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Land North of Bryn Lane Wrexham Industrial Estate

Transport Assessment Addendum

Final Report for:



March 2024

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CONTENTS

1.0	INTRODUCTION	4
1.1	Introduction	4
2.0	ACCIDENT ASSESSMENT	5
2.1	Accident Analysis	5
3.0	DEVELOPMENT PROPOSALS.....	6
3.1	Proposed Development	6
3.2	Parking Standards / Cycle Parking	9
4.0	TRANSPORT POLICY AND ACCESSIBILITY	10
4.1	Preamble.....	10
4.2	The Transport Decarbonisation Plan – March 2020	10
4.3	Travel Plans, Transport Assessments and Statements in Decision-Taking	10
4.6	Unitary Development Plan (2005)	12
4.7	Wrexham SUMP (2016)	13
4.10	Public Transport.....	16
4.11	Summary.....	18
5.0	TRAFFIC IMPACT	19
5.1	Introduction	19
5.3	Phase 2 Development Impact (Mixed Use)	20
5.4	VISSIM Modelling.....	24
5.5	Proposed Site Access / Bryn Lane	25
5.6	Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout.....	26
6.0	SUMMARY AND CONCLUSION	28
6.1	Summary.....	28
6.2	Conclusion	30

TRAFFIC FIGURES

APPENDICES

APPENDIX A – ACCIDENT DATA

APPENDIX B – PROPOSED ACCESS ARRANGEMENTS

APPENDIX C – ROAD SAFETY AUDIT AND TRACKING

APPENDIX D – SITE LAYOUT PLAN

APPENDIX E – EMPLOYMENT USE TRICS OUTPUT

APPENDIX F – MIXED USE TRICS OUTPUT

APPENDIX G – BRYN LANE ACCESS PICADY OUTOUT

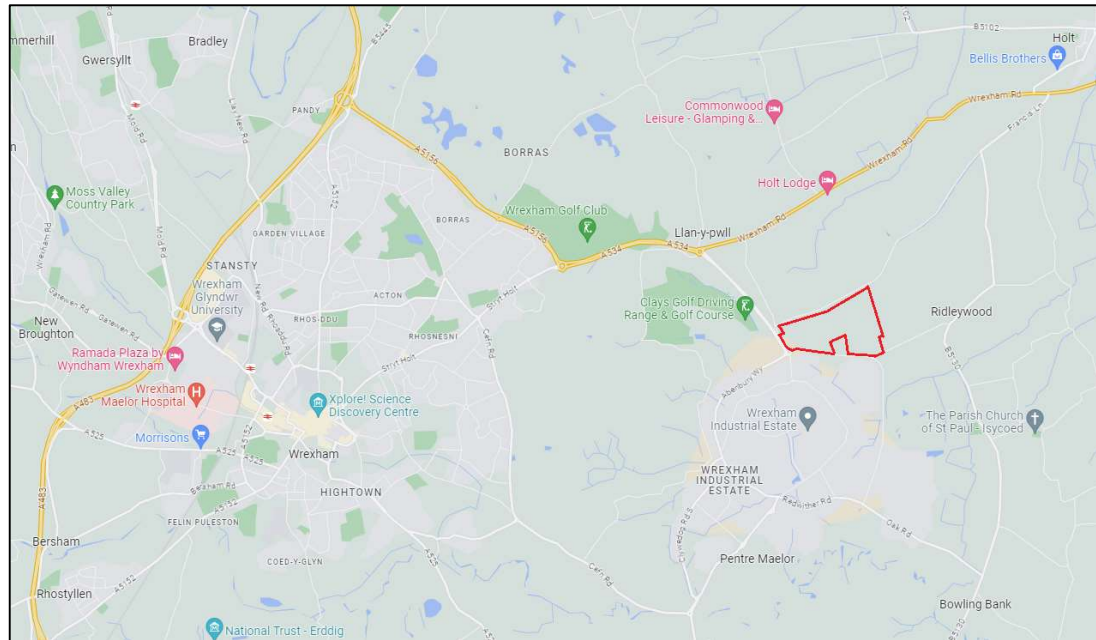
APPENDIX H – EXISTING INDUSTRIAL ESTATE ROAD / BRYN LANE ROUNDABOUT ARCADY OUTPUT

1.0 INTRODUCTION

1.1 Introduction

- 1.1.1 Net World Sports have instructed Cora IHT to prepare a Transport Assessment Addendum for an industrial / employment development located to the north of Wrexham Industrial Estate following comments and request for additional information from Wrexham Council. **Figure 1.1** illustrates the site location.

Figure 1.1: Site Location

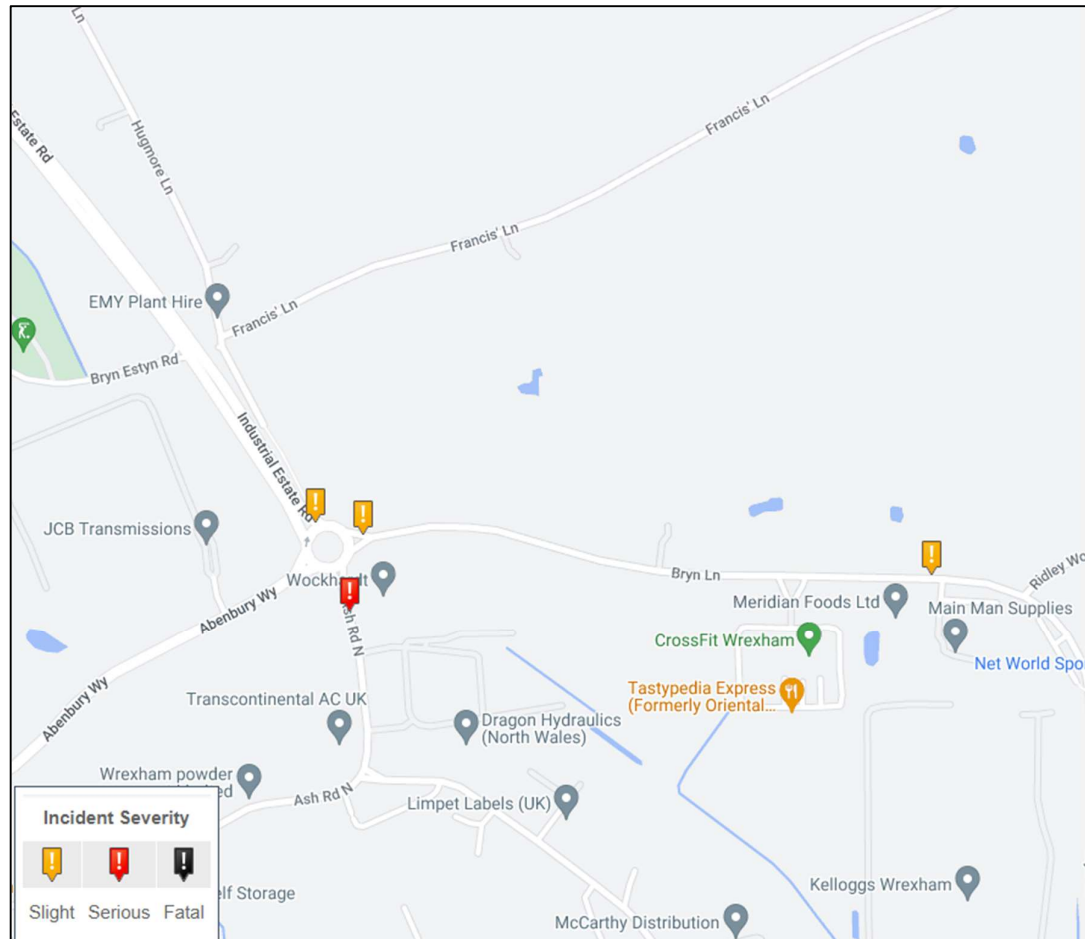


2.0 ACCIDENT ASSESSMENT

2.1 Accident Analysis

2.1.1 Accident data has been obtained from the Crashmap website (<http://www.crashmap.co.uk>) for the period of 2018-2022. **Figure 2.4** shows an extract of the accident plot.

Figure 2.4: Crashmap Accident Plan



- 2.1.2 There has only been 1 slight accident recorded along Bryn Lane within the vicinity of the site in the last 5-year period. There have been 2 slight and 1 serious accident recorded at the Industrial Estate Road 4-arm roundabout located adjacent to the development site in the 5-year period.
- 2.1.3 All three accidents involved cyclists, however, the recorded accident data within the vicinity of the site does not indicate any existing highway safety patterns or problems due to the low number of accidents over this period. It can be concluded that further detailed accident analysis is not required.
- 2.1.4 **Appendix A** provides the detailed accident descriptions.

3.0 DEVELOPMENT PROPOSALS

3.1 *Proposed Development*

3.1.1 The proposed development is commercial in nature. The application is in hybrid form and encompasses:

- Phase 1 - Detailed Component:
 1. Demolition of existing buildings, site clearance and preparation works, including removal of vegetation and reprofiling of topsoil, where necessary;
 2. Phase 1 – Total 61,423 sqm of employment use (B2 24,569sqm / B8 36,854sqm); and
 3. 592 car parking spaces, 138 HGV trailer spaces and HGV lorry spaces are proposed within the detailed component.
 - Phase 2 - Outline Component:
 1. Total 45,510sqm of employment use (B2 18,204sqm / B8 27,306sqm);
 2. Hotel – 100-room hotel, with a floor area of approximately 3,600 sqm GEA;
 3. Drivethrus – 1,106 sqm GEA A3 uses;
 4. Local Centre – 2,450sqm;
 5. The remaining floorspace (8,994 sqm GEA) has been assumed for sui generis / lorry park / EV charging (worstcase assumes it is B8); and
 6. Up to 908 car parking spaces and up to 138 HGV trailer spaces and HGV lorry spaces are proposed across the application site.
 - Site Wide
 1. Access and parking provision, including new access junctions, internal roads, service yards and car and HGV parking. Two new junctions are proposed (in detail) providing vehicular access, as well as cycle and pedestrian access, from Bryn Lane/Industrial Estate Road with an additional access road for a substation. Car parking spaces, HGV trailer spaces and HGV lorry spaces are proposed across the application site;
 2. Retention and enhancement of some existing on-site green spaces and provision of landscaping around the application site; and
 3. Implementation of drainage/attenuation measures.
- 3.1.2 Vehicular access to the Phase 1 detailed component is proposed via a new priority right turn island junction off Bryn Lane. A pedestrian refuge island is proposed to the west of the site access to assist crossing of Bryn Lane.
- 3.1.3 A new access arm off the 4-arm Industrial Estate Road roundabout is also proposed and forms part of Phase 2.

- 3.1.4 The proposed development will provide a site layout designed in accordance with current best practice to accommodate pedestrians and cyclists. 2m footway off-road and 2m cycleways are proposed throughout the site.
- 3.1.5 Additional footpaths are proposed within the site which provides access to Francis' Lane to the northeast of the site. The public right of way on the eastern boundary of the site will be retained and improved, providing linkage between Bryn Lane and Francis' Lane.
- 3.1.6 **Figures 3.1 and 3.2** provides extracts of the Bryn Lane and Roundabout access points respectively whilst **Appendix B** provides the full drawings.
- 3.1.7 The site accesses have been subject to a Stage 1 Road Safety Audit which has been reviewed and accesses amended to address the comments. **Appendix C** provides the Stage 1 Road Safety Audit including tracking drawings.
- 3.1.8 **Figure 3.3** provides an extract of the illustrative masterplan (not for approval). **Appendix D** shows the full site layout plan.

