3	0	0
08:30	-	08:45	30	4	1	0	0	0	0	99	20	1	0	7	0	0
08:45	-	09:00	36	4	0	0	0	0	0	87	15	3	1	3	0	0
TOTAL			120	14	2	0	0	0	0	352	88	5	4	14	1	0
09:00	-	09:15	38	4	1	1	0	0	0	81	15	2	1	4	0	0
09:15	-	09:30	21	5	1	1	0	0	0	61	21	4	2	0	1	0
TOTAL			59	9	2	2	0	0	0	142	36	6	3	4	1	0
PERIOD TOTAL			234	34	6	2	0	0	0	595	155	21	8	19	2	0
16:30	-	16:45	38	6	0	0	0	0	0	163	29	1	1	0	4	0
16:45	-	17:00	23	2	0	1	0	0	0	178	28	1	0	0	0	0
TOTAL			61	8	0	1	0	0	0	341	57	2	1	0	4	0
17:00	-	17:15	29	3	0	0	0	0	0	167	23	0	0	0	0	0
17:15	-	17:30	25	2	0	0	0	0	0	195	20	0	0	0	0	0
17:30	-	17:45	32	2	0	0	0	0	0	174	16	0	0	0	0	0
17:45	-	18:00	22	2	0	0	0	0	0	173	12	0	0	0	0	0
TOTAL			108	9	0	0	0	0	0	709	71	0	0	0	0	0
18:00	-	18:15	24	1	0	0	0	0	0	163	13	0	1	0	0	0
18:15	-	18:30	24	3	0	0	0	0	0	126	15	0	0	0	1	0
TOTAL			48	4	0	0	0	0	0	289	28	0	1	0	1	0
PERIOD TOTAL			217	21	0	1	0	0	0	1339	156	2	2	0	5	0
DAILY TOTAL			451	55	6	3	0	0	0	1934	311	23	10	19	7	0
GRAND TOTAL			515						2304							



PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 11

			MOVEMENT E						MOVEMENT F							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	78	12	0	0	0	1	0	24	11	0	1	0	0	0
07:45	-	08:00	86	7	0	0	0	0	0	35	9	4	1	1	0	0
TOTAL			164	19	0	0	0	1	0	59	20	4	2	1	0	0
08:00	-	08:15	82	1	0	1	1	0	0	37	14	0	1	0	0	0
08:15	-	08:30	92	9	1	0	0	0	0	47	13	0	2	0	0	0
08:30	-	08:45	113	2	0	0	0	0	0	33	16	4	0	0	0	0
08:45	-	09:00	101	9	0	0	1	0	0	40	13	1	1	0	0	0
TOTAL			388	21	1	1	2	0	0	157	56	5	4	0	0	0
09:00	-	09:15	60	2	0	0	0	1	0	34	10	1	1	0	0	0
09:15	-	09:30	62	8	0	0	0	0	0	25	10	4	3	0	0	0
TOTAL			122	10	0	0	0	1	0	59	20	5	4	0	0	0
PERIOD TOTAL			674	50	1	1	2	2	0	275	96	14	10	1	0	0
16:30	-	16:45	24	4	1	0	0	0	0	55	16	0	0	0	0	0
16:45	-	17:00	31	4	0	0	0	0	0	58	18	0	0	0	0	0
TOTAL			55	8	1	0	0	0	0	113	34	0	0	0	0	0
17:00	-	17:15	23	4	0	0	0	0	0	65	15	0	0	0	1	0
17:15	-	17:30	28	2	0	0	0	0	0	55	17	1	1	0	0	0
17:30	-	17:45	26	2	0	0	0	0	0	51	11	0	1	1	0	0
17:45	-	18:00	42	1	2	0	0	0	0	49	8	0	1	1	0	0
TOTAL			119	9	2	0	0	0	0	220	51	1	3	2	1	0
18:00	-	18:15	33	2	0	0	0	0	0	62	11	0	0	1	0	0
18:15	-	18:30	24	2	0	0	0	0	0	44	6	0	0	1	0	0
TOTAL			57	4	0	0	0	0	0	106	17	0	0	2	0	0
PERIOD TOTAL			231	21	3	0	0	0	0	439	102	1	3	4	1	0
DAILY TOTAL			905	71	4	1	2	2	0	714	198	15	13	5	1	0
GRAND TOTAL			985						946							



PROJECT NUMBER: 221102

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 11

			MOVEMENT G						MOVEMENT H							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	40	15	0	0	2	2	0	130	17	1	0	0	1	0
07:45	-	08:00	33	15	3	1	2	0	0	145	22	0	0	2	0	0
TOTAL			73	30	3	1	4	2	0	275	39	1	0	2	1	0
08:00	-	08:15	38	14	0	3	1	0	0	154	15	1	1	3	0	0
08:15	-	08:30	48	15	1	0	0	0	0	180	10	1	0	5	0	0
08:30	-	08:45	26	8	0	1	0	0	0	221	9	1	0	0	0	1
08:45	-	09:00	41	7	0	0	0	0	0	194	15	0	0	1	0	1
TOTAL			153	44	1	4	1	0	0	749	49	3	1	9	0	2
09:00	-	09:15	34	6	0	0	0	0	0	120	10	0	0	0	1	0
09:15	-	09:30	25	13	2	2	0	0	0	124	15	2	0	0	0	0
TOTAL			59	19	2	2	0	0	0	244	25	2	0	0	1	0
PERIOD TOTAL			285	93	6	7	5	2	0	1268	113	6	1	11	2	2
16:30	-	16:45	42	16	1	0	0	0	0	71	14	0	0	1	0	0
16:45	-	17:00	32	7	1	1	0	0	0	77	10	0	0	0	0	0
TOTAL			74	23	2	1	0	0	0	148	24	0	0	1	0	0
17:00	-	17:15	36	14	0	2	0	1	0	70	13	0	0	0	0	0
17:15	-	17:30	37	13	0	0	0	1	0	82	10	0	0	0	1	0
17:30	-	17:45	28	6	0	0	0	0	0	86	6	0	0	0	0	0
17:45	-	18:00	34	8	0	0	1	0	0	118	5	2	0	0	0	0
TOTAL			135	41	0	2	1	2	0	356	34	2	0	0	1	0
18:00	-	18:15	32	7	0	1	0	0	0	93	10	0	1	0	0	0
18:15	-	18:30	46	2	0	0	0	0	0	84	3	1	0	0	1	0
TOTAL			78	9	0	1	0	0	0	177	13	1	1	0	1	0
PERIOD TOTAL			287	73	2	4	1	2	0	681	71	3	1	1	2	0
DAILY TOTAL			572	166	8	11	6	4	0	1949	184	9	2	12	4	2
GRAND TOTAL			767						2162							

**PROJECT NUMBER: 221102**

PROJECT MANAGER: ADAM CARTER **DATE:** THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 11

			MOVEMENT I						MOVEMENT J							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	22	11	3	0	0	0	0	20	7	0	0	0	0	0
07:45	-	08:00	38	11	6	1	0	0	0	40	5	0	2	0	0	0
TOTAL			60	22	9	1	0	0	0	60	12	0	2	0	0	0
08:00	-	08:15	42	18	0	1	0	0	0	64	8	1	0	0	1	0
08:15	-	08:30	49	21	1	1	2	0	0	66	4	0	0	0	0	0
08:30	-	08:45	45	12	0	0	1	0	0	64	5	0	0	0	0	0
08:45	-	09:00	37	9	1	1	2	0	0	60	4	0	0	0	0	0
TOTAL			173	60	2	3	5	0	0	254	21	1	0	0	1	0
09:00	-	09:15	39	13	2	3	3	0	0	48	4	0	1	0	0	0
09:15	-	09:30	34	14	4	1	0	0	0	19	4	0	0	0	0	0
TOTAL			73	27	6	4	3	0	0	67	8	0	1	0	0	0
PERIOD TOTAL			306	109	17	8	8	0	0	381	41	1	3	0	1	0
16:30	-	16:45	87	20	1	1	0	2	0	68	6	0	0	0	0	0
16:45	-	17:00	106	16	1	0	0	0	0	35	6	1	0	0	0	0
TOTAL			193	36	2	1	0	2	0	103	12	1	0	0	0	0
17:00	-	17:15	102	15	0	0	0	0	0	36	4	0	0	0	0	0
17:15	-	17:30	127	7	0	0	0	0	0	48	2	0	0	0	2	0
17:30	-	17:45	95	13	0	0	0	0	0	28	3	0	0	0	0	0
17:45	-	18:00	94	8	0	0	0	0	0	52	5	0	0	0	0	0
TOTAL			418	43	0	0	0	0	0	164	14	0	0	0	2	0
18:00	-	18:15	91	7	0	1	0	0	0	37	1	1	0	0	0	0
18:15	-	18:30	74	5	0	0	0	0	0	26	3	0	0	0	0	0
TOTAL			165	12	0	1	0	0	0	63	4	1	0	0	0	0
PERIOD TOTAL			776	91	2	2	0	2	0	330	30	2	0	0	2	0
DAILY TOTAL			1082	200	19	10	8	2	0	711	71	3	3	0	3	0
GRAND TOTAL			1321						791							



PROJECT NUMBER: 221102

DATE: THUR 10TH NOV 2022

SURVEY DESCRIPTION: WREXHAM - MCC - SITE 11

			MOVEMENT K						MOVEMENT L							
			CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:30	-	07:45	41	11	1	0	0	0	26	6	0	1	0	0	0	
07:45	-	08:00	61	9	2	0	1	0	27	6	0	0	0	0	0	
TOTAL			102	20	3	0	1	0	53	12	0	1	0	0	0	
08:00	-	08:15	59	9	1	1	1	0	28	4	0	0	1	0	0	
08:15	-	08:30	70	9	0	1	1	0	16	4	0	0	0	0	0	
08:30	-	08:45	89	11	2	0	6	0	15	7	0	0	0	0	0	
08:45	-	09:00	89	11	1	0	1	0	14	1	1	0	0	0	0	
TOTAL			307	40	4	2	9	1	73	16	1	0	1	0	0	
09:00	-	09:15	73	9	1	0	1	0	16	4	0	0	0	0	0	
09:15	-	09:30	48	9	1	1	0	1	20	3	0	0	0	0	0	
TOTAL			121	18	2	1	1	1	36	7	0	0	0	0	0	
PERIOD TOTAL			530	78	9	3	11	2	0	162	35	1	1	1	0	0
16:30	-	16:45	113	14	0	0	0	2	0	44	3	0	0	0	0	
16:45	-	17:00	96	11	0	1	0	0	33	1	0	0	0	0	0	
TOTAL			209	25	0	1	0	2	0	77	4	0	0	0	0	0
17:00	-	17:15	107	14	0	0	0	0	62	4	0	0	0	0	0	
17:15	-	17:30	93	13	0	0	0	0	32	2	0	0	0	0	0	
17:30	-	17:45	113	6	0	0	0	0	50	2	0	0	0	0	0	
17:45	-	18:00	107	9	0	0	0	0	42	10	0	0	0	0	0	
TOTAL			420	42	0	0	0	0	186	18	0	0	0	0	0	0
18:00	-	18:15	98	8	0	0	0	0	57	1	0	0	0	0	0	
18:15	-	18:30	75	11	1	0	0	1	30	3	0	0	0	1	0	
TOTAL			173	19	1	0	0	1	87	4	0	0	0	1	0	0
PERIOD TOTAL			802	86	1	1	0	3	0	350	26	0	0	0	1	0
DAILY TOTAL			1332	164	10	4	11	5	0	512	61	1	1	1	1	0
GRAND TOTAL			1526						577							

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APPENDIX C



Key

Existing

Application Boundary (72.85ha)

Trees/Woodland

Hedgerow

Watercourse

Public Right of Way (PRoW) Footpath

Public Right of Way (PRoW) Bridleway

Public Right of Way (PRoW) BOAT

Proposed

Residential Development up to 1430 dwellings (37.57ha)

Wastewater Treatment Plant (if necessary) with 50m Easement (2.55ha)

2FE Primary School Site (1.62ha)

Local Centre with possible nursery, shops, cafe, public house and community facilities subject to viability(1.46ha)

Telecom Mast Exclusion Zone

Spine Road with Tree Avenue, Landscape Verge and Swale

Secondary Road/Shared Drive

Emergency Access

Footpath

Footpath Cycleway

Footpath Cycleway Off Road

Public Open Space (15.98ha)

Strategic Open Space (7.89ha)

Drainage Attenuation (1.96ha)

Tree Planting

Hedgerow Planting

Neighbourhood Equipped Area for Play (NEAP)

Multi Use Games Area (MUGA)

Locally Equipped Area for Play (LEAP)

Local Area for Play (LAP)

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F	Title amended to Option 1	SO	NKH	07/08/23
E	Spine Road and NDA amended	NKH	NKH	23/03/23
D	Removal of WG highway scheme	NKH	NKH	17/03/23
C	Updates following DTM 09/01/23	AG	NKH	01/02/23
B	Updates following DTM 06/12/22	AG	NKH	07/12/22
A	Updates to trees, WWTW, local centre layout and access as per client comments	AG	NKH	23/11/22
Rev	Description	Drawn	Approved	Date

TEP

THE ENVIRONMENT PARTNERSHIP

401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Lower Berse Farm, Ruthin Road, Wrexham

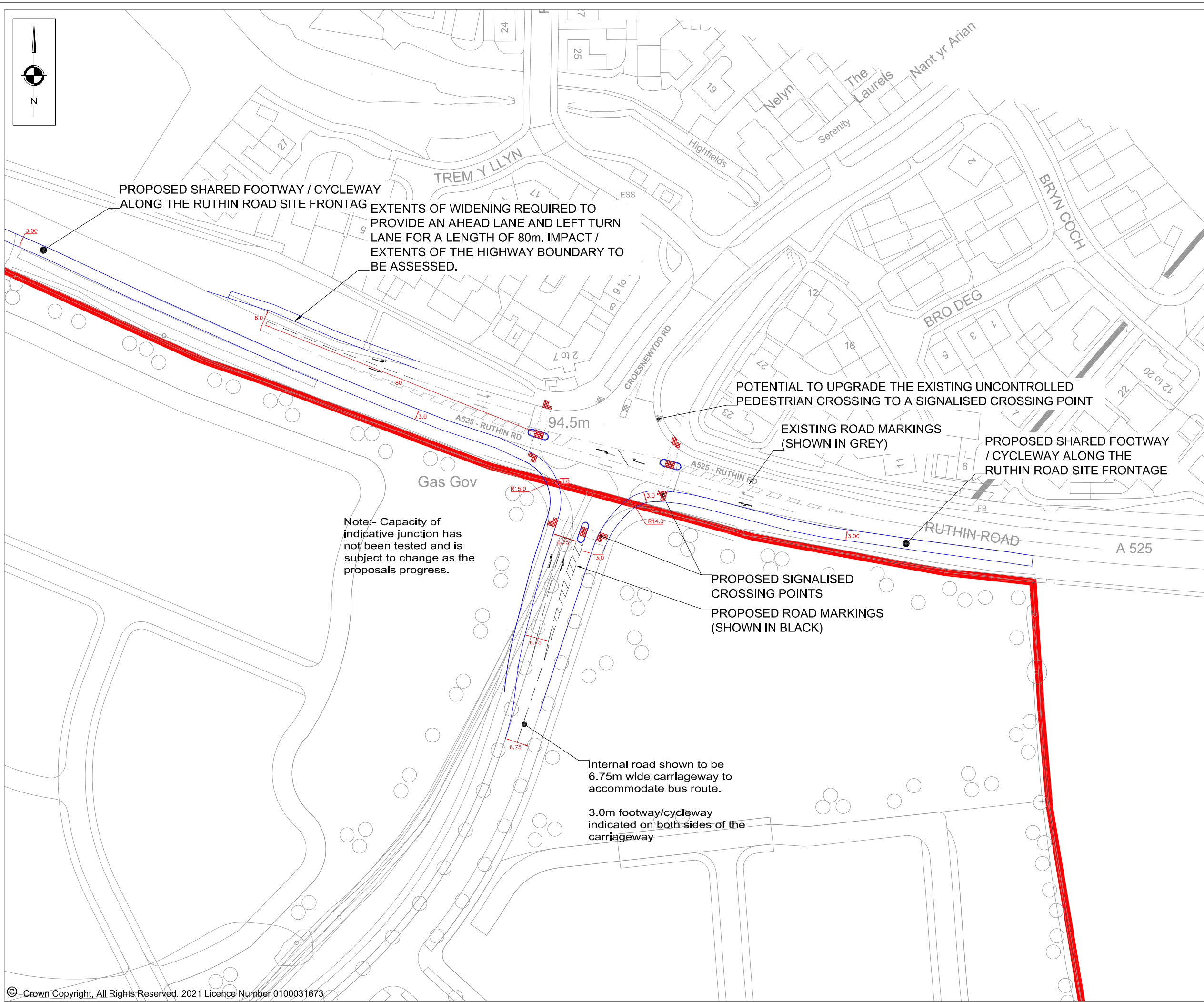
Title
Masterplan Framework - Option 1

Drawing Number
D9730.001F

Scale	Date	
1:2500 @ A1	21/11/2022	
Drawn	Checked	Approved
EL	NKH	NKH

S|C|P

APPENDIX D



REV	DESCRIPTION	DATE	BY
A	-MASTERPLAN REV E UNDERLAID. -JUNCTION DESIGN UPDATED TO SUIT.	29.11.22	BA



RUTHIN ROAD,
WREXHAM

SITE ACCESS OPTION 2

BH	25.07.2020
----	------------

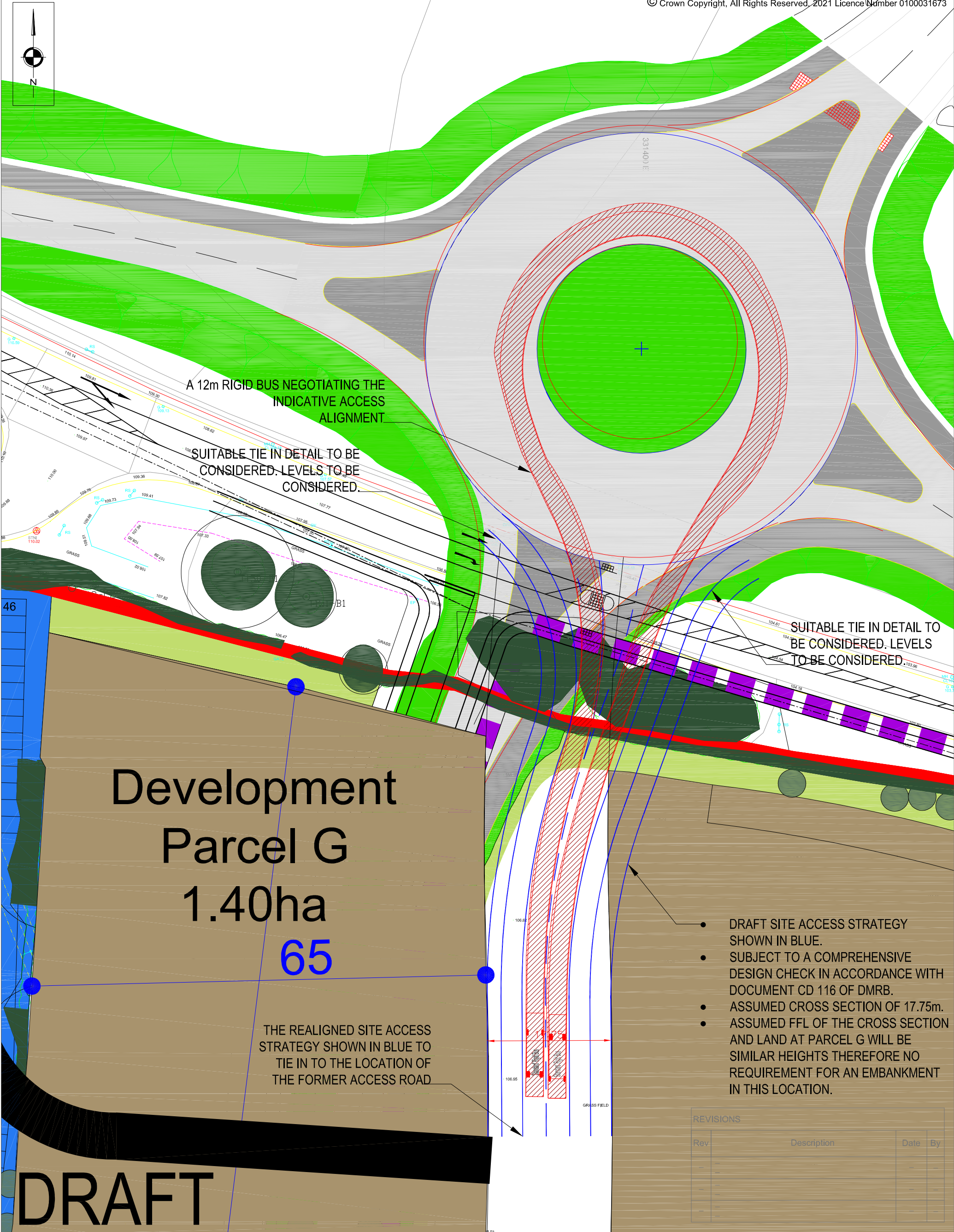
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PLANNING	-

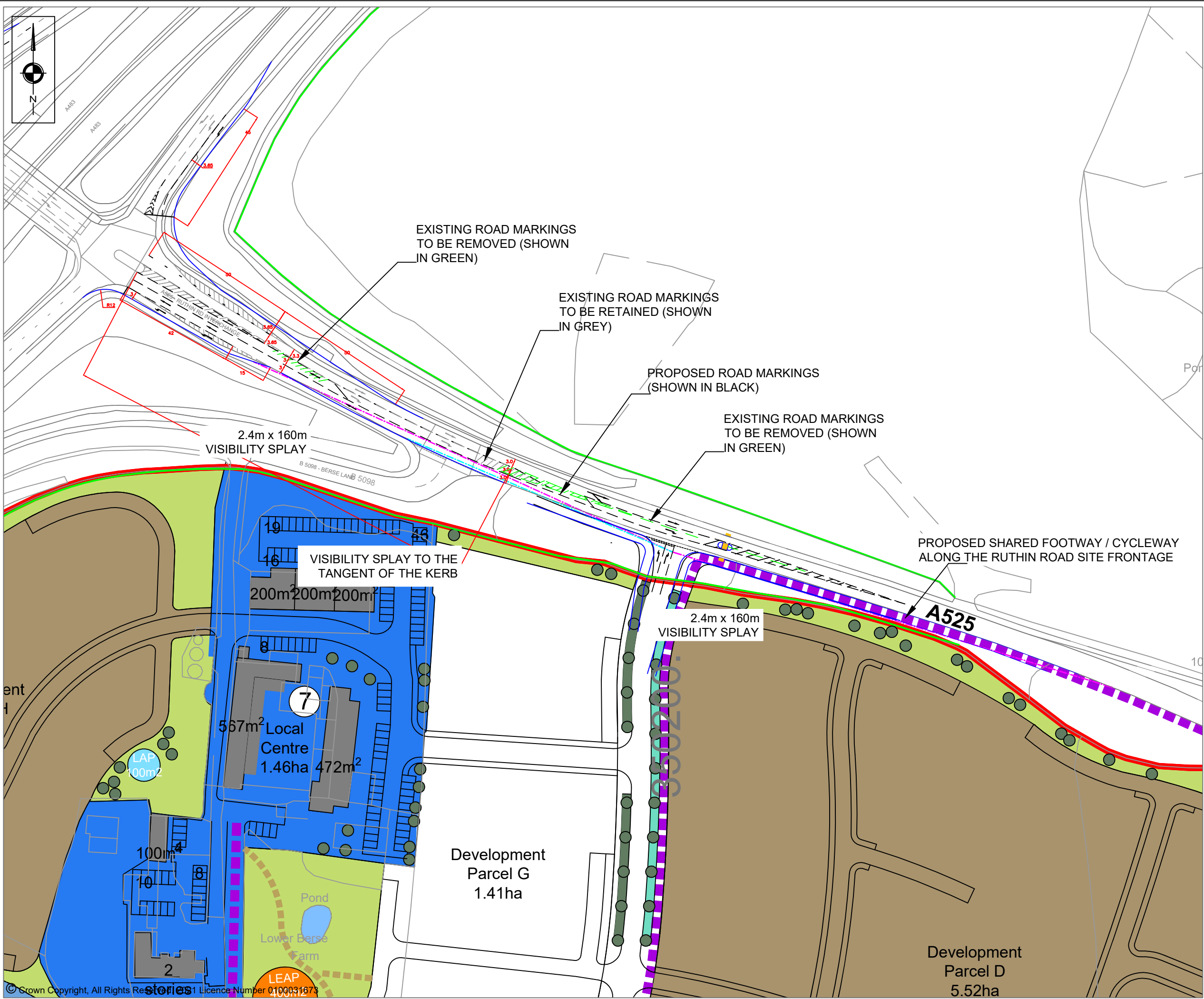
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APPENDIX E



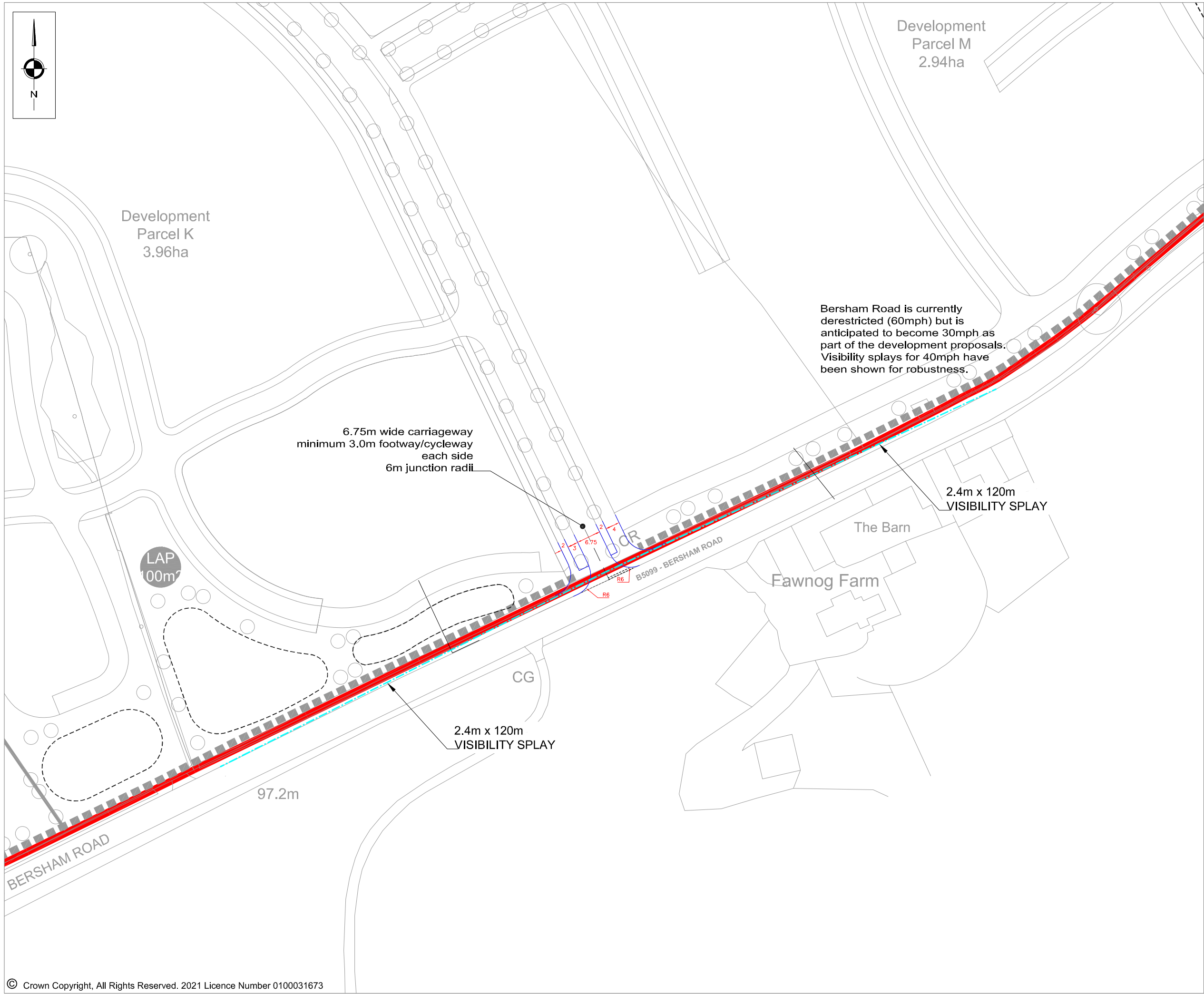
Client	Drawing Title POTENTIAL SITE ACCESS STRATEGY	Scale 1:500 @ A3	By BA	Drawing No. SCP/210187/D01
Project Title RUTHIN ROAD, WREXHAM		Date 16.03.2023	Checked LB	
		Approved/ Unapproved -	Status PLANNING	Revision -



NOTES			
REVISIONS			
REV	DESCRIPTION	DATE	BY
A	-MASTERPLAN REV E UNDERLAID	30.11.22	BA
B	-MASTERPLAN UNDERLAID	06.06.23	AM
Client Name:			
REDROW HOMES (NW)			
Project Title:			
RUTHIN ROAD, WREXHAM			
Drawing Title:			
INTERIM MAIN SITE ACCESS AND VISIBILITY SPLAYS			
Drawn By:		Date:	
BH		24.08.2021	
Checked:		Scale:	
DR		1:1250 @ A3	
Status:		Approved/Unapproved:	
PLANNING		-	
Drawing No.			Rev.
SCP/210187/F04			B

S|C|P

APPENDIX F



NOTES

REVISIONS			
REV	DESCRIPTION	DATE	BY
A	-MASTERPLAN REV E UNDERLAID. -JUNCTION DESIGN UPDATED TO SUIT.	29.11.22	BA

SCP

Transportation Planning : Infrastructure Design

Colwyn Chambers, 19 York Street, Manchester, M2 3BA, Tel 0161 832 4400,
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:

-

Project Title:

RUTHIN ROAD,
WREXHAM

Drawing Title:

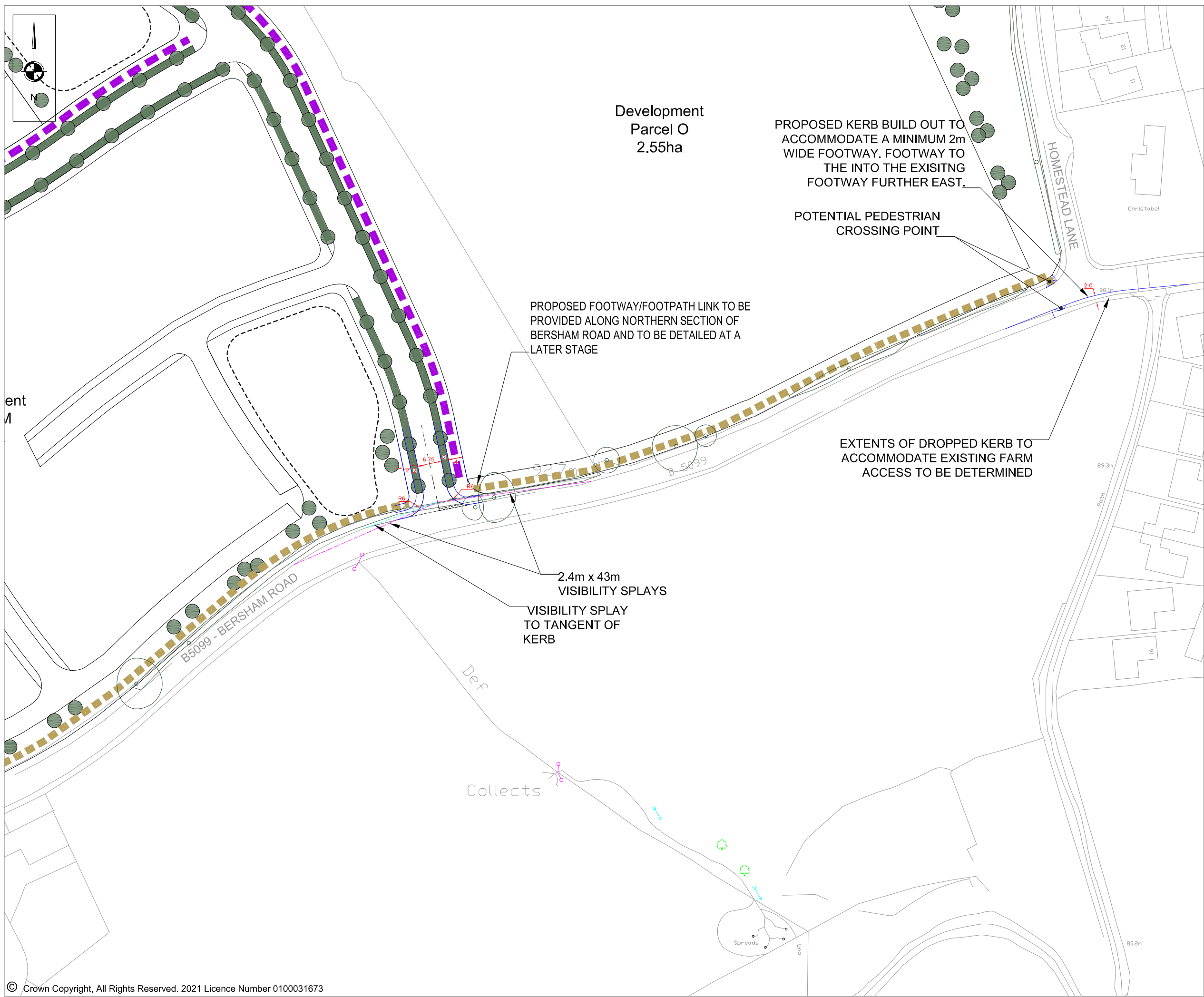
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Checked:	DR	Scale:	1:1000 @ A3
Status:	PLANNING	Approved/Unapproved:	-

Drawing No.	Rev.
SCP/210187/F03	A

S|C|P

APPENDIX G



NOTES

REVISIONS			
REV	DESCRIPTION	DATE	BY
A	-MASTERPLAN REV E UNDERLAID ACCESS RELOCATED TO SUIT	30.11.22	BA

SCP

Transportation Planning : Infrastructure Design

Colwyn Chambers, 19 York Street, Manchester, M2 3BA, Tel 0161 832 4400,
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:

-

Project Title:

RUTHIN ROAD,
WREXHAM

Drawing Title:

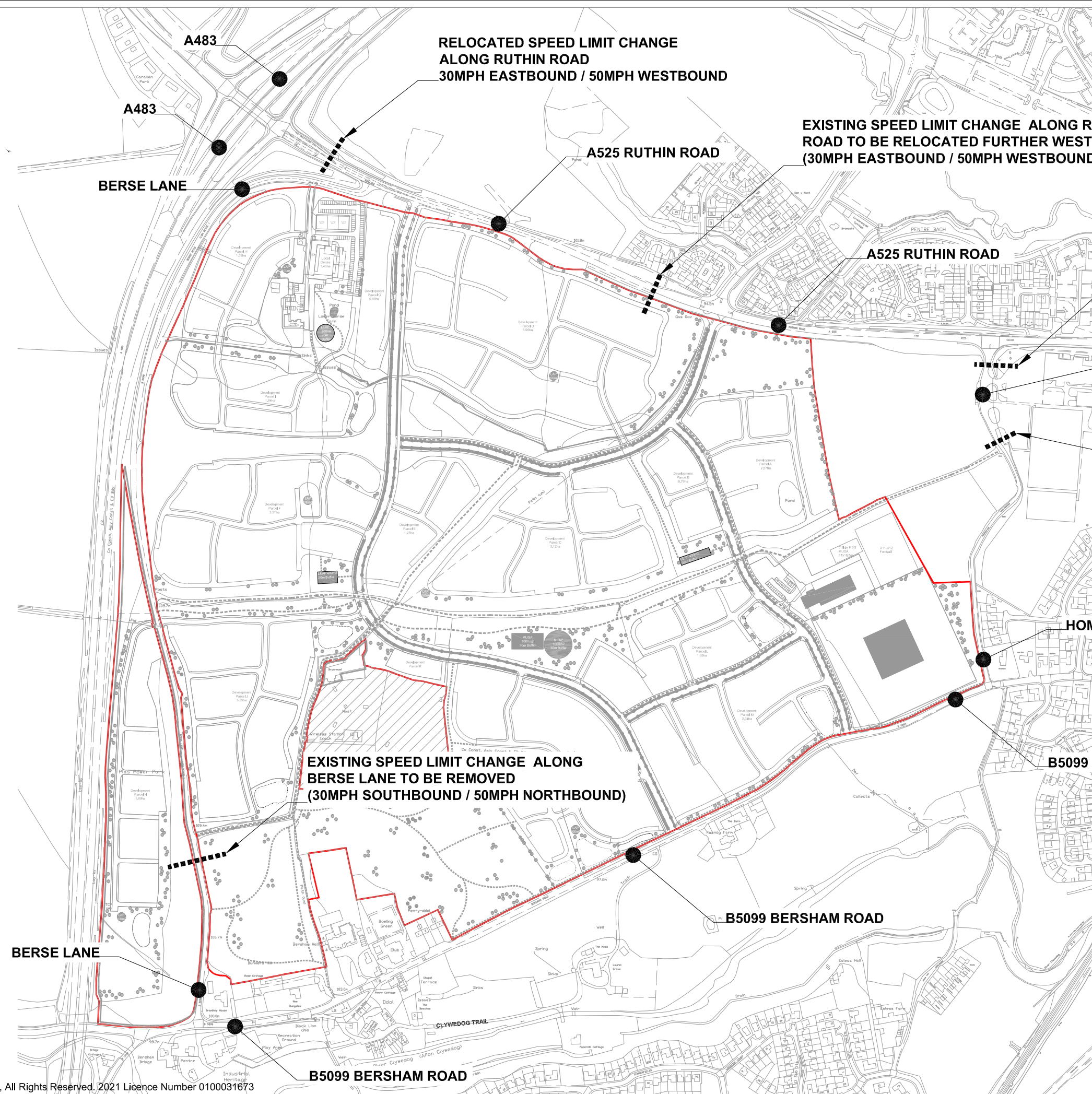
SITE ACCESS OPTION - B5099
BERSHAM ROAD

Drawn By:	BA	Date:	06.09.2021
Checked:	DR	Scale:	1:500 @ A3
Status:	PLANNING	Approved/Unapproved:	-