Figure 3.1: Proposed Bryn Lane Access

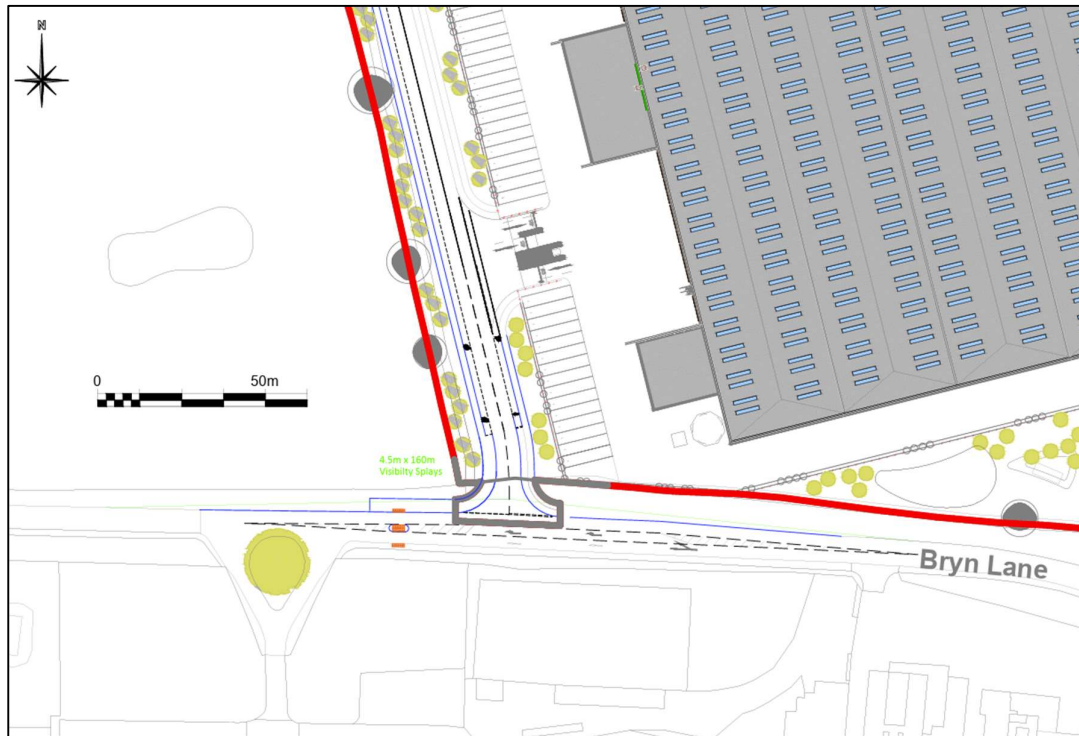


Figure 3.2: Proposed Roundabout Access

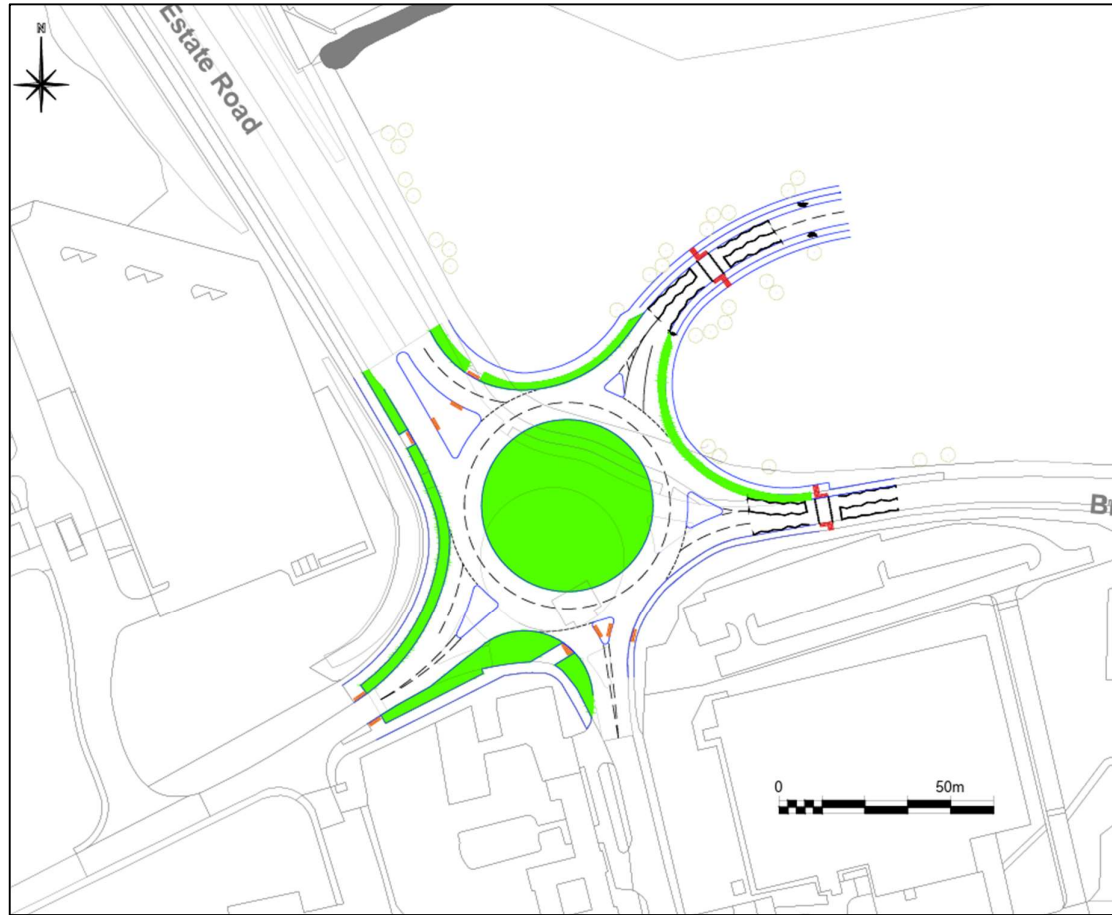
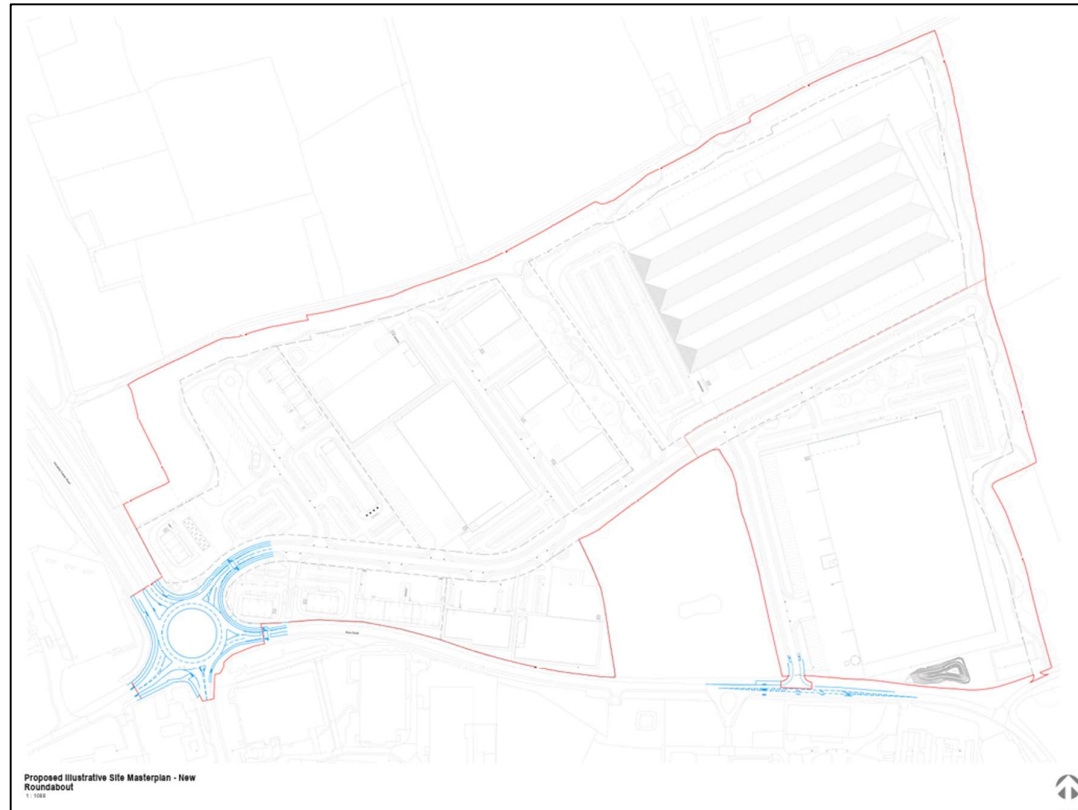


Figure 3.3: Illustrative Masterplan



3.2 **Parking Standards / Cycle Parking**

- 3.2.1 Secure, covered cycle parking areas within each plot will be located in close proximity to the building entrances to encourage use as well as enhance security. Shower / changing facilities will be provided within the development plots to encourage non-car travel.
- 3.2.2 The Wrexham car and cycle parking standards are set out in **Table 3.1**.

Table 3.1: Car and Cycle Parking Standards

	Car Parking	Cycle Parking
	1 space per sqm	1 space per sqm
B1	30	300
B8	100	1000
B2	50	500
Drive thru	10	40
Hotel	1 per bedroom	10%

- 3.2.3 Secure, covered cycle parking areas within each plot will be located in close proximity to the building entrances to encourage use as well as enhance security. Shower / changing facilities will be provided within the development plots to encourage non-car travel.

4.0 TRANSPORT POLICY AND ACCESSIBILITY

4.1 Preamble

- 4.1.1 In order to assess the proposals and develop a transport access strategy for the proposed development, it is necessary to review both local and national transport-related planning guidance. The following section outlines the relevant guidance in respect of the proposed development.

4.2 The Transport Decarbonisation Plan – March 2020

- 4.2.1 The UK Government is developing an ambitious plan to accelerate the decarbonisation of transport. The Transport Decarbonisation Plan (TDP) sets out in detail what government, business and society will need to do to deliver the significant emissions reduction needed across all modes of transport, putting us on a pathway to achieving carbon budgets and net zero emissions across every single mode of transport by 2050.

4.3 Travel Plans, Transport Assessments and Statements in Decision-Taking

- 4.3.1 In March 2014, the Department for Communities and Local Government [DCLG] in conjunction with the Department for Transport [DfT] released advice on when transport assessments and transport statements are required and what they should contain, which is intended to assist stakeholders in determining whether an assessment may be required. If an assessment is required, the level and scope of that assessment is set out within the document.
- 4.3.2 The advice reflects current Government policy, promoting a shift from the ‘predict and provide’ approach to transport planning to one more focused on sustainability. The document focuses on encouraging environmental sustainability, managing the existing network and mitigating the residual impacts of traffic from the development proposal

4.4 Planning Policy Wales (11th Edition, 2021)

- 4.4.1 Planning Policy Wales (PPW), published in 2021, sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters which together with PPW provide the national planning policy framework for Wales.

People and Places: Achieving Well-being Through Placemaking

- 4.4.2 Development proposals should create a sense of place, well-being, and prosperity for all (paragraph 2.3). Placemaking in development decisions happens at all levels and involves considerations at a global scale, including the climate emergency, down to the very local level, such as considering the amenity impact on neighbouring properties and people (paragraph 2.7).
- 4.4.3 The Welsh Government define Placemaking as a holistic approach to the planning and design of development and spaces. It relates to context, function, and relationships between a development site and its wider surroundings (page 14).

Strategic and Spatial Choices

- 4.4.4 Good design is fundamental to the creation of sustainable places where people want to live, work, and socialise. Design is not just about the architecture of a building but also the relationship between all elements of the natural and built environment and between people and places.

4.4.5 PPW identifies the following objectives of good design:

- Access: ensuring access for all
- Character: sustaining or enhancing local character; promoting legible development, a successful relationship between public and private space, quality, choice and variety, innovative design;
- Community Safety: ensuring attractive, safe public spaces & security through natural surveillance;
- Environmental Sustainability: achieving efficient use and protection of natural resources, enhancing biodiversity, designing for change; and
- Movement: promoting sustainable means of travel.

4.4.6 Transport Planning in Wales has a very strong focus on following an accessibility led approach. This is developed from the national policies set out in Planning Policy Wales. In Edition 11 of Planning Policy Wales the transport policies are included in the Section entitled “Active and Social Places”. Paragraph 4.1.1 introduces the transport section with:

‘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.’*

4.4.7 In the subsection of Planning Policy Wales entitled Sustainable Transport paragraphs 4.1.9 and 4.1.10 state:

‘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, particularly by private car, 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.*

4.4.8 Locally this has been translated into Wrexham’s Sustainable Urban Mobility Plan (SUMP) and informed the policies in the LDP.

4.4.9 Specifically in terms of the transport policy hierarchy sitting above the SUMP is national and regional policy including the Active Travel Act which requires Welsh authorities to provide routes

and encourage people to walk and cycle and Technical Advice Note 18: Transport (TAN 18).

4.5 Technical Advice Notes (TANS)

TAN 18: Transport (2007)

- 4.5.1 TAN 18 provides guidance in relation to the integration of land use planning and transport, parking, design, accessibility, sustainable modes of transport, and infrastructure development.

TAN 12: Design (2016)

- 4.5.2 This Advice Note identifies the objectives of good design under the following headings: Access, Character, Community Safety, Environmental Sustainability, and Movement. A series of design objectives are identified for each category. Guidance is provided in relation to the design process, including collaboration stages, appraising the context of a site and consideration of design objectives as well as detailed matters.

4.6 Unitary Development Plan (2005)

- 4.6.1 The statutory development plan for Wrexham comprises the Unitary Development Plan (UDP) (adopted 2005), which covers the plan period 1996 to 2011.

Policy PS4: Strategic Policies

- 4.6.2 Development should maintain the existing settlement pattern and character and be integrated with the existing transport network to help reduce the overall need to travel and encourage the use of alternatives to the car.

Policy PS8: Transport

- 4.6.3 This policy states that the transport network will be developed by providing an integrated range of travel options to and from principal residential, commercial, employment and education centres. This will include, where necessary, the provision of facilities for both passenger and freight interchange and by the encouragement of public transport, cycling and walking.

Policy GDP1: Development Principles

- 4.6.4 This policy states that development should ensure safe and convenient pedestrian and vehicular access and be located where it has convenient access to public transport facilities and sustainable routes.

Policy T1: Public Transport

- 4.6.5 Proposals for cycle and walkway routes and access for buses on new developments will be supported.

Policy T8: Parking

- 4.6.6 Development granted planning permission will be required to provide vehicle parking spaces either on site or nearby in accordance with the Council's current parking standards.

Policy T9: Walking, Cycling and Horse-Riding Routes

- 4.6.7 Development proposals will be required to provide walking and cycling routes, where feasible and appropriate, that link with existing or proposed walking and cycling routes and integrate with the public transport system.

4.7 Wrexham SUMP (2016)

4.7.1 The SUMP has five Objectives all focused on the provision of sustainable communities within a sustainable transport network.

- Safer Places: Wrexham Connected will work with partners to create places and environments where people from all walks of life can live, work and play safely together - both on and off the transport network and at the final destination.
- Sustainable Places: Wrexham Connected will embrace a 'sustainable', transport-first approach to new development through the planning process. It will facilitate and manage the County Borough's growth agenda in the most sustainable and efficient way possible, strengthening its economy and improving access to jobs, education, services and tourism.
- Healthy Places: Wrexham Connected will reduce the impacts of air and noise pollution, greenhouse gas emissions and energy consumption. It will contribute to raising health standards through the promotion of active travel, particularly along the 'last mile'. By connecting communities we will make it easier for people to access open spaces and the countryside.
- Affordable Places: Wrexham Connected will stimulate inward investment and regeneration that leads to job-creation across a wide skill-base, using the planning process to ensure that affordable housing and employment needs are met.
- Well Connected Places: Wrexham Connected will enhance connectivity to, from and within Wrexham. Transport solutions will improve the attractiveness and quality of the environment both on key transport corridors and in the town centre.

4.8 Wrexham Local Development Plan 2013-2028

4.8.2 On 20th December 2023 Wrexham County Borough Council adopted the **Wrexham Local Development Plan (LDP)**. The adopted LDP will form the development plan for Wrexham County Borough and will be the basis for decisions on land use planning in this area.

Policy SP10 KSS3: Land to the north of Bryn Lane, Wrexham Industrial Estate

4.8.3 The site to the north of Bryn Lane forms employment allocation KSS3, which is identified as an Employment Key Strategic Site, under Policy SP11 'KSS3: Land to the north of Bryn Lane, Wrexham Industrial Estate'.

4.8.4 Land is allocated to the north of Bryn Lane, Wrexham Industrial Estate as shown on the proposals map to deliver 28ha of employment land for B use class purposes including an ecological network and residential buffer zone along with enabling and necessary infrastructure which will be delivered in a phased manner with specific details tied into planning consents.

Policy SP11: Transport and Accessibility

4.8.5 Wrexham's transport network will be developed in a safe, efficient, and sustainable manner. This will be achieved by restricting development that would have an unacceptable impact on the safe and efficient operation of the transport network. In addition, the Council will ensure adequate levels of car parking are incorporated into new development and develop the coverage of the Active Travel Network across Wrexham to promote increased use of walking and cycling as safe, viable, and sustainable alternatives to the car (inter alia).

Policy T1: Managing Transport Impacts

- 4.8.6 Development will be supported where it will facilitate increased journeys by more sustainable modes of travel, mitigate any significant adverse effects upon the transport network that arise from the proposed development, does not compromise the safe, effective, and efficient use of the highway network and does not have an adverse impact on highway safety or create unacceptable levels of traffic generation, and provide appropriate levels of parking and access arrangements.

Policy T2: Active Travel

- 4.8.7 This policy supports new development which integrates walking and cycling, provides facilities to encourage Active Travel, develops and enhances Active Travel routes, provides appropriate travel choice information and reduces the dominance and speed of vehicles, to increase priority to pedestrians and cyclists.

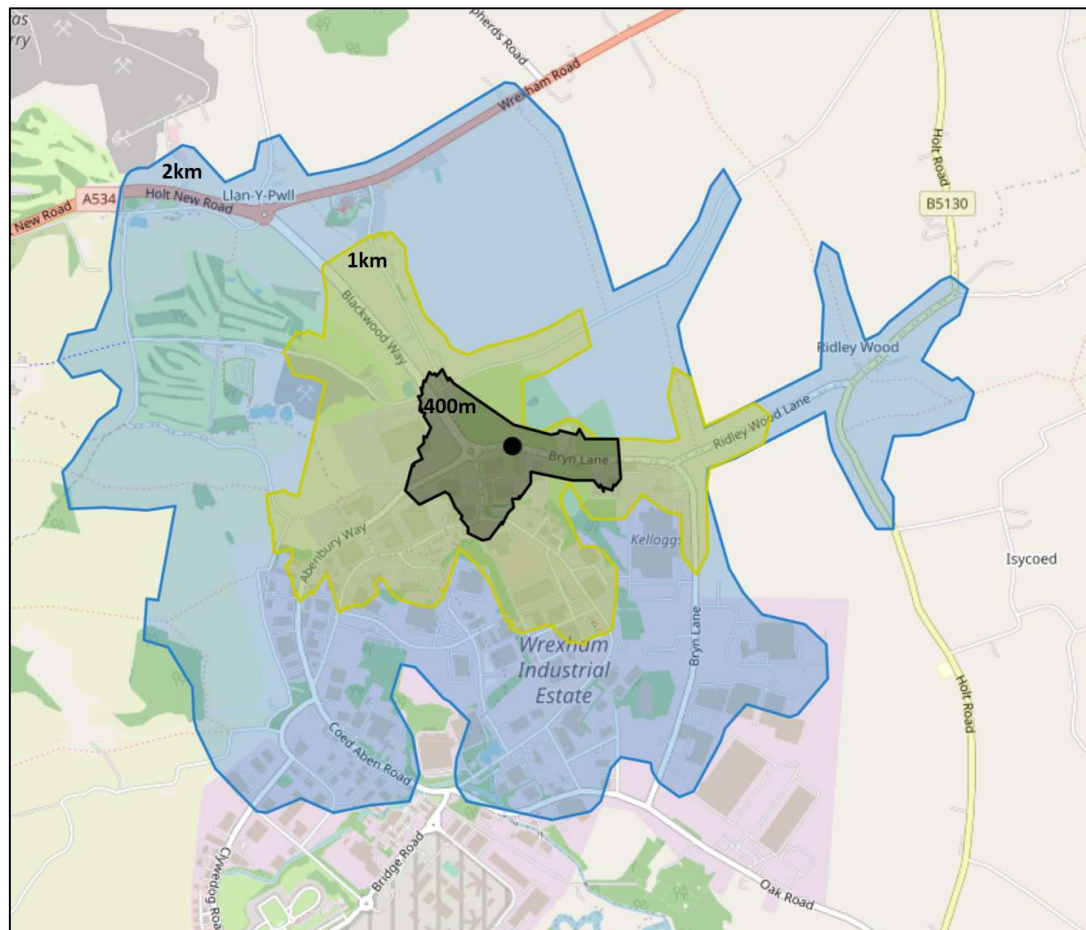
Policy DM1: Development Management Considerations

- 4.8.8 Developments must accord with or enhance the character and local distinctiveness of a site in terms of their siting, layout, scale, height, density, and landscaping. In addition, developments must (inter alia):
- Prioritise walking, cycling and public transport use ahead of travel by car; and
 - Not give rise to parking or highway safety problems on site or in the locality.

4.9 Walking and Cycling

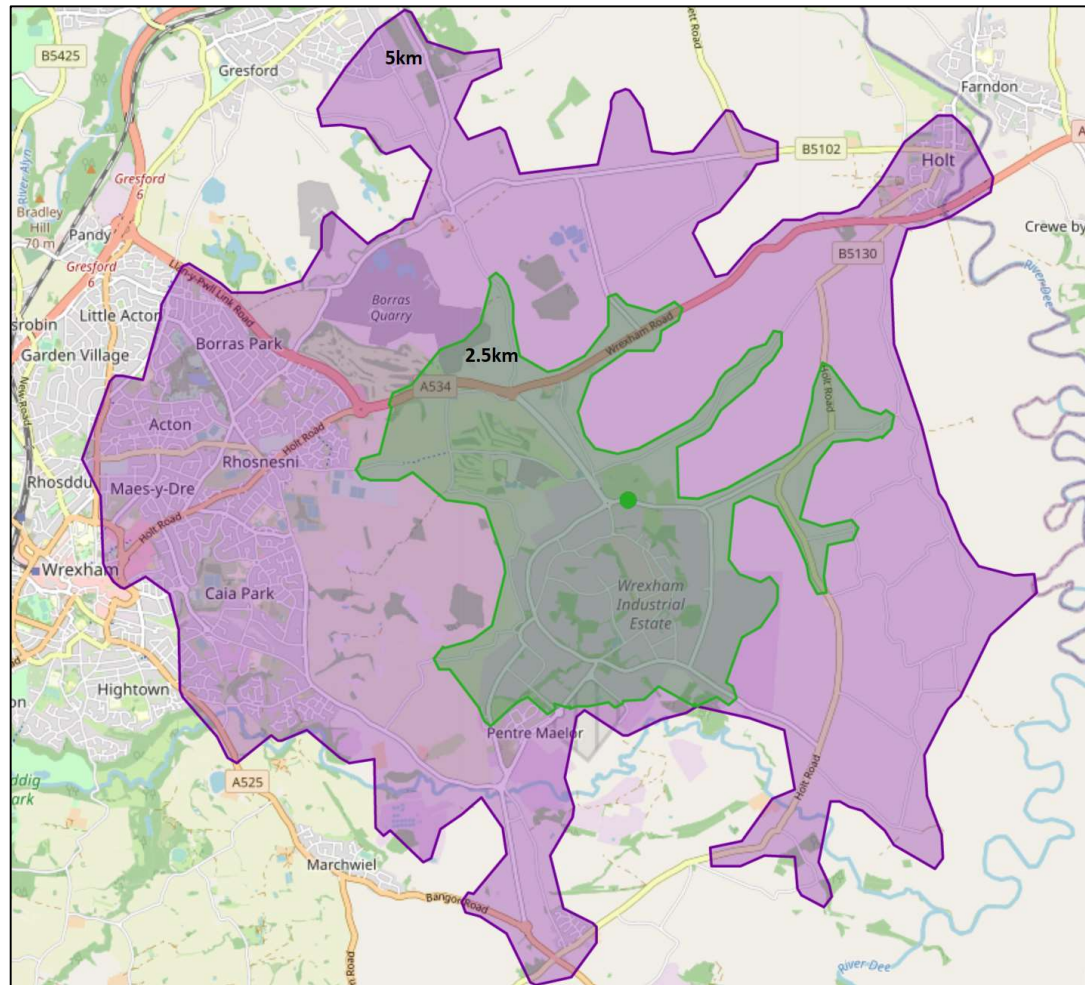
- 4.9.1 The surrounding area benefits from an adequate level of pedestrian infrastructure, with a lit cycleway found on the non-site side of Bryn Lane. Dropped kerbs and dedicated pedestrian footways and cycleways can be found along Industrial Estate Road near the vicinity of the development site, with the cycleway on the site side providing a connection to Hugmore Lane.
- 4.9.2 Bryn Lane adjacent to the site is subject to a 40mph speed limit heading eastbound from the 4-arm roundabout nearby. Partial footways on the site side and a full footway on the southern side can be found along the road.
- 4.9.3 Short car journeys of up to 2km are considered replaceable by walking and up to 5km by cycling. The general topography of area is reasonably flat, which should assist in encouraging visitors and employees of the proposed development to travel by foot or cycle.
- 4.9.4 **Figure 4.1** provides the 400m, 1km and 2km walk catchment plan.

Figure 4.1: Walk Catchment Plan



- 4.9.5 A footpath / Public Right of Way (ISY/6 & HOL/26) can be found running adjacent to the east of the development site, from north to south. Another footpath (HOL/25), which can be accessed from Francis' Lane is located just to the north of the development site.
- 4.9.6 **Figure 4.2** provides the 2.5km and 5km cycle catchment for the development site.

Figure 4.2: 2.5km and 5km Cycle Catchment Plan



4.9.7 As can be seen from **Figure 4.2**, the whole of Wrexham Industrial Estate, the east of Wrexham and the market town of Holt is within 5km of the site, providing access to further amenities, services and residential communities.

4.9.8 There are no official cycle routes within the vicinity of the site, however there are cycleways provided along roads adjacent to the site.

4.10 Public Transport

4.10.1 The proposed site is served by public transport with the nearest bus stops located circa 550m walk away along Abbey Road (Abbey Road bus stops).

4.10.2 The 41/42W bus services can be accessed from these stops providing 2 services per hour in the morning (6-9am) and 1 per hour after 9am routing to and from Wrexham Bus Station.

4.10.3 **Figure 4.3** shows the bus stop locations.

Figure 4.3: Bus Stop Locations



4.10.4 **Table 4.1** below shows the relevant information for the bus services in the area.

Table 4.1: Bus Service Information

<i>Bus Service</i>	<i>Route</i>	<i>Monday - Saturday (Frequency)</i>	<i>Sunday (Frequency)</i>
41 / 42W	Wrexham Bus Station – Wrexham Industrial Estate	2 per hour (Between 6- 9am) 1 per hour after 9am	N / A

4.11 Summary

- 4.11.1 In summary, the proposed development site is located in an accessible location enabling visitors and employees to make use of the existing public transport links and pedestrian / cycle facilities.

5.0 TRAFFIC IMPACT

5.1 Introduction

- 5.1.1 This section of the report considers the traffic impact of the proposed development on the local highway network. The primary aim is to provide an assessment of the traffic generated by the proposed development, and the impact it could have on the local highway network.
- 5.1.2 Vehicular access to the Phase 1 detailed component is proposed via a new priority right turn island junction off Bryn Lane. A new access arm off the 4-arm Industrial Estate Road roundabout is also proposed and forms part of Phase 2.

5.2 Phase 1 Development Trips

- 5.2.1 In order to identify the trip generations associated with the proposed developments, the industry standard TRICS database has been used to ascertain the likely vehicle trips generated by the site. The trip rates was agreed with the highway authority. **Appendix E** providing the full TRICS outputs.

Table 5.1: Peak Hour Trip Rates & Trip Generation – B8 Warehousing

Total Vehicles	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
AM Peak	0.18	0.119	0.299	66	44	110
PM Peak	0.126	0.171	0.297	46	63	109
Daily (AADT)	2.235	2.136	4.371	824	787	1611

HGVs	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
AM Peak	0.042	0.063	0.105	15	23	39
PM Peak	0.065	0.043	0.108	24	16	40
Daily (AADT)	0.754	0.795	1.549	278	293	571

Table 5.2: Daily Trip Rates & Trip Generation – B2 Industrial

Total Vehicles	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
AM Peak	0.458	0.084	0.542	113	21	133
PM Peak	0.129	0.384	0.513	32	94	126
Daily (AADT)	2.761	2.672	5.433	678	656	1335

HGVs	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
AM Peak	0.012	0.012	0.024	3	3	6
PM Peak	0.009	0.011	0.02	2	3	5
Daily (AADT)	0.184	0.172	0.356	45	42	87

5.3 Phase 2 Development Impact (Mixed Use)

5.3.1 The additional employment trips for Phase 2 are presented in **Tables 5.3** and **5.4**.

Table 5.3: Peak Hour Trip Rates & Trip Generation – B8 Warehousing

Total Vehicles	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
0800-0900	0.18	0.119	0.299	65	43	109
1600-1700	0.126	0.171	0.297	46	62	108
Daily (AADT)	2.235	2.136	4.371	811	775	1587

HGVs	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
0800-0900	0.042	0.063	0.105	15	23	38
1600-1700	0.065	0.043	0.108	24	16	39
Daily (AADT)	0.754	0.795	1.549	274	289	562

Table 5.4: Daily Trip Rates & Trip Generation – B2 Industrial

	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
0800-0900	0.458	0.084	0.542	83	15	99
1600-1700	0.129	0.384	0.513	23	70	93
Daily (AADT)	2.761	2.672	5.433	503	486	989

	Trip Rates			Trip Generation		
Time Range	Arr	Dep	Total	Arr	Dep	Total
0800-0900	0.012	0.012	0.024	2	2	4
1600-1700	0.009	0.011	0.02	2	2	4
Daily (AADT)	0.184	0.172	0.356	33	31	65

- 5.3.2 The proposed Local Centre aspect of the developments have been based on a total GFA of 894m². The “01 – RETAIL/I – SHOPPING CENTRE – LOCAL SHOPS” category within TRICS has been selected.
- 5.3.3 The proposed trips for the hotel aspect of the development have been based on a 100-bedroom hotel. The “FOOD & DRINK/A – HOTELS” category within TRICS has been selected.
- 5.3.4 The trips to the drive-thru restaurant have been based on the total GFA of 1,106m², whilst the trips for the PFS aspect of the development have been based on the PFS having a total of 10 bays. The “FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH” and “13 - PETROL FILLING STATIONS/A - PETROL FILLING STATIONS” categories for each respective land use have been selected within TRICS.

- 5.3.5 **Tables 5.5 to 5.8** shows the calculated trip rates and development trips associated with the additional mixed use development. **Appendix F** shows the full TRICS outputs for all of the proposed missed uses.