Drawing No.	Rev.
SCP/210187/F06	A

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APPENDIX H



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APPENDIX I

Code	Trips		Route	Proportion
Wrexham 003		29	A	1.34%
Wrexham 004		28	A	1.29%
Wrexham 005		22	J	1.01%
Wrexham 006		21	J	0.97%
Wrexham 007		20	K	0.92%
Wrexham 008		195	A	8.98%
Wrexham 009		43	B	1.98%
Wrexham 010		21	C	0.97%
Wrexham 011		298	C	13.72%
Wrexham 012		106	D	4.88%
Wrexham 013		26	I	1.20%
Wrexham 014		32	F	1.47%
Wrexham 015		52	G	2.39%
Wrexham 016		47	G	2.16%
Wrexham 017		17	G	0.78%
Wrexham 018		22	G	1.01%
Wrexham 019		26	G	1.20%
Wrexham 020		441	K	20.30%
County Durham		1	K	0.05%
Halton		13	K	0.60%
Warrington		12	K	0.55%
Cheshire East		14	K	0.64%
Cheshire West and Chester		186	K	8.56%
South Lakeland		2	K	0.09%
Fylde		1	K	0.05%
Pendle		1	K	0.05%
Preston		1	K	0.05%
Wyre		1	K	0.05%
Manchester		10	K	0.46%
Salford		4	K	0.18%
Stockport		5	K	0.23%
Tameside		3	K	0.14%
Trafford		2	K	0.09%
Knowsley		5	K	0.23%
Liverpool		15	K	0.69%
St. Helens		1	K	0.05%
Sefton		1	K	0.05%
Wirral		19	K	0.87%
Harrogate		6	K	0.28%
Bradford		1	K	0.05%
Calderdale		1	K	0.05%
Nottingham		1	K	0.05%
Melton		1	K	0.05%
North West Leices		2	K	0.09%
Telford and Wreki		2	G	0.09%
Stoke-on-Trent		3	K	0.14%
Shropshire		104	G	4.79%
East Staffordshire		1	K	0.05%
Stafford		1	G	0.05%
Coventry		2	G	0.09%
Sandwell		1	G	0.05%
Walsall		1	G	0.05%
Central Bedfordsh		2	G	0.09%
North Hertfordshi		1	G	0.05%
Great Yarmouth		1	G	0.05%
King's Lynn and W		1	G	0.05%
North Norfolk		1	G	0.05%
Hammersmith and Uxbridge		1	G	0.05%
Hillingdon		1	G	0.05%
Westminster, City of		1	G	0.05%
Milton Keynes		3	G	0.14%
Chiltern		1	G	0.05%
Test Valley		1	G	0.05%
Tandridge		1	G	0.05%
South Gloucesters		1	G	0.05%
Poole		2	G	0.09%
Isle of Anglesey		2	K	0.09%
Gwynedd		3	K	0.14%
Conwy		9	K	0.41%
Denbighshire		52	K	2.39%
Flintshire		208	K	9.58%
Carmarthenshire		1	G	0.05%
Cardiff		2	G	0.09%
Powys		7	G	0.32%
				100.00%

Croesnwydd Rd A5152 Bradley Rd (NE) Wrexham Tc A525 (East of Wrexhar Fairy Rd B5098 (S) A483 (S) Plas Buckely Rd A525 (W) Heritage Wy A483 (N)

A	B	C	D	E	F	G	H	I	J	K
11.6%	2.0%	14.7%	4.9%	0.0%	1.5%	14.0%	0.0%	1.2%	2.0%	48.3%

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APPENDIX J

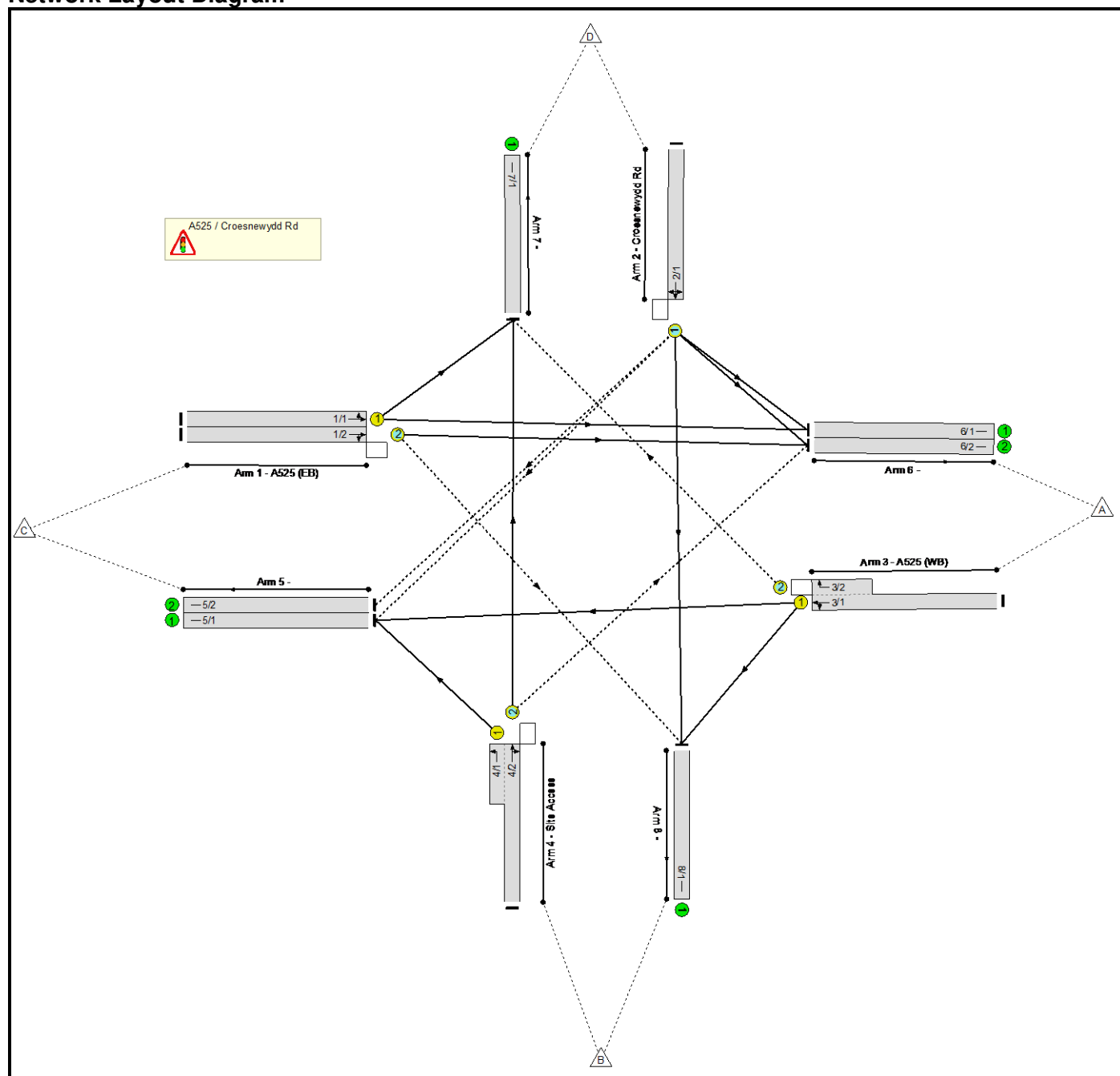
Full Input Data And Results

Full Input Data And Results

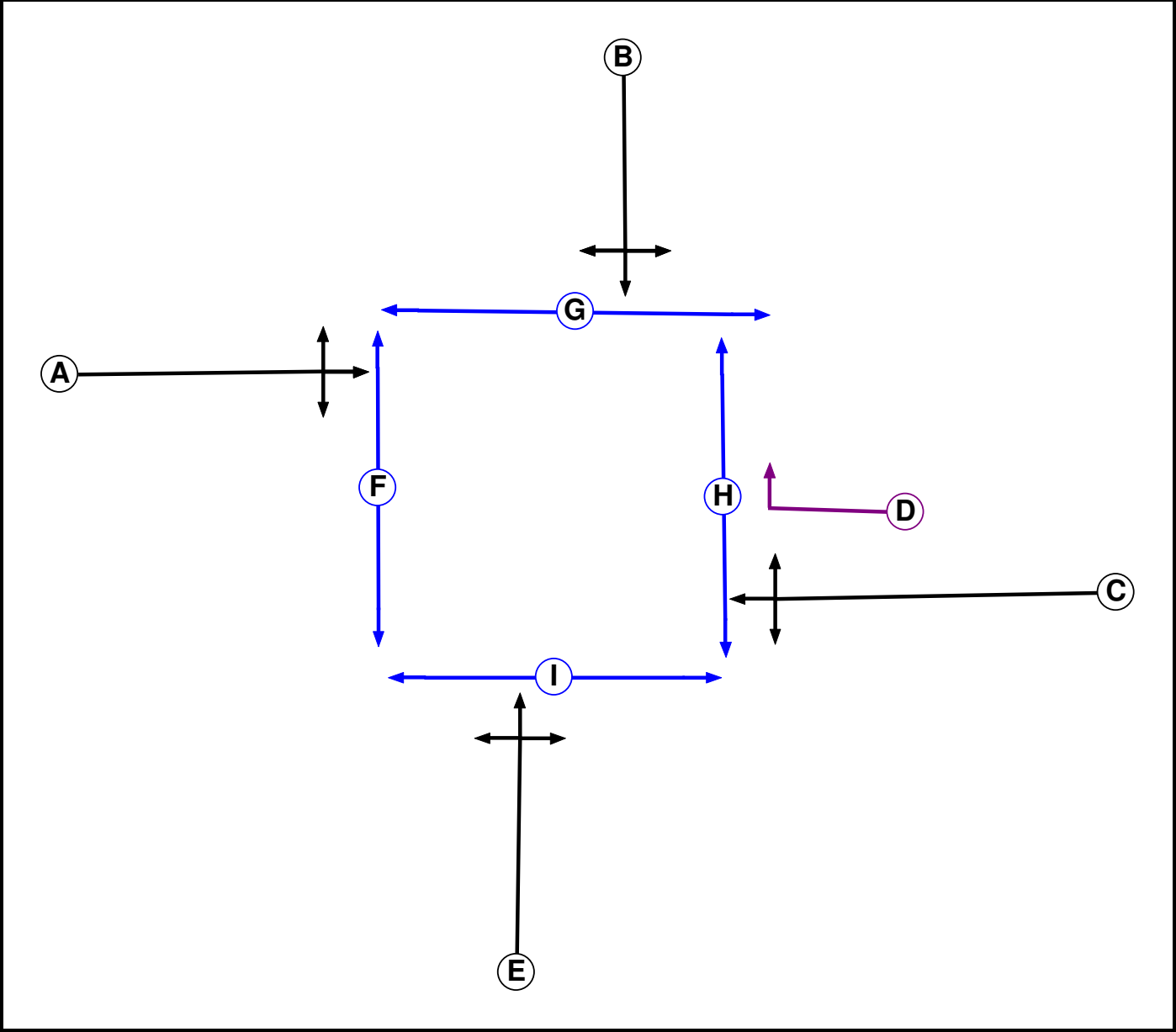
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Title:	
Location:	
Additional detail:	
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Author:	
Company:	
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Ind. Arrow	C	4	4
E	Traffic		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7

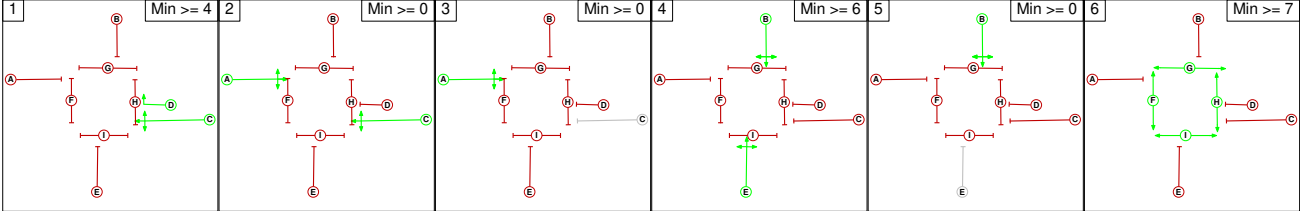
Phase Intergreens Matrix

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

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage	To Stage						
		1	2	3	4	5	6
	1		5	5	5	5	9
	2	5		0	7	7	10
	3	5	2		7	7	10
	4	5	7	7		0	10
	5	5	5	5	2		10
	6	6	6	6	6	6	

Full Input Data And Results

Full Input Data And Results

Give-Way Lane Input Data

Junction: A525 / Croesnewydd Rd											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/2 (A525 (EB))	8/1 (Right)	1439	0	3/1	1.09	All	2.00	2.00	0.50	2	2.00
2/1 (Croesnewydd Rd)	5/1 (Right)	1439	0	4/1	1.09	All	2.00	2.00	0.50	2	2.00
				4/2	1.09	To 7/1 (Ahead)					
				4/1	1.09	All					
	5/2 (Right)	1439	0	4/2	1.09	To 7/1 (Ahead)					
3/2 (A525 (WB))	7/1 (Right)	1439	0	1/1	1.09	All	2.00	-	0.50	2	2.00
				1/2	1.09	To 6/2 (Ahead)					
4/2 (Site Access)	6/2 (Right)	1439	0	2/1	1.09	None	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: A525 / Croesnewydd Rd												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A525 (EB))	U	A	2	3	13.9	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	19.00
1/2 (A525 (EB))	O	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 8 Right	Inf
2/1 (Croesnewydd Rd)	O	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Right	18.00
											Arm 6 Left	Inf
											Arm 8 Ahead	Inf
3/1 (A525 (WB))	U	C	2	3	60.0	Geom	-	2.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	20.00
3/2 (A525 (WB))	O	C D	2	3	5.9	Geom	-	2.50	0.00	Y	Arm 7 Right	14.00
4/1 (Site Access)	U	E	2	3	5.9	Geom	-	3.40	0.00	Y	Arm 5 Left	18.00
4/2 (Site Access)	O	E	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Right	20.00
											Arm 7 Ahead	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2028 Assess AM'	08:00	09:00	01:00	
2: '2028 Assess PM'	16:30	17:30	01:00	

Scenario 1: '2028 Assess AM' (FG1: '2028 Assess AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin	A	A	B	C	D	Tot.
	A	0	26	358	139	523
	B	68	0	91	52	211
	C	609	630	0	35	1274
	D	163	20	0	0	183
	Tot.	840	676	449	226	2191

Traffic Lane Flows

Lane	Scenario 1: 2028 Assess AM
Junction: A525 / Croesnewydd Rd	
1/1	644
1/2	630
2/1	183
3/1 (with short)	523(In) 384(Out)
3/2 (short)	139
4/1 (short)	91
4/2 (with short)	211(In) 120(Out)
5/1	449
5/2	0
6/1	690
6/2	150
7/1	226
8/1	676

Lane Saturation Flows

Junction: A525 / Croesnewydd Rd								
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 (A525 (EB))	3.00	0.00	Y	Arm 6 Ahead	Inf	94.6 %	1907	1907
				Arm 7 Left	19.00	5.4 %		
1/2 (A525 (EB))	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 8 Right	Inf	100.0 %		
2/1 (Croesnewydd Rd)	3.00	0.00	Y	Arm 5 Right	18.00	0.0 %	1915	1915
				Arm 6 Left	Inf	89.1 %		
				Arm 8 Ahead	Inf	10.9 %		
3/1 (A525 (WB))	2.50	0.00	Y	Arm 5 Ahead	Inf	93.2 %	1856	1856
				Arm 8 Left	20.00	6.8 %		
3/2 (A525 (WB))	2.50	0.00	Y	Arm 7 Right	14.00	100.0 %	1685	1685
4/1 (Site Access)	3.40	0.00	Y	Arm 5 Left	18.00	100.0 %	1805	1805
4/2 (Site Access)	3.40	0.00	Y	Arm 6 Right	20.00	56.7 %	1875	1875
				Arm 7 Ahead	Inf	43.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2028 Assess PM' (FG2: '2028 Assess PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	60	431	169	660
	B	36	0	49	28	113
	C	478	81	0	129	688
	D	154	47	0	0	201
	Tot.	668	188	480	326	1662

Traffic Lane Flows

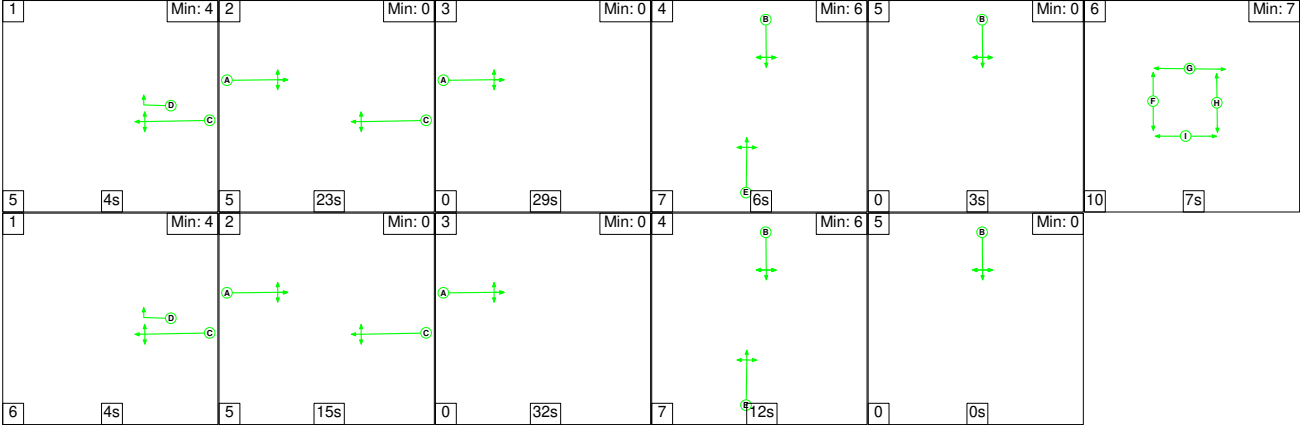
Lane	Scenario 2: 2028 Assess PM
Junction: A525 / Croesnewydd Rd	
1/1	357
1/2	331
2/1	201
3/1 (with short)	660(In) 491(Out)
3/2 (short)	169
4/1 (short)	49
4/2 (with short)	113(In) 64(Out)
5/1	480
5/2	0
6/1	305
6/2	363
7/1	326
8/1	188

Lane Saturation Flows

Junction: A525 / Croesnewydd Rd								
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 (A525 (EB))	3.00	0.00	Y	Arm 6 Ahead	Inf	63.9 %	1862	1862
				Arm 7 Left	19.00	36.1 %		
1/2 (A525 (EB))	3.00	0.00	Y	Arm 6 Ahead	Inf	75.5 %	1915	1915
				Arm 8 Right	Inf	24.5 %		
2/1 (Croesnewydd Rd)	3.00	0.00	Y	Arm 5 Right	18.00	0.0 %	1915	1915
				Arm 6 Left	Inf	76.6 %		
				Arm 8 Ahead	Inf	23.4 %		
3/1 (A525 (WB))	2.50	0.00	Y	Arm 5 Ahead	Inf	87.8 %	1848	1848
				Arm 8 Left	20.00	12.2 %		
3/2 (A525 (WB))	2.50	0.00	Y	Arm 7 Right	14.00	100.0 %	1685	1685
4/1 (Site Access)	3.40	0.00	Y	Arm 5 Left	18.00	100.0 %	1805	1805
4/2 (Site Access)	3.40	0.00	Y	Arm 6 Right	20.00	56.3 %	1876	1876
				Arm 7 Ahead	Inf	43.8 %		
5/1				Infinite Saturation Flow			Inf	Inf
5/2				Infinite Saturation Flow			Inf	Inf
6/1				Infinite Saturation Flow			Inf	Inf
6/2				Infinite Saturation Flow			Inf	Inf
7/1				Infinite Saturation Flow			Inf	Inf
8/1				Infinite Saturation Flow			Inf	Inf

Scenario 1: '2028 Assess AM' (FG1: '2028 Assess AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



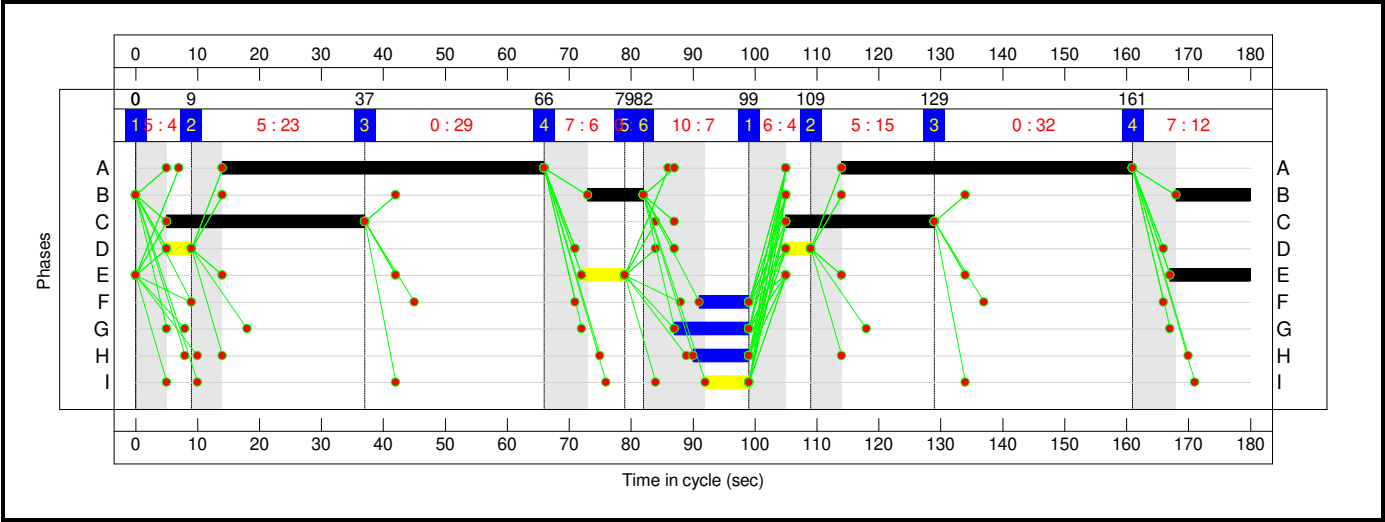
Stage Timings

Stage	1	2	3	4	5	6	1	2	3	4
Duration	4	23	29	6	3	7	4	15	32	12
Change Point	0	9	37	66	79	82	99	109	129	161

Full Input Data And Results

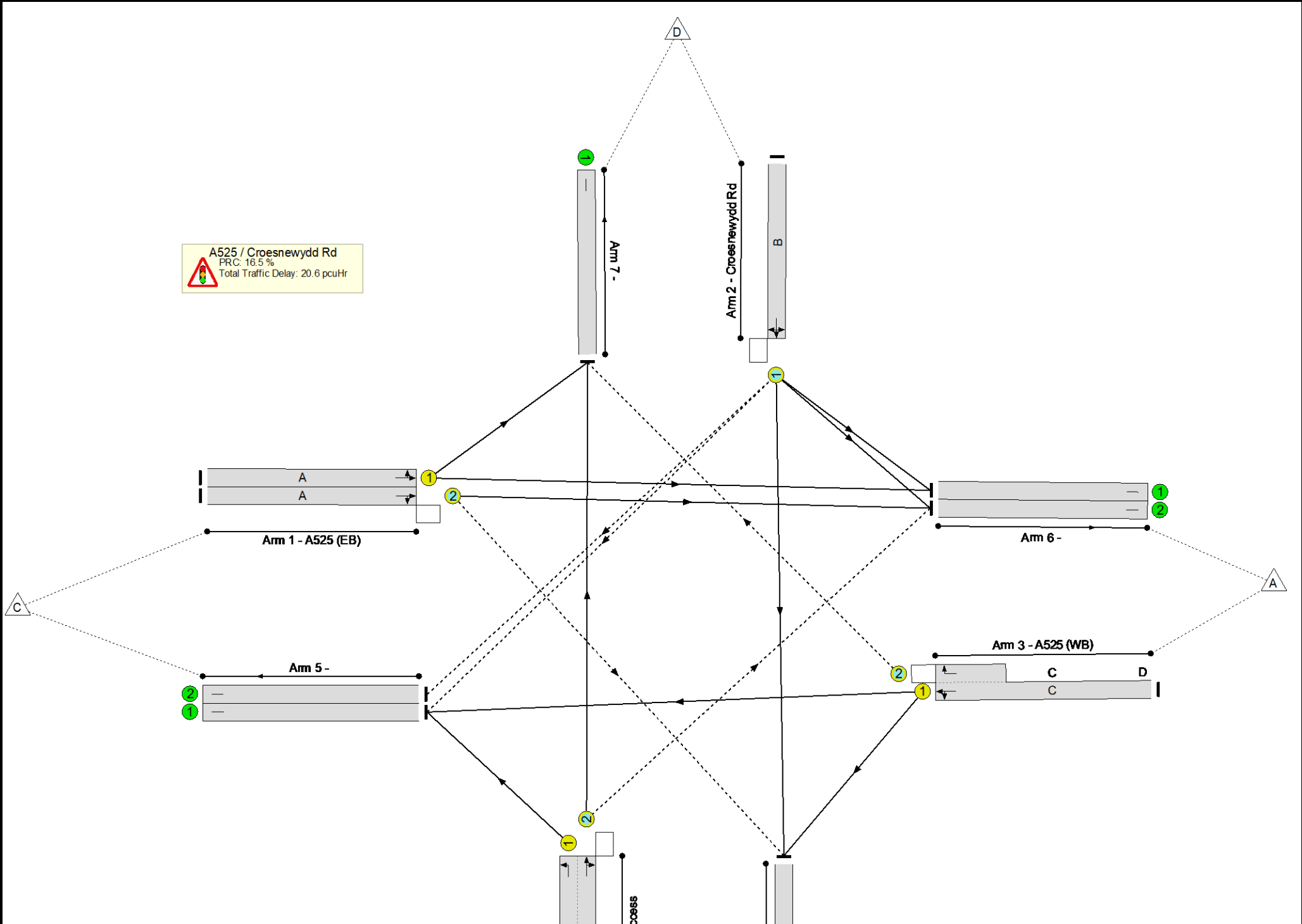
Stage	5									
Duration	0									
Change Point	0									

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

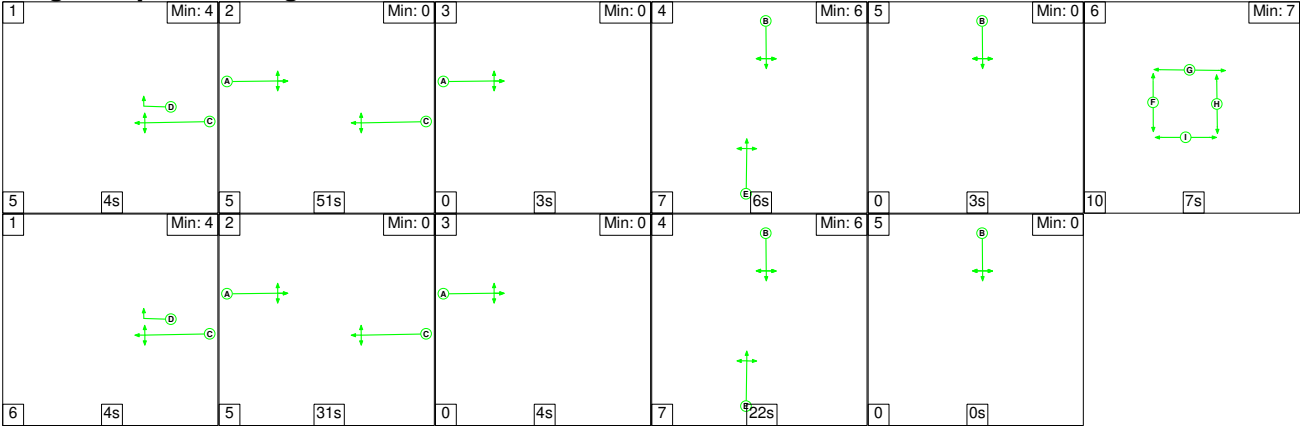
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.2%
A525 / Croesnewydd Rd	-	-	N/A	-	-		-	-	-	-	-	-	77.2%
1/1	A525 (EB) Ahead Left	U	N/A	N/A	A		2	99	-	644	1907	1070	60.2%
1/2	A525 (EB) Ahead Right	O	N/A	N/A	A		2	99	-	630	1915	816	77.2%
2/1	Croesnewydd Rd Right Left Ahead	O	N/A	N/A	B		2	21	-	183	1915	245	74.8%
3/1+3/2	A525 (WB) Ahead Right Left	U+O	N/A	N/A	C	D	2	56	8	523	1856:1685	503+182	76.3 : 76.3%
4/2+4/1	Site Access Left Right Ahead	O+U	N/A	N/A	E		2	20	-	211	1875:1805	220+167	54.6 : 54.6%
5/1		U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	690	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	676	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	181	640	16	13.9	6.0	0.7	20.6	-	-	-	-
A525 / Croesnewydd Rd	-	-	181	640	16	13.9	6.0	0.7	20.6	-	-	-	-
1/1	644	644	-	-	-	2.4	0.8	-	3.2	17.8	12.5	0.8	13.3
1/2	630	630	129	487	14	3.6	1.7	0.5	5.7	32.8	15.2	1.7	16.9
2/1	183	183	0	0	0	1.9	1.4	0.0	3.4	66.0	4.7	1.4	6.1
3/1+3/2	523	523	52	87	0	3.8	1.6	0.2	5.6	38.2	10.5	1.6	12.1
4/2+4/1	211	211	0	66	2	2.2	0.6	0.0	2.8	47.4	3.1	0.6	3.7
5/1	449	449	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	690	690	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	150	150	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	676	676	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 16.5 Total Delay for Signalled Lanes (pcuHr): 20.61 Cycle Time (s): 180 PRC Over All Lanes (%): 16.5 Total Delay Over All Lanes(pcuHr): 20.61													

Stage Sequence Diagram

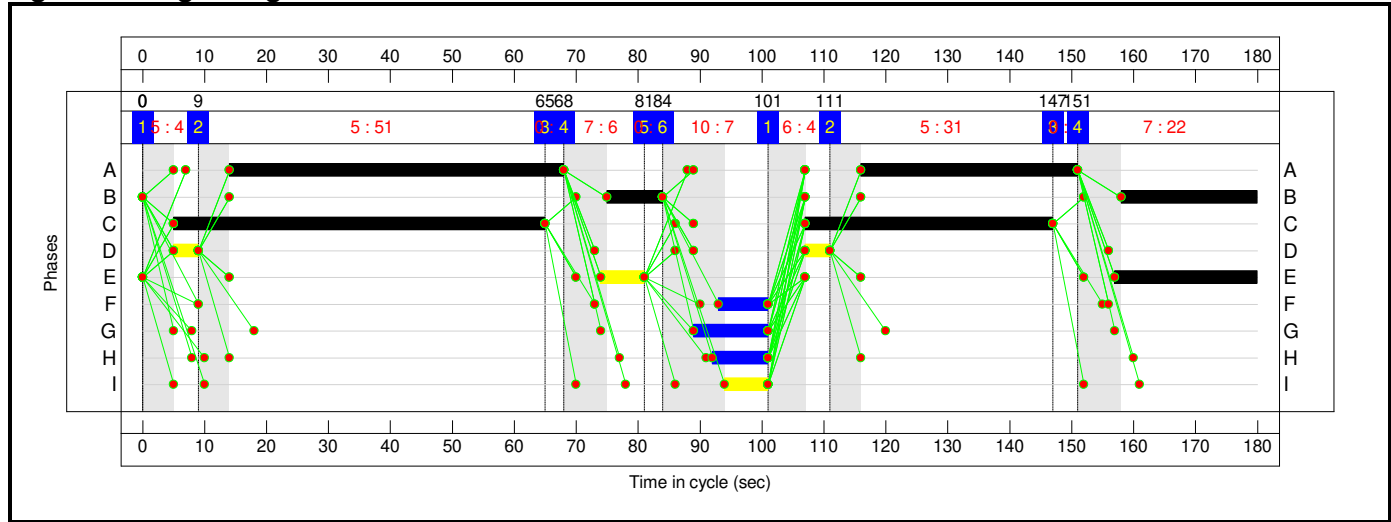


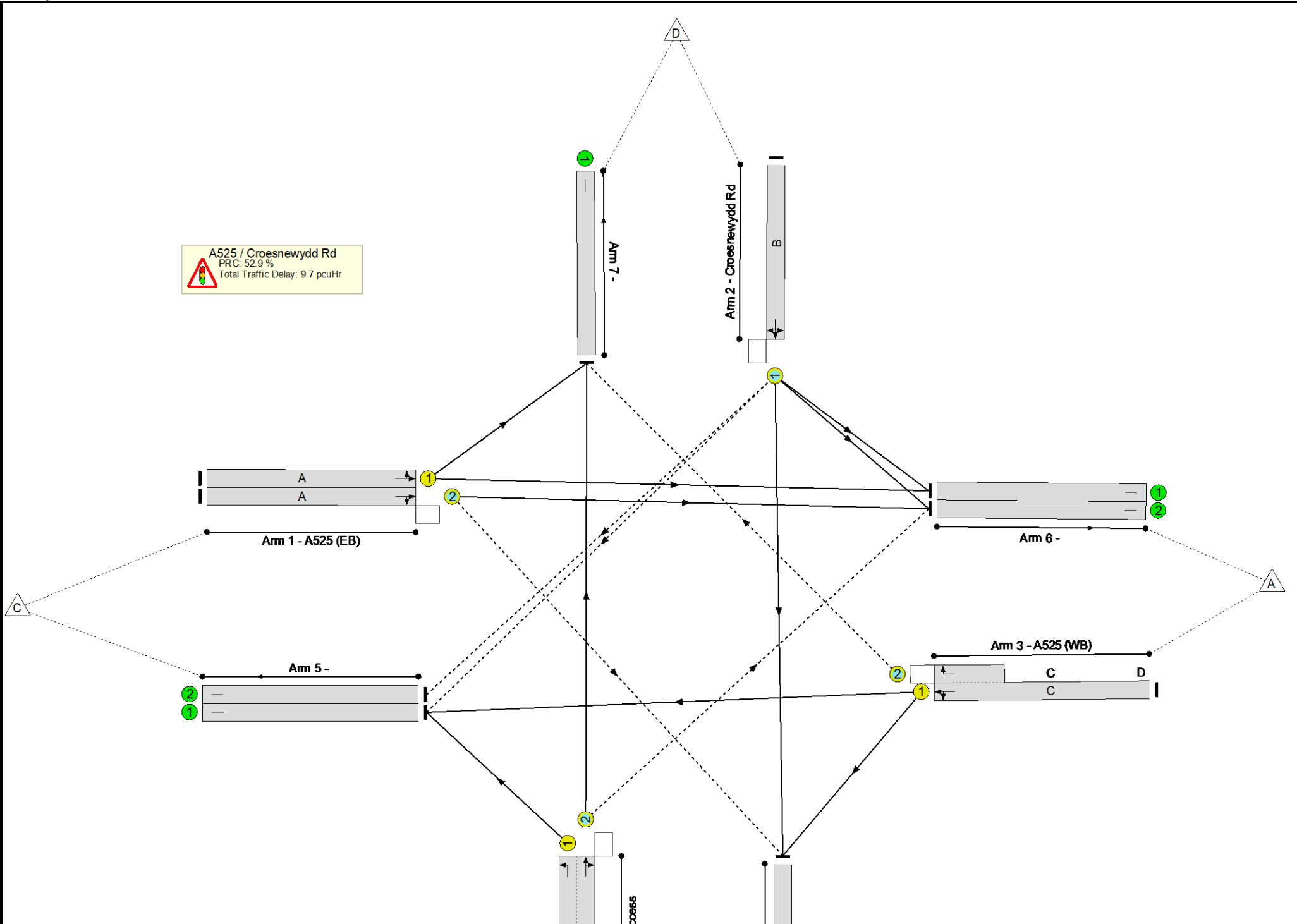
Stage Timings

Stage	1	2	3	4	5	6	1	2	3	4
Duration	4	51	3	6	3	7	4	31	4	22
Change Point	0	9	65	68	81	84	101	111	147	151

Stage	5									
Duration	0									
Change Point	0									

Signal Timings Diagram





Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	58.9%
A525 / Croesnewydd Rd	-	-	N/A	-	-		-	-	-	-	-	-	58.9%
1/1	A525 (EB) Ahead Left	U	N/A	N/A	A		2	89	-	357	1862	941	37.9%
1/2	A525 (EB) Ahead Right	O	N/A	N/A	A		2	89	-	331	1915	968	34.2%
2/1	Croesnewydd Rd Right Left Ahead	O	N/A	N/A	B		2	31	-	201	1915	351	57.3%
3/1+3/2	A525 (WB) Ahead Right Left	U+O	N/A	N/A	C	D	2	100	8	660	1848:1685	834+287	58.9 : 58.9%
4/2+4/1	Site Access Left Right Ahead	O+U	N/A	N/A	E		2	30	-	113	1876:1805	278+213	23.0 : 23.0%
5/1		U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	305	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	363	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	326	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	188	Inf	Inf	0.0%

Full Input Data And Results

[illegible]

S|C|P

APPENDIX K

Junctions 9											
ARCADY 9 - Roundabout Module											
Version: 9.5.1.7462											
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Filename: NEW ROUNDABOUT.j9

Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\ARCADY

Report generation date: 11/08/2023 09:38:14

»Assessment 2028, AM

»Assessment 2028, PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
Assessment 2028												
Arm A	D3	1.3	6.39	0.56	A	14 % [Arm C]	D4	0.1	3.66	0.11	A	55 % [Arm D]
Arm B		0.8	6.13	0.45	A			0.3	3.66	0.23	A	
Arm C		5.2	10.48	0.84	B			1.0	3.19	0.50	A	
Arm D		0.0	6.38	0.04	A			0.5	6.49	0.34	A	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Ruthin Road
Location	Ruthin Road
Site number	
Date	05/06/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	RSKHELBY\abbie.moore
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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)
D3	Assessment 2028	AM	ONE HOUR	07:45	09:15	15
D4	Assessment 2028	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Assessment 2028, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ruthin Road	Standard Roundabout		A, B, C, D	8.81	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	14	Arm C

Arms

Arms

Arm	Name	Description
A	A525 East	
B	Site access to the south	
C	A525 West	
D	Link Road	

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
A	3.70	4.90	31.5	54.0	62.0	51.0	
B	3.37	6.80	5.5	140.0	62.0	31.0	
C	4.60	7.60	40.0	35.0	62.0	17.0	
D	3.65	4.92	29.3	37.6	62.0	50.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.482	1384
B	0.508	1421
C	0.659	2267
D	0.479	1377

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)
D3	Assessment 2028	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	651	100.000
B		✓	437	100.000
C		✓	1660	100.000
D		✓	19	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
	A	0	31	582	38
	B	81	0	339	17
	C	1241	180	0	239
	D	2	7	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.56	6.39	1.3	A
B	0.45	6.13	0.8	A
C	0.84	10.48	5.2	B
D	0.04	6.38	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	490	148	1313	0.373	488	0.6	4.349	A
B	329	472	1181	0.279	327	0.4	4.211	A
C	1250	102	2200	0.568	1245	1.3	3.748	A
D	14	1126	837	0.017	14	0.0	4.374	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	585	177	1299	0.450	584	0.8	5.029	A
B	393	566	1133	0.347	392	0.5	4.859	A
C	1492	122	2187	0.682	1489	2.1	5.135	A
D	17	1347	731	0.023	17	0.0	5.040	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	717	216	1281	0.560	715	1.3	6.344	A
B	481	692	1069	0.450	480	0.8	6.103	A
C	1828	149	2169	0.843	1816	5.0	9.891	A
D	21	1644	589	0.036	21	0.0	6.333	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	717	217	1280	0.560	717	1.3	6.391	A
B	481	694	1068	0.451	481	0.8	6.133	A
C	1828	150	2169	0.843	1827	5.2	10.483	B
D	21	1653	585	0.036	21	0.0	6.384	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	585	178	1298	0.451	587	0.8	5.073	A
B	393	568	1132	0.347	394	0.5	4.887	A
C	1492	123	2187	0.683	1504	2.2	5.365	A
D	17	1361	725	0.024	17	0.0	5.088	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	490	149	1313	0.373	491	0.6	4.387	A
B	329	475	1179	0.279	330	0.4	4.240	A
C	1250	103	2200	0.568	1253	1.3	3.818	A
D	14	1134	834	0.017	14	0.0	4.394	A

Assessment 2028, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ruthin Road	Standard Roundabout		A, B, C, D	3.81	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	55	Arm D

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)
D4	Assessment 2028	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	115	100.000
B		✓	268	100.000
C		✓	1007	100.000
D		✓	254	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	64	49	2
	B	33	0	226	9
	C	696	299	0	12
	D	33	16	205	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.11	3.66	0.1	A
B	0.23	3.66	0.3	A
C	0.50	3.19	1.0	A
D	0.34	6.49	0.5	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	87	390	1197	0.072	86	0.1	3.242	A
B	202	192	1323	0.152	201	0.2	3.207	A
C	758	33	2246	0.338	756	0.5	2.414	A
D	191	772	1007	0.190	190	0.2	4.404	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	103	467	1160	0.089	103	0.1	3.407	A
B	241	230	1304	0.185	241	0.2	3.386	A
C	905	40	2241	0.404	905	0.7	2.691	A
D	228	923	934	0.244	228	0.3	5.094	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	127	572	1109	0.114	126	0.1	3.663	A
B	295	281	1278	0.231	295	0.3	3.662	A
C	1109	48	2235	0.496	1108	1.0	3.189	A
D	280	1131	835	0.335	279	0.5	6.465	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	127	573	1109	0.114	127	0.1	3.664	A
B	295	282	1277	0.231	295	0.3	3.664	A
C	1109	48	2235	0.496	1109	1.0	3.194	A
D	280	1132	834	0.335	280	0.5	6.487	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	103	468	1159	0.089	104	0.1	3.410	A
B	241	231	1303	0.185	241	0.2	3.389	A
C	905	40	2241	0.404	906	0.7	2.701	A
D	228	925	933	0.245	229	0.3	5.117	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	87	392	1196	0.072	87	0.1	3.248	A
B	202	193	1322	0.153	202	0.2	3.215	A
C	758	33	2246	0.338	759	0.5	2.422	A
D	191	775	1006	0.190	192	0.2	4.425	A

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.5.1.7462 © Copyright TRL Limited, 2019				
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Filename: 12. Right Turn Lane Ruthin Rd Site Access.j9

Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\PICADY

Report generation date: 11/08/2023 09:44:16

»2028 Assess Re-dist, AM

»2028 Assess Re-dist , PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2028 Assess Re-dist										
Stream B-C	D7	4.3	43.92	0.83	E	D8	0.6	8.91	0.38	A
Stream B-A		1.5	62.95	0.61	F		0.1	13.06	0.12	B
Stream C-B		0.6	11.28	0.38	B		1.0	11.44	0.51	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	Right Turn Lane Site Access
Location	
Site number	
Date	01/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15
D8	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Assess Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Right Turn Lane Site Access	T-Junction	Two-way		8.97	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A525 Ruthin Road East		Major
B	Site Access South		Minor
C	A525 Ruthin Road West		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.70		✓	2.20	170.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	3.90	3.90	29	18

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	540	0.087	0.219	0.138	0.314
B-C	692	0.094	0.237	-	-
C-B	672	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)
D7	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	613	100.000
B		✓	420	100.000
C		✓	1421	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	31	582
	B	81	0	339
	C	1241	180	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.83	43.92	4.3	E
B-A	0.61	62.95	1.5	F
C-A				
C-B	0.38	11.28	0.6	B
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	255	553	0.461	252	0.8	11.817	B
B-A	61	271	0.225	60	0.3	17.000	C
C-A	934			934			
C-B	136	566	0.239	134	0.3	8.309	A
A-B	23			23			
A-C	438			438			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	305	518	0.589	303	1.4	16.559	C
B-A	73	218	0.334	72	0.5	24.561	C
C-A	1116			1116			
C-B	162	546	0.297	161	0.4	9.357	A
A-B	28			28			
A-C	523			523			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	373	453	0.824	364	3.8	36.759	E
B-A	89	145	0.614	86	1.4	57.376	F
C-A	1366			1366			
C-B	198	517	0.383	197	0.6	11.227	B
A-B	34			34			
A-C	641			641			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	373	450	0.830	371	4.3	43.920	E
B-A	89	145	0.615	89	1.5	62.954	F
C-A	1366			1366			
C-B	198	517	0.383	198	0.6	11.280	B
A-B	34			34			
A-C	641			641			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	305	515	0.592	316	1.5	18.995	C
B-A	73	217	0.335	77	0.5	26.186	D
C-A	1116			1116			
C-B	162	546	0.297	163	0.4	9.414	A
A-B	28			28			
A-C	523			523			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	255	552	0.462	258	0.9	12.331	B
B-A	61	270	0.226	62	0.3	17.373	C
C-A	934			934			
C-B	136	566	0.239	136	0.3	8.375	A
A-B	23			23			
A-C	438			438			

2028 Assess Re-dist , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Right Turn Lane Site Access	T-Junction	Two-way		4.29	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)
D8	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	113	100.000
B		✓	259	100.000
C		✓	995	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	64	49
	B	33	0	226
	C	696	299	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.38	8.91	0.6	A
B-A	0.12	13.06	0.1	B
C-A				
C-B	0.51	11.44	1.0	B
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	170	668	0.255	169	0.3	7.191	A
B-A	25	385	0.065	25	0.1	9.981	A
C-A	524			524			
C-B	225	653	0.345	223	0.5	8.336	A
A-B	48			48			
A-C	37			37			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	203	662	0.307	203	0.4	7.828	A
B-A	30	354	0.084	30	0.1	11.087	B
C-A	626			626			
C-B	269	649	0.414	268	0.7	9.431	A
A-B	58			58			
A-C	44			44			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	249	653	0.381	248	0.6	8.873	A
B-A	36	312	0.116	36	0.1	13.030	B
C-A	766			766			
C-B	329	644	0.511	328	1.0	11.346	B
A-B	70			70			
A-C	54			54			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	249	653	0.381	249	0.6	8.905	A
B-A	36	312	0.116	36	0.1	13.061	B
C-A	766			766			
C-B	329	644	0.511	329	1.0	11.435	B
A-B	70			70			
A-C	54			54			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	203	662	0.307	204	0.4	7.868	A
B-A	30	354	0.084	30	0.1	11.126	B
C-A	626			626			
C-B	269	649	0.414	270	0.7	9.531	A
A-B	58			58			
A-C	44			44			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	170	668	0.255	171	0.3	7.246	A
B-A	25	384	0.065	25	0.1	10.027	B
C-A	524			524			
C-B	225	653	0.345	226	0.5	8.445	A
A-B	48			48			
A-C	37			37			

S|C|P

APPENDIX L

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.5.2.1013				
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Filename: 13. B5099 Bersham Road Site Access (W).j9

Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\PICADY

Report generation date: 10/08/2023 11:57:44

»2028 Assessment Re-dist, AM

»2028 Assessment Re-dist, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2028 Assessment Re-dist										
Stream B-AC	D1	0.2	8.58	0.18	A	D2	0.2	8.27	0.18	A
Stream C-AB		0.0	5.47	0.02	A		0.1	4.80	0.04	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	Junction 13 B5099 Bersham Road Site Access
Location	
Site number	
Date	01/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Assessment Re-dist	AM	ONE HOUR	07:45	09:15	15
D2	2028 Assessment Re-dist	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Assessment Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Junction 13 B5099 Bersham Road Site Access	T-Junction	Two-way		1.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B5099 Bersham Road (W)		Major
B	Site Access (N)		Minor
C	B5099 Bersham 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	6.65			250.0	✓	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	4.58	28	17

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	573	0.101	0.256	0.161	0.366
B-C	735	0.109	0.277	-	-
C-B	719	0.271	0.271	-	-

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)
D1	2028 Assessment Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	329	100.000
B		✓	86	100.000
C		✓	85	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	78	251
	B	62	0	24
	C	73	12	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	8.58	0.2	A
C-AB	0.02	5.47	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	545	0.119	64	0.1	7.485	A
C-AB	10	687	0.014	10	0.0	5.317	A
C-A	54			54			
A-B	59			59			
A-C	189			189			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	77	532	0.145	77	0.2	7.915	A
C-AB	12	681	0.018	12	0.0	5.379	A
C-A	64			64			
A-B	70			70			
A-C	226			226			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	95	514	0.184	94	0.2	8.575	A
C-AB	15	673	0.022	15	0.0	5.467	A
C-A	79			79			
A-B	86			86			
A-C	276			276			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	95	514	0.184	95	0.2	8.584	A
C-AB	15	673	0.022	15	0.0	5.469	A
C-A	79			79			
A-B	86			86			
A-C	276			276			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	77	532	0.145	78	0.2	7.929	A
C-AB	12	681	0.018	12	0.0	5.382	A
C-A	64			64			
A-B	70			70			
A-C	226			226			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	545	0.119	65	0.1	7.507	A
C-AB	10	687	0.014	10	0.0	5.319	A
C-A	54			54			
A-B	59			59			
A-C	189			189			

2028 Assessment Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Junction 13 B5099 Bersham Road Site Access	T-Junction	Two-way		2.14	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)
D2	2028 Assessment Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	119	100.000
B		✓	85	100.000
C		✓	182	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	65	54
	B	76	0	9
	C	161	21	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	8.27	0.2	A
C-AB	0.04	4.80	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	547	0.117	63	0.1	7.431	A
C-AB	19	769	0.024	19	0.0	4.798	A
C-A	118			118			
A-B	49			49			
A-C	41			41			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	76	540	0.142	76	0.2	7.767	A
C-AB	23	779	0.030	23	0.0	4.762	A
C-A	140			140			
A-B	58			58			
A-C	49			49			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	529	0.177	93	0.2	8.259	A
C-AB	30	793	0.038	30	0.1	4.714	A
C-A	171			171			
A-B	72			72			
A-C	59			59			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	529	0.177	94	0.2	8.266	A
C-AB	30	793	0.038	30	0.1	4.717	A
C-A	171			171			
A-B	72			72			
A-C	59			59			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	76	540	0.142	77	0.2	7.776	A
C-AB	23	779	0.030	23	0.0	4.763	A
C-A	140			140			
A-B	58			58			
A-C	49			49			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	547	0.117	64	0.1	7.453	A
C-AB	19	769	0.024	19	0.0	4.799	A
C-A	118			118			
A-B	49			49			
A-C	41			41			

S|C|P

APPENDIX M

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.5.2.1013				
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Filename: 14. B5099 Bersham Road (E).j9

Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\PICADY

Report generation date: 10/08/2023 12:23:09

»2028 Assessment Re-dist, AM

»2028 Assessment Re-dist, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2028 Assessment Re-dist										
Stream B-AC	D1	0.2	7.07	0.17	A	D2	0.1	6.62	0.09	A
Stream C-AB		0.1	6.62	0.08	A		0.2	5.90	0.13	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	Junction 14, B5099 Bersham Road W
Location	Junction 14, B5099 Bersham Road W
Site number	
Date	01/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Assessment Re-dist	AM	ONE HOUR	07:45	09:15	15
D2	2028 Assessment Re-dist	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Assessment Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Junction 14, B5099 Bersham Road W	T-Junction	Two-way		1.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B5099 Bersham Road (W)		Major
B	Site Access North		Minor
C	B5099 Bersham Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.15			50.0	✓	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	4.58	19	36

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	581	0.105	0.266	0.167	0.380
B-C	749	0.114	0.288	-	-
C-B	603	0.232	0.232	-	-

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)
D1	2028 Assessment Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	277	100.000
B		✓	93	100.000
C		✓	108	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	26	251
	B	21	0	72
	C	73	35	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	7.07	0.2	A
C-AB	0.08	6.62	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	641	0.109	70	0.1	6.299	A
C-AB	29	593	0.049	29	0.1	6.385	A
C-A	52			52			
A-B	20			20			
A-C	189			189			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	628	0.133	83	0.2	6.606	A
C-AB	35	591	0.060	35	0.1	6.480	A
C-A	62			62			
A-B	23			23			
A-C	226			226			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	611	0.168	102	0.2	7.071	A
C-AB	45	589	0.076	45	0.1	6.615	A
C-A	74			74			
A-B	29			29			
A-C	276			276			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	611	0.168	102	0.2	7.074	A
C-AB	45	589	0.076	45	0.1	6.617	A
C-A	74			74			
A-B	29			29			
A-C	276			276			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	628	0.133	84	0.2	6.616	A
C-AB	35	591	0.060	36	0.1	6.485	A
C-A	62			62			
A-B	23			23			
A-C	226			226			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	641	0.109	70	0.1	6.312	A
C-AB	29	593	0.049	29	0.1	6.390	A
C-A	52			52			
A-B	20			20			
A-C	189			189			

2028 Assessment Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Junction 14, B5099 Bersham Road W	T-Junction	Two-way		2.32	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)
D2	2028 Assessment Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	76	100.000
B		✓	51	100.000
C		✓	224	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	22	54
	B	25	0	26
	C	161	63	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	6.62	0.1	A
C-AB	0.13	5.90	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	618	0.062	38	0.1	6.203	A
C-AB	58	671	0.086	57	0.1	5.862	A
C-A	111			111			
A-B	17			17			
A-C	41			41			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	611	0.075	46	0.1	6.374	A
C-AB	72	685	0.105	72	0.2	5.874	A
C-A	129			129			
A-B	20			20			
A-C	49			49			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	56	600	0.094	56	0.1	6.619	A
C-AB	93	703	0.132	93	0.2	5.896	A
C-A	154			154			
A-B	24			24			
A-C	59			59			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	56	600	0.094	56	0.1	6.619	A
C-AB	93	703	0.132	93	0.2	5.902	A
C-A	154			154			
A-B	24			24			
A-C	59			59			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	610	0.075	46	0.1	6.379	A
C-AB	72	685	0.105	72	0.2	5.883	A
C-A	129			129			
A-B	20			20			
A-C	49			49			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	618	0.062	38	0.1	6.210	A
C-AB	58	671	0.086	58	0.1	5.876	A
C-A	111			111			
A-B	17			17			
A-C	41			41			

S|C|P

APPENDIX N

Junctions 9							
PICADY 9 - Priority Intersection Module							
Version: 9.5.2.1013							
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Filename: 4. B5098 _ Vicarage Hill Priority Junction;.j9

Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\PICADY

Report generation date: 10/08/2023 11:35:47

- »2028 Base Re-dist, AM
- »2028 Base Re-dist, PM
- »2028 Assess Re-dist, AM
- »2028 Assess Re-dist, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2028 Base Re-dist									
Stream B-C	D1	0.1	6.06	0.07	A	D2	0.1	6.15	0.09	A
Stream B-A		0.2	8.60	0.18	A		0.3	8.70	0.23	A
Stream C-AB		0.1	6.72	0.11	A		0.1	6.15	0.07	A
	2028 Assess Re-dist									
Stream B-C	D3	0.1	6.33	0.07	A	D4	0.1	6.32	0.10	A
Stream B-A		0.3	9.46	0.26	A		0.4	9.23	0.27	A
Stream C-AB		0.1	6.77	0.11	A		0.1	6.24	0.07	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	B5098 / Vicarage Hill Priority Junction;
Location	B5098 / Vicarage Hill Priority Junction;
Site number	
Date	29/11/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Re-dist	AM	ONE HOUR	00:00	01:30	15
D2	2028 Base Re-dist	PM	ONE HOUR	00:00	01:30	15
D3	2028 Assess Re-dist	AM	ONE HOUR	00:00	01:30	15
D4	2028 Assess Re-dist	PM	ONE HOUR	00:00	01:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B5098 / Vicarage Hill Priority Junction;	T-Junction	Two-way		3.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B5098 (W)		Major
B	B5098 (N)		Minor
C	Vicarage Hill (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.37			78.2	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	9.41	5.82	3.67	3.29	✓	2.00	38	41

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	570	0.098	0.247	0.155	0.353
B-C	699	0.101	0.255	-	-
C-B	619	0.226	0.226	-	-

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)
D1	2028 Base Re-dist	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	203	100.000
B		✓	123	100.000
C		✓	104	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	155	48
	B	83	0	40
	C	47	57	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.07	6.06	0.1	A
B-A	0.18	8.60	0.2	A
C-AB	0.11	6.72	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	658	0.046	30	0.0	5.727	A
B-A	62	529	0.118	62	0.1	7.696	A
C-AB	46	609	0.075	45	0.1	6.387	A
C-A	33			33			
A-B	117			117			
A-C	36			36			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	650	0.055	36	0.1	5.863	A
B-A	75	521	0.143	74	0.2	8.056	A
C-AB	55	607	0.091	55	0.1	6.524	A
C-A	38			38			
A-B	139			139			
A-C	43			43			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	44	638	0.069	44	0.1	6.059	A
B-A	91	510	0.179	91	0.2	8.587	A
C-AB	69	604	0.114	69	0.1	6.720	A
C-A	46			46			
A-B	171			171			
A-C	53			53			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	44	638	0.069	44	0.1	6.060	A
B-A	91	510	0.179	91	0.2	8.596	A
C-AB	69	604	0.114	69	0.1	6.724	A
C-A	46			46			
A-B	171			171			
A-C	53			53			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	650	0.055	36	0.1	5.865	A
B-A	75	521	0.143	75	0.2	8.070	A
C-AB	55	607	0.091	55	0.1	6.531	A
C-A	38			38			
A-B	139			139			
A-C	43			43			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	658	0.046	30	0.0	5.735	A
B-A	62	529	0.118	63	0.1	7.718	A
C-AB	46	609	0.075	46	0.1	6.397	A
C-A	33			33			
A-B	117			117			
A-C	36			36			

2028 Base Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B5098 / Vicarage Hill Priority Junction;	T-Junction	Two-way		4.77	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)
D2	2028 Base Re-dist	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	83	100.000
B		✓	167	100.000
C		✓	73	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	60	23
	B	112	0	55
	C	38	35	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.09	6.15	0.1	A
B-A	0.23	8.70	0.3	A
C-AB	0.07	6.15	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	664	0.062	41	0.1	5.775	A
B-A	84	548	0.154	84	0.2	7.749	A
C-AB	28	624	0.044	27	0.0	6.031	A
C-A	27			27			
A-B	45			45			
A-C	17			17			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	657	0.075	49	0.1	5.929	A
B-A	101	543	0.185	101	0.2	8.130	A
C-AB	33	625	0.053	33	0.1	6.081	A
C-A	32			32			
A-B	54			54			
A-C	21			21			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	646	0.094	60	0.1	6.150	A
B-A	123	537	0.230	123	0.3	8.689	A
C-AB	41	627	0.066	41	0.1	6.150	A
C-A	39			39			
A-B	66			66			
A-C	25			25			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	646	0.094	61	0.1	6.151	A
B-A	123	537	0.230	123	0.3	8.701	A
C-AB	41	627	0.066	41	0.1	6.153	A
C-A	39			39			
A-B	66			66			
A-C	25			25			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	656	0.075	50	0.1	5.935	A
B-A	101	543	0.185	101	0.2	8.146	A
C-AB	33	625	0.053	33	0.1	6.083	A
C-A	32			32			
A-B	54			54			
A-C	21			21			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	664	0.062	41	0.1	5.784	A
B-A	84	547	0.154	85	0.2	7.780	A
C-AB	28	624	0.044	28	0.1	6.035	A
C-A	27			27			
A-B	45			45			
A-C	17			17			

2028 Assess Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B5098 / Vicarage Hill Priority Junction;	T-Junction	Two-way		3.75	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)
D3	2028 Assess Re-dist	AM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	218	100.000
B		✓	160	100.000
C		✓	104	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	170	48
	B	120	0	40
	C	47	57	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.07	6.33	0.1	A
B-A	0.26	9.46	0.3	A
C-AB	0.11	6.77	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	639	0.047	30	0.0	5.905	A
B-A	90	532	0.170	90	0.2	8.117	A
C-AB	46	606	0.075	45	0.1	6.415	A
C-A	33			33			
A-B	128			128			
A-C	36			36			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	629	0.057	36	0.1	6.074	A
B-A	108	524	0.206	108	0.3	8.643	A
C-AB	55	604	0.091	55	0.1	6.560	A
C-A	38			38			
A-B	153			153			
A-C	43			43			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	44	613	0.072	44	0.1	6.324	A
B-A	132	513	0.258	132	0.3	9.446	A
C-AB	69	601	0.114	69	0.1	6.767	A
C-A	46			46			
A-B	187			187			
A-C	53			53			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	44	613	0.072	44	0.1	6.326	A
B-A	132	512	0.258	132	0.3	9.464	A
C-AB	69	601	0.114	69	0.1	6.770	A
C-A	46			46			
A-B	187			187			
A-C	53			53			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	628	0.057	36	0.1	6.077	A
B-A	108	524	0.206	108	0.3	8.668	A
C-AB	55	604	0.091	55	0.1	6.564	A
C-A	38			38			
A-B	153			153			
A-C	43			43			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	639	0.047	30	0.0	5.912	A
B-A	90	532	0.170	91	0.2	8.156	A
C-AB	46	606	0.075	46	0.1	6.423	A
C-A	33			33			
A-B	128			128			
A-C	36			36			

2028 Assess Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B5098 / Vicarage Hill Priority Junction;	T-Junction	Two-way		4.78	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)
D4	2028 Assess Re-dist	PM	ONE HOUR	00:00	01:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	116	100.000
B		✓	187	100.000
C		✓	73	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	93	23
	B	132	0	55
	C	38	35	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.10	6.32	0.1	A
B-A	0.27	9.23	0.4	A
C-AB	0.07	6.24	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	653	0.063	41	0.1	5.885	A
B-A	99	547	0.182	98	0.2	8.010	A
C-AB	28	619	0.045	27	0.0	6.088	A
C-A	27			27			
A-B	70			70			
A-C	17			17			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	643	0.077	49	0.1	6.062	A
B-A	119	542	0.219	118	0.3	8.491	A
C-AB	33	619	0.054	33	0.1	6.150	A
C-A	32			32			
A-B	84			84			
A-C	21			21			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	630	0.096	60	0.1	6.323	A
B-A	145	535	0.271	145	0.4	9.211	A
C-AB	41	619	0.067	41	0.1	6.236	A
C-A	39			39			
A-B	102			102			
A-C	25			25			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	630	0.096	61	0.1	6.325	A
B-A	145	535	0.271	145	0.4	9.228	A
C-AB	41	619	0.067	41	0.1	6.236	A
C-A	39			39			
A-B	102			102			
A-C	25			25			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	643	0.077	50	0.1	6.067	A
B-A	119	542	0.219	119	0.3	8.514	A
C-AB	33	619	0.054	33	0.1	6.154	A
C-A	32			32			
A-B	84			84			
A-C	21			21			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	652	0.064	41	0.1	5.897	A
B-A	99	547	0.182	100	0.2	8.051	A
C-AB	28	619	0.045	28	0.1	6.094	A
C-A	27			27			
A-B	70			70			
A-C	17			17			

S|C|P

APPENDIX O

Junctions 9									
PICADY 9 - Priority Intersection Module									
Version: 9.5.2.1013									
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Filename: 6. A5152 Ruabon Road _ A525 Ruthin Road Priority Junction.j9
Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\PICADY
Report generation date: 10/08/2023 11:42:56

- »2028 Base Re-dist, AM
- »2028 Base Re-dist, PM
- »2028 Assess Re-dist, AM
- »2028 Assess Re-dist, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2028 Base Re-dist									
Stream B-AC	D1	1.3	18.05	0.58	C					
Stream C-AB		0.7	8.61	0.35	A					
	2028 Base Re-dist									
Stream B-AC						D2	0.9	14.67	0.49	B
Stream C-AB							1.2	8.51	0.46	A
	2028 Assess Re-dist									
Stream B-AC	D3	3.2	33.64	0.77	D	D4	1.4	18.66	0.59	C
Stream C-AB		1.0	9.93	0.44	A		2.8	13.43	0.67	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	A5152 Ruabon Road / A525 Ruthin Road Priority Junction
Location	A5152 Ruabon Road / A525 Ruthin Road Priority Junction
Site number	
Date	29/11/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Re-dist	AM	ONE HOUR	07:45	09:15	15
D2	2028 Base Re-dist	PM	ONE HOUR	16:15	17:45	15
D3	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15
D4	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A5152 Ruabon Road / A525 Ruthin Road Priority Junction	T-Junction	Two-way		6.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A5152 Ruabon Road (S)		Major
B	A525 Ruthin Rd		Minor
C	A5152 Ruabon Road (N)		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	6.65			99.1	✓	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	2.20	32	17

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	456	0.081	0.204	0.128	0.292
B-C	584	0.087	0.220	-	-
C-B	631	0.238	0.238	-	-

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)
D1	2028 Base Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	459	100.000
B		✓	248	100.000
C		✓	318	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	32	427
	B	4	0	244
	C	172	146	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.58	18.05	1.3	C
C-AB	0.35	8.61	0.7	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	187	507	0.368	184	0.6	11.096	B
C-AB	138	639	0.216	137	0.3	7.151	A
C-A	102			102			
A-B	24			24			
A-C	321			321			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	223	492	0.453	222	0.8	13.276	B
C-AB	173	642	0.270	173	0.5	7.671	A
C-A	113			113			
A-B	29			29			
A-C	384			384			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	273	472	0.578	271	1.3	17.721	C
C-AB	228	647	0.352	227	0.7	8.573	A
C-A	122			122			
A-B	35			35			
A-C	470			470			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	273	472	0.578	273	1.3	18.052	C
C-AB	228	647	0.352	228	0.7	8.610	A
C-A	122			122			
A-B	35			35			
A-C	470			470			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	223	492	0.453	225	0.8	13.569	B
C-AB	174	643	0.270	174	0.5	7.716	A
C-A	112			112			
A-B	29			29			
A-C	384			384			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	187	507	0.368	188	0.6	11.325	B
C-AB	138	640	0.216	139	0.3	7.204	A
C-A	101			101			
A-B	24			24			
A-C	321			321			

2028 Base Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A5152 Ruabon Road / A525 Ruthin Road Priority Junction	T-Junction	Two-way		5.38	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)
D2	2028 Base Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	339	100.000
B		✓	210	100.000
C		✓	504	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	18	321
	B	15	0	195
	C	322	182	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.49	14.67	0.9	B
C-AB	0.46	8.51	1.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	158	508	0.311	156	0.4	10.183	B
C-AB	204	736	0.277	202	0.5	6.729	A
C-A	175			175			
A-B	14			14			
A-C	242			242			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	189	495	0.381	188	0.6	11.703	B
C-AB	265	759	0.350	265	0.7	7.294	A
C-A	188			188			
A-B	16			16			
A-C	289			289			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	231	476	0.485	230	0.9	14.530	B
C-AB	365	791	0.461	363	1.2	8.433	A
C-A	190			190			
A-B	20			20			
A-C	353			353			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	231	476	0.485	231	0.9	14.673	B
C-AB	366	792	0.462	366	1.2	8.508	A
C-A	189			189			
A-B	20			20			
A-C	353			353			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	189	495	0.381	190	0.6	11.851	B
C-AB	266	760	0.351	268	0.8	7.376	A
C-A	187			187			
A-B	16			16			
A-C	289			289			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	158	508	0.311	159	0.5	10.327	B
C-AB	205	737	0.278	206	0.5	6.810	A
C-A	174			174			
A-B	14			14			
A-C	242			242			

2028 Assess Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A5152 Ruabon Road / A525 Ruthin Road Priority Junction	T-Junction	Two-way		11.28	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)
D3	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	498	100.000
B		✓	326	100.000
C		✓	364	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	32	466
	B	4	0	322
	C	187	177	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.77	33.64	3.2	D
C-AB	0.44	9.93	1.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	245	501	0.490	242	0.9	13.698	B
C-AB	171	641	0.267	169	0.4	7.616	A
C-A	103			103			
A-B	24			24			
A-C	351			351			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	293	485	0.604	291	1.5	18.323	C
C-AB	216	644	0.335	215	0.6	8.391	A
C-A	111			111			
A-B	29			29			
A-C	419			419			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	359	463	0.775	353	3.0	30.875	D
C-AB	286	650	0.440	285	1.0	9.858	A
C-A	115			115			
A-B	35			35			
A-C	513			513			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	359	463	0.775	358	3.2	33.636	D
C-AB	287	651	0.441	287	1.0	9.935	A
C-A	114			114			
A-B	35			35			
A-C	513			513			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	293	485	0.604	299	1.6	19.981	C
C-AB	216	645	0.335	218	0.6	8.475	A
C-A	111			111			
A-B	29			29			
A-C	419			419			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	245	501	0.490	248	1.0	14.360	B
C-AB	171	641	0.267	172	0.5	7.700	A
C-A	103			103			
A-B	24			24			
A-C	351			351			

2028 Assess Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A5152 Ruabon Road / A525 Ruthin Road Priority Junction	T-Junction	Two-way		8.76	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)
D4	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	360	100.000
B		✓	252	100.000
C		✓	609	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
From	A	0	18	342
	B	15	0	237
	C	357	252	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.59	18.66	1.4	C
C-AB	0.67	13.43	2.8	B
C-A				
A-B				
A-C				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	190	505	0.375	187	0.6	11.245	B
C-AB	295	751	0.393	292	0.9	7.809	A
C-A	163			163			
A-B	14			14			
A-C	257			257			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	227	491	0.462	226	0.8	13.515	B
C-AB	388	777	0.499	386	1.3	9.218	A
C-A	160			160			
A-B	16			16			
A-C	307			307			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	277	470	0.590	275	1.4	18.271	C
C-AB	541	814	0.664	535	2.7	12.924	B
C-A	130			130			
A-B	20			20			
A-C	377			377			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	277	470	0.591	277	1.4	18.664	C
C-AB	543	817	0.665	543	2.8	13.429	B
C-A	127			127			
A-B	20			20			
A-C	377			377			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	227	491	0.462	229	0.9	13.854	B
C-AB	391	780	0.501	396	1.4	9.577	A
C-A	157			157			
A-B	16			16			
A-C	307			307			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	190	505	0.376	191	0.6	11.492	B
C-AB	297	753	0.395	300	0.9	8.015	A
C-A	161			161			
A-B	14			14			
A-C	257			257			