Table 5.5: Trip Rates & Trip Generation – Local Centre

Local Centre – 894m ²	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rates	3.310	2.956	6.266	4.199	4.575	8.774
Trips	81	72	154	103	112	215

Table 5.6: Trip Rates & Trip Generation – Hotel

100 Bedrooms	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rates	0.088	0.183	0.271	0.128	0.075	0.203
Trips	9	18	27	13	8	20

Table 5.7: Trip Rates & Trip Generation – Drive-Thru Restaurant

1,106m ² GFA	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rates	15.952	15.462	31.414	18.606	18.648	37.254
Trips	176	171	347	206	206	412

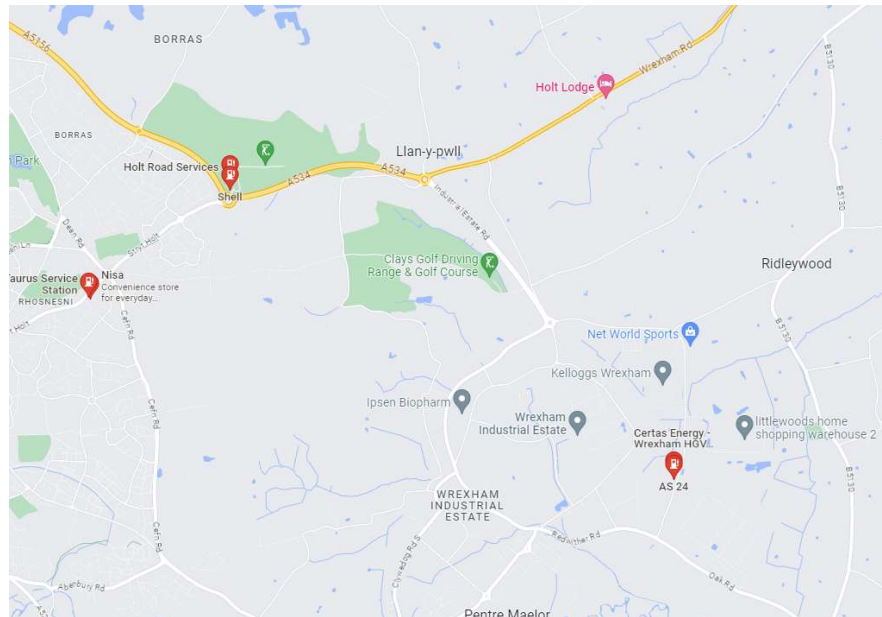
Table 5.8: Trip Rates & Trip Generation – Petrol Filling Station

10 PFS Bays	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rates	5.709	5.620	11.329	6.051	6.241	12.292
Trips	57	56	113	61	62	123

- 5.3.6 It is important to recognise that developments such as a drive-thru and petrol filling station (PFS) are non-primary (i.e. they attract existing trips from the local road network rather than generating new trips).
- 5.3.7 In considering traffic composition in relation to trips generated by these types of developments, they are typically comprised of the following types of trips:
- **Primary (New Trips)** – are defined as those that will be new to the highway network during the assessment period (i.e. not currently undertaking a trip at this time). In most cases, these trips will be associated with new housing or another development. Primary trips would be single purpose trips for example; home – development – home.

- **Non-primary (Existing Trips in the Network)** - are defined as multi-purpose trips which call into a development en-route to another destination:
 - **Pass-by Trips** are those non-primary trips that visit the new development without having to make any significant diversion from their existing route.
 - **Diverted Trips** are those non-primary trips that deviate off their normal route to visit the new development.
 - **Linked Trips** - these are trips that will have multiple destinations within the proposed development site. Examples include trips to food and non-food retail, between both the development site and existing adjacent sites or between the development site and an established town centre. Where there is a high probability that there will be a proportion of linked trips between two uses on a development, it is customary only to 'count' those trips once for the development as a whole, and not effectively double-count them by attributing two visits and departures affecting the sections of highway network being assessed.
- 5.3.8 The TRICS Consortium research report, 14/1 'Pass-by and Diverted Trips', states that a significant number of trips to developments already exist on the network, especially at peak times.
- 5.3.9 For the PFS there is already a Shell at the Holt Road Services and various facilities to the north and west of the application site. Therefore, it is assumed that no new PFS trips would be generated within the highway network with 90% being pass-by (the site accesses) and 10% new. **Figure 5.1** show the existing PFS' in the area.
- 5.3.10 For the Drive thru, due to the application site being remote from the residential areas and existing similar facilities to the west and within Wrexham town centre, it is assumed that no new trips would be generated within the highway network with 90% being pass-by (the site accesses), and 10% new. The assumptions are considered reasonable as the catchment for the PFS and drive thru would be from the local area (Wrexham Industrial Estate).

Figure 5.1: Existing PFS Locations



5.3.11 In order to be robust, the trip composition for both drive-thru restaurant and petrol filling station aspects of the development is provided in **Tables 5.9 to 5.11**.

Table 5.9: Trip Generation By Type – Local Centre

Trip Types	Percentage	AM Peak (0800-0900)			PM Peak (1600-1700)		
		Arr	Dep	Total	Arr	Dep	Total
New	10%	8	7	15	10	11	21
Passby	90%	73	65	138	93	101	193
Total	100%	81	72	154	103	112	215

Table 5.10: Trip Generation By Type – Drive-Thru Restaurant

Trip Types	Percentage	AM Peak (0800-0900)			PM Peak (1600-1700)		
		Arr	Dep	Total	Arr	Dep	Total
New	10%	18	17	35	21	21	41
Passby	90%	159	154	313	185	186	371
Total	100%	176	171	347	206	206	412

Table 5.11: Trip Generation By Type – Petrol Filling Station

Trip Types	Percentage	AM Peak (0800-0900)			PM Peak (1600-1700)		
		Arr	Dep	Total	Arr	Dep	Total
New	6	6	11	6	6	12	6
Passby	51	51	102	54	56	111	51
Total	57	56	113	61	62	123	57

5.4 VISSIM Modelling

- 5.4.1 As part of the Holt Road application (KSS2) planning reference P/2019/0005 WCBC and the developers of KSS2 commissioned VISSIM microsimulation modelling work to test the cumulative impacts of LDP allocations in the east of Wrexham.
- 5.4.2 The VISSIM modelling considered the traffic implication of employment development on KSS3 as well as the residential development on the north and south parts of KSS2.
- 5.4.3 In summary the VISSIM modelling identified mitigation requirements as follows:-
- By 2023, based on the assumptions that 250 units are occupied on KSS2 north; 460 are occupied on KSS2 south and half of KSS3 is developed and occupied, junction improvements are required at the A534 / Industrial Estate roundabout (the Industrial Estate roundabout) and the A534 Holt Road / A5156 roundabout. With these improvements the impact of the development at 2023 is mitigated.
 - At 2023 the link road through the KSS2 site (from the A534 to Cefn Road) is not required but based on the levels of development included in the model it is likely to be required soon afterwards.
 - By 2028, the end of the LDP plan period, with full development on KSS2 north and south and KSS3, the link road is required and additional improvements are required at the A534 Holt Road / A5156 roundabout. With these improvements the impact of the development at 2028 is mitigated.
- 5.4.4 An extract of the timing of the improvements is set out below as part of the committee report dated 27th July 2020.

Mitigation	Timing
Signalisation of the A534 / Blackwood Way roundabout as well as an additional 100m long west-bound approach lane and an additional circulatory lane on the southern quadrant of the A5156 / A534 / Holt Road roundabout	Required when 710 dwellings are occupied on KSS2, assumed to be 250 dwellings on the northern part of KSS2 (i.e. the application site) and 460 dwellings on the southern part) and approximately half of KSS3 has been developed
Spine road through KSS2 from the A5156 / A534 Holt Road to Cefn Road	Required for the number of dwellings occupied in KSS2 to exceed 710, again assumed to be 250 dwellings on the northern part of KSS2 and 460 on the southern part
An additional 100m long south bound approach lane, additional circulatory lane on the northern quadrant and signalisation of the A5156 / A534 / Holt Road	Required when the remainder of KSS2 is built out and for KSS3 to be fully developed

- 5.4.5 Since the VISSIM modelling was carried out further planning applications have been submitted in the area which would have an impact on the highway network although not assessed in the VISSIM model.
- 5.4.6 A proportionate contribution will be provided between the cumulative sites for highway improvements.

5.5 Proposed Site Access / Bryn Lane

5.5.1 The “PICADY” assessment program has been used to assess the capacity at the new proposed site access / Bryn Lane T-junction.

5.5.2 **Tables 5.15** summarises the capacity assessments. The full output is provided in **Appendix G**.

Table 5.15: Site Access / Bryn Lane – Capacity Summary

Arm	2030 Base + Development + Committed Developments AM Peak		2037 Base + Development + Committed Developments PM Peak	
	RFC*	Queue	RFC	Queue
Proposed Site Access	0.24	0	0.44	1
Bryn Lane	0.06	0	0.00	0

*Ratio of Flow to Capacity

5.5.3 The above assessments show that the proposed Bryn Lane site access junction would operate within capacity in the base and future year assessment.

5.6 Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout

5.6.1 The “ARCADY” assessment program has been used to assess the capacity at the proposed Industrial Estate Road roundabout junction.

5.6.2 **Table 5.16** summarises capacity assessments if the KSS3 site was not developed. The full output is provided in **Appendix H**.

Table 5.16 Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout Junction.

AM						PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2023 Base										
1 - Bryn Lane	D1	0.3	4.75	0.23	A	D2	0.3	3.00	0.22	A
2 - Ash Road North		0.1	3.15	0.13	A		1.4	6.11	0.59	A
3 - Abenbury Way		0.3	3.95	0.23	A		3.2	20.31	0.77	C
4 - Industrial Estate Road		1.7	3.82	0.62	A		0.2	1.79	0.20	A
2030 Base										
1 - Bryn Lane	D3	0.3	5.14	0.26	A	D4	0.3	3.08	0.23	A
2 - Ash Road North		0.2	3.25	0.14	A		1.7	6.89	0.63	A
3 - Abenbury Way		0.3	4.06	0.25	A		5.1	31.97	0.85	D
4 - Industrial Estate Road		1.9	4.24	0.66	A		0.3	1.81	0.21	A
2030 Base + Committed										
1 - Bryn Lane	D5	0.6	6.87	0.38	A	D6	0.5	3.59	0.32	A
2 - Ash Road North		0.2	3.59	0.19	A		3.5	12.11	0.78	B
3 - Abenbury Way		0.4	4.41	0.26	A		27.1	149.69	1.06	F
4 - Industrial Estate Road		3.3	6.29	0.77	A		0.4	1.99	0.28	A
2037 Base										
1 - Bryn Lane	D7	0.4	5.63	0.28	A	D8	0.3	3.17	0.25	A
2 - Ash Road North		0.2	3.35	0.15	A		2.0	7.91	0.67	A
3 - Abenbury Way		0.4	4.18	0.26	A		10.6	62.50	0.95	F
4 - Industrial Estate Road		2.3	4.79	0.70	A		0.3	1.84	0.22	A
2037 Base + Committed										
1 - Bryn Lane	D9	0.7	7.77	0.42	A	D10	0.5	3.71	0.34	A
2 - Ash Road North		0.3	3.72	0.21	A		4.6	15.50	0.83	C
3 - Abenbury Way		0.4	4.56	0.28	A		56.2	285.90	1.19	F
4 - Industrial Estate Road		4.2	7.57	0.81	A		0.4	2.02	0.29	A

5.6.3 The above assessment shows that if the KSS3 site was not developed and the Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout Junction would remain as existing, due to the additional of the cumulative sites, the roundabout would require improvements in the 2030 year of assessment.

5.6.4 **Table 5.17** summarises capacity assessments with the new roundabout access and proposed improvements in place. The full output is provided in **Appendix J**.

Table 5.17 Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout Junction.

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2030 Base + Committed									
1 - Bryn Lane	D1	0.4	4.07	0.26	A	D2	0.3	2.62	0.26	A
2 - Ash Road North		0.2	2.95	0.16	A		2.1	7.11	0.68	A
3 - Abenbury Way		0.2	2.16	0.15	A		0.9	5.02	0.46	A
4 - Industrial Estate Road		2.7	5.09	0.73	A		0.4	1.85	0.26	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2030 Base + Committed + Development (Phase 1)									
1 - Bryn Lane	D3	0.5	4.55	0.34	A	D4	0.5	2.98	0.35	A
2 - Ash Road North		0.2	3.08	0.17	A		2.5	8.54	0.71	A
3 - Abenbury Way		0.2	2.23	0.15	A		1.0	5.81	0.50	A
4 - Industrial Estate Road		4.0	6.85	0.80	A		0.4	1.96	0.30	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2030 Base + Committed + Development (Phase 1 + 2)									
1 - Bryn Lane	D5	0.7	5.64	0.40	A	D6	0.8	4.06	0.43	A
2 - Ash Road North		0.2	3.39	0.17	A		6.5	23.40	0.88	C
3 - Abenbury Way		0.2	2.44	0.17	A		1.9	11.65	0.67	B
4 - Industrial Estate Road		8.3	13.38	0.90	B		0.7	2.45	0.40	A
5 - Proposed Site Access		0.9	7.21	0.49	A		0.6	3.52	0.37	A
	2037 Base + Committed									
1 - Bryn Lane	D7	0.4	4.38	0.29	A	D8	0.4	2.69	0.27	A
2 - Ash Road North		0.2	3.04	0.17	A		2.5	8.16	0.71	A
3 - Abenbury Way		0.2	2.19	0.16	A		1.0	5.62	0.50	A
4 - Industrial Estate Road		3.3	5.91	0.77	A		0.4	1.88	0.28	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2037 Base + Committed + Development (Phase 1)									
1 - Bryn Lane	D9	0.6	4.93	0.37	A	D10	0.6	3.06	0.36	A
2 - Ash Road North		0.2	3.17	0.18	A		3.0	10.10	0.76	B
3 - Abenbury Way		0.2	2.27	0.16	A		1.2	6.62	0.54	A
4 - Industrial Estate Road		5.0	8.39	0.84	A		0.5	1.99	0.31	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2037 Base + Committed + Development (Phase 1 + 2)									
1 - Bryn Lane	D11	0.8	6.21	0.43	A	D12	0.8	4.21	0.45	A
2 - Ash Road North		0.2	3.59	0.20	A		10.6	36.90	0.93	E
3 - Abenbury Way		0.2	2.51	0.18	A		2.7	15.20	0.73	C
4 - Industrial Estate Road		13.5	21.37	0.94	C		0.7	2.50	0.41	A
5 - Proposed Site Access		1.0	8.07	0.51	A		0.6	3.58	0.38	A

- 5.6.5 The assessments show that the proposed Site Access / Industrial Estate Road roundabout junction would operate well within capacity in the base and future year assessments.
- 5.6.6 It can be deduced that the KSS3's proposals to improve the junction is a substantial infrastructure benefit for the Wrexham Industrial Estate to ensure the satisfactory operation of the highway network through this important gateway.

6.0 SUMMARY AND CONCLUSION

6.1 Summary

6.1.1 Net World Sports have instructed Cora IHT to prepare a Transport Assessment for an industrial / employment development located to the north of Wrexham Industrial Estate.