S|C|P

APPENDIX P

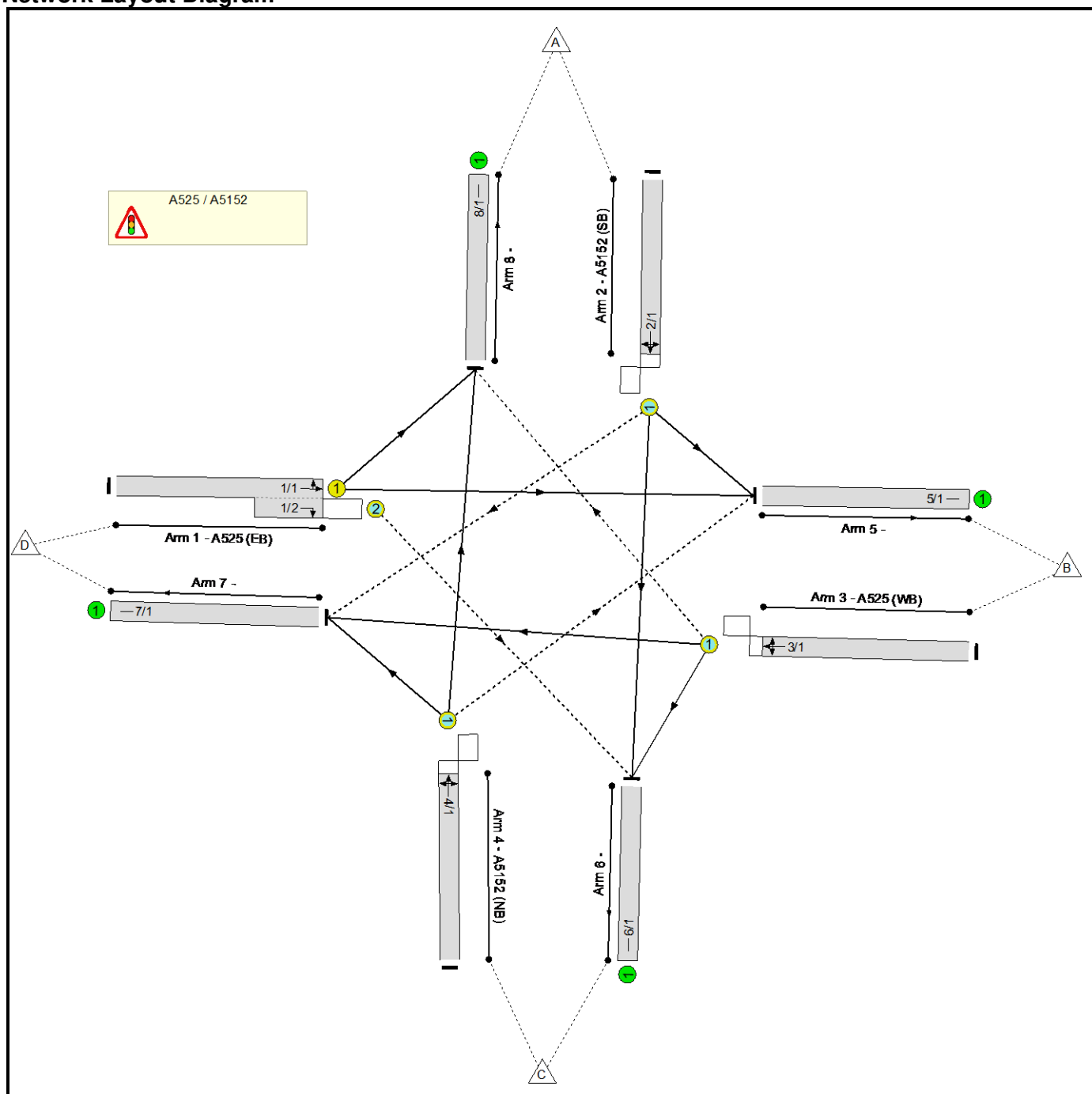
Full Input Data And Results

Full Input Data And Results

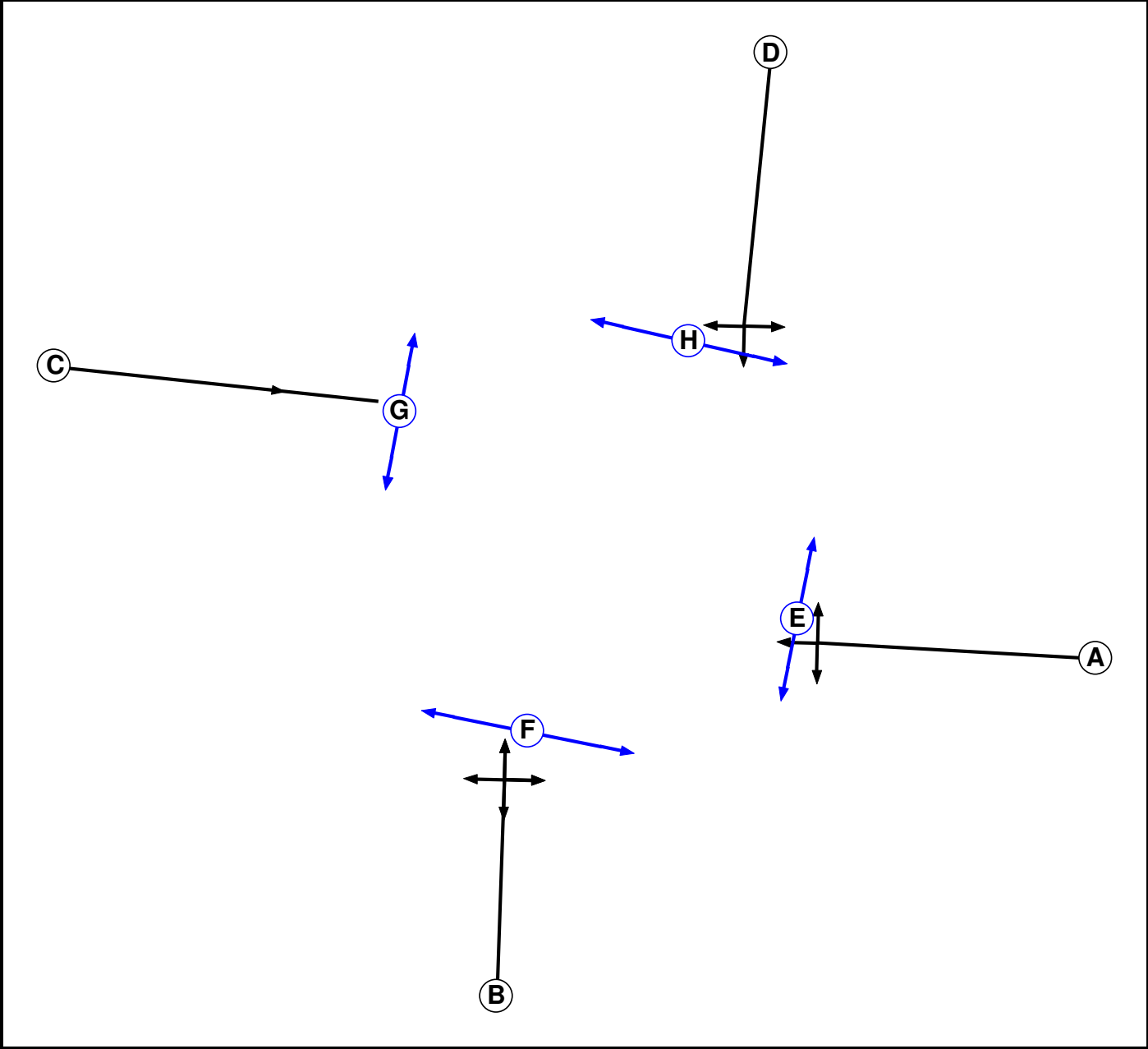
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	7. A525_A5152.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		5	5
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Pedestrian		5	5

Full Input Data And Results

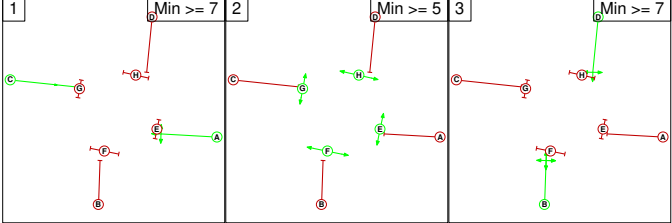
Phase Intergreens Matrix

Terminating Phase	Starting Phase								
		A	B	C	D	E	F	G	H
	A		6	-	5	9	9	9	9
	B	6		6	-	9	9	9	9
	C	-	6		6	9	9	9	9
	D	6	-	6		9	9	9	9
	E	5	5	5	5		-	-	-
	F	5	5	5	5	-		-	-
	G	5	5	5	5	-	-		-
	H	5	5	5	5	-	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage	To Stage			
		1	2	3
	1		9	6
	2	5		5
	3	6	9	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A525 / A5152											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/2 (A525 (EB))	6/1 (Right)	1439	0	3/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	3.00	-	0.50	3	2.00
2/1 (A5152 (SB))	7/1 (Right)	1439	0	4/1	1.09	To 7/1 (Left) To 8/1 (Ahead)	3.00	2.00	0.50	3	2.00
3/1 (A525 (WB))	8/1 (Right)	1439	0	1/1	1.09	All	3.00	2.00	0.50	3	2.00
4/1 (A5152 (NB))	5/1 (Right)	1439	0	2/1	1.09	To 5/1 (Left) To 6/1 (Ahead)	3.00	2.00	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: A525 / A5152												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A525 (EB))	U	B	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	15.00
1/2 (A525 (EB))	O	B	2	3	5.2	Geom	-	3.30	0.00	Y	Arm 6 Right	15.00
											Arm 5 Left	21.00
2/1 (A5152 (SB))	O	D	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Right	21.00
3/1 (A525 (WB))	O	A	2	3	60.0	Geom	-	4.20	0.00	Y	Arm 6 Left	18.00
											Arm 7 Ahead	Inf
4/1 (A5152 (NB))	O	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 8 Right	18.00
											Arm 7 Right	Inf
4/1 (A5152 (NB))	O	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	15.00
4/1 (A5152 (NB))	O	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 8 Ahead	Inf
											Arm 5 Right	15.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2028 Assess AM'	08:00	09:00	01:00	
2: '2028 Assess PM'	16:30	17:30	01:00	

Scenario 1: '2028 Assess AM' (FG1: '2028 Assess AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	19	347	106	472
	B	18	0	5	173	196
	C	301	7	0	166	474
	D	203	305	177	0	685
	Tot.	522	331	529	445	1827

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2028 Assess AM
Junction: A525 / A5152	
1/1 (with short)	685(In) 508(Out)
1/2 (short)	177
2/1	472
3/1	196
4/1	474
5/1	331
6/1	529
7/1	445
8/1	522

Lane Saturation Flows

Junction: A525 / A5152								
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 (A525 (EB))	3.30	0.00	Y	Arm 5 Ahead Arm 8 Left	Inf 15.00	60.0 % 40.0 %	1870	1870
1/2 (A525 (EB))	3.30	0.00	Y	Arm 6 Right	15.00	100.0 %	1768	1768
2/1 (A5152 (SB))	3.70	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 7 Right	21.00 Inf 21.00	4.0 % 73.5 % 22.5 %	1948	1948
3/1 (A525 (WB))	4.20	0.00	Y	Arm 6 Left Arm 7 Ahead Arm 8 Right	18.00 Inf 18.00	2.6 % 88.3 % 9.2 %	2015	2015
4/1 (A5152 (NB))	3.80	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead	15.00 15.00 Inf	1.5 % 35.0 % 63.5 %	1925	1925
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2028 Assess PM' (FG2: '2028 Assess PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	14	380	195	589
	B	15	0	6	253	274
	C	252	3	0	150	405
	D	160	232	207	0	599
	Tot.	427	249	593	598	1867

Traffic Lane Flows

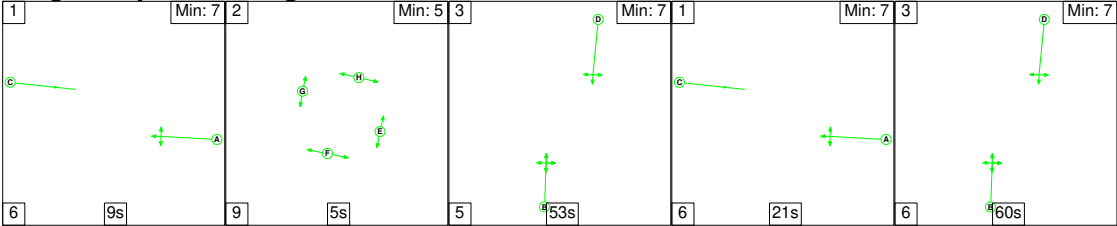
Lane	Scenario 2: 2028 Assess PM
Junction: A525 / A5152	
1/1 (with short)	599(In) 392(Out)
1/2 (short)	207
2/1	589
3/1	274
4/1	405
5/1	249
6/1	593
7/1	598
8/1	427

Lane Saturation Flows

Junction: A525 / A5152								
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 (A525 (EB))	3.30	0.00	Y	Arm 5 Ahead	Inf	59.2 %	1869	1869
				Arm 8 Left	15.00	40.8 %		
1/2 (A525 (EB))	3.30	0.00	Y	Arm 6 Right	15.00	100.0 %	1768	1768
2/1 (A5152 (SB))	3.70	0.00	Y	Arm 5 Left	21.00	2.4 %	1936	1936
				Arm 6 Ahead	Inf	64.5 %		
				Arm 7 Right	21.00	33.1 %		
3/1 (A525 (WB))	4.20	0.00	Y	Arm 6 Left	18.00	2.2 %	2022	2022
				Arm 7 Ahead	Inf	92.3 %		
				Arm 8 Right	18.00	5.5 %		
4/1 (A5152 (NB))	3.80	0.00	Y	Arm 5 Right	15.00	0.7 %	1922	1922
				Arm 7 Left	15.00	37.0 %		
				Arm 8 Ahead	Inf	62.2 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2028 Assess AM' (FG1: '2028 Assess AM', Plan 1: 'Network Control Plan 1')

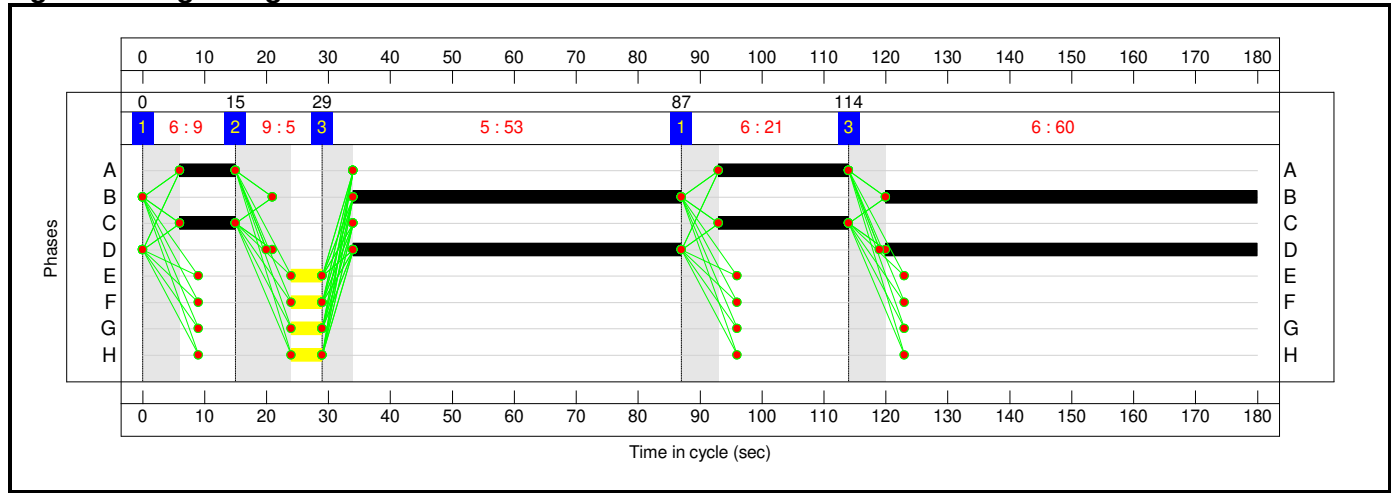
Stage Sequence Diagram



Stage Timings

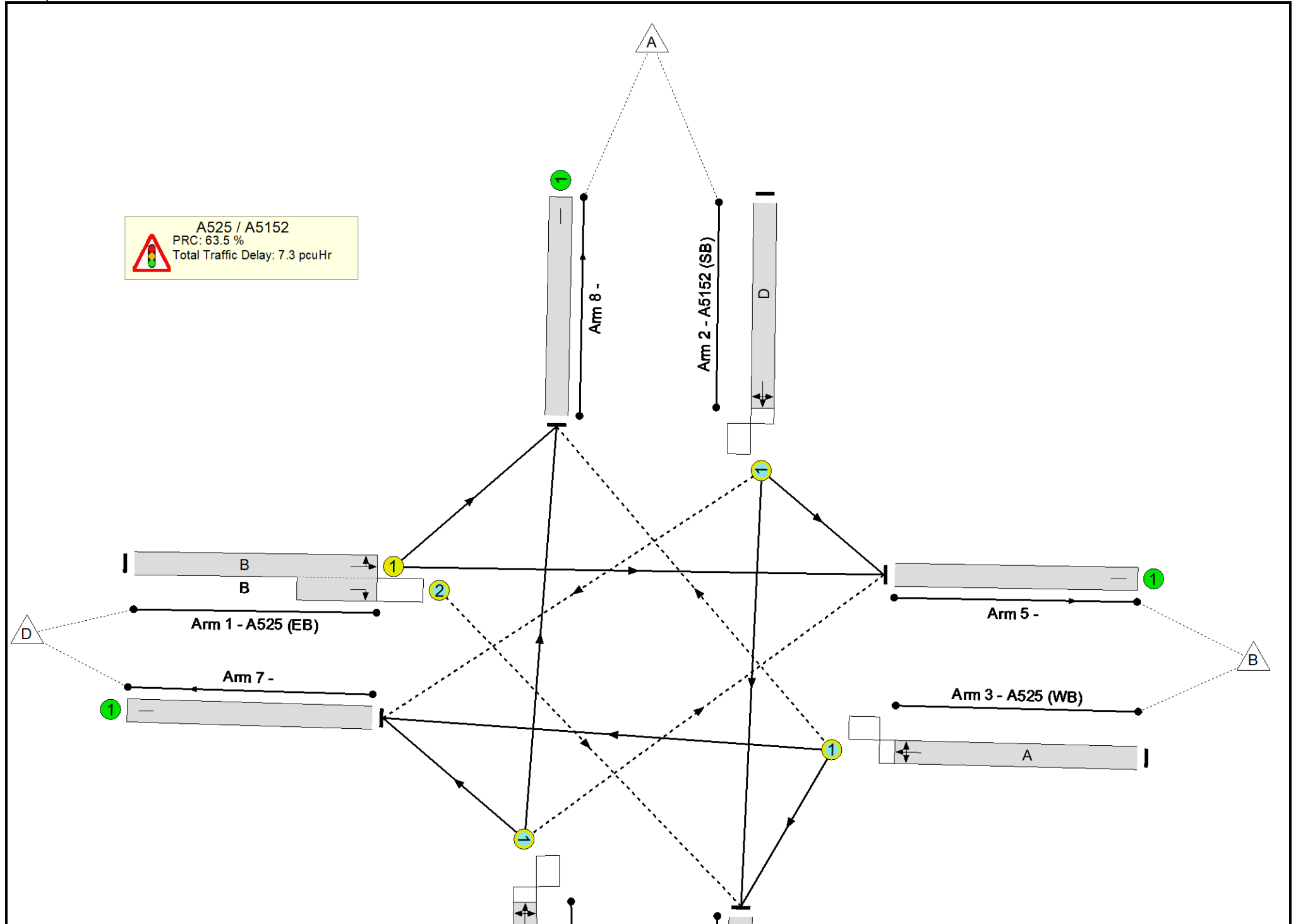
Stage	1	2	3	1	3
Duration	9	5	53	21	60
Change Point	0	15	29	87	114

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	55.0%
A525 / A5152	-	-	N/A	-	-		-	-	-	-	-	-	55.0%
1/1+1/2	A525 (EB) Ahead Right Left	U+O	N/A	N/A	B		2	113	-	685	1870:1768	927+323	54.8 : 54.8%
2/1	A5152 (SB) Left Ahead Right	O	N/A	N/A	D		2	113	-	472	1948	1216	38.8%
3/1	A525 (WB) Left Ahead Right	O	N/A	N/A	A		2	30	-	196	2015	356	55.0%
4/1	A5152 (NB) Right Left Ahead	O	N/A	N/A	B		2	113	-	474	1925	1230	38.5%
5/1		U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	529	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	445	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	522	Inf	Inf	0.0%

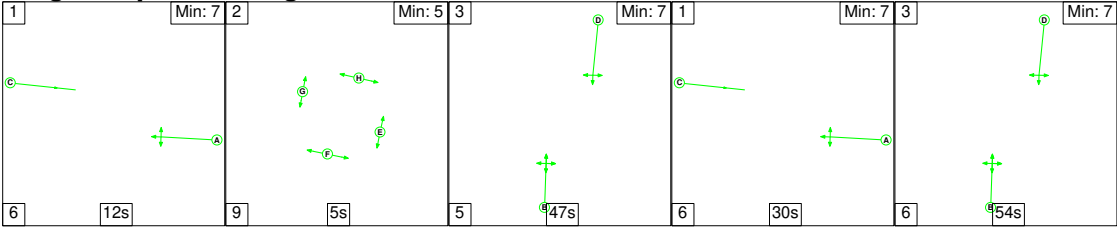
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	112	187	9	5.4	1.8	0.1	7.3	-	-	-	-
A525 / A5152	-	-	112	187	9	5.4	1.8	0.1	7.3	-	-	-	-
1/1+1/2	685	685	0	171	6	1.5	0.6	0.0	2.1	11.0	6.9	0.6	7.5
2/1	472	472	105	0	1	1.0	0.3	0.1	1.4	11.0	5.6	0.3	6.0
3/1	196	196	0	16	2	1.8	0.6	0.0	2.4	45.0	4.6	0.6	5.2
4/1	474	474	7	0	0	1.0	0.3	0.0	1.3	10.2	5.7	0.3	6.0
5/1	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	529	529	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	445	445	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	522	522	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 63.5 Total Delay for Signalled Lanes (pcuHr): 7.32 Cycle Time (s): 180 PRC Over All Lanes (%): 63.5 Total Delay Over All Lanes(pcuHr): 7.32													

Full Input Data And Results

Scenario 2: '2028 Assess PM' (FG2: '2028 Assess PM', Plan 1: 'Network Control Plan 1')

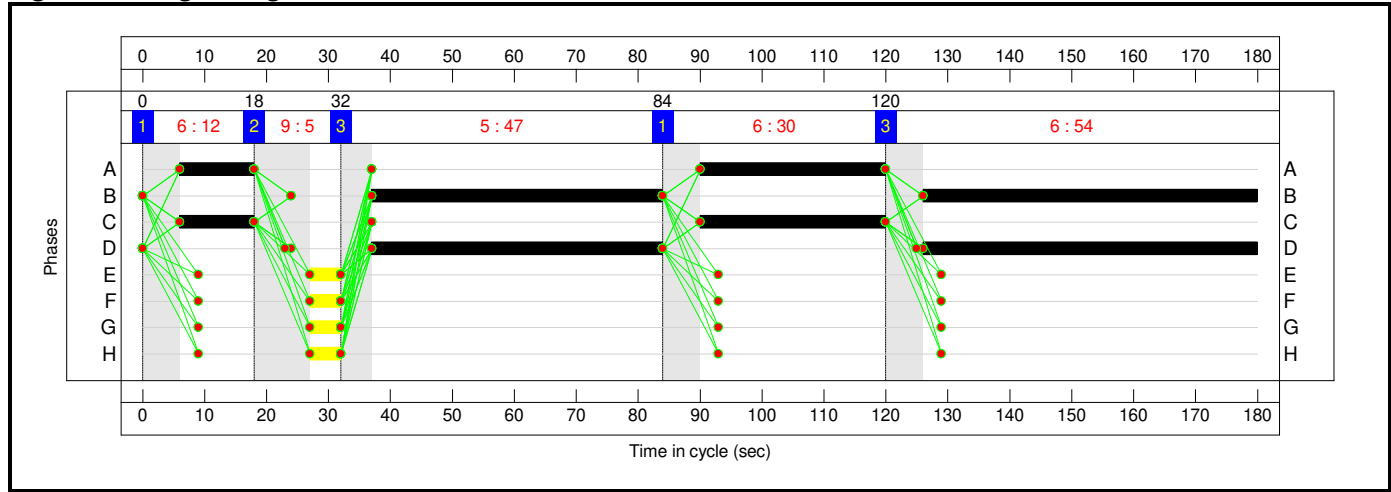
Stage Sequence Diagram

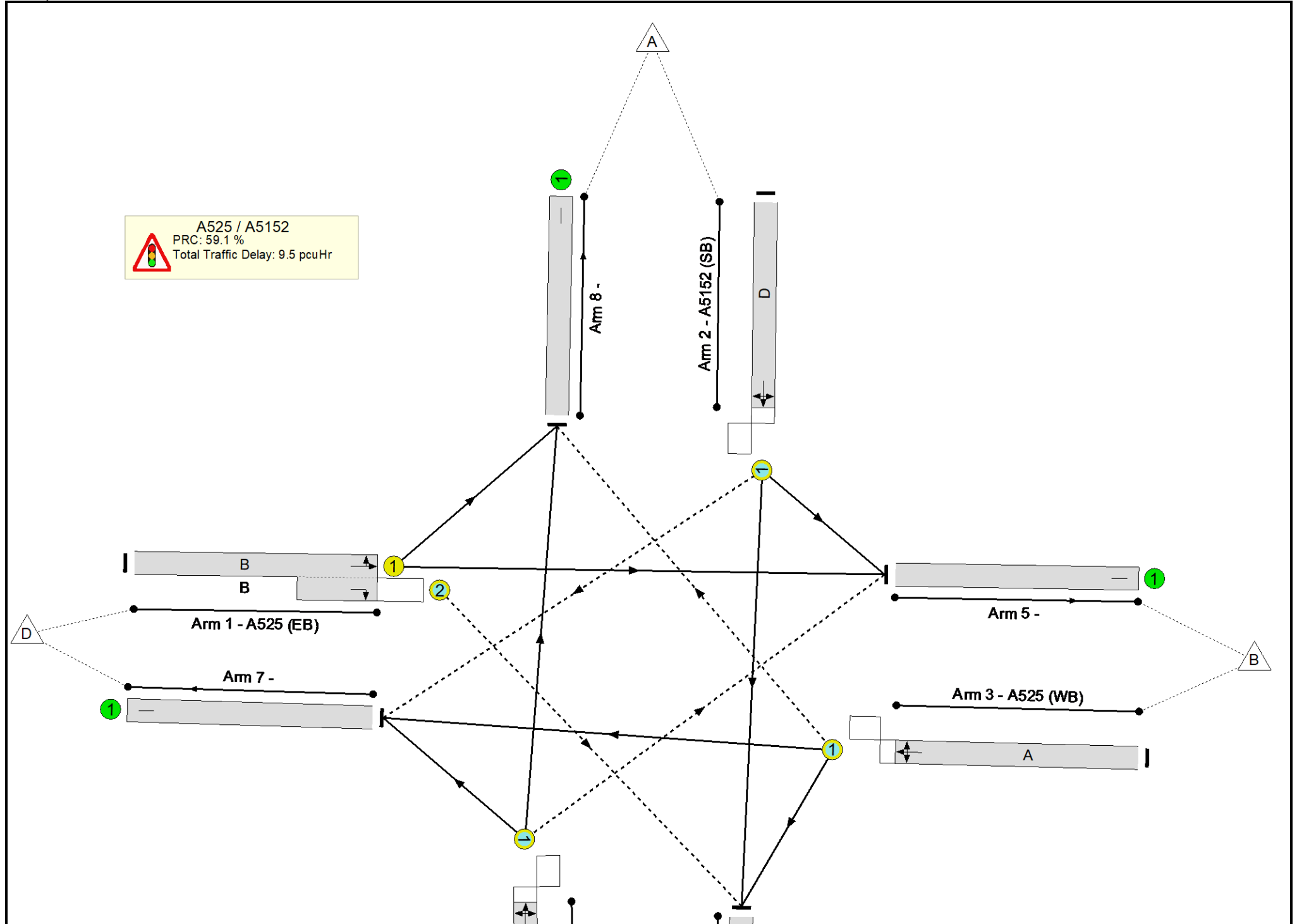


Stage Timings

Stage	1	2	3	1	3
Duration	12	5	47	30	54
Change Point	0	18	32	84	120

Signal Timings Diagram





Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	56.6%
A525 / A5152	-	-	N/A	-	-		-	-	-	-	-	-	56.6%
1/1+1/2	A525 (EB) Ahead Right Left	U+O	N/A	N/A	B		2	101	-	599	1869:1768	759+401	51.6 : 51.6%
2/1	A5152 (SB) Left Ahead Right	O	N/A	N/A	D		2	101	-	589	1936	1041	56.6%
3/1	A525 (WB) Left Ahead Right	O	N/A	N/A	A		2	42	-	274	2022	494	55.4%
4/1	A5152 (NB) Right Left Ahead	O	N/A	N/A	B		2	101	-	405	1922	1100	36.8%
5/1		U	N/A	N/A	-		-	-	-	249	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	593	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	598	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	427	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	196	214	10	7.2	2.1	0.2	9.5	-	-	-	-
A525 / A5152	-	-	196	214	10	7.2	2.1	0.2	9.5	-	-	-	-
1/1+1/2	599	599	0	200	7	1.7	0.5	0.0	2.2	13.3	6.0	0.5	6.6
2/1	589	589	193	0	2	2.0	0.6	0.2	2.9	17.8	10.3	0.6	11.0
3/1	274	274	0	14	1	2.3	0.6	0.0	2.9	37.9	6.2	0.6	6.9
4/1	405	405	3	0	0	1.2	0.3	0.0	1.5	13.1	5.7	0.3	6.0
5/1	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	593	593	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	598	598	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	427	427	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 59.1 Total Delay for Signalled Lanes (pcuHr): 9.48 Cycle Time (s): 180 PRC Over All Lanes (%): 59.1 Total Delay Over All Lanes(pcuHr): 9.48													

S|C|P

APPENDIX Q

Junctions 9										
ARCADY 9 - Roundabout Module										
Version: 9.5.2.1013										
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution										

Filename: 8. Croesnewydd Rd _ Rhyd Broughton Ln _ Hospital Access.j9
Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\ARCADY
Report generation date: 10/08/2023 12:27:41

- »2028 Base Re-dist, AM
- »2028 Base Re-dist, PM
- »2028 Assess Re-dist, AM
- »2028 Assess Re-dist, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2028 Base Re-dist									
Arm 1	D1	3.6	9.65	0.79	A	D2	0.4	2.69	0.27	A
Arm 2		0.5	4.89	0.33	A		1.2	6.11	0.54	A
Arm 3		0.0	3.69	0.01	A		0.1	4.08	0.06	A
Arm 4		0.5	3.71	0.33	A		0.6	4.70	0.38	A
	2028 Assess Re-dist									
Arm 1	D3	4.1	10.85	0.81	B	D4	0.4	2.77	0.29	A
Arm 2		0.5	5.04	0.35	A		1.3	6.72	0.57	A
Arm 3		0.0	3.76	0.01	A		0.1	4.27	0.06	A
Arm 4		0.6	4.03	0.39	A		0.8	5.22	0.44	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	8.Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;
Location	8.Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;
Site number	
Date	01/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Re-dist	AM	ONE HOUR	07:45	09:15	15
D2	2028 Base Re-dist	PM	ONE HOUR	16:15	17:45	15
D3	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15
D4	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	8.Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;	Standard Roundabout		1, 2, 3, 4	7.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Rhyd Broughton Lane	
2	Croesnewydd Rd (E)	
3	Hospital Access	
4	Croesnewydd Rd (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	2.90	6.99	44.9	41.0	34.7	23.0	
2	3.50	6.00	7.7	16.3	34.7	38.0	
3	5.00	5.00	0.0	15.9	34.7	42.0	
4	3.70	6.48	9.8	28.9	34.7	23.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.714	1929
2	0.574	1376
3	0.581	1433
4	0.648	1623

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)
D1	2028 Base Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1245	100.000
2		✓	333	100.000
3		✓	13	100.000
4		✓	443	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	835	36	374
	2	223	0	14	96
	3	6	1	0	6
	4	207	214	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.79	9.65	3.6	A
2	0.33	4.89	0.5	A
3	0.01	3.69	0.0	A
4	0.33	3.71	0.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	937	178	1802	0.520	933	1.1	4.123	A
2	251	324	1190	0.211	250	0.3	3.826	A
3	10	519	1131	0.009	10	0.0	3.210	A
4	334	172	1511	0.221	332	0.3	3.051	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1119	213	1777	0.630	1117	1.7	5.433	A
2	299	388	1153	0.260	299	0.3	4.212	A
3	12	622	1071	0.011	12	0.0	3.397	A
4	398	207	1489	0.267	398	0.4	3.299	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1371	261	1743	0.786	1363	3.5	9.306	A
2	367	473	1104	0.332	366	0.5	4.874	A
3	14	760	991	0.014	14	0.0	3.685	A
4	488	253	1459	0.334	487	0.5	3.702	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1371	261	1743	0.787	1370	3.6	9.646	A
2	367	476	1103	0.333	367	0.5	4.891	A
3	14	763	989	0.014	14	0.0	3.691	A
4	488	253	1459	0.334	488	0.5	3.706	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1119	213	1777	0.630	1127	1.7	5.601	A
2	299	391	1151	0.260	300	0.4	4.231	A
3	12	626	1069	0.011	12	0.0	3.404	A
4	398	207	1489	0.268	399	0.4	3.306	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	937	179	1802	0.520	940	1.1	4.191	A
2	251	326	1188	0.211	251	0.3	3.843	A
3	10	523	1129	0.009	10	0.0	3.216	A
4	334	173	1510	0.221	334	0.3	3.059	A

2028 Base Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	8.Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;	Standard Roundabout		1, 2, 3, 4	4.66	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)
D2	2028 Base Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	460	100.000
2		✓	627	100.000
3		✓	53	100.000
4		✓	429	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	309	7	144
	2	504	0	2	121
	3	29	7	0	17
	4	325	103	1	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.27	2.69	0.4	A
2	0.54	6.11	1.2	A
3	0.06	4.08	0.1	A
4	0.38	4.70	0.6	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	346	83	1870	0.185	345	0.2	2.361	A
2	472	114	1310	0.360	470	0.6	4.273	A
3	40	576	1098	0.036	40	0.0	3.402	A
4	323	405	1361	0.237	322	0.3	3.460	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	414	100	1858	0.223	413	0.3	2.492	A
2	564	137	1297	0.435	563	0.8	4.897	A
3	48	690	1031	0.046	48	0.0	3.658	A
4	386	485	1309	0.295	385	0.4	3.897	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	506	122	1842	0.275	506	0.4	2.695	A
2	690	167	1280	0.539	689	1.2	6.077	A
3	58	845	942	0.062	58	0.1	4.075	A
4	472	593	1238	0.381	472	0.6	4.690	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	506	122	1842	0.275	506	0.4	2.695	A
2	690	167	1280	0.540	690	1.2	6.108	A
3	58	847	941	0.062	58	0.1	4.080	A
4	472	595	1237	0.382	472	0.6	4.705	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	414	100	1858	0.223	414	0.3	2.495	A
2	564	137	1297	0.435	565	0.8	4.930	A
3	48	693	1030	0.046	48	0.0	3.667	A
4	386	487	1307	0.295	386	0.4	3.914	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	346	84	1869	0.185	347	0.2	2.365	A
2	472	115	1310	0.360	473	0.6	4.306	A
3	40	580	1096	0.036	40	0.0	3.409	A
4	323	407	1359	0.238	323	0.3	3.480	A

2028 Assess Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	8.Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;	Standard Roundabout		1, 2, 3, 4	8.22	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)
D3	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1258	100.000
2		✓	346	100.000
3		✓	13	100.000
4		✓	513	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1	2	3	4
From	1	0	835	36	387
	2	223	0	14	109
	3	6	1	0	6
	4	242	249	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.81	10.85	4.1	B
2	0.35	5.04	0.5	A
3	0.01	3.76	0.0	A
4	0.39	4.03	0.6	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	947	204	1783	0.531	943	1.1	4.260	A
2	260	333	1184	0.220	259	0.3	3.887	A
3	10	539	1119	0.009	10	0.0	3.243	A
4	386	172	1511	0.256	385	0.3	3.192	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1131	244	1755	0.645	1128	1.8	5.723	A
2	311	399	1146	0.271	311	0.4	4.305	A
3	12	645	1058	0.011	12	0.0	3.441	A
4	461	207	1489	0.310	461	0.4	3.498	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1385	299	1716	0.807	1376	4.0	10.354	B
2	381	487	1096	0.348	380	0.5	5.026	A
3	14	788	974	0.015	14	0.0	3.748	A
4	565	253	1459	0.387	564	0.6	4.019	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1385	299	1715	0.807	1385	4.1	10.848	B
2	381	490	1094	0.348	381	0.5	5.045	A
3	14	791	973	0.015	14	0.0	3.755	A
4	565	253	1459	0.387	565	0.6	4.027	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1131	245	1754	0.645	1140	1.8	5.943	A
2	311	403	1144	0.272	312	0.4	4.327	A
3	12	650	1055	0.011	12	0.0	3.449	A
4	461	207	1489	0.310	462	0.5	3.508	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	947	205	1783	0.531	950	1.1	4.338	A
2	260	336	1183	0.220	261	0.3	3.906	A
3	10	543	1117	0.009	10	0.0	3.252	A
4	386	173	1510	0.256	387	0.3	3.206	A

2028 Assess Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	8.Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;	Standard Roundabout		1, 2, 3, 4	5.06	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)
D4	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	491	100.000
2		✓	658	100.000
3		✓	53	100.000
4		✓	498	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	309	7	175
	2	504	0	2	152
	3	29	7	0	17
	4	394	103	1	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.29	2.77	0.4	A
2	0.57	6.72	1.3	A
3	0.06	4.27	0.1	A
4	0.44	5.22	0.8	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	370	83	1870	0.198	369	0.2	2.397	A
2	495	137	1297	0.382	493	0.6	4.465	A
3	40	623	1071	0.037	40	0.0	3.491	A
4	375	405	1361	0.276	373	0.4	3.642	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	441	100	1858	0.238	441	0.3	2.541	A
2	592	164	1281	0.462	591	0.8	5.204	A
3	48	746	999	0.048	48	0.0	3.782	A
4	448	485	1309	0.342	447	0.5	4.176	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	541	122	1842	0.293	540	0.4	2.765	A
2	724	201	1260	0.575	723	1.3	6.673	A
3	58	913	902	0.065	58	0.1	4.266	A
4	548	593	1238	0.443	547	0.8	5.200	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	541	122	1842	0.294	541	0.4	2.766	A
2	724	201	1260	0.575	724	1.3	6.721	A
3	58	915	901	0.065	58	0.1	4.272	A
4	548	595	1237	0.443	548	0.8	5.223	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	441	100	1858	0.238	442	0.3	2.542	A
2	592	165	1281	0.462	593	0.9	5.250	A
3	48	749	997	0.048	48	0.1	3.793	A
4	448	487	1307	0.343	449	0.5	4.198	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	370	84	1869	0.198	370	0.2	2.401	A
2	495	138	1297	0.382	496	0.6	4.504	A
3	40	627	1068	0.037	40	0.0	3.499	A
4	375	407	1359	0.276	375	0.4	3.665	A

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APPENDIX R

Junctions 9							
ARCADY 9 - Roundabout Module							
Version: 9.5.2.1013							
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution							

Filename: 9. B5101 Berse Rd_ Rhyd Broughton Lane.j9

Path: Z:\Job Library\2021\210187 - Ruthin Road, Wrexham\Traffic Data\ARCADY

Report generation date: 10/08/2023 13:10:52

»2028 Base Re-dist, AM

»2028 Base Re-dist, PM

»2028 Assess Re-dist , AM

»2028 Assess Re-dist , PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2028 Base Re-dist									
Arm 1	D3	3.1	8.50	0.76	A	D4	1.3	4.95	0.57	A
Arm 2		2.7	7.74	0.73	A		2.3	8.16	0.70	A
Arm 3		0.6	5.02	0.37	A		0.7	5.11	0.40	A
	2028 Assess Re-dist									
Arm 1	D5	3.6	9.70	0.79	A	D6	1.4	5.09	0.58	A
Arm 2		2.8	8.22	0.74	A		2.5	8.57	0.72	A
Arm 3		0.7	5.31	0.40	A		0.7	5.21	0.40	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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	B5101 Berse Road/ Ryd Broughton Lane
Location	B5101 Berse Road/ Ryd Broughton Lane
Site number	
Date	29/11/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\abbie.moore
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2028 Base Re-dist	AM	ONE HOUR	07:45	09:15	15
D4	2028 Base Re-dist	PM	ONE HOUR	16:15	17:45	15
D5	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15
D6	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Re-dist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B5101 Berse Road/ Ryd Broughton Lane	Standard Roundabout		1, 2, 3	7.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Berse Road (N)	
2	Rhyd Broughton Lane	
3	B5101 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	3.70	7.10	12.8	41.5	38.5	13.0	
2	4.80	6.80	10.8	20.9	38.5	11.0	
3	3.50	5.60	21.2	25.5	38.5	18.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.695	1819
2	0.718	1960
3	0.646	1624

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)
D3	2028 Base Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1204	100.000
2		✓	1149	100.000
3		✓	384	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1	2	3
From	1	0	913	291
	2	682	0	467
	3	291	93	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.76	8.50	3.1	A
2	0.73	7.74	2.7	A
3	0.37	5.02	0.6	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	906	70	1771	0.512	902	1.0	4.124	A
2	865	218	1803	0.480	861	0.9	3.809	A
3	289	511	1294	0.223	288	0.3	3.575	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1082	84	1761	0.614	1080	1.6	5.267	A
2	1033	261	1772	0.583	1031	1.4	4.845	A
3	345	612	1229	0.281	345	0.4	4.070	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1326	102	1748	0.758	1320	3.0	8.286	A
2	1265	319	1731	0.731	1260	2.6	7.568	A
3	423	748	1141	0.370	422	0.6	5.001	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1326	102	1748	0.758	1325	3.1	8.500	A
2	1265	320	1730	0.731	1265	2.7	7.736	A
3	423	751	1139	0.371	423	0.6	5.023	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1082	84	1761	0.615	1088	1.6	5.393	A
2	1033	263	1771	0.583	1038	1.4	4.946	A
3	345	616	1226	0.282	346	0.4	4.094	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	906	70	1771	0.512	909	1.1	4.188	A
2	865	220	1802	0.480	867	0.9	3.859	A
3	289	515	1292	0.224	290	0.3	3.595	A

2028 Base Re-dist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B5101 Berse Road/ Ryd Broughton Lane	Standard Roundabout		1, 2, 3	6.33	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)
D4	2028 Base Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	881	100.000
2		✓	947	100.000
3		✓	420	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1	2	3
From	1	0	278	603
	2	644	0	303
	3	261	159	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.57	4.95	1.3	A
2	0.70	8.16	2.3	A
3	0.40	5.11	0.7	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	663	119	1737	0.382	661	0.6	3.340	A
2	713	452	1635	0.436	710	0.8	3.879	A
3	316	483	1312	0.241	315	0.3	3.604	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	792	143	1720	0.460	791	0.8	3.870	A
2	851	541	1571	0.542	850	1.2	4.980	A
3	378	578	1251	0.302	377	0.4	4.118	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	970	175	1698	0.571	968	1.3	4.919	A
2	1043	663	1484	0.703	1038	2.3	7.994	A
3	462	706	1168	0.396	462	0.6	5.088	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	970	175	1698	0.571	970	1.3	4.945	A
2	1043	664	1483	0.703	1043	2.3	8.164	A
3	462	709	1166	0.396	462	0.7	5.113	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	792	143	1720	0.460	794	0.9	3.896	A
2	851	543	1570	0.542	856	1.2	5.076	A
3	378	582	1248	0.302	378	0.4	4.142	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	663	120	1736	0.382	664	0.6	3.363	A
2	713	455	1633	0.437	715	0.8	3.927	A
3	316	486	1310	0.241	317	0.3	3.626	A

2028 Assess Re-dist , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B5101 Berse Road/ Ryd Broughton Lane	Standard Roundabout		1, 2, 3	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)
D5	2028 Assess Re-dist	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1252	100.000
2		✓	1149	100.000
3		✓	419	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1	2	3
From	1	0	926	326
	2	682	0	467
	3	326	93	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.79	9.70	3.6	A
2	0.74	8.22	2.8	A
3	0.40	5.31	0.7	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	943	70	1771	0.532	938	1.1	4.299	A
2	865	244	1784	0.485	861	0.9	3.885	A
3	315	511	1294	0.244	314	0.3	3.669	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1126	83	1761	0.639	1123	1.7	5.618	A
2	1033	292	1750	0.590	1031	1.4	4.994	A
3	377	612	1229	0.306	376	0.4	4.220	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1378	102	1748	0.788	1371	3.6	9.365	A
2	1265	357	1703	0.743	1260	2.8	8.014	A
3	461	748	1141	0.404	460	0.7	5.279	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1378	102	1748	0.788	1378	3.6	9.701	A
2	1265	359	1702	0.743	1265	2.8	8.222	A
3	461	751	1139	0.405	461	0.7	5.309	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1126	84	1761	0.639	1133	1.8	5.793	A
2	1033	295	1748	0.591	1038	1.5	5.112	A
3	377	616	1226	0.307	378	0.4	4.248	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	943	70	1771	0.532	945	1.1	4.374	A
2	865	246	1783	0.485	867	1.0	3.938	A
3	315	515	1292	0.244	316	0.3	3.692	A

2028 Assess Re-dist , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B5101 Berse Road/ Ryd Broughton Lane	Standard Roundabout		1, 2, 3	6.58	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)
D6	2028 Assess Re-dist	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	900	100.000
2		✓	966	100.000
3		✓	420	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	1	2	3	
From	1	0	297	603
	2	663	0	303
	3	261	159	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.58	5.09	1.4	A
2	0.72	8.57	2.5	A
3	0.40	5.21	0.7	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	119	1737	0.390	675	0.6	3.382	A
2	727	452	1635	0.445	724	0.8	3.939	A
3	316	497	1303	0.243	315	0.3	3.637	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	809	143	1720	0.470	808	0.9	3.942	A
2	868	541	1571	0.553	867	1.2	5.099	A
3	378	595	1240	0.304	377	0.4	4.170	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	991	175	1698	0.584	989	1.4	5.062	A
2	1064	663	1484	0.717	1059	2.5	8.368	A
3	462	727	1155	0.400	462	0.7	5.185	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	991	175	1698	0.584	991	1.4	5.092	A
2	1064	664	1483	0.717	1063	2.5	8.570	A
3	462	730	1153	0.401	462	0.7	5.213	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	809	143	1720	0.470	811	0.9	3.969	A
2	868	543	1570	0.553	873	1.3	5.208	A
3	378	599	1237	0.305	378	0.4	4.198	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	120	1736	0.390	679	0.6	3.406	A
2	727	455	1633	0.445	729	0.8	3.988	A
3	316	500	1301	0.243	317	0.3	3.660	A

S|C|P

APPENDIX S

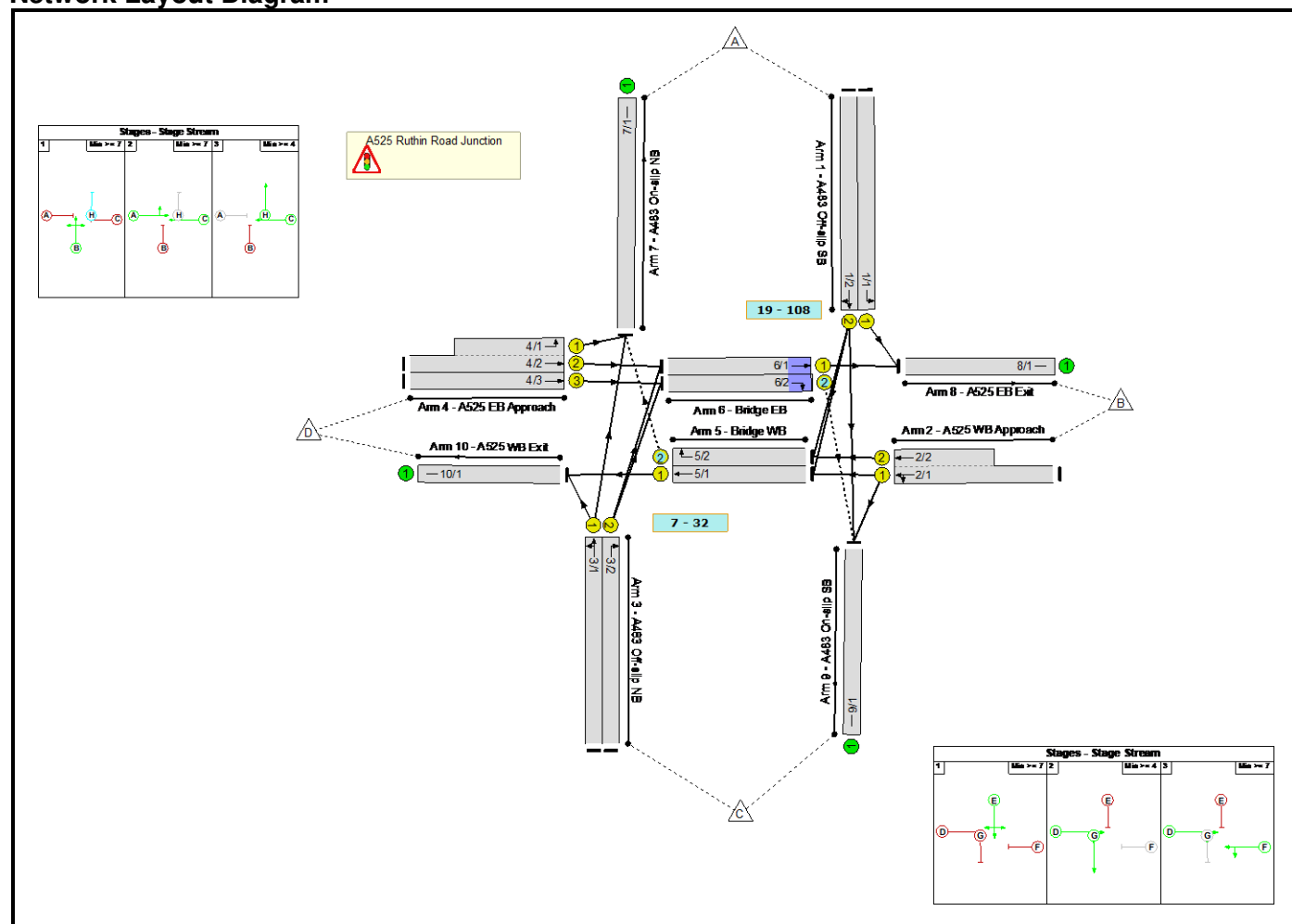
Full Input Data And Results

Full Input Data And Results

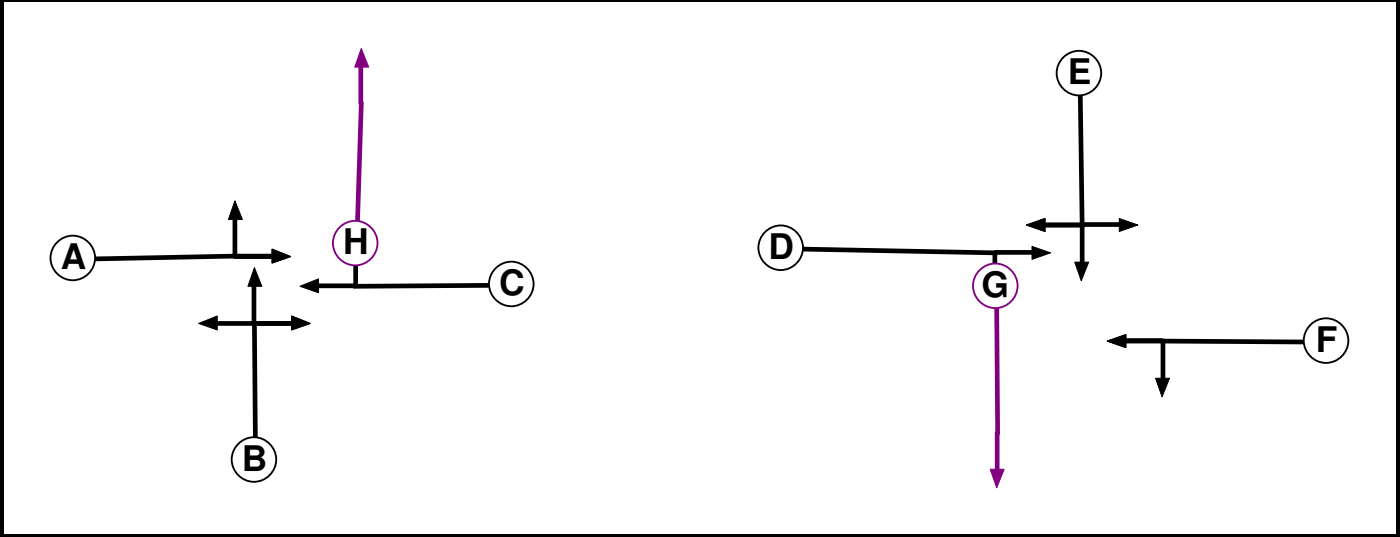
User and Project Details

Project:	Ruthin Road Wrexham
Title:	A483 / A525 Linsig Model
Location:	Junction of A483 & A525
Additional detail:	Based on Capita model supplied by Wrexham Council
File name:	Existing_A525_A483_06.06.23.lsg3x
Author:	Jon Addy
Company:	SCP Transport
Address:	Colwyn Chambers, 19 York Street, Manchester, M2 3BA

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	2		7	7
B	Traffic	2		7	7
C	Traffic	2		7	7
D	Traffic	1		7	7
E	Traffic	1		7	7
F	Traffic	1		7	7
G	Ind. Arrow	1	D	4	4
H	Ind. Arrow	2	C	4	4

Phase Intergreens Matrix

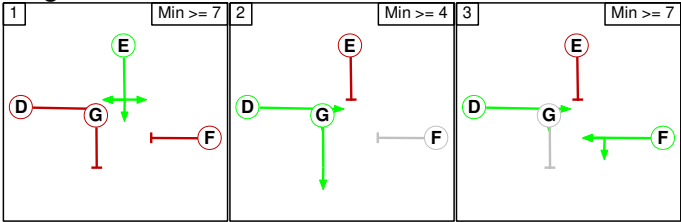
Terminating Phase	Starting Phase								
		A	B	C	D	E	F	G	H
	A		7	-	-	-	-	-	-
	B	7		7	-	-	-	-	-
	C	-	7		-	-	-	-	-
	D	-	-	-		7	-	-	-
	E	-	-	-	7		7	7	-
	F	-	-	-	-	7		-	-
	G	-	-	-	-	7	-		-
	H	-	-	-	-	-	-	-	

Phases in Stage

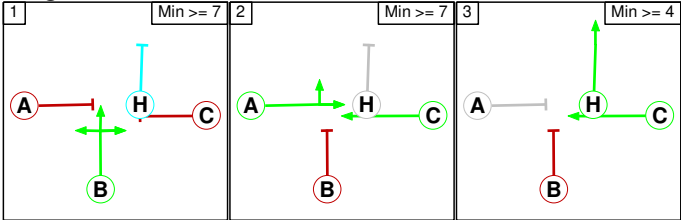
Stream	Stage No.	Phases in Stage
1	1	E
1	2	D G
1	3	D F
2	1	B
2	2	A C
2	3	C H

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	3
	1		7	7
	2	7		2
	3	7	0	

Stage Stream: 2

		To Stage		
From Stage		1	2	3
	1		7	X
	2	7		0
	3	7	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A525 Ruthin Road Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
5/2 (Bridge WB)	7/1 (Right)	1439	0	4/1	1.09	All	0.01	-	0.50	0	2.00
				4/2	1.09	All					
				4/3	1.09	All					
6/2 (Bridge EB)	9/1 (Right)	1439	0	2/1	1.09	All	0.10	-	0.50	0	2.00
				2/2	1.09	All					

Full Input Data And Results

Lane Input Data

Junction: A525 Ruthin Road Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A483 Off-slip SB)	U	E	2	3	43.5	Geom	-	3.00	2.00	Y	Arm 8 Left	20.00
1/2 (A483 Off-slip SB)	U	E	2	3	60.0	Geom	-	3.00	2.00	N	Arm 5 Right	15.00
											Arm 9 Ahead	Inf
2/1 (A525 WB Approach)	U	F	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 9 Left	20.00
2/2 (A525 WB Approach)	U	F	2	3	8.7	User	1900	-	-	-	-	-
3/1 (A483 Off-slip NB)	U	B	2	3	60.0	Geom	-	3.00	2.00	Y	Arm 7 Ahead	Inf
											Arm 10 Left	20.00
3/2 (A483 Off-slip NB)	U	B	2	3	60.0	Geom	-	3.00	2.00	N	Arm 6 Right	10.00
4/1 (A525 EB Approach)	U	A	2	3	9.6	Geom	-	3.00	0.00	Y	Arm 7 Left	20.00
4/2 (A525 EB Approach)	U	A	2	3	60.0	User	1900	-	-	-	-	-
4/3 (A525 EB Approach)	U	A	2	3	9.6	User	1900	-	-	-	-	-
5/1 (Bridge WB)	U	C	2	3	10.1	User	1900	-	-	-	-	-
5/2 (Bridge WB)	O	C H	2	3	10.1	Geom	-	3.25	0.00	Y	Arm 7 Right	15.00
6/1 (Bridge EB)	U	D	2	3	10.1	User	1900	-	-	-	-	-
6/2 (Bridge EB)	O	D G	2	3	10.1	Geom	-	3.25	0.00	Y	Arm 9 Right	15.00
7/1 (A483 On-slip NB)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A525 EB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (A483 On-slip SB)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A525 WB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2028 Base'	08:00	09:00	01:00	
2: 'PM 2028 Base'	16:15	17:15	01:00	
3: 'AM Assessment'	08:00	09:00	01:00	
4: 'PM Assessment '	16:15	17:15	01:00	

Scenario 1: 'AM 2028 Base' (FG1: 'AM 2028 Base', Plan 1: 'AM Control Plan')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	411	0	289	700
	B	151	0	101	550	802
	C	0	504	0	248	752
	D	347	1024	233	0	1604
	Tot.	498	1939	334	1087	3858

Traffic Lane Flows

Lane	Scenario 1: AM 2028 Base
Junction: A525 Ruthin Road Junction	
1/1	411
1/2	289
2/1 (with short)	802(In) 651(Out)
2/2 (short)	151
3/1	248
3/2	504
4/1 (short)	347
4/2 (with short)	1371(In) 1024(Out)
4/3	233
5/1	839
5/2	151
6/1	1528
6/2	233
7/1	498
8/1	1939
9/1	334
10/1	1087

Full Input Data And Results

Lane Saturation Flows

Junction: A525 Ruthin Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A483 Off-slip SB)	3.00	2.00	Y	Arm 8 Left	20.00	100.0 %	1703	1703
1/2 (A483 Off-slip SB)	3.00	2.00	N	Arm 5 Right	15.00	100.0 %	1792	1792
				Arm 9 Ahead	Inf	0.0 %		
2/1 (A525 WB Approach)	3.00	0.00	Y	Arm 5 Ahead Arm 9 Left	Inf 20.00	84.5 % 15.5 %	1893	1893
2/2 (A525 WB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A483 Off-slip NB)	3.00	2.00	Y	Arm 7 Ahead	Inf	0.0 %	1703	1703
				Arm 10 Left	20.00	100.0 %		
3/2 (A483 Off-slip NB)	3.00	2.00	N	Arm 6 Right	10.00	100.0 %	1714	1714
4/1 (A525 EB Approach)	3.00	0.00	Y	Arm 7 Left	20.00	100.0 %	1781	1781
4/2 (A525 EB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/3 (A525 EB Approach Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Bridge WB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Bridge WB)	3.25	0.00	Y	Arm 7 Right	15.00	100.0 %	1764	1764
6/1 (Bridge EB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Bridge EB)	3.25	0.00	Y	Arm 9 Right	15.00	100.0 %	1764	1764
7/1 (A483 On-slip NB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A525 EB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A483 On-slip SB Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A525 WB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: 'PM 2028 Base' (FG2: 'PM 2028 Base', Plan 2: 'PM Control Plan')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	227	0	534	761
	B	239	0	245	963	1447
	C	0	133	0	333	466
	D	320	403	227	0	950
	Tot.	559	763	472	1830	3624

Traffic Lane Flows

Lane	Scenario 2: PM 2028 Base
Junction: A525 Ruthin Road Junction	
1/1	227
1/2	534
2/1 (with short)	1447(In) 1208(Out)
2/2 (short)	239
3/1	333
3/2	133
4/1 (short)	320
4/2 (with short)	723(In) 403(Out)
4/3	227
5/1	1497
5/2	239
6/1	536
6/2	227
7/1	559
8/1	763
9/1	472
10/1	1830

Full Input Data And Results

Lane Saturation Flows

Junction: A525 Ruthin Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A483 Off-slip SB)	3.00	2.00	Y	Arm 8 Left	20.00	100.0 %	1703	1703
1/2 (A483 Off-slip SB)	3.00	2.00	N	Arm 5 Right	15.00	100.0 %	1792	1792
				Arm 9 Ahead	Inf	0.0 %		
2/1 (A525 WB Approach)	3.00	0.00	Y	Arm 5 Ahead Arm 9 Left	Inf 20.00	79.7 % 20.3 %	1886	1886
2/2 (A525 WB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A483 Off-slip NB)	3.00	2.00	Y	Arm 7 Ahead	Inf	0.0 %	1703	1703
				Arm 10 Left	20.00	100.0 %		
3/2 (A483 Off-slip NB)	3.00	2.00	N	Arm 6 Right	10.00	100.0 %	1714	1714
4/1 (A525 EB Approach)	3.00	0.00	Y	Arm 7 Left	20.00	100.0 %	1781	1781
4/2 (A525 EB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/3 (A525 EB Approach Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Bridge WB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Bridge WB)	3.25	0.00	Y	Arm 7 Right	15.00	100.0 %	1764	1764
6/1 (Bridge EB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Bridge EB)	3.25	0.00	Y	Arm 9 Right	15.00	100.0 %	1764	1764
7/1 (A483 On-slip NB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A525 EB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A483 On-slip SB Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A525 WB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'AM Assessment' (FG3: 'AM Assessment', Plan 1: 'AM Control Plan')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	524	0	289	813
	B	441	0	157	569	1167
	C	0	526	0	248	774
	D	347	1031	233	0	1611
	Tot.	788	2081	390	1106	4365

Traffic Lane Flows

Lane	Scenario 3: AM Assessment
Junction: A525 Ruthin Road Junction	
1/1	524
1/2	289
2/1 (with short)	1167(In) 726(Out)
2/2 (short)	441
3/1	248
3/2	526
4/1 (short)	347
4/2 (with short)	1378(In) 1031(Out)
4/3	233
5/1	858
5/2	441
6/1	1557
6/2	233
7/1	788
8/1	2081
9/1	390
10/1	1106

Full Input Data And Results

Lane Saturation Flows

Junction: A525 Ruthin Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A483 Off-slip SB)	3.00	2.00	Y	Arm 8 Left	20.00	100.0 %	1703	1703
1/2 (A483 Off-slip SB)	3.00	2.00	N	Arm 5 Right	15.00	100.0 %	1792	1792
				Arm 9 Ahead	Inf	0.0 %		
2/1 (A525 WB Approach)	3.00	0.00	Y	Arm 5 Ahead Arm 9 Left	Inf 20.00	78.4 % 21.6 %	1884	1884
2/2 (A525 WB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A483 Off-slip NB)	3.00	2.00	Y	Arm 7 Ahead	Inf	0.0 %	1703	1703
				Arm 10 Left	20.00	100.0 %		
3/2 (A483 Off-slip NB)	3.00	2.00	N	Arm 6 Right	10.00	100.0 %	1714	1714
4/1 (A525 EB Approach)	3.00	0.00	Y	Arm 7 Left	20.00	100.0 %	1781	1781
4/2 (A525 EB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/3 (A525 EB Approach Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Bridge WB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Bridge WB)	3.25	0.00	Y	Arm 7 Right	15.00	100.0 %	1764	1764
6/1 (Bridge EB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Bridge EB)	3.25	0.00	Y	Arm 9 Right	15.00	100.0 %	1764	1764
7/1 (A483 On-slip NB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A525 EB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A483 On-slip SB Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A525 WB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: 'PM Assessment ' (FG4: 'PM Assessment ', Plan 2: 'PM Control Plan')

Traffic Flows, Desired

Desired Flow :

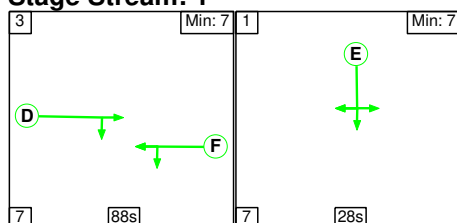
	Destination					
Origin		A	B	C	D	Tot.
	A	0	486	0	534	1020
	B	395	0	275	974	1644
	C	0	182	0	333	515
	D	320	420	227	0	967
	Tot.	715	1088	502	1841	4146

Traffic Lane Flows

Lane	Scenario 4: PM Assessment
Junction: A525 Ruthin Road Junction	
1/1	486
1/2	534
2/1 (with short)	1644(In) 1249(Out)
2/2 (short)	395
3/1	333
3/2	182
4/1 (short)	320
4/2 (with short)	740(In) 420(Out)
4/3	227
5/1	1508
5/2	395
6/1	602
6/2	227
7/1	715
8/1	1088
9/1	502
10/1	1841

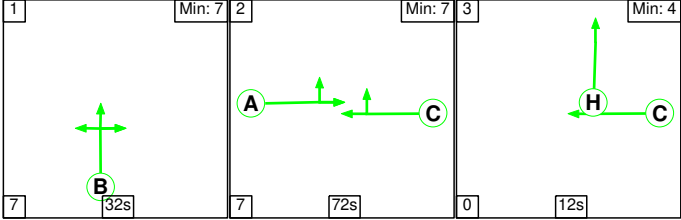
Lane Saturation Flows

Junction: A525 Ruthin Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A483 Off-slip SB)	3.00	2.00	Y	Arm 8 Left	20.00	100.0 %	1703	1703
1/2 (A483 Off-slip SB)	3.00	2.00	N	Arm 5 Right	15.00	100.0 %	1792	1792
				Arm 9 Ahead	Inf	0.0 %		
2/1 (A525 WB Approach)	3.00	0.00	Y	Arm 5 Ahead Arm 9 Left	Inf 20.00	78.0 % 22.0 %	1884	1884
2/2 (A525 WB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A483 Off-slip NB)	3.00	2.00	Y	Arm 7 Ahead	Inf	0.0 %	1703	1703
				Arm 10 Left	20.00	100.0 %		
3/2 (A483 Off-slip NB)	3.00	2.00	N	Arm 6 Right	10.00	100.0 %	1714	1714
4/1 (A525 EB Approach)	3.00	0.00	Y	Arm 7 Left	20.00	100.0 %	1781	1781
4/2 (A525 EB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/3 (A525 EB Approach Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Bridge WB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Bridge WB)	3.25	0.00	Y	Arm 7 Right	15.00	100.0 %	1764	1764
6/1 (Bridge EB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Bridge EB)	3.25	0.00	Y	Arm 9 Right	15.00	100.0 %	1764	1764
7/1 (A483 On-slip NB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A525 EB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A483 On-slip SB Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A525 WB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM 2028 Base' (FG1: 'AM 2028 Base', Plan 1: 'AM Control Plan')**Stage Sequence Diagram****Stage Stream: 1**

Full Input Data And Results

Stage Stream: 2



Stage Timings

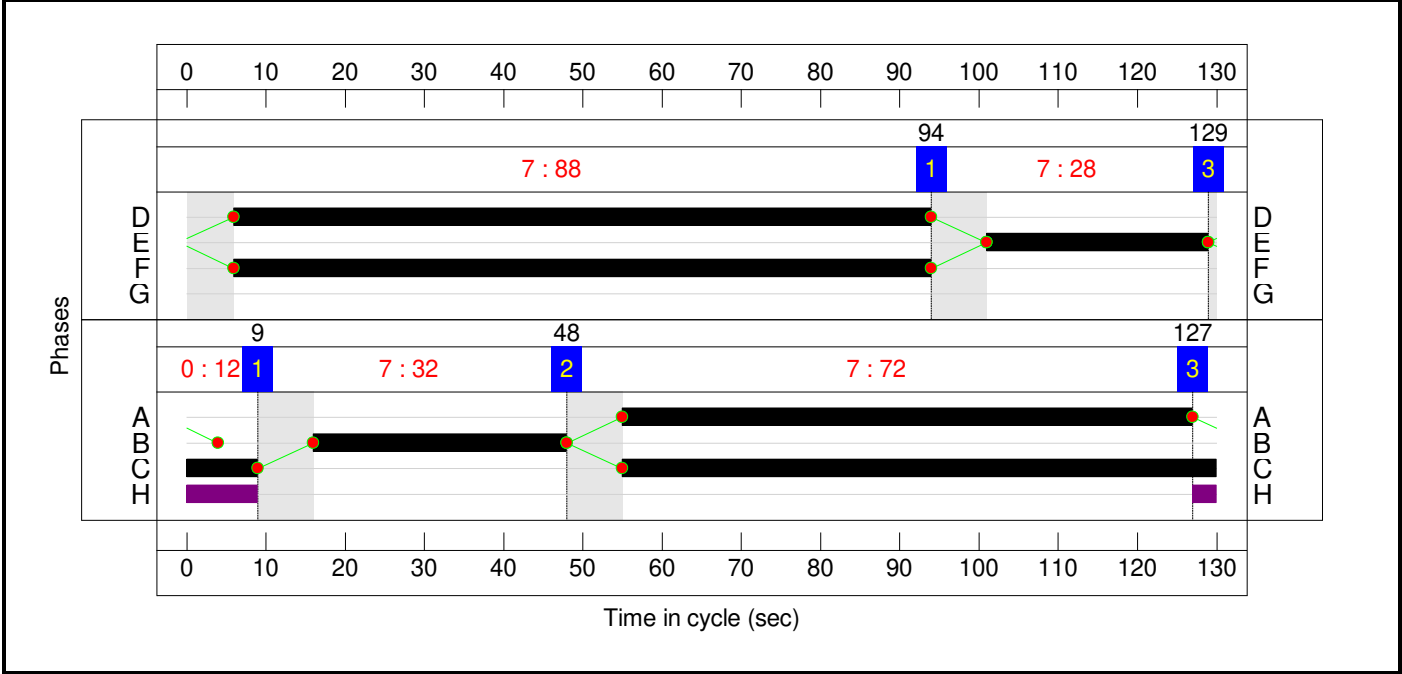
Stage Stream: 1

Stage	3	1
Duration	88	28
Change Point	129	94

Stage Stream: 2

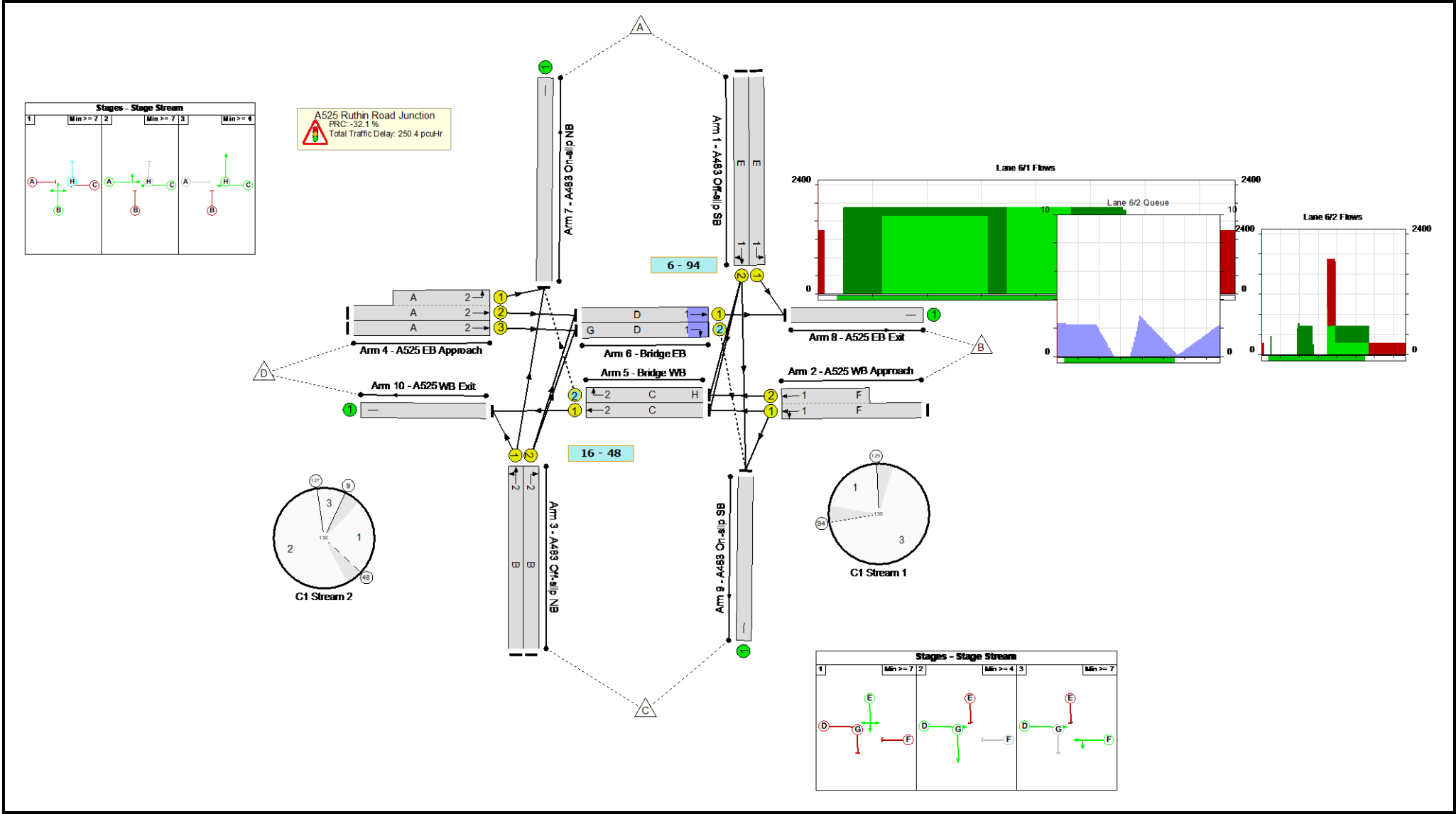
Stage	1	2	3
Duration	32	72	12
Change Point	9	48	127

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A483 / A525 Linsig Model	-	-	N/A	-	-		-	-	-	-	-	-	118.9%
A525 Ruthin Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	118.9%
1/1	A483 Off-slip SB Left	U	1	N/A	E		1	28	-	411	1703	380	108.2%
1/2	A483 Off-slip SB Right Ahead	U	1	N/A	E		1	28	-	289	1792	400	72.3%
2/1+2/2	A525 WB Approach Ahead Left	U	1	N/A	F		1	88	-	802	1893:1900	1108+257	58.7 : 58.7%
3/1	A483 Off-slip NB Ahead Left	U	2	N/A	B		1	32	-	248	1703	432	57.4%
3/2	A483 Off-slip NB Right	U	2	N/A	B		1	32	-	504	1714	435	115.8%
4/2+4/1	A525 EB Approach Ahead Left	U	2	N/A	A		1	72	-	1371	1900:1781	861+292	118.9 : 118.9%
4/3	A525 EB Approach Ahead	U	2	N/A	A		1	72	-	233	1900	1067	21.8%
5/1	Bridge WB Ahead	U	2	N/A	C		1	84	-	839	1900	1242	67.5%
5/2	Bridge WB Right	O	2	N/A	C	H	1	84	12	151	1764	136	111.2%
6/1	Bridge EB Ahead	U	1	N/A	D		1	88	-	1528	1900	1301	99.7%
6/2	Bridge EB Right	O	1	N/A	D	G	1	88	0	233	1764	285	81.7%
7/1	A483 On-slip NB	U	N/A	N/A	-		-	-	-	498	Inf	Inf	0.0%
8/1	A525 EB Exit	U	N/A	N/A	-		-	-	-	1939	Inf	Inf	0.0%
9/1	A483 On-slip SB	U	N/A	N/A	-		-	-	-	334	Inf	Inf	0.0%

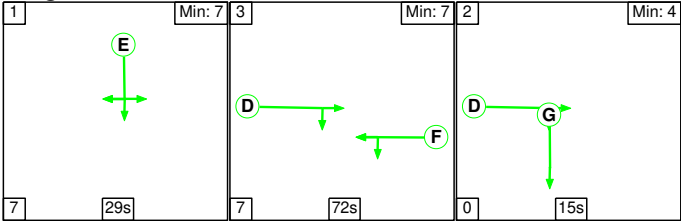
Full Input Data And Results

10/1	A525 WB Exit	U	N/A	N/A	-		-	-	-	1087	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: A483 / A525 Linsig Model	-	-	233	136	0	69.6	180.7	0.1	250.4	-	-	-	-
A525 Ruthin Road Junction	-	-	233	136	0	69.6	180.7	0.1	250.4	-	-	-	-
1/1	411	380	-	-	-	8.1	20.6	-	28.7	251.2	16.9	20.6	37.4
1/2	289	289	-	-	-	3.8	1.3	-	5.0	62.7	9.6	1.3	10.9
2/1+2/2	802	802	-	-	-	2.1	0.7	-	2.8	12.6	11.8	0.7	12.5
3/1	248	248	-	-	-	2.9	0.7	-	3.6	52.1	7.8	0.7	8.5
3/2	504	435	-	-	-	11.1	37.8	-	48.9	349.3	20.7	37.8	58.5
4/2+4/1	1371	1153	-	-	-	24.9	111.9	-	136.8	359.3	58.9	111.9	170.9
4/3	233	233	-	-	-	0.9	0.1	-	1.1	16.4	4.1	0.1	4.3
5/1	839	839	-	-	-	4.4	0.0	-	4.4	18.9	17.7	0.0	17.7
5/2	151	136	0	136	0	4.3	7.6	0.0	11.9	283.2	6.0	7.6	13.6
6/1	1296	1296	-	-	-	5.7	0.0	-	5.7	15.9	29.3	0.0	29.3
6/2	233	233	233	0	0	1.4	0.0	0.1	1.5	22.6	2.9	0.0	2.9
7/1	428	428	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1676	1676	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1087	1087	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): -20.2 C1 Stream: 2 PRC for Signalled Lanes (%): -32.1 PRC Over All Lanes (%): -32.1 Total Delay for Signalled Lanes (pcuHr): 43.71 Total Delay for Signalled Lanes (pcuHr): 206.66 Total Delay Over All Lanes(pcuHr): 250.36 Cycle Time (s): 130 Cycle Time (s): 130													