6.1.2 The proposed development is commercial in nature. The application is in hybrid form and encompasses:

- Phase 1 - Detailed Component:
 1. Demolition of existing buildings, site clearance and preparation works, including removal of vegetation and reprofiling of topsoil, where necessary;
 2. Phase 1 – Total 61,423 sqm of employment use (B2 24,569sqm / B8 36,854sqm); and
 3. 592 car parking spaces, 138 HGV trailer spaces and HGV lorry spaces are proposed within the detailed component.
- Phase 2 - Outline Component:
 1. Total 45,510sqm of employment use (B2 18,204sqm / B8 27,306sqm);
 2. Hotel – 100-room hotel, with a floor area of approximately 3,600 sqm GEA;
 3. Drivethrus – 1,106 sqm GEA A3 uses;
 4. Local Centre – 2,450sqm;
 5. The remaining floorspace (8,994 sqm GEA) has been assumed for sui generis / lorry park / EV charging (worstcase assumes it is B8); and
 6. Up to 908 car parking spaces and up to 138 HGV trailer spaces and HGV lorry spaces are proposed across the application site.
- Site Wide
 1. Access and parking provision, including new access junctions, internal roads, service yards and car and HGV parking. Two new junctions are proposed (in detail) providing vehicular access, as well as cycle and pedestrian access, from Bryn Lane/Industrial Estate Road with an additional access road for a substation. Car parking spaces, HGV trailer spaces and HGV lorry spaces are proposed across the application site;
 2. Retention and enhancement of some existing on-site green spaces and provision of landscaping around the application site; and
 3. Implementation of drainage/attenuation measures.

6.1.3 Vehicular access to the Phase 1 detailed component is proposed via a new priority right turn island junction off Bryn Lane. A pedestrian refuge island is proposed to the west of the site access to assist crossing of Bryn Lane.

-
- 6.1.4 A new access arm off the 4-arm Industrial Estate Road roundabout is also proposed and forms part of Phase 2.
 - 6.1.5 The proposed development will provide a site layout designed in accordance with current best practice to accommodate pedestrians and cyclists. 2m footway off-road and 2m cycleways are proposed throughout the site.
 - 6.1.6 Additional footpaths are proposed within the site which provides access to Francis' Lane to the northeast of the site. The public right of way on the eastern boundary of the site will be retained and improved providing linkage between Bryn Lane and Francis' Lane.
 - 6.1.7 Secure, covered cycle parking areas within each plot will be located in close proximity to the building entrances to encourage use as well as enhance security. Shower / changing facilities will be provided within the development plots to encourage non-car travel.
 - 6.1.8 The proposed development site is located in an accessible location enabling visitors and employees to make use of the existing public transport links and pedestrian / cycle facilities.
 - 6.1.9 The impact assessment shows that the proposed development would have a marginal impact on the local highway network for all assessment scenarios.
 - 6.1.10 The recorded accident data within the vicinity of the site does not indicate any existing highway safety patterns or problems.
 - 6.1.11 The proposed Bryn Lane site access junction would operate within capacity in the base and future year of assessment.
 - 6.1.12 The assessment shows that if the KSS3 site was not developed and the Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout Junction would remain as existing, due to the additional of the cumulative sites, the roundabout would require improvements in the 2030 year of assessment.
 - 6.1.13 The development proposals to improve the Industrial Estate Road / Abenbury Way / Ash Road North / Bryn Lane Roundabout Junction is a substantial infrastructure benefit for the Wrexham Industrial Estate to ensure the satisfactory operation of the highway network through this important gateway.
 - 6.1.14 At the Industrial Estate Road (Blackmoor Way) / A534 / Borrass Hall Lane / Sandy Lane Roundabout Junction if the proposed development was to be developed and occupied first before the cumulative schemes, the junction would operate within capacity. The assessment shows that once the cumulative schemes are added, there would be a material impact which results in the roundabout operating over capacity.
 - 6.1.15 As part of the strategic VISSIM model conducted for the KSS2 site, improvements have been put forward for Industrial Estate Road (Blackmoor Way) / A534 / Borrass Hall Lane / Sandy Lane Roundabout Junction. A proportionate contribution will be provided between the cumulative sites for highway improvements.
 - 6.1.16 At the A5156 / A534 / Wrexham Golf Club Access / Stryt Holt Roundabout Junction if the proposed development was to be developed and the KSS2 site didn't come forward the roundabout would operate within capacity.
 - 6.1.17 As a result of the development of the KSS2 site, the A5156 / A534 / Wrexham Golf Club Access / Stryt Holt Roundabout Junction would need to be improved. As part of the KSS2 site proposals to gain access from this roundabout, improvements have been put forward to signalise the
-

roundabout. A proportionate contribution will be provided between the cumulative sites for highway improvements.

6.2 Conclusion

- 6.2.1 It is concluded that the development proposals are acceptable in highways and transportation terms and compliant with national and local planning policies and guidance relating to transport. There are no highways or transportation related reasons upon which a refusal of the planning application for the proposals would be justified.

TRAFFIC FIGURES

Figure 1 - 2023 Surveyed Traffic Flows
AM Peak: 0800-0900

Notes:

123

 Total Vehicles

123

 HGVs

--

 Flows Taken from Kingmoor TA

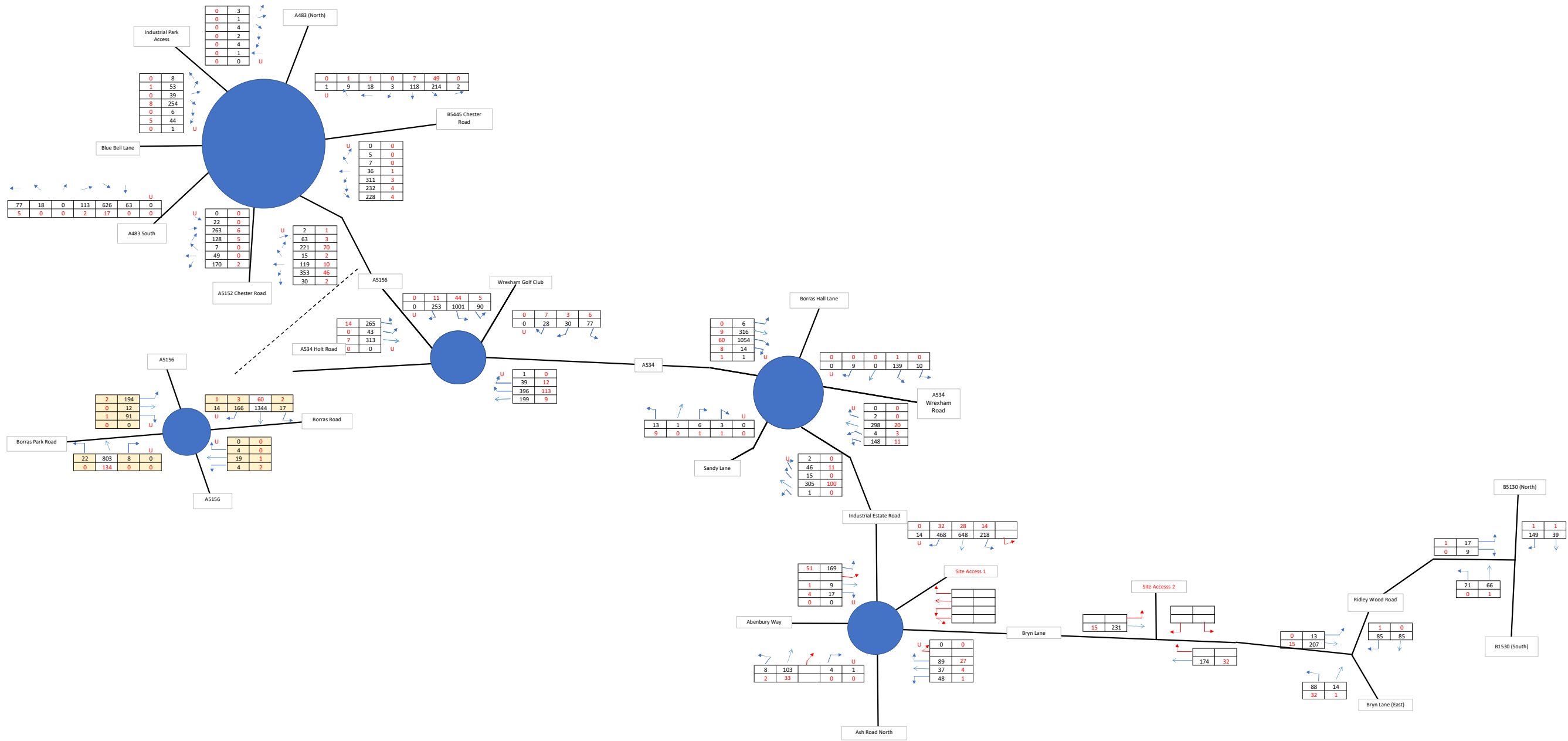


Figure 2 - 2023 Surveyed Traffic Flows
PM Peak: 1630-1730

Notes:

123	Total Vehicles
123	HGVs
	Flows Taken from Kingmoor TA

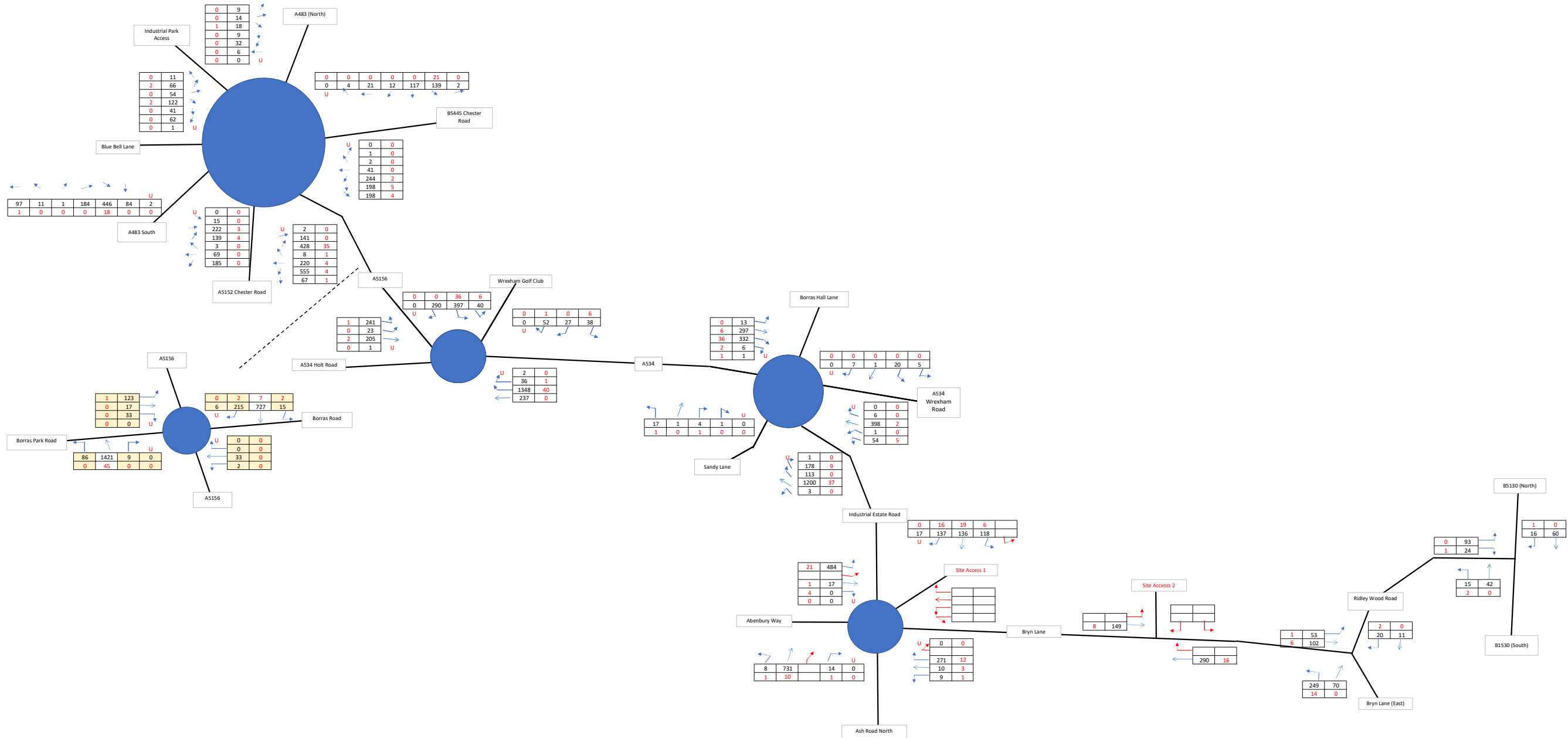


Figure 3 - 2023 Surveyed Traffic Flows
AM Peak: 0800-0900

Notes:

123

 PCUs

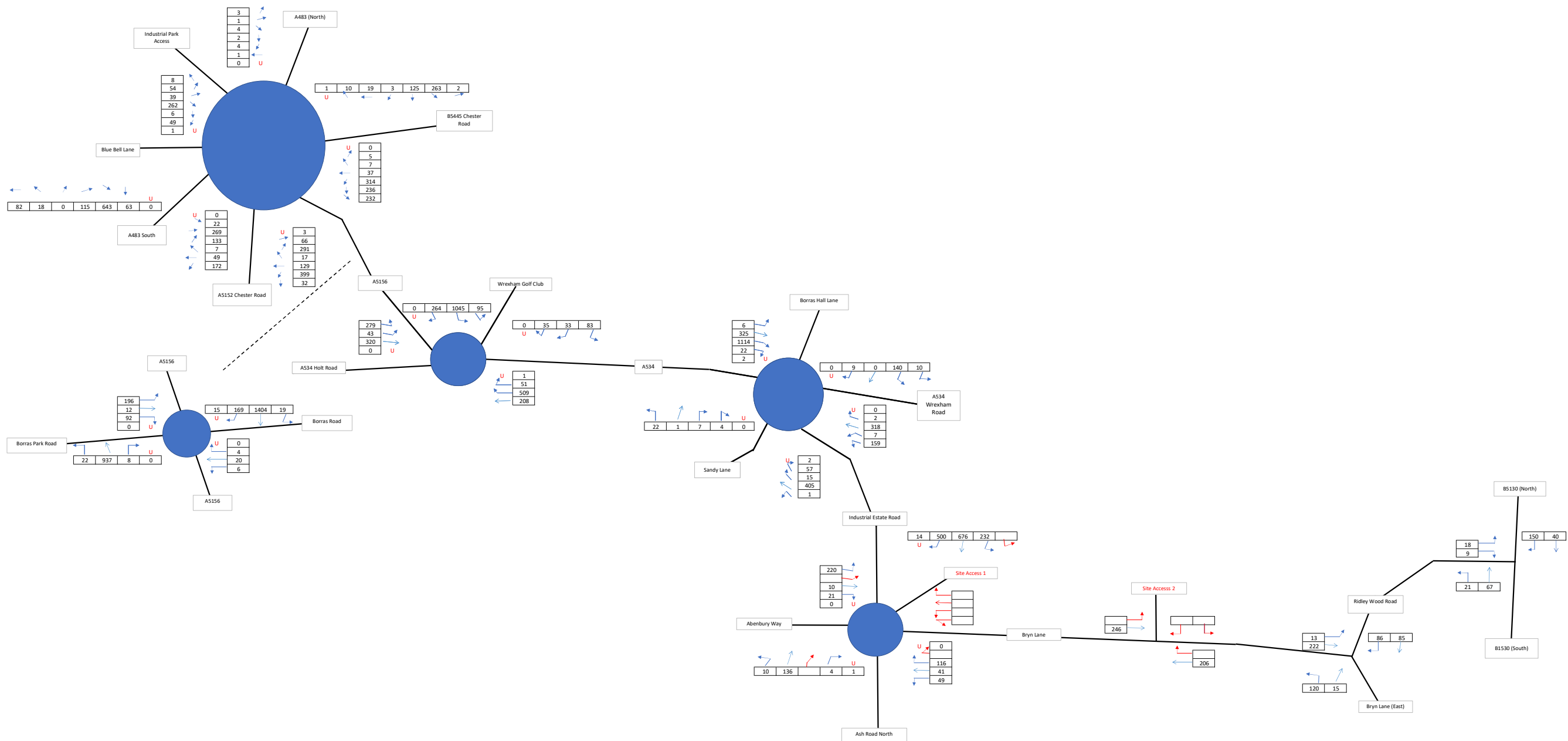
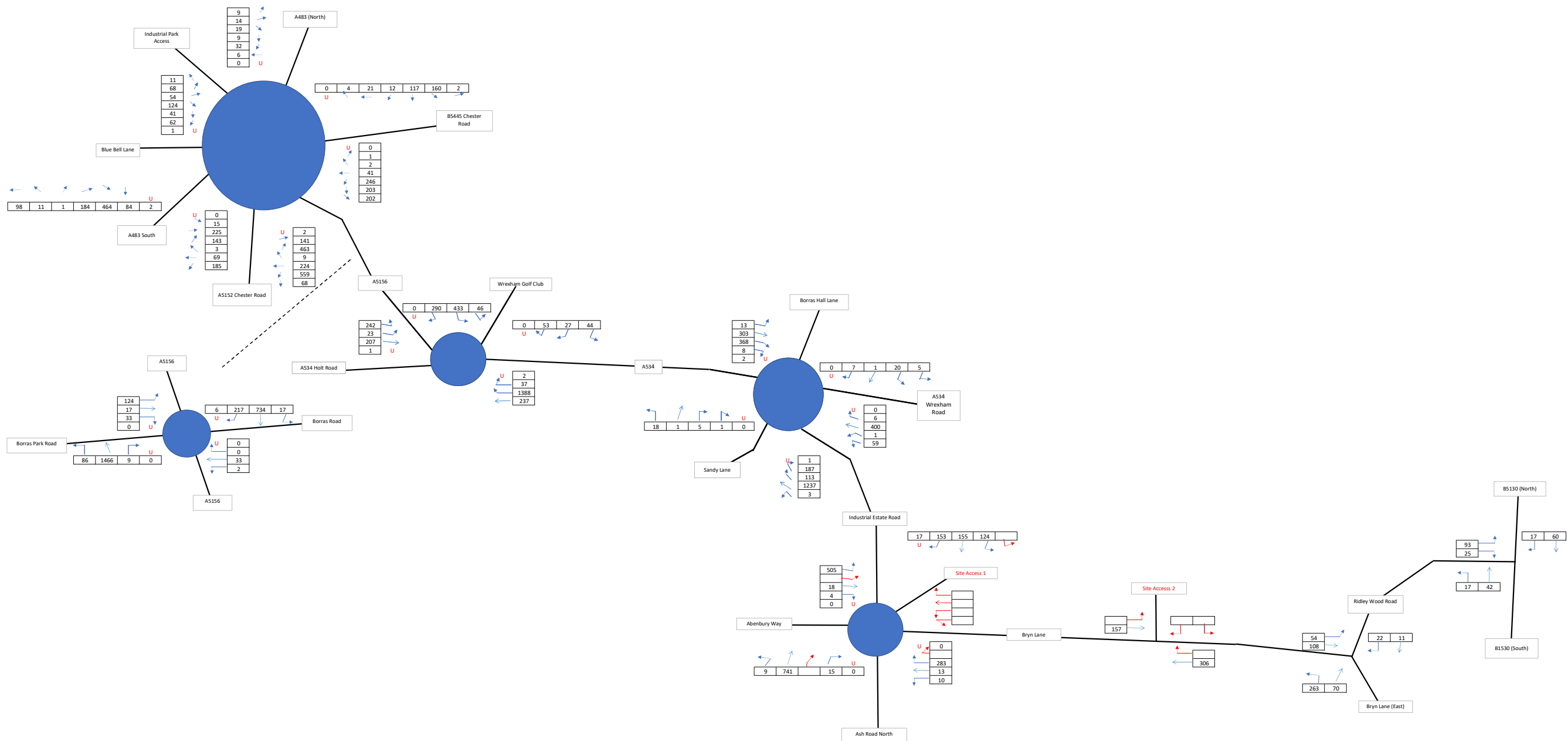


Figure 4 - 2023 Surveyed Traffic Flows
PM Peak: 1630-1730

Notes:

123

 PCUs



**Figure 5 - 2030 Growth Traffic Flows
AM Peak: 0800-0900**

Notes:

123
1.0587

 PCUs
Growth Factor

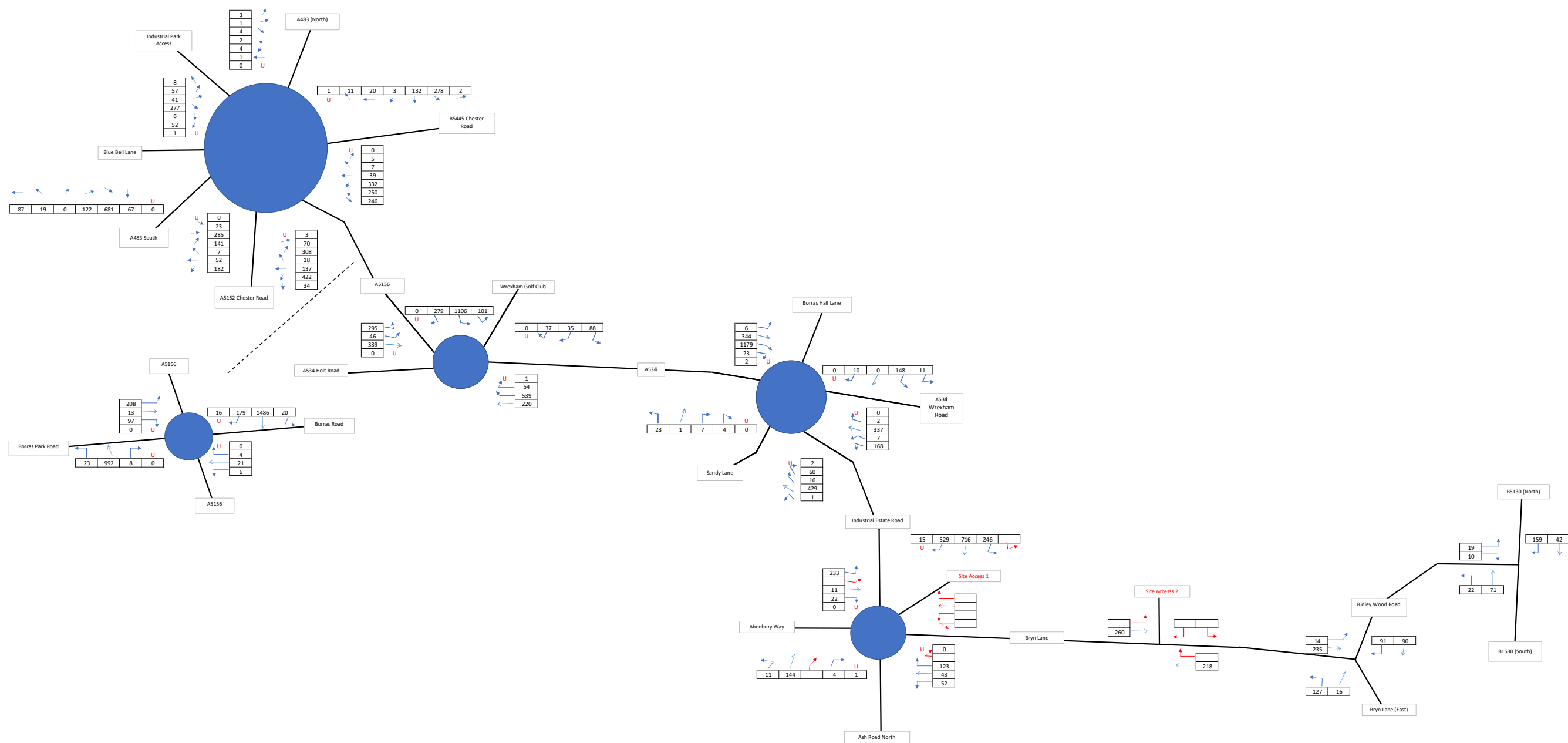


Figure 6 - 2030 Growthed Traffic Flows
PM Peak: 1630-1730

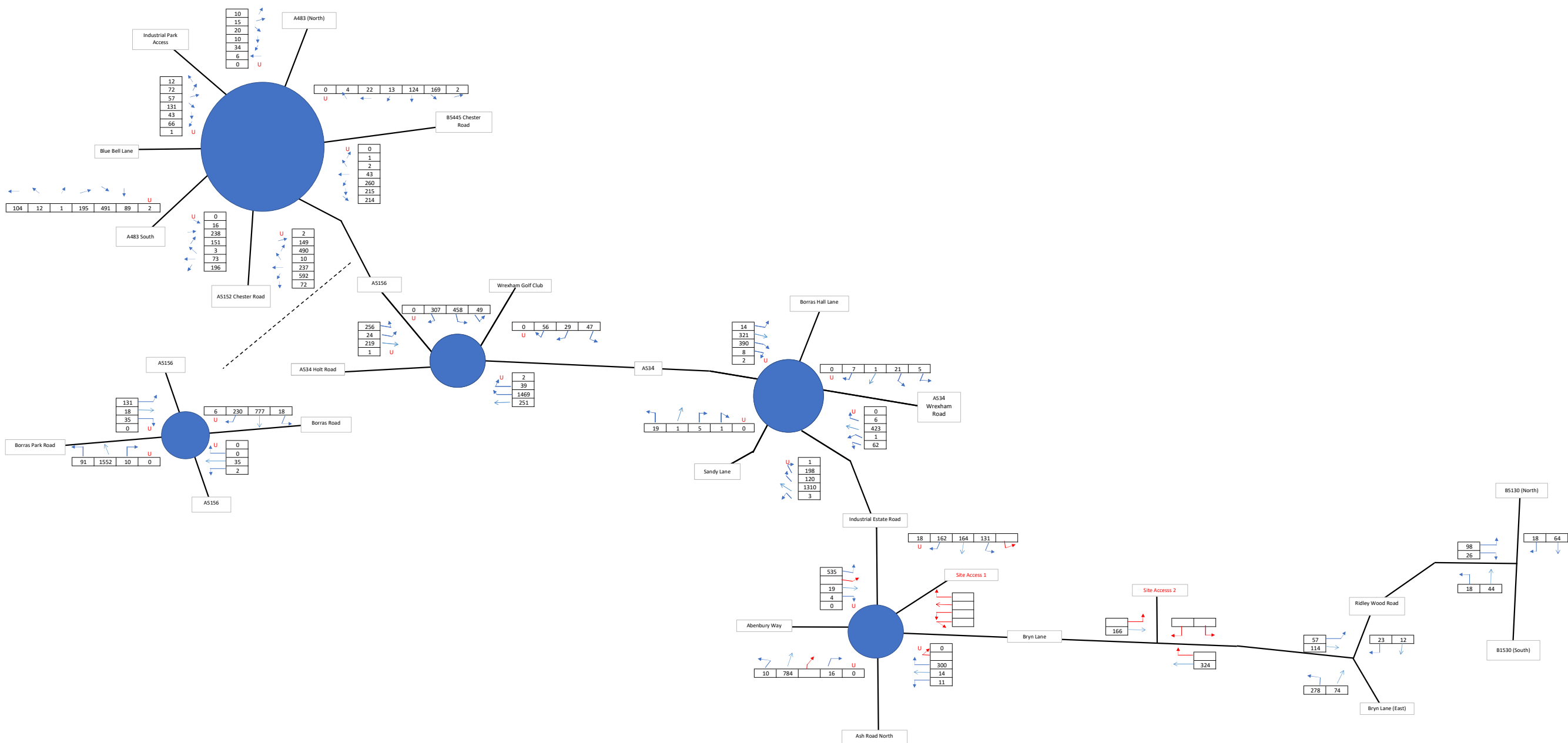
Notes:

123

 PCUs

1.0587

 Growth Factor



Notes:

%
%

 Arrivals (Lights)
Departures (Lights)

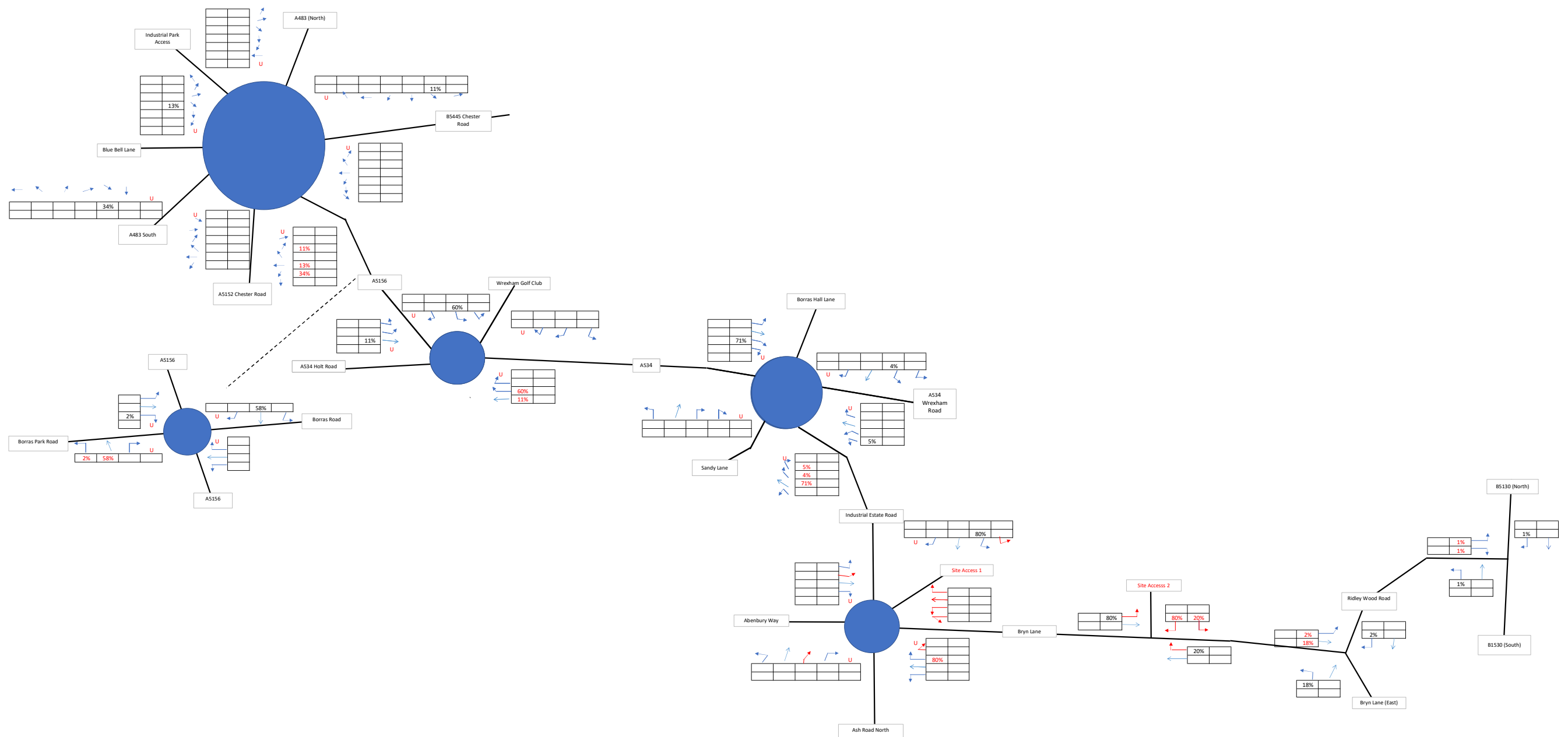


Figure 7b - Development Traffic Distribution (Lights) [Phase 1]
PM Peak

Notes:

%	Arrivals (Lights)
%	Departures (Lights)

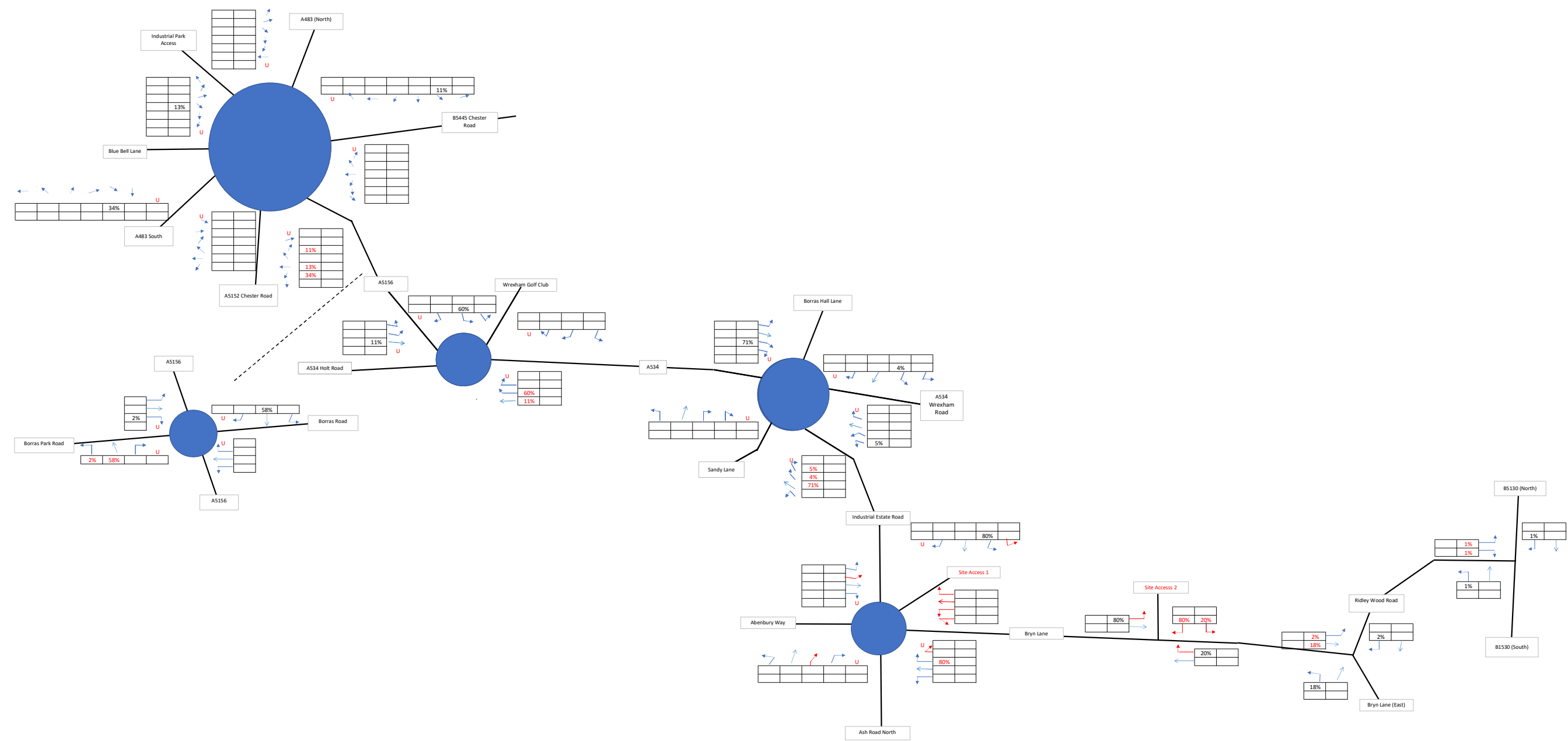


Figure 7c - Development Traffic Distribution (HGVs) [Phase 1]
AM Peak

Notes:

%	Arrivals (HGVs)
%	Departures (HGVs)

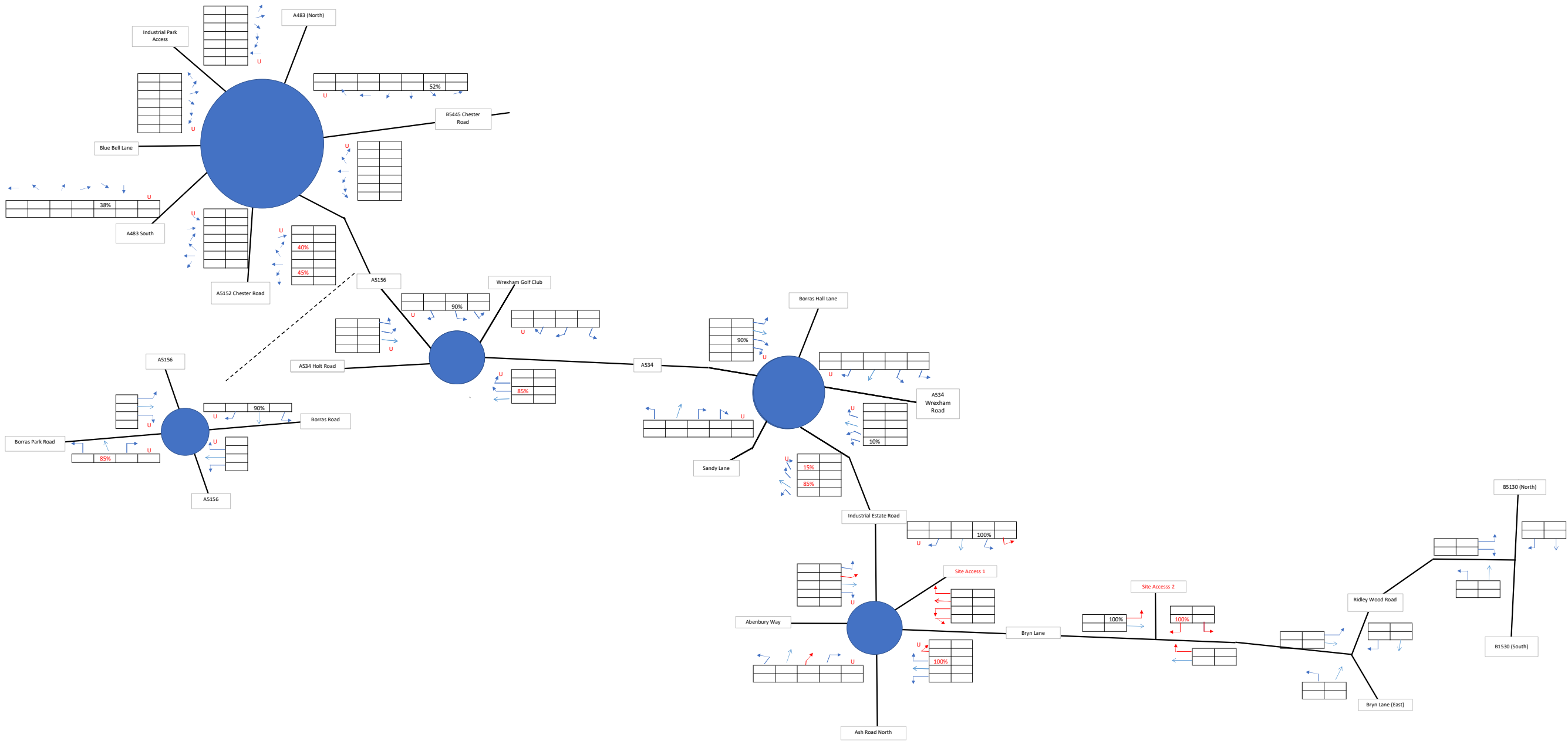


Figure 7d - Development Traffic Distribution (HGVs) [Phase 1]
PM Peak

Notes:

%	Arrivals (HGVs)
%	Departures (HGVs)

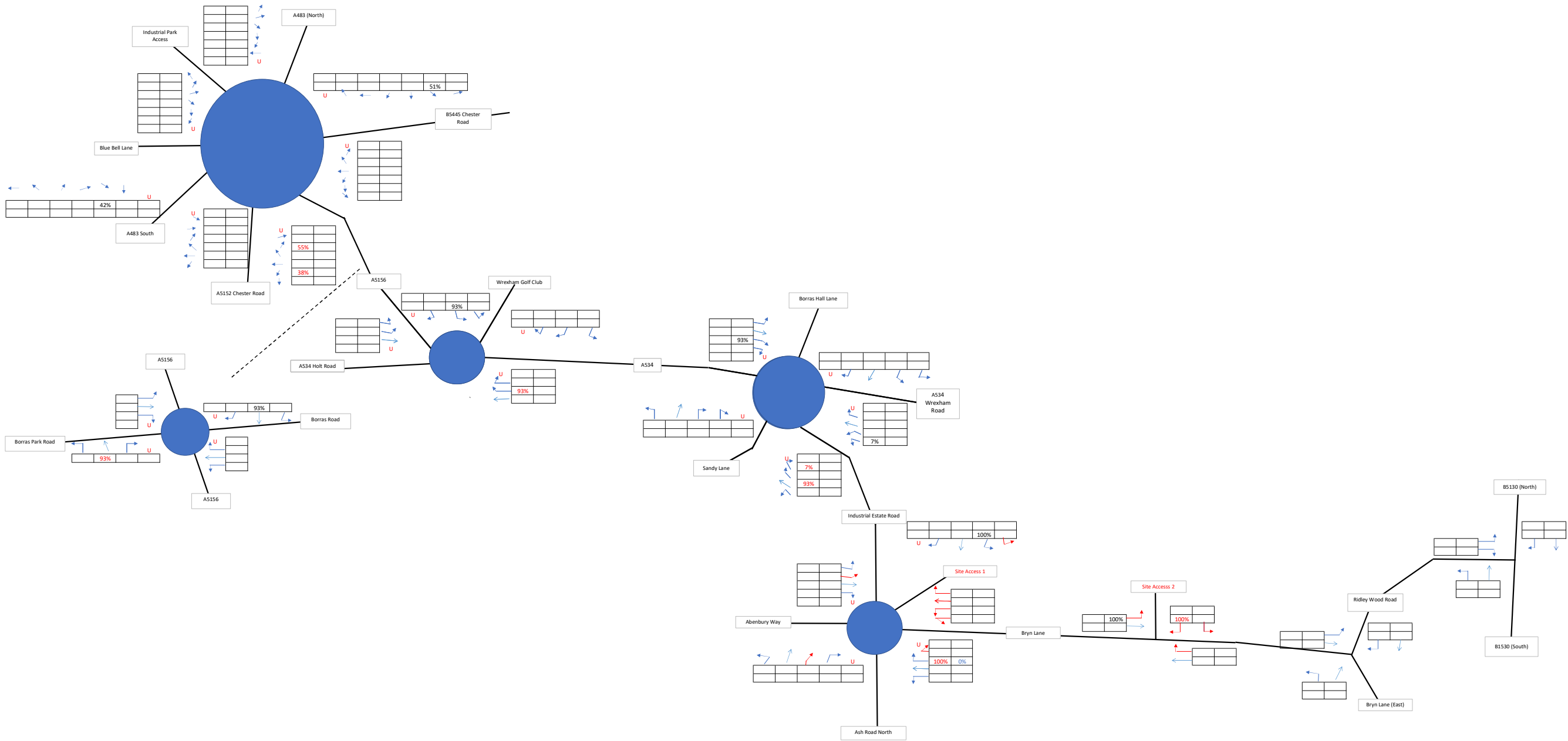


Figure 7e - Development Traffic Distribution (Lights) [Phase 2]
AM Peak

Notes:

%	Arrivals (Lights)
%	Departures (Lights)
%	Retail / Mixed Use (Lights)