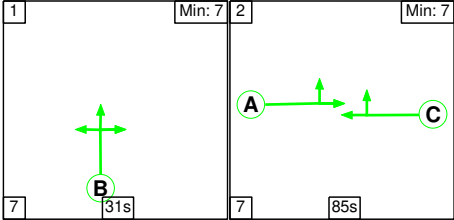
Full Input Data And Results
Scenario 2: 'PM 2028 Base' (FG2: 'PM 2028 Base', Plan 2: 'PM Control Plan')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

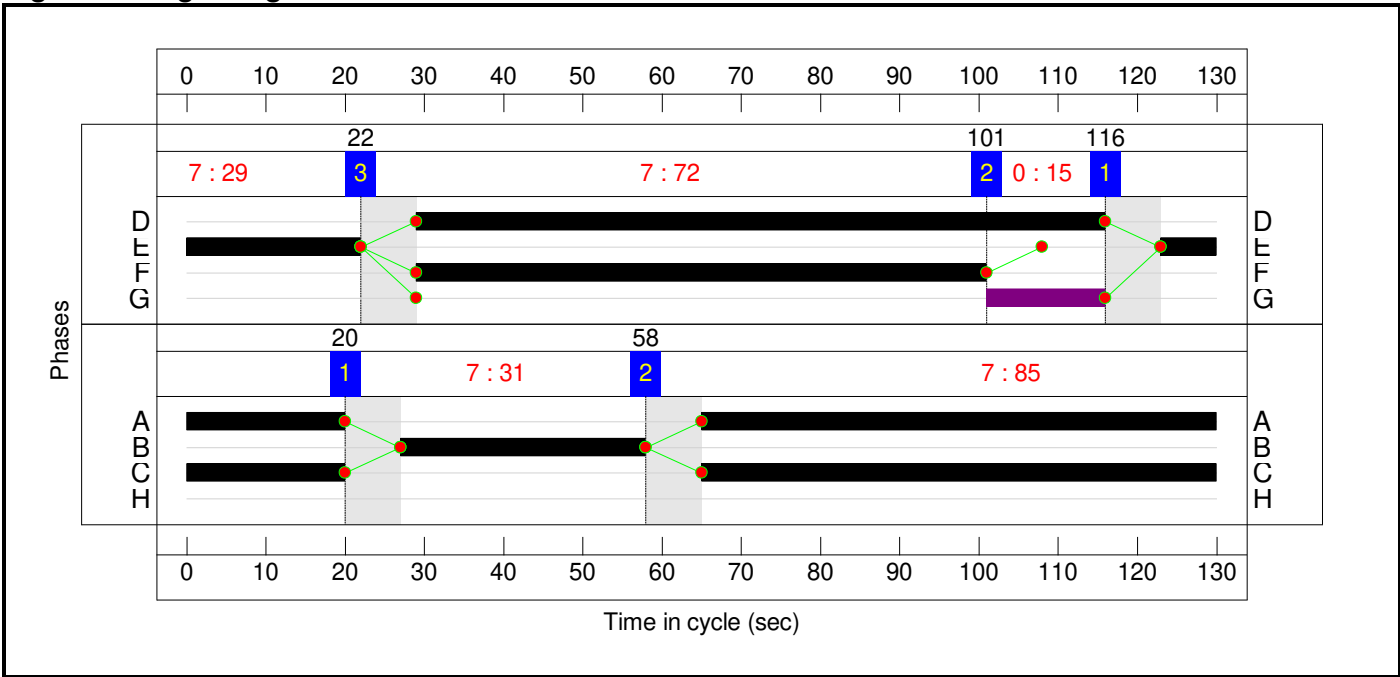
Stage Stream: 1

Stage	1	3	2
Duration	29	72	15
Change Point	116	22	101

Stage Stream: 2

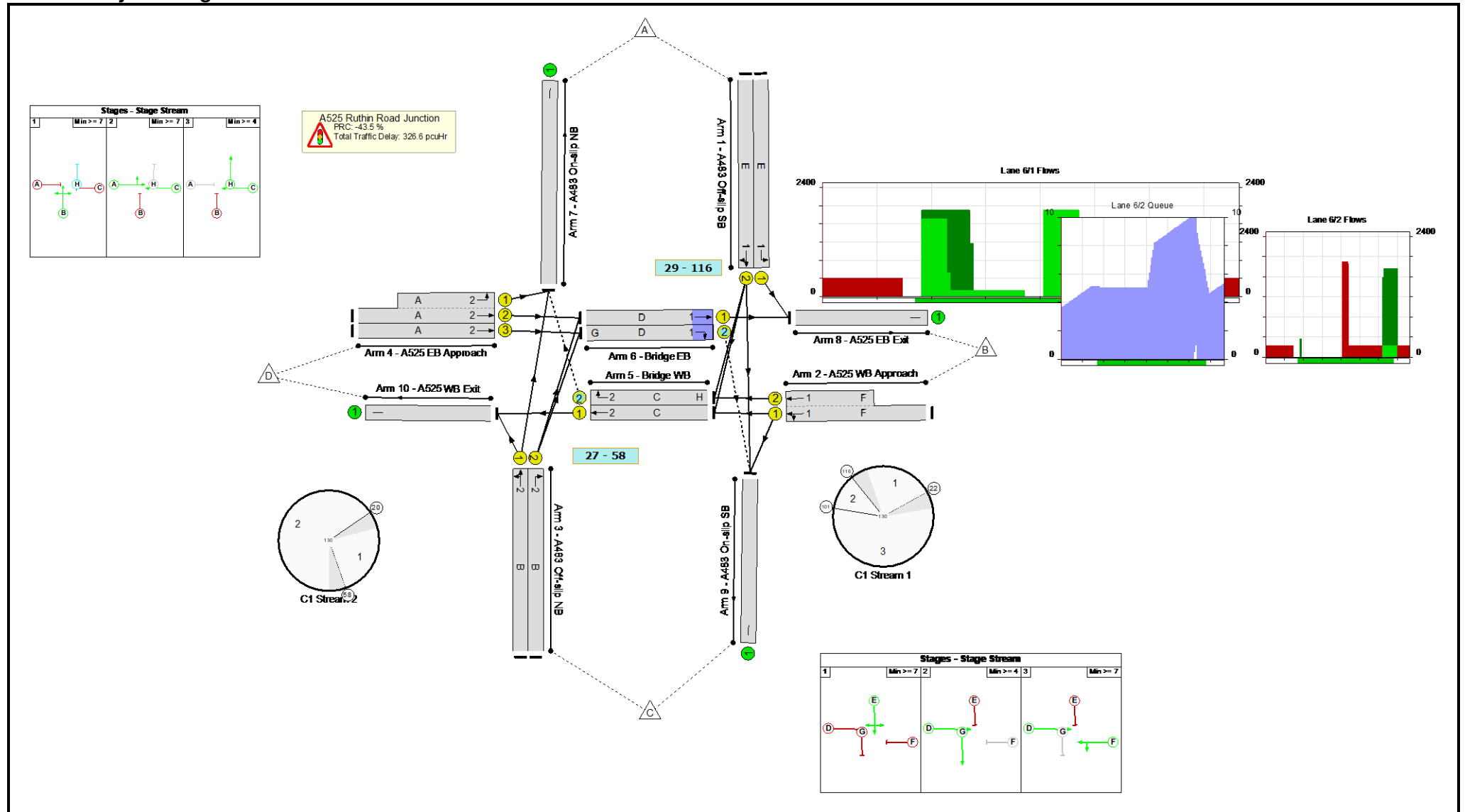
Stage	1	2
Duration	31	85
Change Point	20	58

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

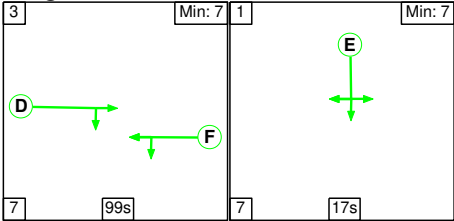
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A483 / A525 Linsig Model	-	-	N/A	-	-		-	-	-	-	-	-	129.1%
A525 Ruthin Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	129.1%
1/1	A483 Off-slip SB Left	U	1	N/A	E		1	29	-	227	1703	393	57.8%
1/2	A483 Off-slip SB Right Ahead	U	1	N/A	E		1	29	-	534	1792	414	129.1%
2/1+2/2	A525 WB Approach Ahead Left	U	1	N/A	F		1	72	-	1447	1886:1900	936+185	129.0 : 129.0%
3/1	A483 Off-slip NB Ahead Left	U	2	N/A	B		1	31	-	333	1703	419	79.4%
3/2	A483 Off-slip NB Right	U	2	N/A	B		1	31	-	133	1714	422	31.5%
4/2+4/1	A525 EB Approach Ahead Left	U	2	N/A	A		1	85	-	723	1900:1781	808+642	49.9 : 49.9%
4/3	A525 EB Approach Ahead	U	2	N/A	A		1	85	-	227	1900	1257	18.1%
5/1	Bridge WB Ahead	U	2	N/A	C		1	85	-	1497	1900	1257	92.3%
5/2	Bridge WB Right	O	2	N/A	C	H	1	85	0	239	1764	224	82.8%
6/1	Bridge EB Ahead	U	1	N/A	D		1	87	-	536	1900	1286	41.7%
6/2	Bridge EB Right	O	1	N/A	D	G	1	87	15	227	1764	178	127.7%
7/1	A483 On-slip NB	U	N/A	N/A	-		-	-	-	559	Inf	Inf	0.0%
8/1	A525 EB Exit	U	N/A	N/A	-		-	-	-	763	Inf	Inf	0.0%
9/1	A483 On-slip SB	U	N/A	N/A	-		-	-	-	472	Inf	Inf	0.0%

Full Input Data And Results

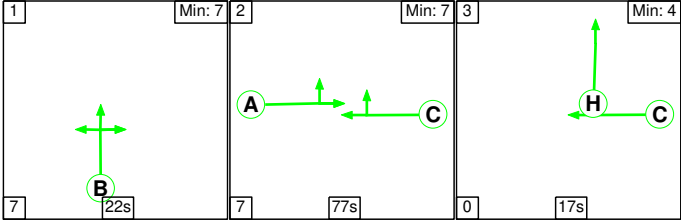
10/1	A525 WB Exit	U	N/A	N/A	-		-	-	-	1830	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A483 / A525 Linsig Model	-	-	185	176	1	71.3	255.3	0.1	326.6	-	-	-	-
A525 Ruthin Road Junction	-	-	185	176	1	71.3	255.3	0.1	326.6	-	-	-	-
1/1	227	227	-	-	-	2.8	0.7	-	3.5	55.1	7.3	0.7	7.9
1/2	534	414	-	-	-	15.8	62.4	-	78.2	527.0	24.3	62.4	86.6
2/1+2/2	1447	1121	-	-	-	28.4	165.0	-	193.3	481.0	65.1	165.0	230.1
3/1	333	333	-	-	-	4.2	1.9	-	6.1	65.9	11.2	1.9	13.0
3/2	133	133	-	-	-	1.5	0.2	-	1.7	46.3	3.9	0.2	4.1
4/2+4/1	723	723	-	-	-	1.9	0.5	-	2.4	11.8	6.2	0.5	6.7
4/3	227	227	-	-	-	0.5	0.1	-	0.6	10.2	3.1	0.1	3.2
5/1	1160	1160	-	-	-	6.6	0.0	-	6.6	20.6	29.3	0.0	29.3
5/2	185	185	185	0	0	2.2	0.0	0.0	2.3	43.8	6.7	0.0	6.7
6/1	536	536	-	-	-	1.1	0.0	-	1.1	7.3	5.0	0.0	5.0
6/2	227	178	0	176	1	6.2	24.6	0.1	30.9	489.4	10.3	24.6	34.9
7/1	505	505	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	763	763	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1493	1493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): -43.5 C1 Stream: 2 PRC for Signalled Lanes (%): -2.5 PRC Over All Lanes (%): -43.5 Total Delay for Signalled Lanes (pcuHr): 306.94 Total Delay for Signalled Lanes (pcuHr): 19.70 Total Delay Over All Lanes(pcuHr): 326.63 Cycle Time (s): 130 Cycle Time (s): 130													

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

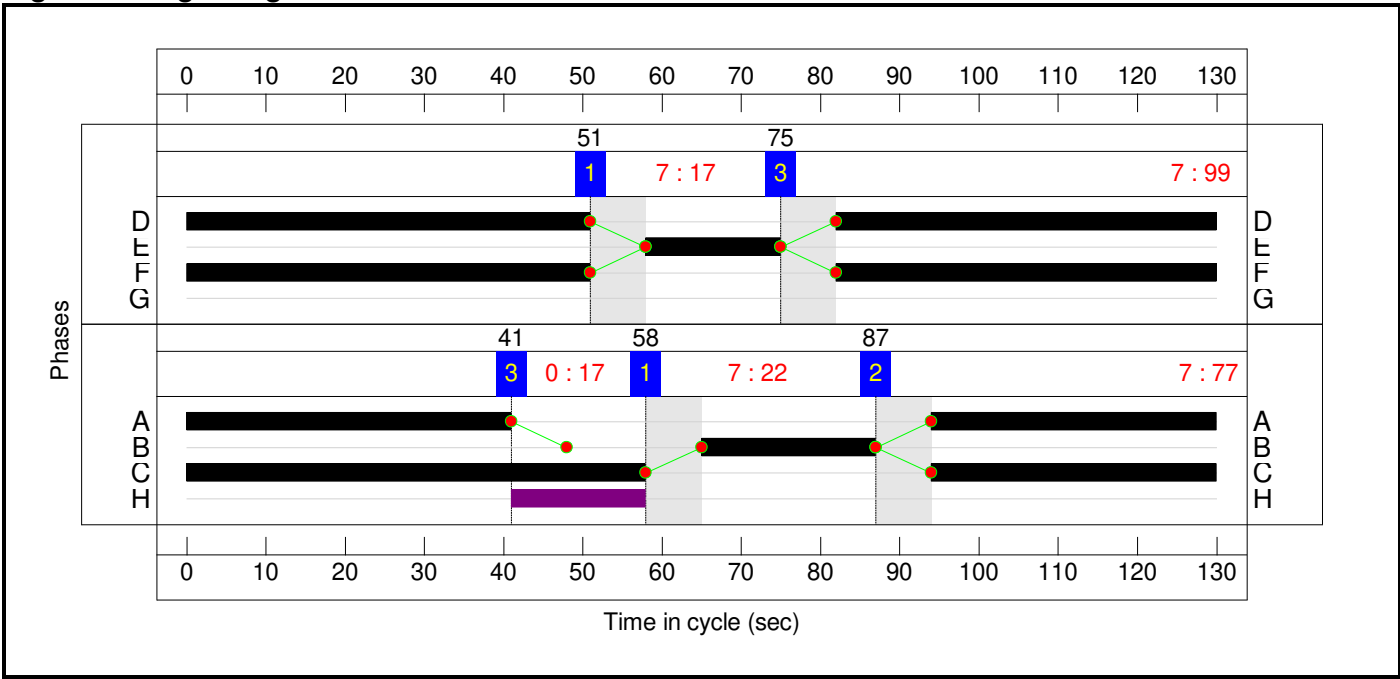
Stage Stream: 1

Stage	3	1
Duration	99	17
Change Point	75	51

Stage Stream: 2

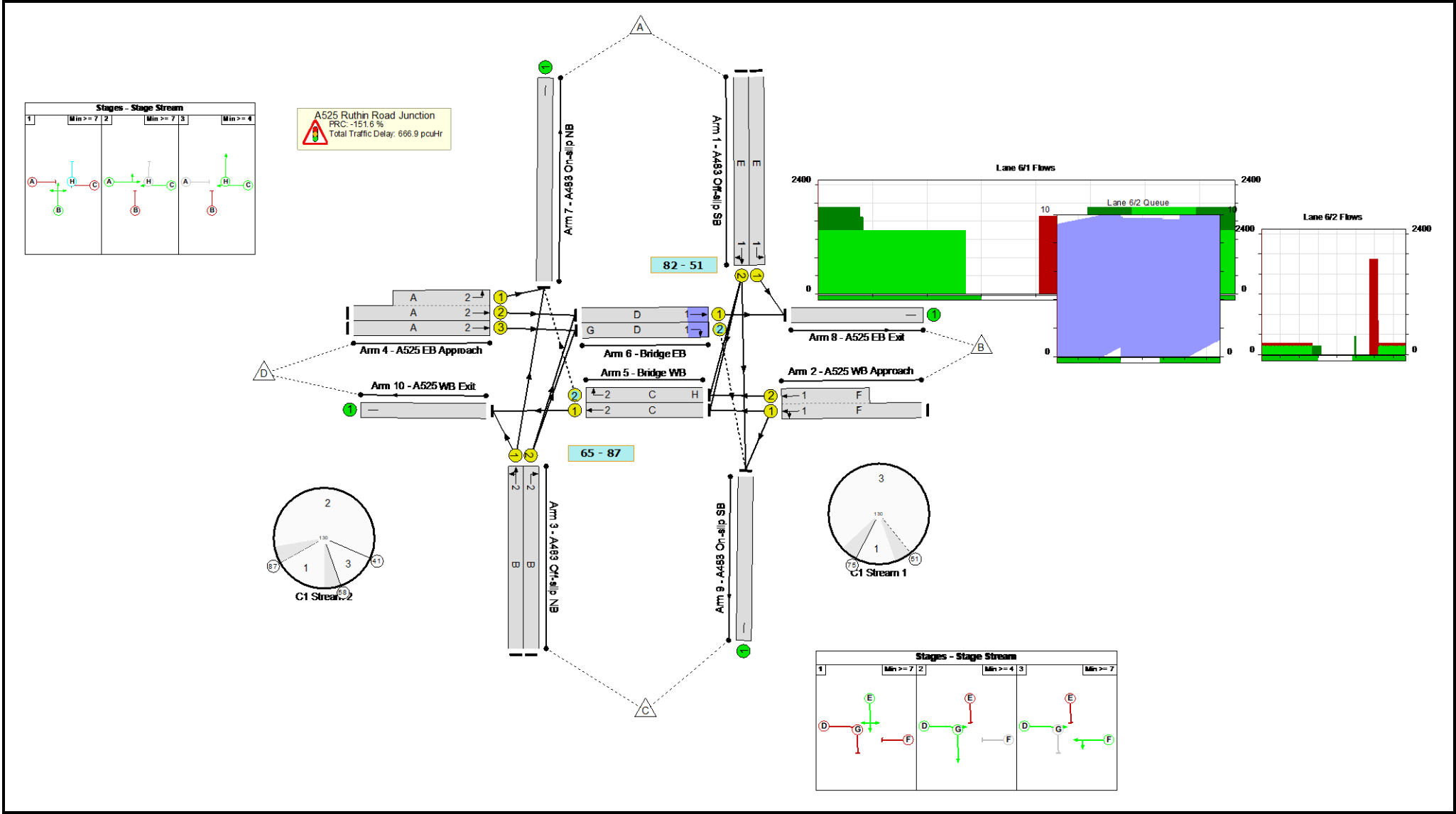
Stage	1	2	3
Duration	22	77	17
Change Point	58	87	41

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A483 / A525 Linsig Model	-	-	N/A	-	-		-	-	-	-	-	-	226.4%
A525 Ruthin Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	226.4%
1/1	A483 Off-slip SB Left	U	1	N/A	E		1	17	-	524	1703	236	222.2%
1/2	A483 Off-slip SB Right Ahead	U	1	N/A	E		1	17	-	289	1792	248	116.5%
2/1+2/2	A525 WB Approach Ahead Left	U	1	N/A	F		1	99	-	1167	1884:1900	1004+610	72.3 : 72.3%
3/1	A483 Off-slip NB Ahead Left	U	2	N/A	B		1	22	-	248	1703	301	82.3%
3/2	A483 Off-slip NB Right	U	2	N/A	B		1	22	-	526	1714	303	173.5%
4/2+4/1	A525 EB Approach Ahead Left	U	2	N/A	A		1	77	-	1378	1900:1781	916+308	112.5 : 112.5%
4/3	A525 EB Approach Ahead	U	2	N/A	A		1	77	-	233	1900	1140	20.4%
5/1	Bridge WB Ahead	U	2	N/A	C		1	94	-	858	1900	1388	58.9%
5/2	Bridge WB Right	O	2	N/A	C	H	1	94	17	441	1764	204	216.5%
6/1	Bridge EB Ahead	U	1	N/A	D		1	99	-	1557	1900	1462	83.4%
6/2	Bridge EB Right	O	1	N/A	D	G	1	99	0	233	1764	103	226.4%
7/1	A483 On-slip NB	U	N/A	N/A	-		-	-	-	788	Inf	Inf	0.0%
8/1	A525 EB Exit	U	N/A	N/A	-		-	-	-	2081	Inf	Inf	0.0%
9/1	A483 On-slip SB	U	N/A	N/A	-		-	-	-	390	Inf	Inf	0.0%

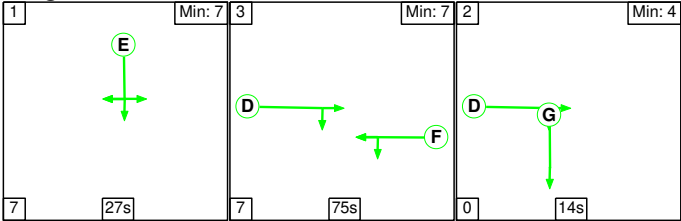
Full Input Data And Results

10/1	A525 WB Exit	U	N/A	N/A	-		-	-	-	1106	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: A483 / A525 Linsig Model	-	-	103	204	0	117.5	549.3	0.1	666.9	-	-	-	-
A525 Ruthin Road Junction	-	-	103	204	0	117.5	549.3	0.1	666.9	-	-	-	-
1/1	524	236	-	-	-	26.3	145.0	-	171.3	1177.0	32.2	145.0	177.2
1/2	289	248	-	-	-	6.7	23.5	-	30.2	376.0	11.9	23.5	35.4
2/1+2/2	1167	1167	-	-	-	1.7	1.3	-	3.0	9.2	11.0	1.3	12.3
3/1	248	248	-	-	-	3.6	2.2	-	5.7	82.8	8.6	2.2	10.8
3/2	526	303	-	-	-	21.3	112.5	-	133.8	915.9	29.2	112.5	141.8
4/2+4/1	1378	1225	-	-	-	19.9	81.0	-	100.9	263.5	55.1	81.0	136.1
4/3	233	233	-	-	-	0.8	0.1	-	0.9	13.8	3.8	0.1	3.9
5/1	817	817	-	-	-	4.1	0.0	-	4.1	18.1	21.7	0.0	21.7
5/2	441	204	0	204	0	20.7	118.7	0.0	139.3	1137.3	26.1	118.7	144.8
6/1	1219	1219	-	-	-	2.0	0.0	-	2.0	5.8	11.5	0.0	11.5
6/2	233	103	103	0	0	10.6	65.0	0.1	75.8	1170.5	15.1	65.0	80.2
7/1	512	512	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1455	1455	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1065	1065	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): -151.6 C1 Stream: 2 PRC for Signalled Lanes (%): -140.6 PRC Over All Lanes (%): -151.6 Total Delay for Signalled Lanes (pcuHr): 282.23 Total Delay for Signalled Lanes (pcuHr): 384.72 Cycle Time (s): 130 Cycle Time (s): 130 Total Delay Over All Lanes(pcuHr): 666.95													

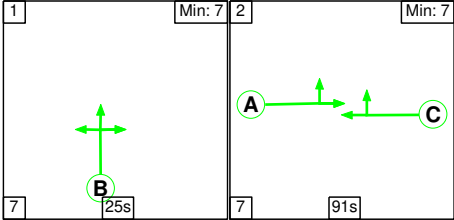
Full Input Data And Results
Scenario 4: 'PM Assessment ' (FG4: 'PM Assessment ', Plan 2: 'PM Control Plan')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

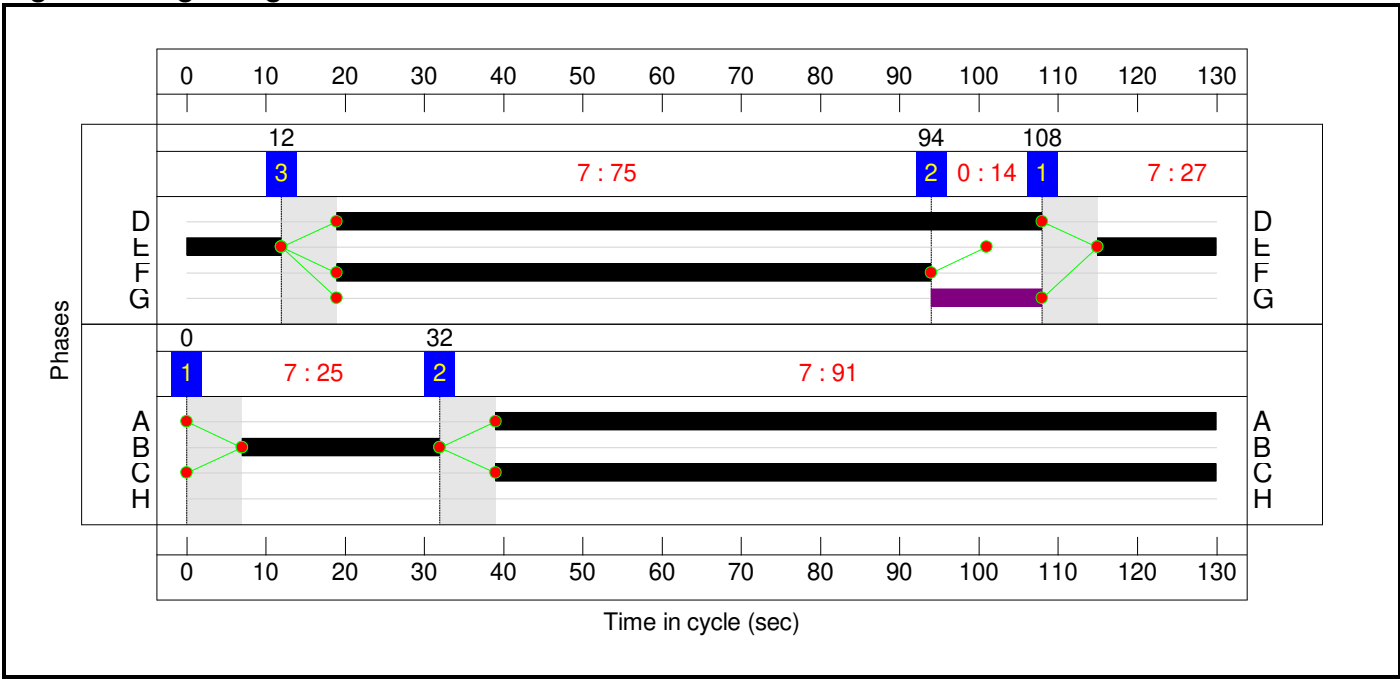
Stage Stream: 1

Stage	1	3	2
Duration	27	75	14
Change Point	108	12	94

Stage Stream: 2

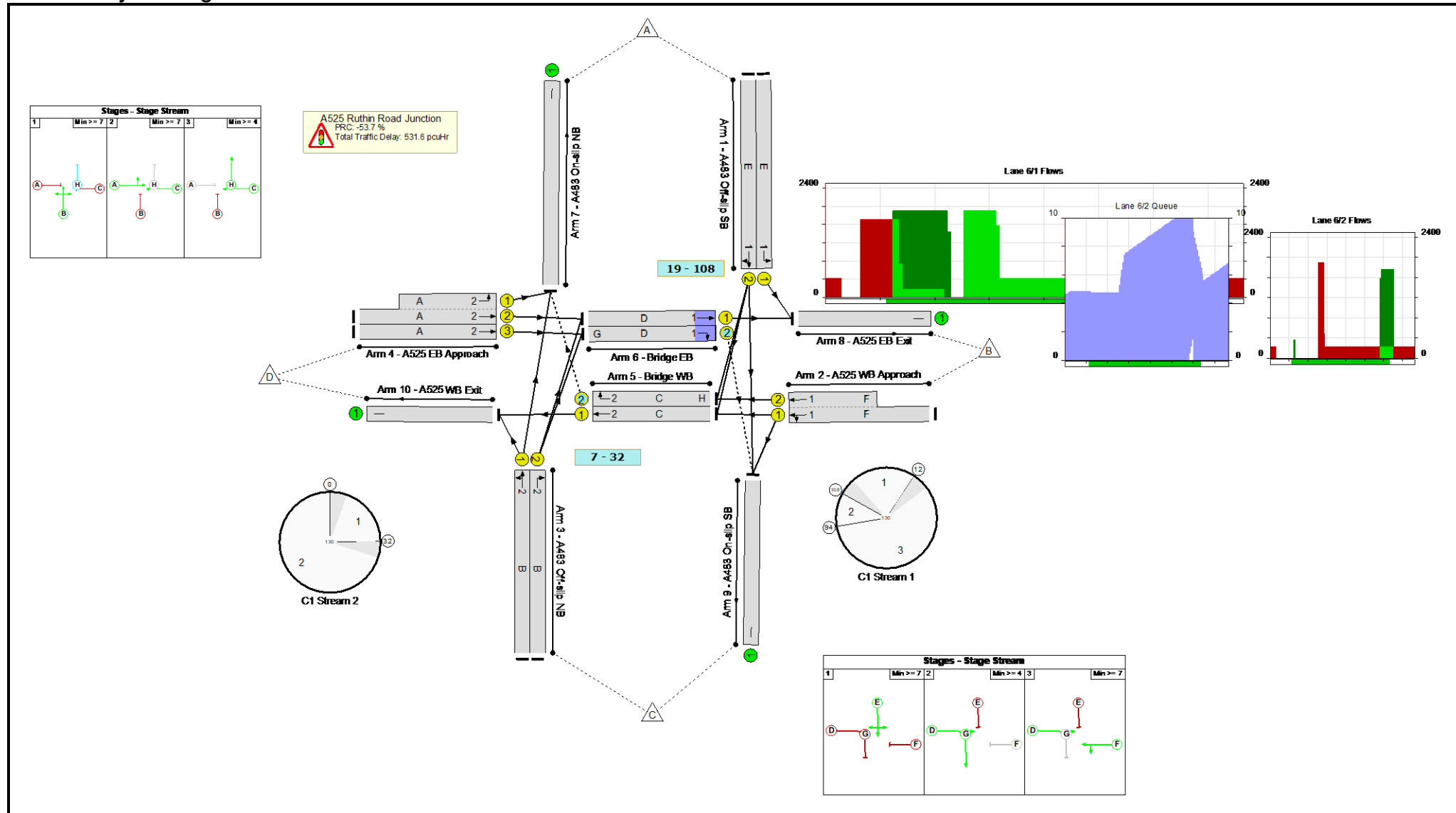
Stage	1	2
Duration	25	91
Change Point	0	32

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A483 / A525 Linsig Model	-	-	N/A	-	-		-	-	-	-	-	-	138.4%
A525 Ruthin Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	138.4%
1/1	A483 Off-slip SB Left	U	1	N/A	E		1	27	-	486	1703	367	132.5%
1/2	A483 Off-slip SB Right Ahead	U	1	N/A	E		1	27	-	534	1792	386	138.4%
2/1+2/2	A525 WB Approach Ahead Left	U	1	N/A	F		1	75	-	1644	1884:1900	907+287	137.7 : 137.7%
3/1	A483 Off-slip NB Ahead Left	U	2	N/A	B		1	25	-	333	1703	341	97.8%
3/2	A483 Off-slip NB Right	U	2	N/A	B		1	25	-	182	1714	343	53.1%
4/2+4/1	A525 EB Approach Ahead Left	U	2	N/A	A		1	91	-	740	1900:1781	867+660	48.5 : 48.5%
4/3	A525 EB Approach Ahead	U	2	N/A	A		1	91	-	227	1900	1345	16.9%
5/1	Bridge WB Ahead	U	2	N/A	C		1	91	-	1508	1900	1345	81.3%
5/2	Bridge WB Right	O	2	N/A	C	H	1	91	0	395	1764	234	122.5%
6/1	Bridge EB Ahead	U	1	N/A	D		1	89	-	602	1900	1315	45.8%
6/2	Bridge EB Right	O	1	N/A	D	G	1	89	14	227	1764	164	138.2%
7/1	A483 On-slip NB	U	N/A	N/A	-		-	-	-	715	Inf	Inf	0.0%
8/1	A525 EB Exit	U	N/A	N/A	-		-	-	-	1088	Inf	Inf	0.0%
9/1	A483 On-slip SB	U	N/A	N/A	-		-	-	-	502	Inf	Inf	0.0%

Full Input Data And Results

10/1	A525 WB Exit	U	N/A	N/A	-		-	-	-	1841	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: A483 / A525 Linsig Model	-	-	234	163	1	100.9	430.6	0.1	531.6	-	-	-	-
A525 Ruthin Road Junction	-	-	234	163	1	100.9	430.6	0.1	531.6	-	-	-	-
1/1	486	367	-	-	-	15.5	61.6	-	77.1	570.7	24.1	61.6	85.7
1/2	534	386	-	-	-	18.2	75.8	-	94.0	633.8	27.7	75.8	103.5
2/1+2/2	1644	1194	-	-	-	36.7	227.0	-	263.7	577.4	76.1	227.0	303.1
3/1	333	333	-	-	-	4.8	7.4	-	12.2	131.9	11.9	7.4	19.4
3/2	182	182	-	-	-	2.4	0.6	-	2.9	57.7	5.9	0.6	6.4
4/2+4/1	740	740	-	-	-	1.4	0.5	-	1.9	9.3	5.6	0.5	6.1
4/3	227	227	-	-	-	0.4	0.1	-	0.5	7.9	2.7	0.1	2.8
5/1	1093	1093	-	-	-	5.9	0.0	-	5.9	19.6	32.8	0.0	32.8
5/2	287	234	234	0	0	7.2	26.3	0.0	33.5	420.3	14.2	26.3	40.5
6/1	602	602	-	-	-	1.4	0.0	-	1.4	8.2	9.1	0.0	9.1
6/2	227	164	0	163	1	7.0	31.4	0.1	38.5	610.3	10.9	31.4	42.2
7/1	554	554	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	969	969	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	364	364	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1426	1426	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): -53.7 C1 Stream: 2 PRC for Signalled Lanes (%): -36.1 PRC Over All Lanes (%): -53.7 Total Delay for Signalled Lanes (pcuHr): 474.61 Total Delay for Signalled Lanes (pcuHr): 56.94 Total Delay Over All Lanes(pcuHr): 531.55 Cycle Time (s): 130 Cycle Time (s): 130													

S|C|P

APPENDIX T

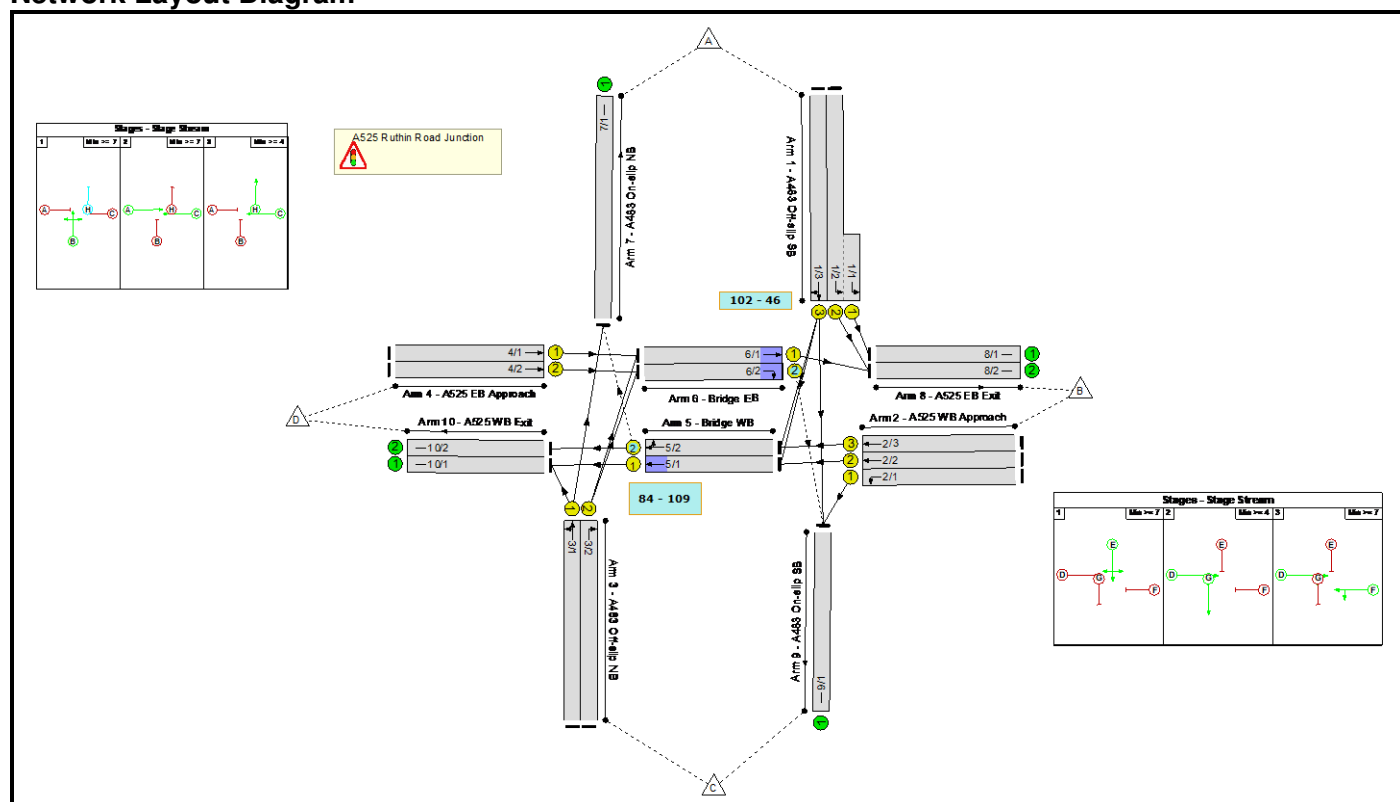
Full Input Data And Results

Full Input Data And Results

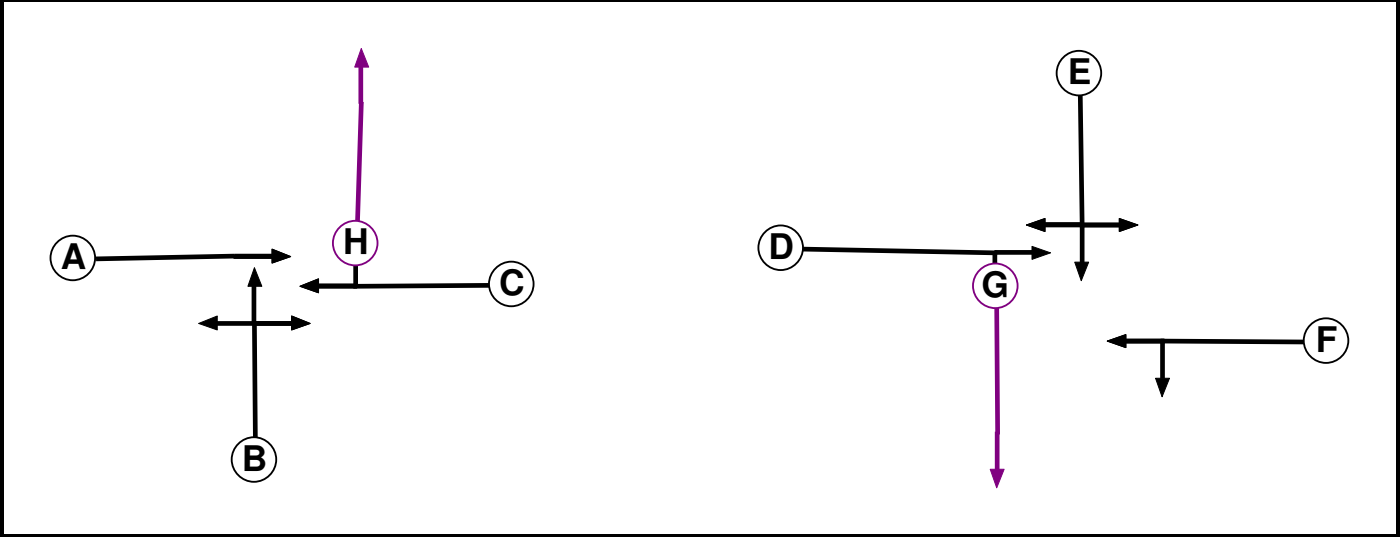
User and Project Details

Project:	Ruthin Road Wrexham
Title:	A483 / A525 Linsig Model
Location:	Junction of A483 & A525
Additional detail:	Based on Capita model supplied by Wrexham Council Additional Left Turn Lane On A575 N
File name:	Proposed_A525_A483_06.06 LB TEST.lsg3x
Author:	Jon Addy
Company:	SCP Transport
Address:	Colwyn Chambers, 19 York Street, Manchester, M2 3BA

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	2		7	7
B	Traffic	2		7	7
C	Traffic	2		7	7
D	Traffic	1		7	7
E	Traffic	1		7	7
F	Traffic	1		7	7
G	Ind. Arrow	1	D	4	4
H	Ind. Arrow	2	C	4	4

Phase Intergreens Matrix

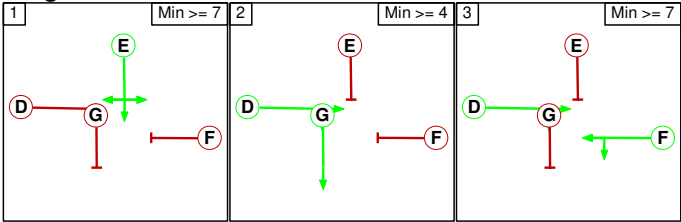
Terminating Phase	Starting Phase								
		A	B	C	D	E	F	G	H
	A		7	-	-	-	-	-	3
	B	7		7	-	-	-	-	-
	C	-	7		-	-	-	-	-
	D	-	-	-		7	-	-	-
	E	-	-	-	7		7	7	-
	F	-	-	-	-	7		5	-
	G	-	-	-	-	7	3		-
	H	5	-	-	-	-	-	-	

Phases in Stage

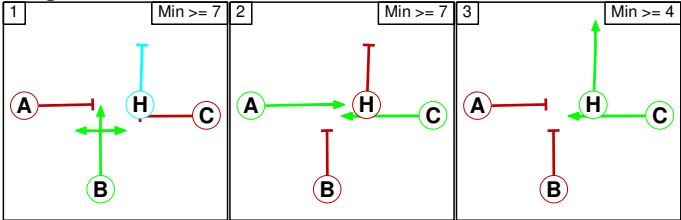
Stream	Stage No.	Phases in Stage
1	1	E
1	2	D G
1	3	D F
2	1	B
2	2	A C
2	3	C H

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	3
	1		7	7
	2	7		3
	3	7	5	

Stage Stream: 2

	To Stage			
From Stage		1	2	3
	1		7	X
	2	7		3
	3	7	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A525 Ruthin Road Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
5/2 (Bridge WB)	7/1 (Right)	1439	0	4/1	1.09	All	-	-	-	-	-
				4/2	1.09	All					
6/2 (Bridge EB)	9/1 (Right)	1439	0	2/2	1.09	All	0.10	-	0.50	0	2.00
				2/3	1.09	All					

Full Input Data And Results

Lane Input Data

Junction: A525 Ruthin Road Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A483 Off-slip SB)	U	E	2	3	6.0	Geom	-	3.25	0.00	Y	Arm 8 Left	Inf
1/2 (A483 Off-slip SB)	U	E	2	3	43.5	Geom	-	3.00	2.00	Y	Arm 8 Left	Inf
1/3 (A483 Off-slip SB)	U	E	2	3	60.0	Geom	-	3.00	2.00	N	Arm 5 Right	15.00
											Arm 9 Ahead	Inf
2/1 (A525 WB Approach)	U	F	2	3	7.3	Geom	-	3.00	0.00	Y	Arm 9 Left	13.50
2/2 (A525 WB Approach)	U	F	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
2/3 (A525 WB Approach)	U	F	2	3	60.0	User	1900	-	-	-	-	-
3/1 (A483 Off-slip NB)	U	B	2	3	60.0	Geom	-	3.00	2.00	Y	Arm 7 Ahead	Inf
											Arm 10 Left	20.00
3/2 (A483 Off-slip NB)	U	B	2	3	60.0	Geom	-	3.00	2.00	N	Arm 6 Right	10.00
4/1 (A525 EB Approach)	U	A	2	3	60.0	User	1900	-	-	-	-	-
4/2 (A525 EB Approach)	U	A	2	3	9.6	User	1900	-	-	-	-	-
5/1 (Bridge WB)	U	C	2	3	10.1	User	1900	-	-	-	-	-
5/2 (Bridge WB)	O	C H	2	3	10.1	Geom	-	3.25	0.00	Y	Arm 7 Right	15.00
											Arm 10 Ahead	Inf
6/1 (Bridge EB)	U	D	2	3	10.1	User	1900	-	-	-	-	-
6/2 (Bridge EB)	O	D G	2	3	10.1	Geom	-	3.25	0.00	Y	Arm 9 Right	15.00
7/1 (A483 On-slip NB)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A525 EB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

8/2 (A525 EB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (A483 On-slip SB)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A525 WB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (A525 WB Exit)	U		2	3	60.0	Geom	-	3.25	0.00	Y		

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Assessment'	08:00	09:00	01:00	
2: 'PM Assessment'	16:30	17:30	01:00	

Scenario 1: 'AM Assessment' (FG1: 'AM Assessment', Plan 1: 'AM Control Plan')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	524	0	289	813
	B	441	0	157	569	1167
	C	0	526	0	248	774
	D	347	1031	233	0	1611
	Tot.	788	2081	390	1106	4365

Traffic Lane Flows

Lane	Scenario 1: AM Assessment
Junction: A525 Ruthin Road Junction	
1/1 (short)	281
1/2 (with short)	524(In) 243(Out)
1/3	289
2/1	157
2/2	569
2/3	441
3/1	248
3/2	526
4/1	1031
4/2	233
5/1	858
5/2	441
6/1	1557
6/2	233
7/1	441
8/1	281
8/2	1800
9/1	390
10/1	1106
10/2	0

Lane Saturation Flows

Junction: A525 Ruthin Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A483 Off-slip SB)	3.25	0.00	Y	Arm 8 Left	Inf	100.0 %	1940	1940
1/2 (A483 Off-slip SB)	3.00	2.00	Y	Arm 8 Left	Inf	100.0 %	1831	1831
1/3 (A483 Off-slip SB)	3.00	2.00	N	Arm 5 Right	15.00	100.0 %	1792	1792
				Arm 9 Ahead	Inf	0.0 %		
2/1 (A525 WB Approach)	3.00	0.00	Y	Arm 9 Left	13.50	100.0 %	1724	1724
2/2 (A525 WB Approach)	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
2/3 (A525 WB Approach Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A483 Off-slip NB)	3.00	2.00	Y	Arm 7 Ahead	Inf	0.0 %	1703	1703
				Arm 10 Left	20.00	100.0 %		
3/2 (A483 Off-slip NB)	3.00	2.00	N	Arm 6 Right	10.00	100.0 %	1714	1714
4/1 (A525 EB Approach Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
4/2 (A525 EB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Bridge WB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Bridge WB)	3.25	0.00	Y	Arm 7 Right	15.00	100.0 %	1764	1764
				Arm 10 Ahead	Inf	0.0 %		
6/1 (Bridge EB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Bridge EB)	3.25	0.00	Y	Arm 9 Right	15.00	100.0 %	1764	1764
7/1 (A483 On-slip NB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A525 EB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (A525 EB Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (A483 On-slip SB Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A525 WB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (A525 WB Exit)	3.25	0.00	Y				1940	1940

Full Input Data And Results

Scenario 2: 'PM Assessment' (FG2: 'PM Assessment', Plan 2: 'PM Control Plan')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	486	0	534	1020
	B	395	0	275	974	1644
	C	0	182	0	333	515
	D	320	420	227	0	967
	Tot.	715	1088	502	1841	4146

Traffic Lane Flows

Lane	Scenario 2: PM Assessment
Junction: A525 Ruthin Road Junction	
1/1 (short)	252
1/2 (with short)	486(In) 234(Out)
1/3	534
2/1	275
2/2	802
2/3	567
3/1	333
3/2	182
4/1	420
4/2	227
5/1	1336
5/2	567
6/1	602
6/2	227
7/1	395
8/1	252
8/2	836
9/1	502
10/1	1669
10/2	172

Lane Saturation Flows

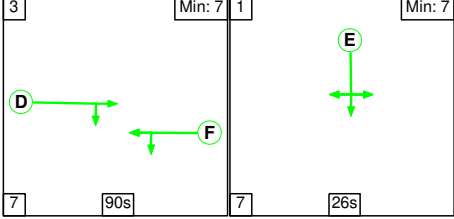
Junction: A525 Ruthin Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A483 Off-slip SB)	3.25	0.00	Y	Arm 8 Left	Inf	100.0 %	1940	1940
1/2 (A483 Off-slip SB)	3.00	2.00	Y	Arm 8 Left	Inf	100.0 %	1831	1831
1/3 (A483 Off-slip SB)	3.00	2.00	N	Arm 5 Right	15.00	100.0 %	1792	1792
				Arm 9 Ahead	Inf	0.0 %		
2/1 (A525 WB Approach)	3.00	0.00	Y	Arm 9 Left	13.50	100.0 %	1724	1724
2/2 (A525 WB Approach)	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
2/3 (A525 WB Approach Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A483 Off-slip NB)	3.00	2.00	Y	Arm 7 Ahead	Inf	0.0 %	1703	1703
				Arm 10 Left	20.00	100.0 %		
3/2 (A483 Off-slip NB)	3.00	2.00	N	Arm 6 Right	10.00	100.0 %	1714	1714
4/1 (A525 EB Approach Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
4/2 (A525 EB Approach Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Bridge WB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (Bridge WB)	3.25	0.00	Y	Arm 7 Right	15.00	69.7 %	1814	1814
				Arm 10 Ahead	Inf	30.3 %		
6/1 (Bridge EB Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Bridge EB)	3.25	0.00	Y	Arm 9 Right	15.00	100.0 %	1764	1764
7/1 (A483 On-slip NB Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A525 EB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (A525 EB Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (A483 On-slip SB Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A525 WB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (A525 WB Exit)	3.25	0.00	Y				1940	1940

Full Input Data And Results

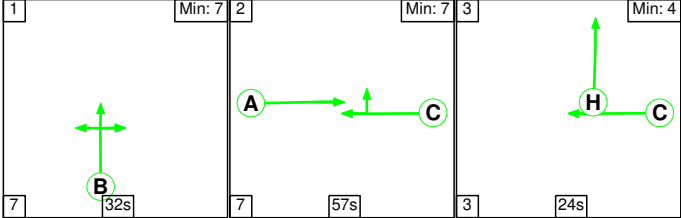
Scenario 1: 'AM Assessment' (FG1: 'AM Assessment', Plan 1: 'AM Control Plan')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

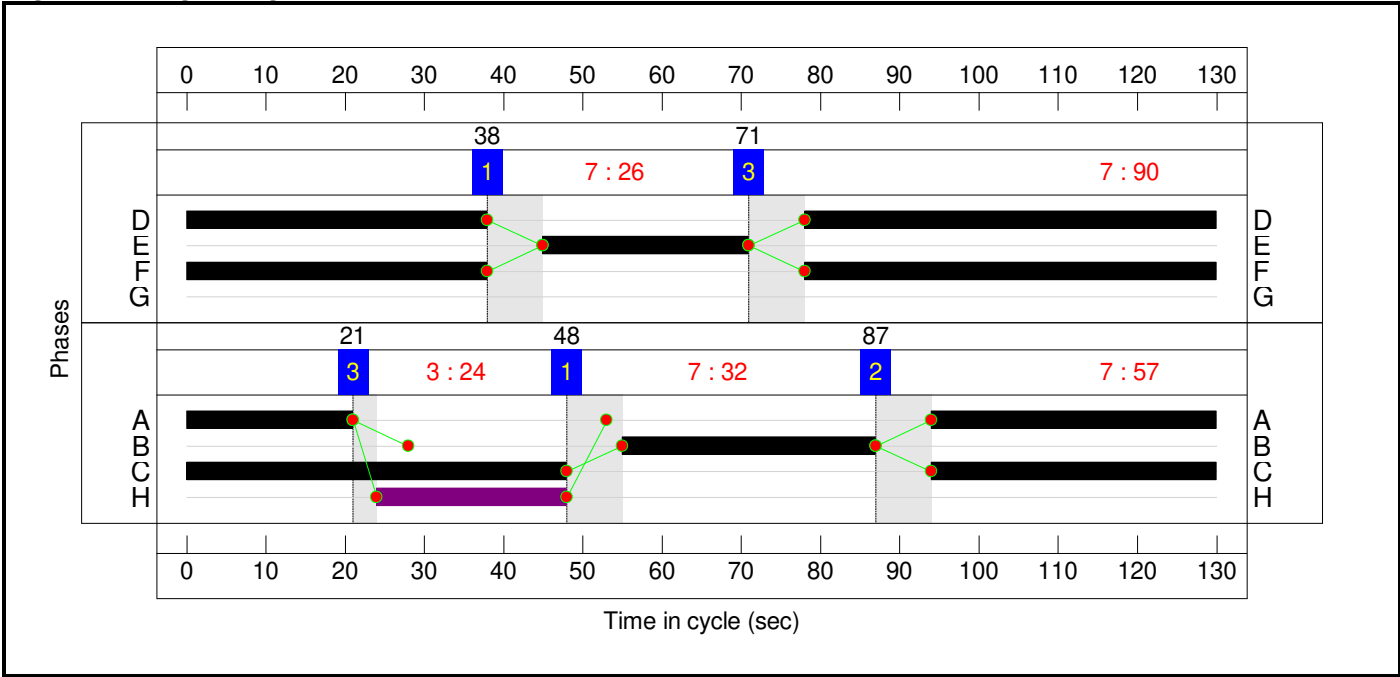
Stage Stream: 1

Stage	3	1
Duration	90	26
Change Point	71	38

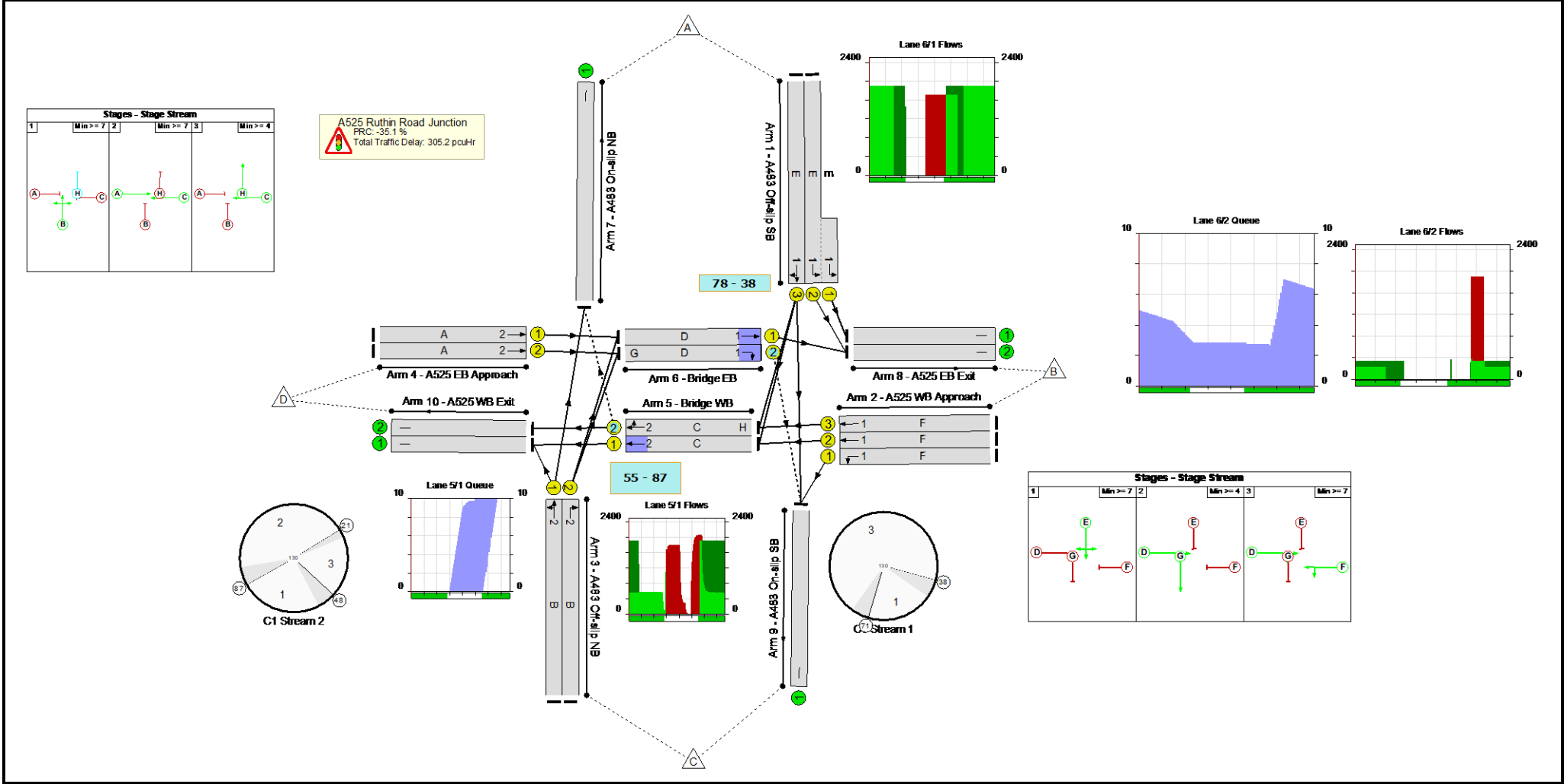
Stage Stream: 2

Stage	1	2	3
Duration	32	57	24
Change Point	48	87	21

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A483 / A525 Linsig Model	-	-	N/A	-	-		-	-	-	-	-	-	121.6%
A525 Ruthin Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	121.6%
1/2+1/1	A483 Off-slip SB Left	U	1	N/A	E		1	26	-	524	1831:1940	251+291	96.6 : 96.6%
1/3	A483 Off-slip SB Right Ahead	U	1	N/A	E		1	26	-	289	1792	372	77.6%
2/1	A525 WB Approach Left	U	1	N/A	F		1	90	-	157	1724	1207	13.0%
2/2	A525 WB Approach Ahead	U	1	N/A	F		1	90	-	569	2055	1438	39.6%
2/3	A525 WB Approach Ahead	U	1	N/A	F		1	90	-	441	1900	1330	33.2%
3/1	A483 Off-slip NB Ahead Left	U	2	N/A	B		1	32	-	248	1703	432	57.4%
3/2	A483 Off-slip NB Right	U	2	N/A	B		1	32	-	526	1714	435	120.9%
4/1	A525 EB Approach Ahead	U	2	N/A	A		1	57	-	1031	1900	848	121.6%
4/2	A525 EB Approach Ahead	U	2	N/A	A		1	57	-	233	1900	848	27.5%
5/1	Bridge WB Ahead	U	2	N/A	C		1	84	-	858	1900	1242	69.1%
5/2	Bridge WB Right Ahead	O	2	N/A	C	H	1	84	24	441	1764	366	120.4%
6/1	Bridge EB Ahead	U	1	N/A	D		1	90	-	1557	1900	1330	96.4%
6/2	Bridge EB Right	O	1	N/A	D	G	1	90	0	233	1764	195	119.4%

Full Input Data And Results

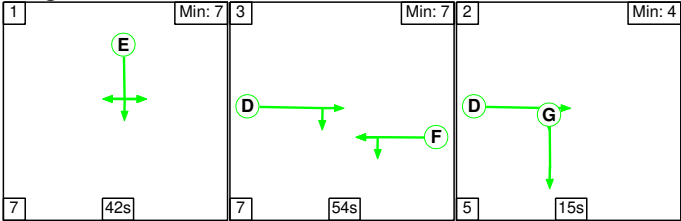
7/1	A483 On-slip NB	U	N/A	N/A	-		-	-	-	441	Inf	Inf	0.0%
8/1	A525 EB Exit	U	N/A	N/A	-		-	-	-	281	Inf	Inf	0.0%
8/2	A525 EB Exit	U	N/A	N/A	-		-	-	-	1800	Inf	Inf	0.0%
9/1	A483 On-slip SB	U	N/A	N/A	-		-	-	-	390	Inf	Inf	0.0%
10/1	A525 WB Exit	U	N/A	N/A	-		-	-	-	1106	Inf	Inf	0.0%
10/2	A525 WB Exit	U	N/A	N/A	-		-	-	-	0	1940	1940	0.0%

Full Input Data And Results

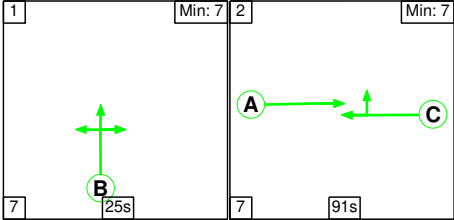
[illegible]

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

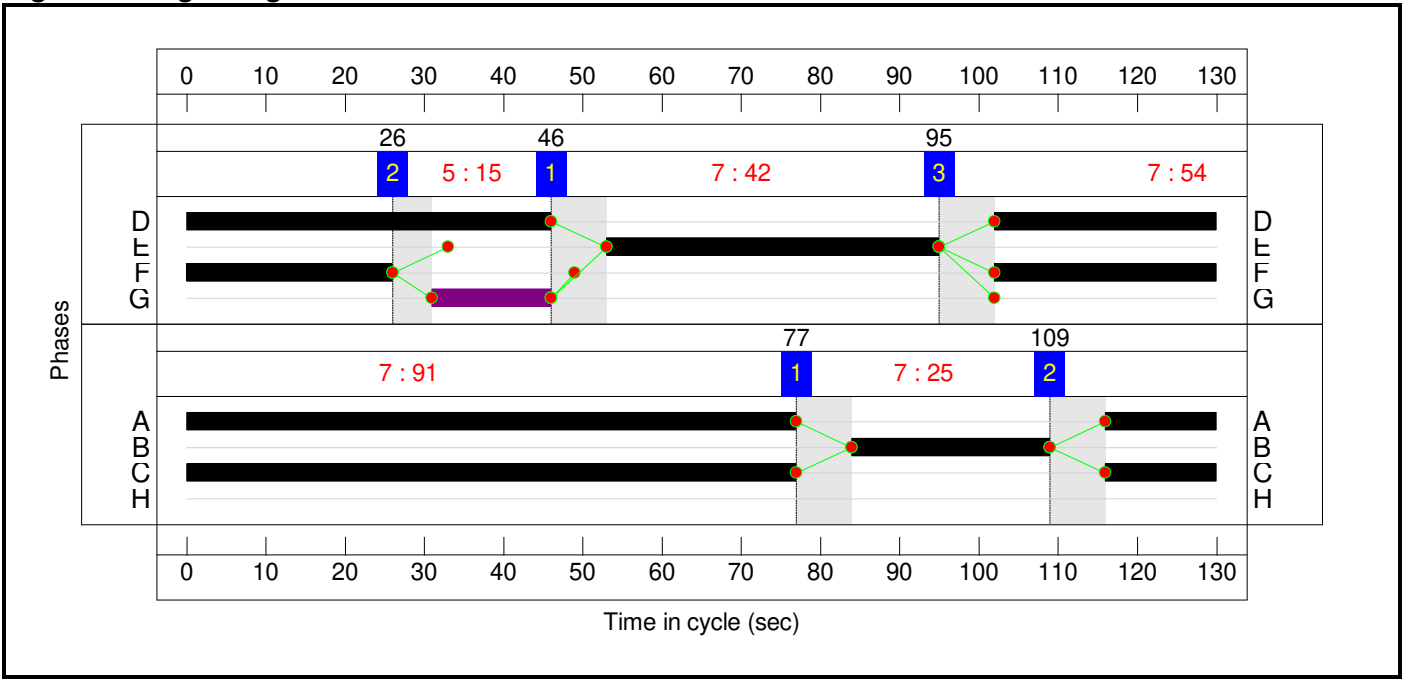
Stage Stream: 1

Stage	1	3	2
Duration	42	54	15
Change Point	46	95	26

Stage Stream: 2

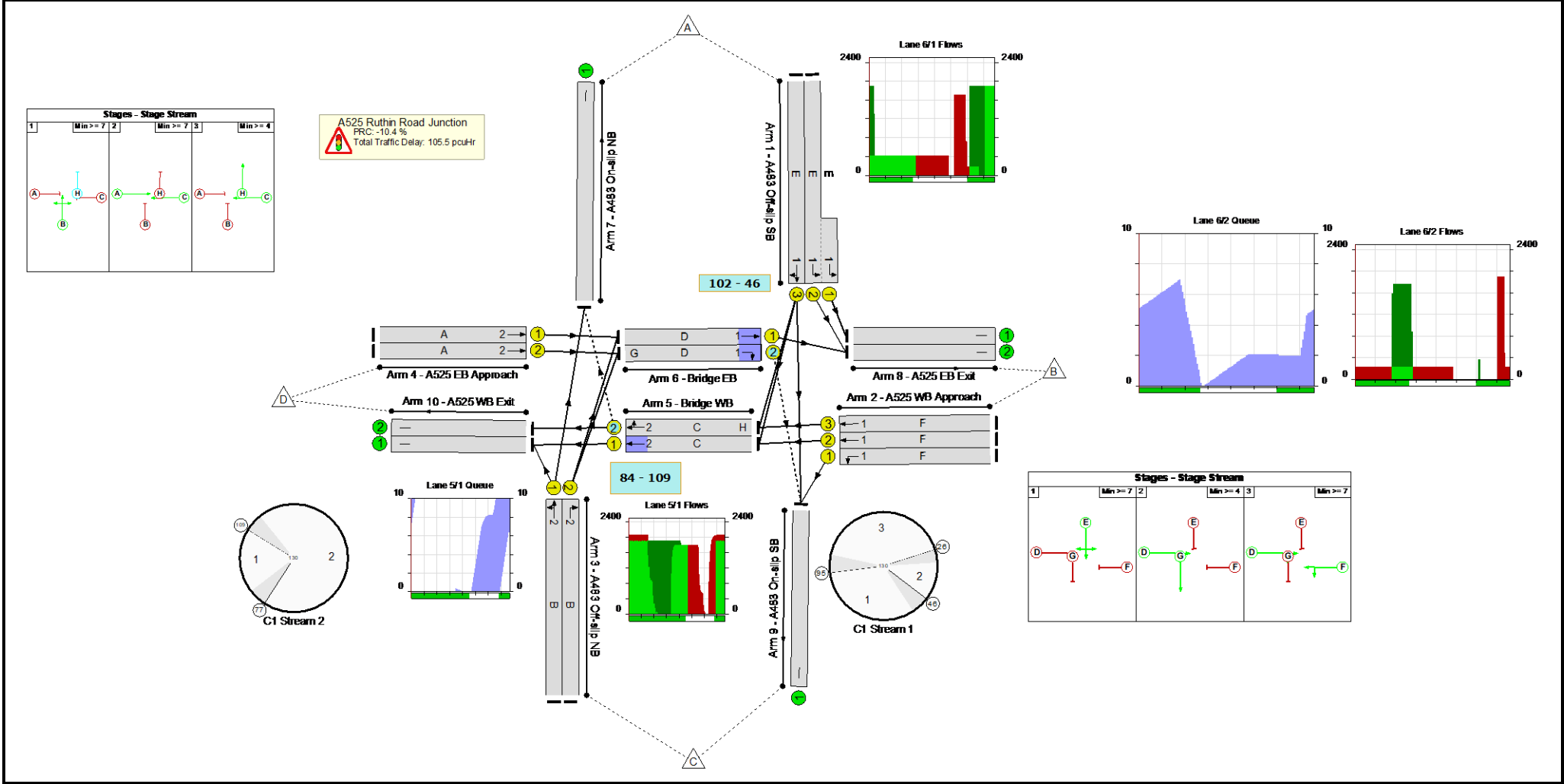
Stage	1	2
Duration	25	91
Change Point	77	109

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A483 / A525 Linsig Model	-	-	N/A	-	-		-	-	-	-	-	-	99.4%
A525 Ruthin Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	99.4%
1/2+1/1	A483 Off-slip SB Left	U	1	N/A	E		1	42	-	486	1831:1940	378+407	61.9 : 61.9%
1/3	A483 Off-slip SB Right Ahead	U	1	N/A	E		1	42	-	534	1792	593	90.1%
2/1	A525 WB Approach Left	U	1	N/A	F		1	54	-	275	1724	729	37.7%
2/2	A525 WB Approach Ahead	U	1	N/A	F		1	54	-	802	2055	869	92.2%
2/3	A525 WB Approach Ahead	U	1	N/A	F		1	54	-	567	1900	804	70.5%
3/1	A483 Off-slip NB Ahead Left	U	2	N/A	B		1	25	-	333	1703	341	97.8%
3/2	A483 Off-slip NB Right	U	2	N/A	B		1	25	-	182	1714	343	53.1%
4/1	A525 EB Approach Ahead	U	2	N/A	A		1	91	-	420	1900	1345	31.2%
4/2	A525 EB Approach Ahead	U	2	N/A	A		1	91	-	227	1900	1345	16.9%
5/1	Bridge WB Ahead	U	2	N/A	C		1	91	-	1336	1900	1345	99.4%
5/2	Bridge WB Right Ahead	O	2	N/A	C	H	1	91	0	567	1814	572	99.1%
6/1	Bridge EB Ahead	U	1	N/A	D		1	74	-	602	1900	1096	54.9%
6/2	Bridge EB Right	O	1	N/A	D	G	1	74	15	227	1764	246	92.4%

Full Input Data And Results

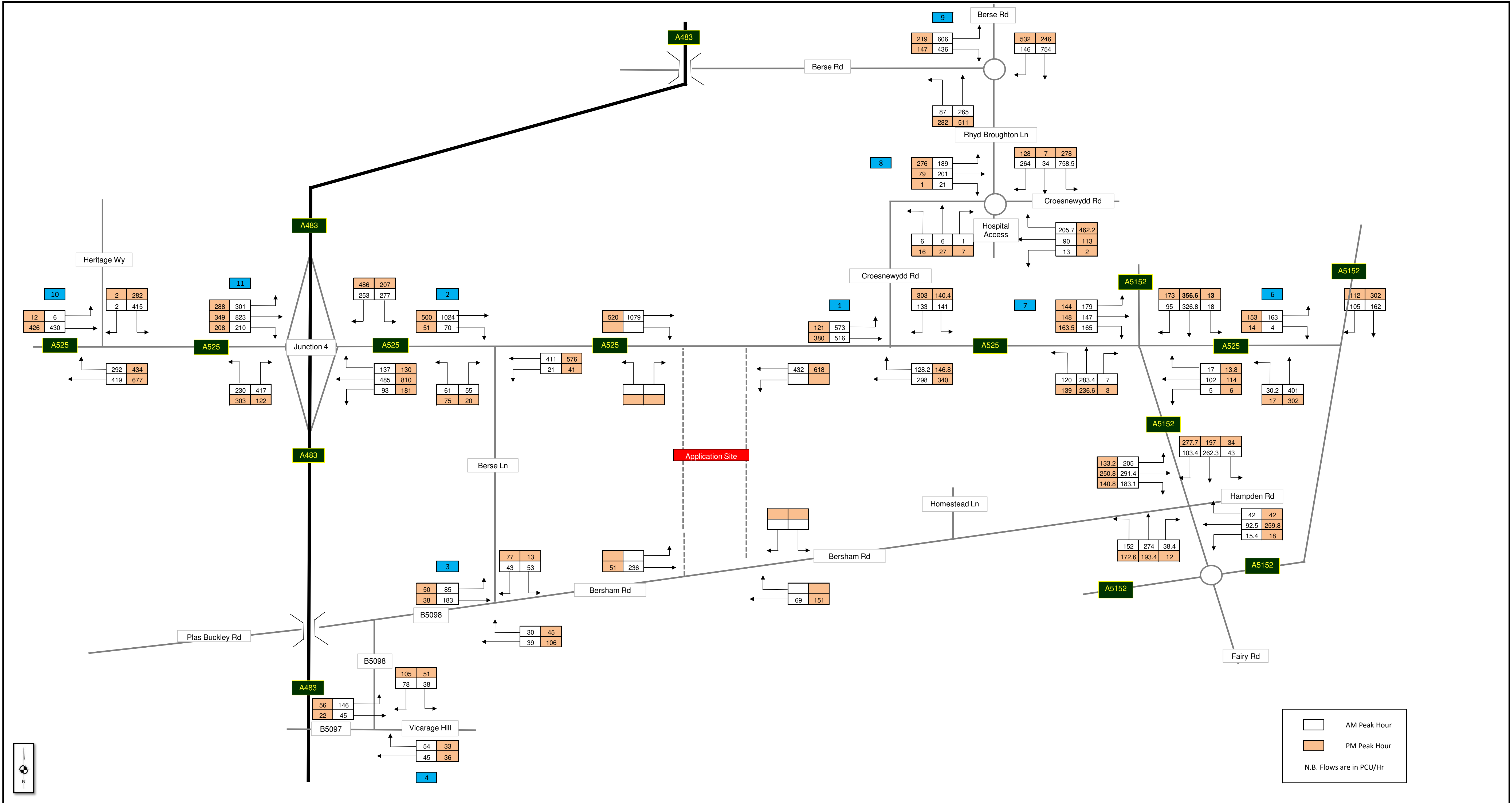
7/1	A483 On-slip NB	U	N/A	N/A	-		-	-	-	395	Inf	Inf	0.0%
8/1	A525 EB Exit	U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%
8/2	A525 EB Exit	U	N/A	N/A	-		-	-	-	836	Inf	Inf	0.0%
9/1	A483 On-slip SB	U	N/A	N/A	-		-	-	-	502	Inf	Inf	0.0%
10/1	A525 WB Exit	U	N/A	N/A	-		-	-	-	1669	Inf	Inf	0.0%
10/2	A525 WB Exit	U	N/A	N/A	-		-	-	-	172	1940	1940	8.9%

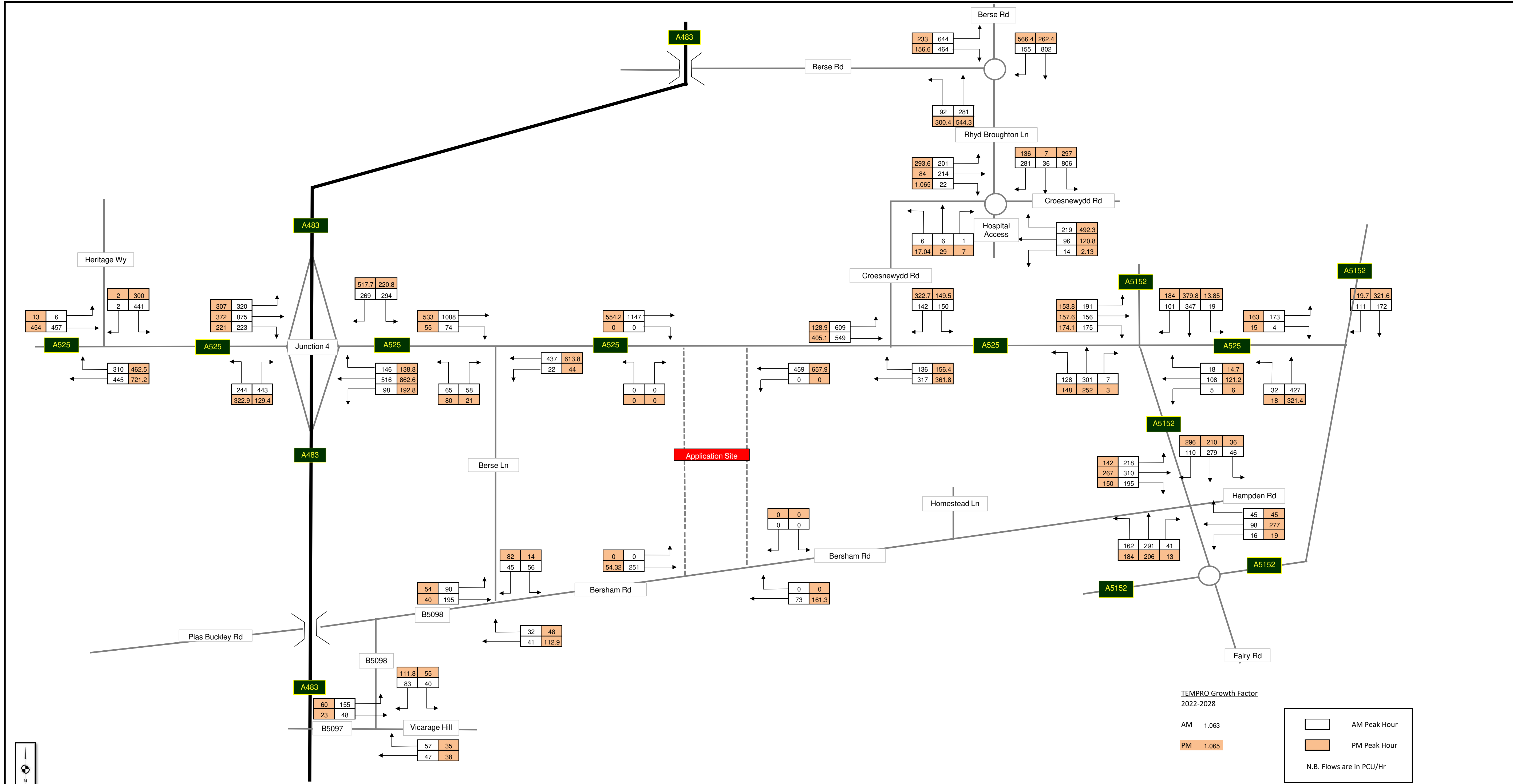
Full Input Data And Results

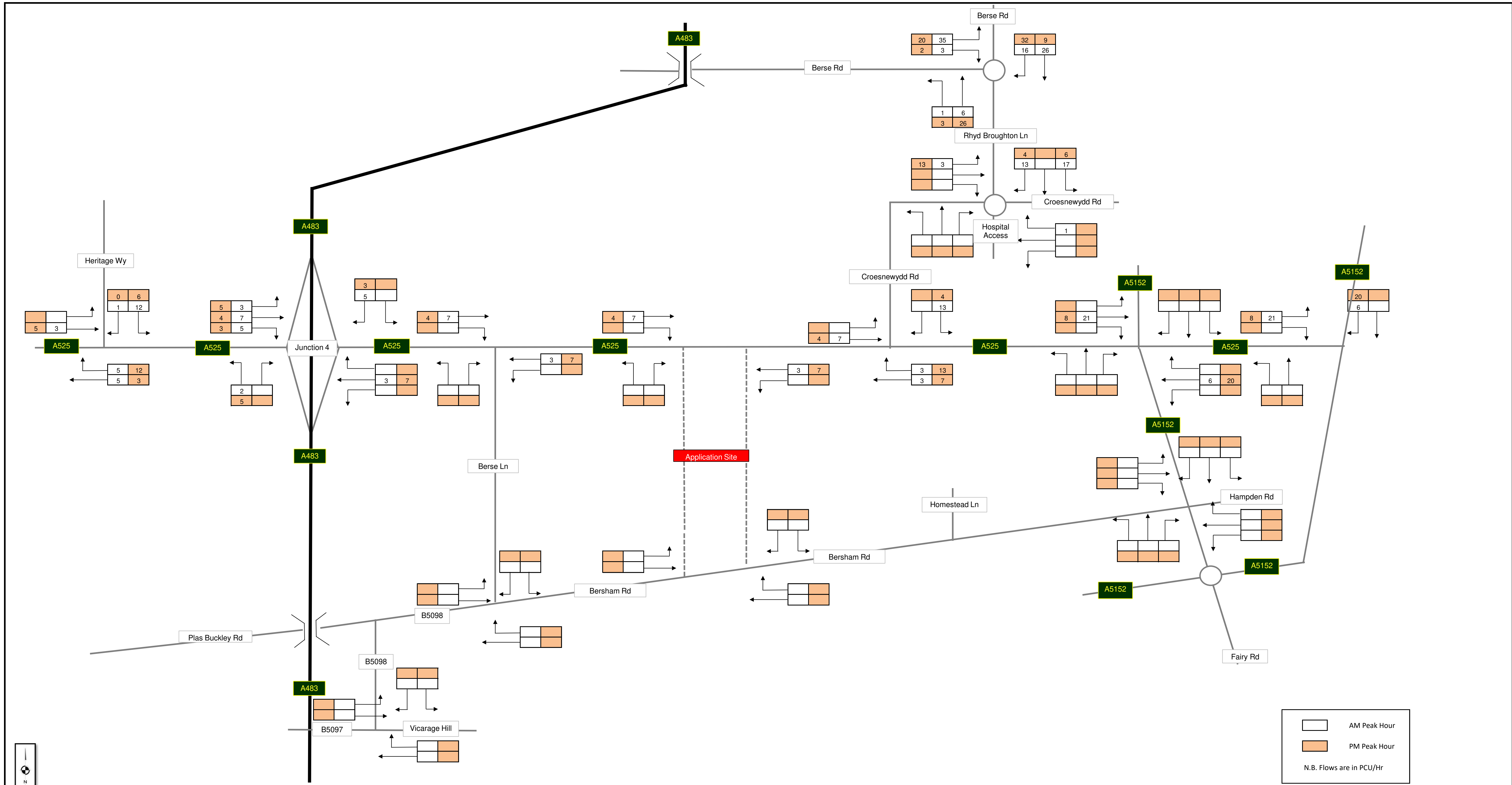
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A483 / A525 Linsig Model	-	-	376	246	0	53.8	51.6	0.1	105.5	-	-	-	-
A525 Ruthin Road Junction	-	-	376	246	0	53.8	51.6	0.1	105.5	-	-	-	-
1/2+1/1	486	486	-	-	-	4.5	0.8	-	5.3	39.6	8.2	0.8	9.0
1/3	534	534	-	-	-	6.2	4.0	-	10.2	68.4	18.2	4.0	22.2
2/1	275	275	-	-	-	2.0	0.3	-	2.3	29.7	6.8	0.3	7.1
2/2	802	802	-	-	-	7.9	5.2	-	13.1	58.6	27.4	5.2	32.6
2/3	567	567	-	-	-	4.9	1.2	-	6.0	38.4	16.7	1.2	17.9
3/1	333	333	-	-	-	4.8	7.4	-	12.2	131.9	11.9	7.4	19.4
3/2	182	182	-	-	-	2.4	0.6	-	2.9	57.7	5.9	0.6	6.4
4/1	420	420	-	-	-	0.8	0.2	-	1.1	9.1	5.6	0.2	5.8
4/2	227	227	-	-	-	0.4	0.1	-	0.5	7.9	2.7	0.1	2.8
5/1	1336	1336	-	-	-	8.2	16.2	-	24.4	65.8	37.9	16.2	54.1
5/2	567	567	376	19	0	6.3	10.7	-	17.0	108.0	20.5	10.7	31.2
6/1	602	602	-	-	-	2.5	0.6	-	3.1	18.8	10.4	0.6	11.0
6/2	227	227	0	227	0	3.0	4.2	0.1	7.3	115.6	7.0	4.2	11.2
7/1	395	395	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	252	252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	836	836	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	502	502	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1669	1669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	172	172	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): -2.7 C1 Stream: 2 PRC for Signalled Lanes (%): -10.4 PRC Over All Lanes (%): -10.4 Total Delay for Signalled Lanes (pcuHr): 47.30 Total Delay for Signalled Lanes (pcuHr): 58.11 Total Delay Over All Lanes(pcuHr): 105.46 Cycle Time (s): 130 Cycle Time (s): 130													

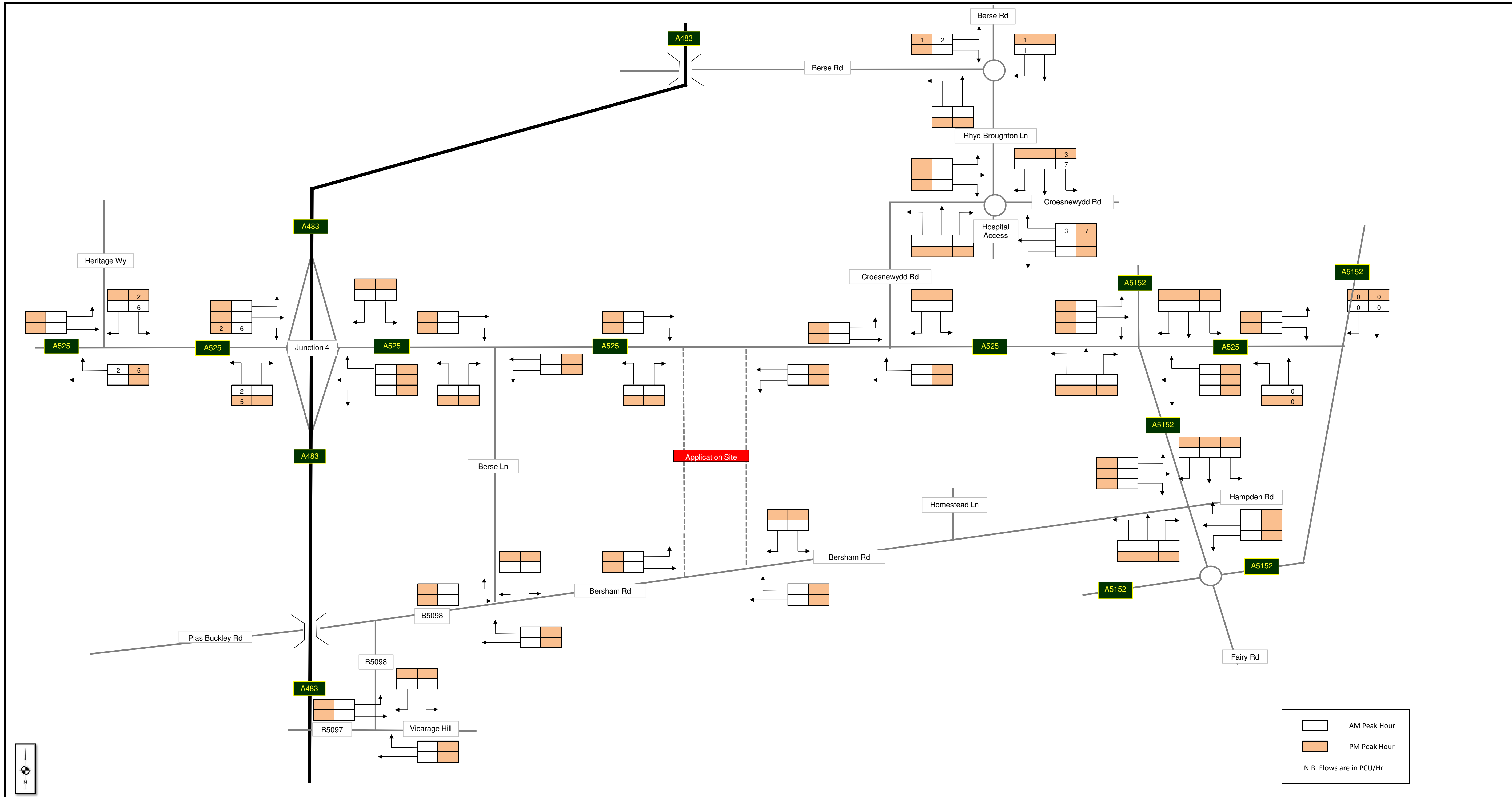
S|C|P

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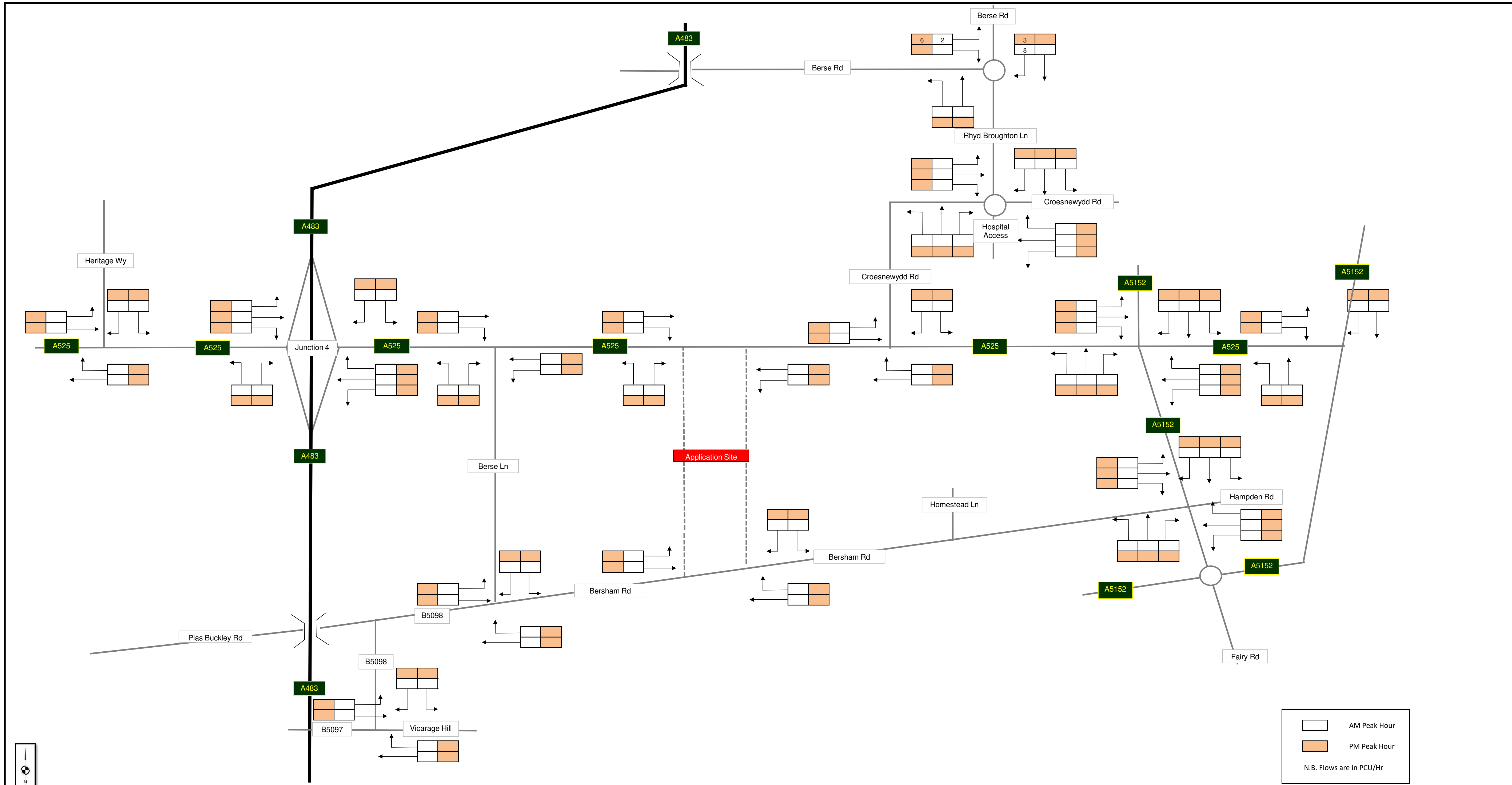




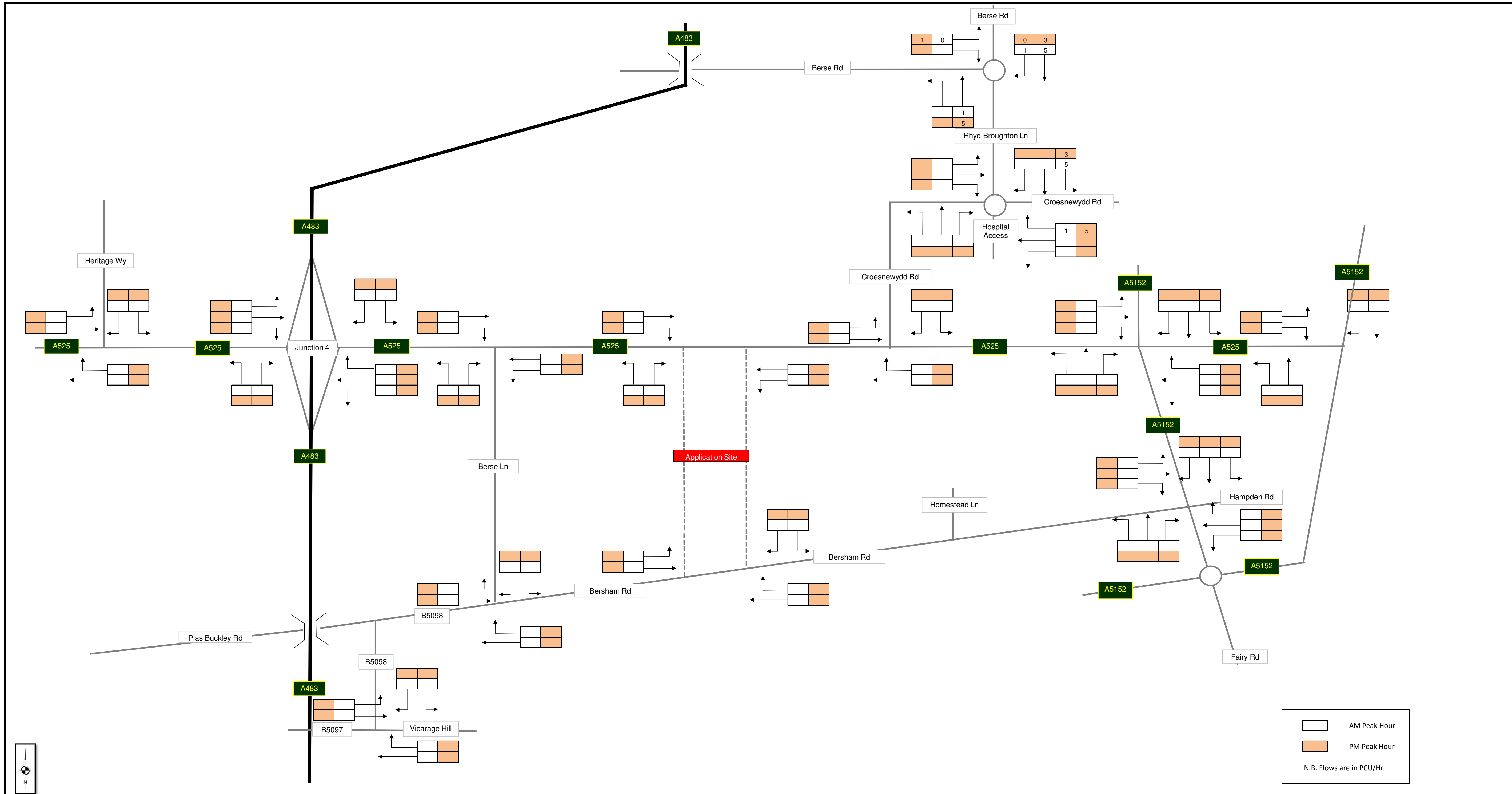




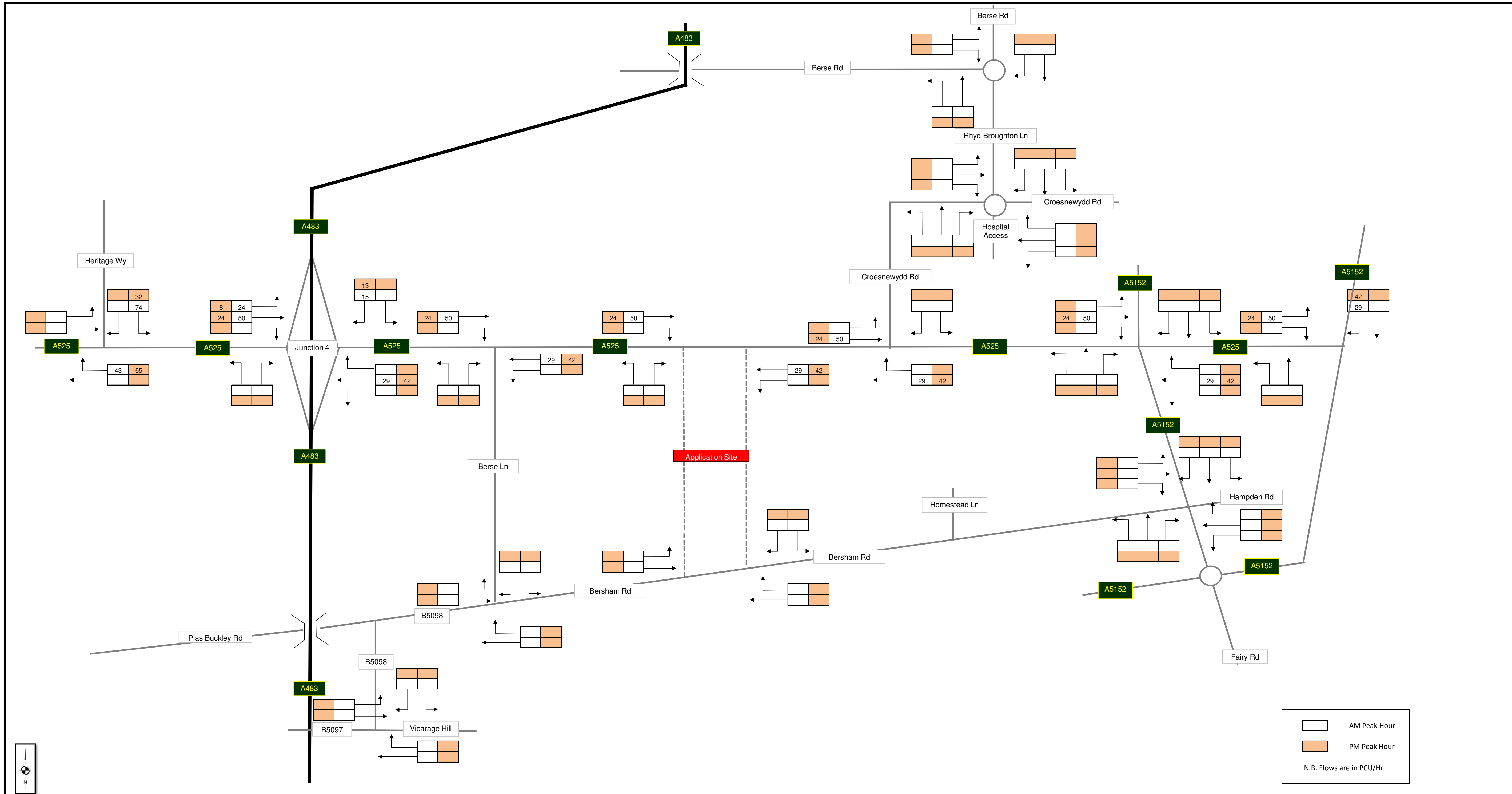
SCP Transportation Planning : Infrastructure Design	Committed Development - Brymbo (Ref 2019/0059)	11 August 2023
	Proposed Residential Development, Ruthin Road, Wrexham	Job Number - SCP/210187
		Traffic Figure 4



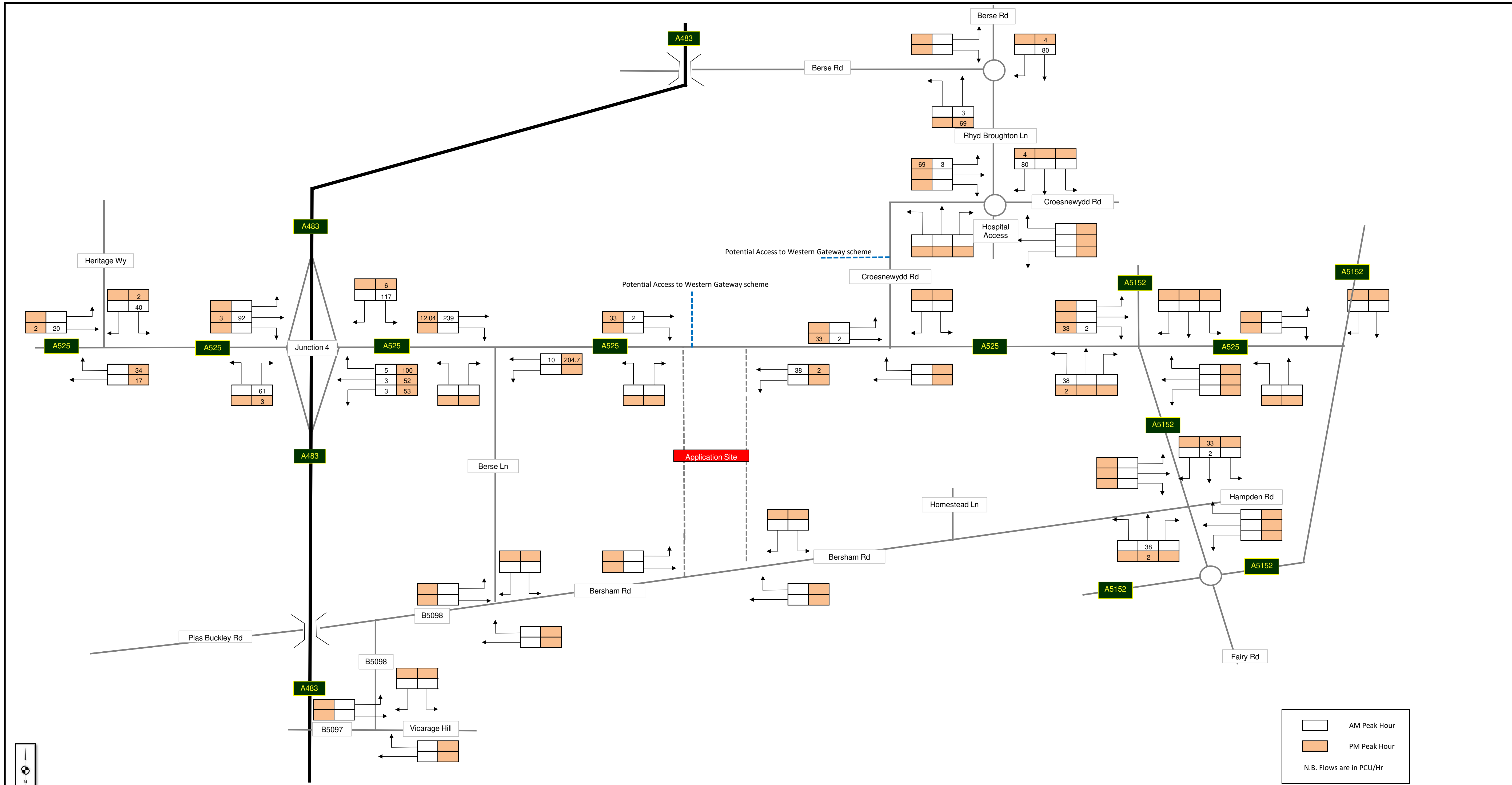
 Transportation Planning : Infrastructure Design	Committed Development - Rhosrobin (Ref 2021/0135)		11 August 2023
	Proposed Residential Development, Ruthin Road, Wrexham		Job Number - SCP/210187
			Traffic Figure 5

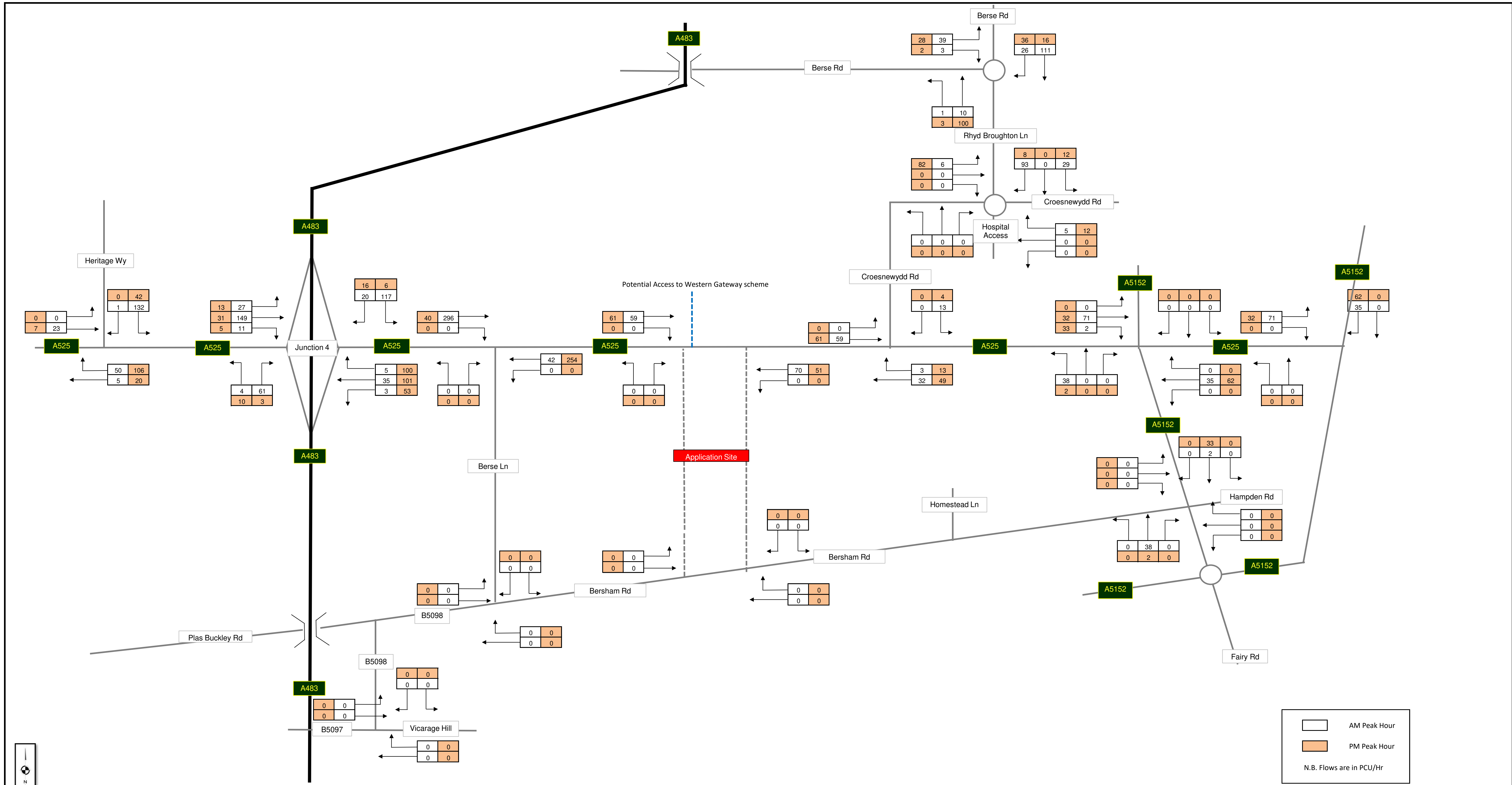


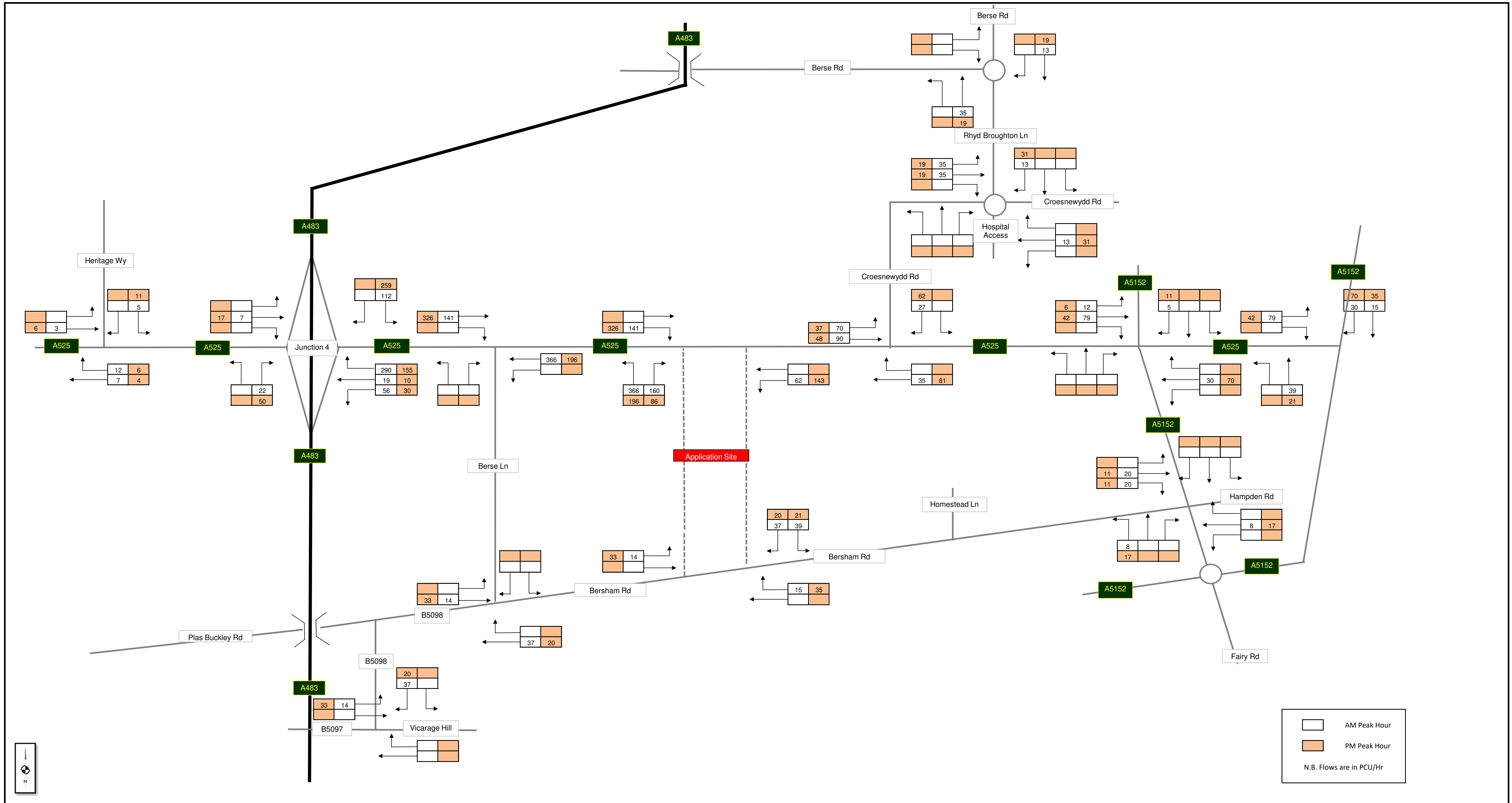
 Transportation Planning : Infrastructure Design	Committed Development - Chain Rd (Ref P/2019/0923)		11 August 2023
	Proposed Residential Development, Ruthin Road, Wrexham		Job Number - SCP/210187
			Traffic Figure 6



 Transportation Planning : Infrastructure Design	Committed Development - Brymbo Park (Ref 2019/0546)		11 August 2023
	Proposed Residential Development, Ruthin Road, Wrexham		Job Number - SCP/210187
			Traffic Figure 7







SCP Transportation Planning : Infrastructure Design	Traffic Assignment		11 August 2023
	Proposed Residential Development, Ruthin Road, Wrexham		Job Number - SCP/210187
			Traffic Figure 11