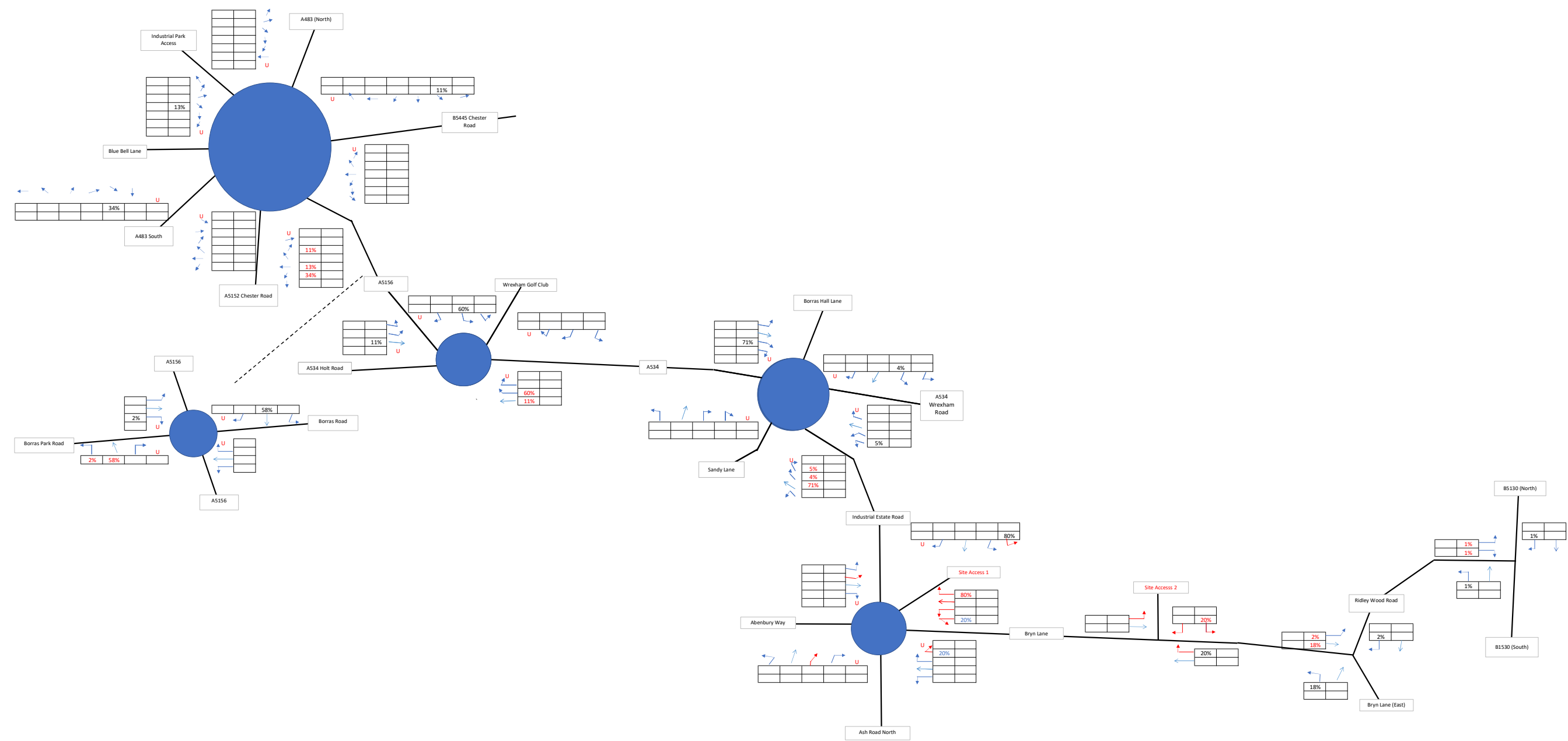


Figure 7f - Development Traffic Distribution (Lights) [Phase 2]
PM Peak

Notes:

%	Arrivals (Lights)
%	Departures (Lights)
%	Retail / Mixed Use (Lights)

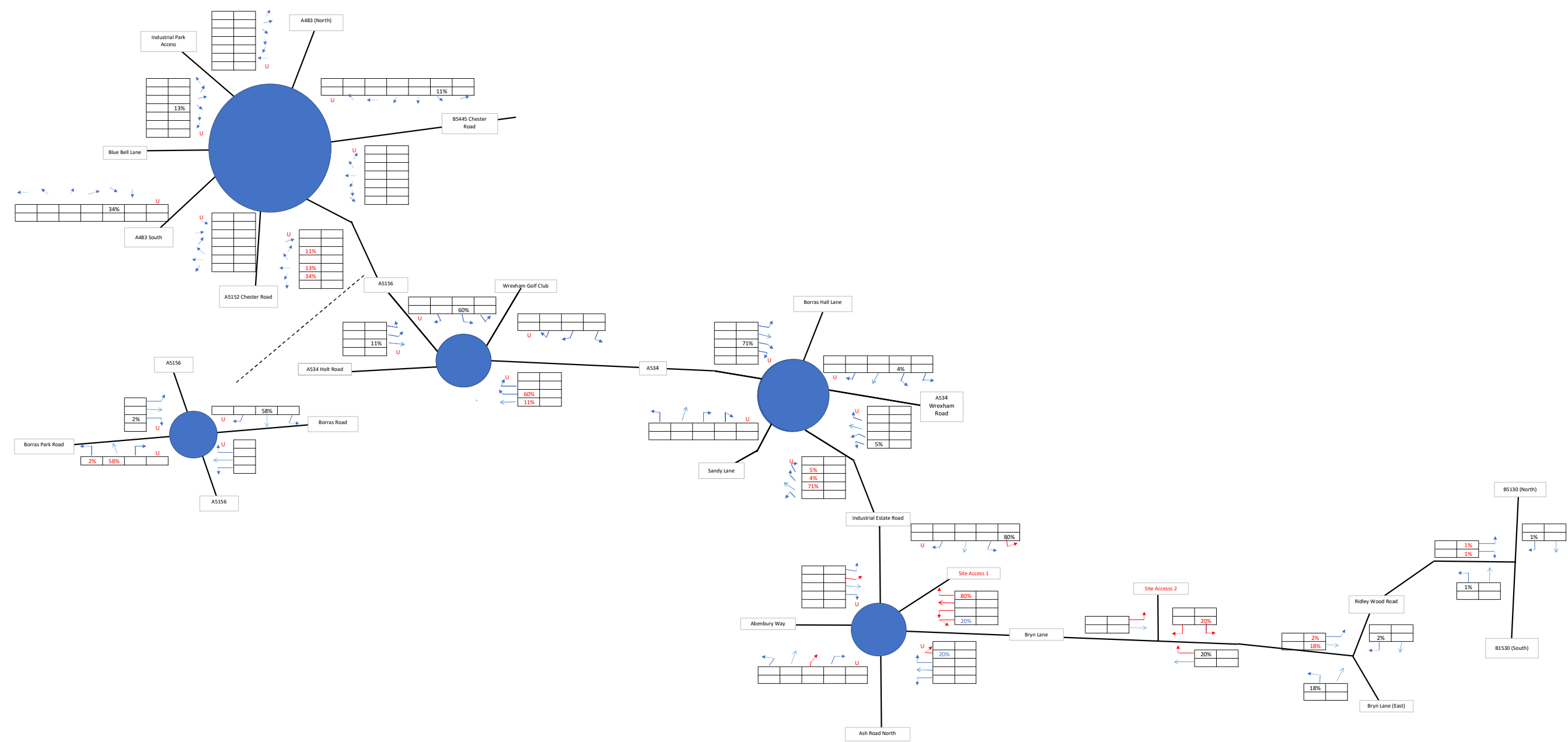


Figure 7g - Development Traffic Distribution (HGVs) [Phase 2]
AM Peak

Notes:

%	Arrivals (HGVs)
%	Departures (HGVs)

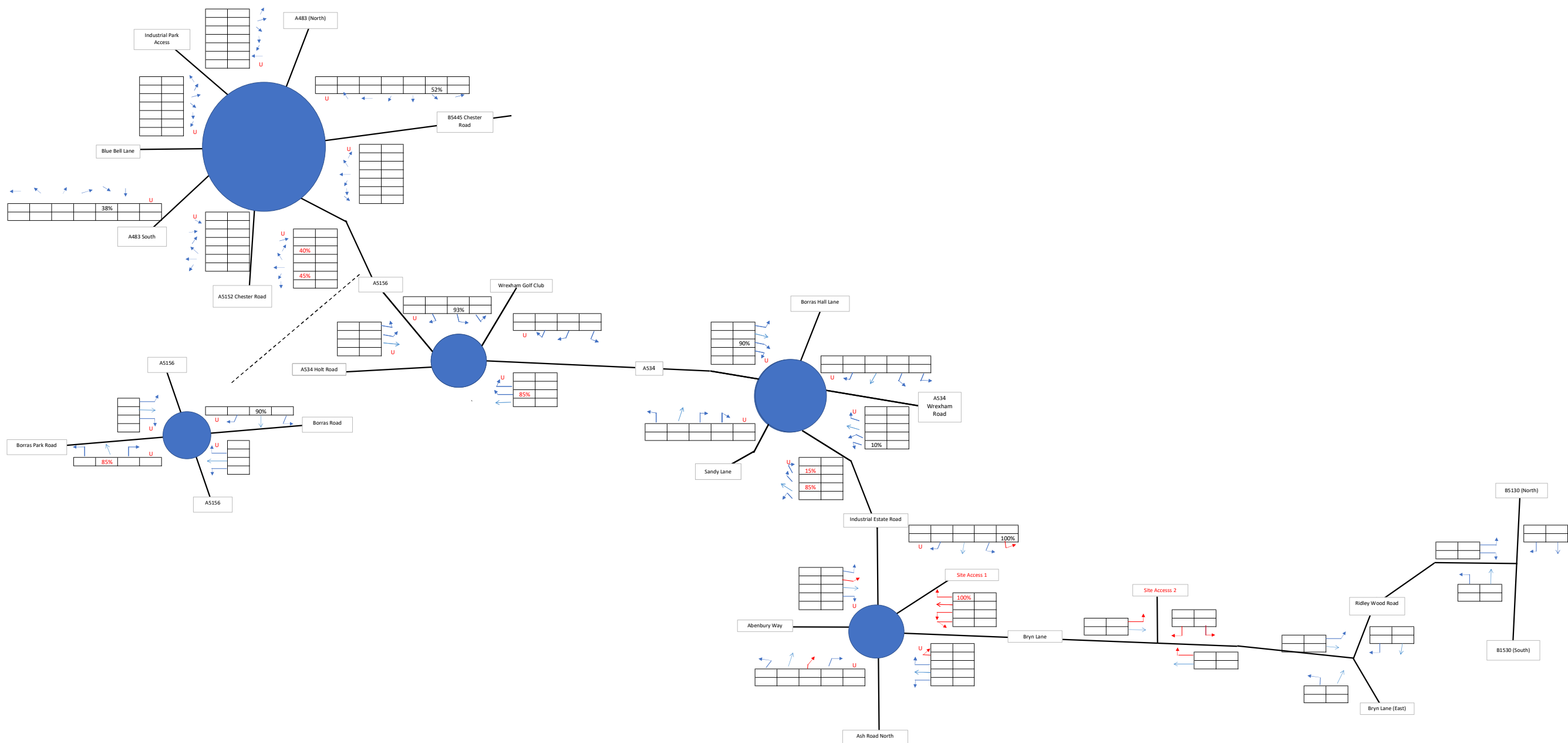


Figure 7g - Development Traffic Distribution (HGVs) [Phase 2]
PM Peak

Notes:

%	Arrivals (HGVs)
%	Departures (HGVs)

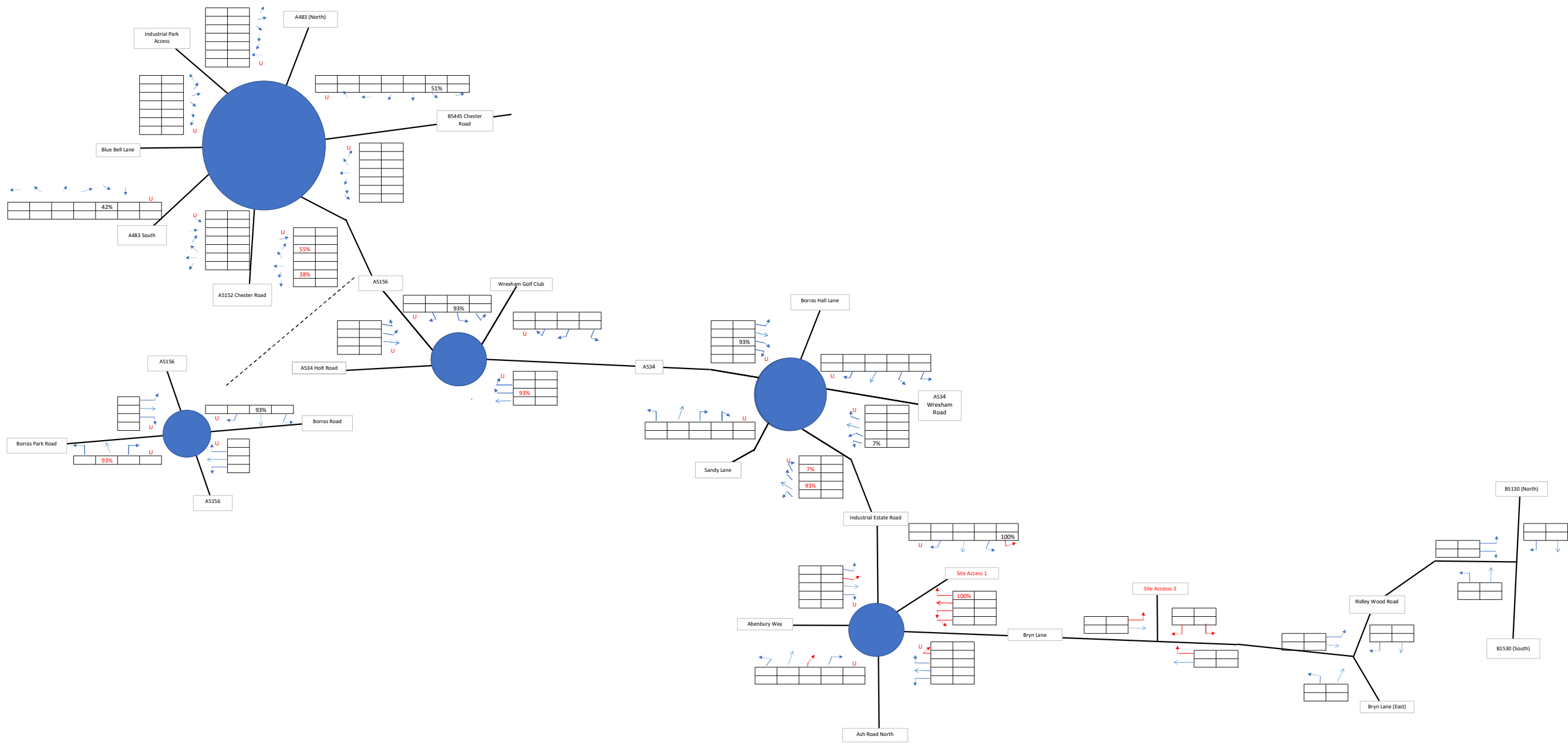


Figure 8a - Industrial Estate Development Trips (Lights) [Phase 1]
AM Peak: 0800-0900

Notes:

160

 Arrivals

38

 Departures

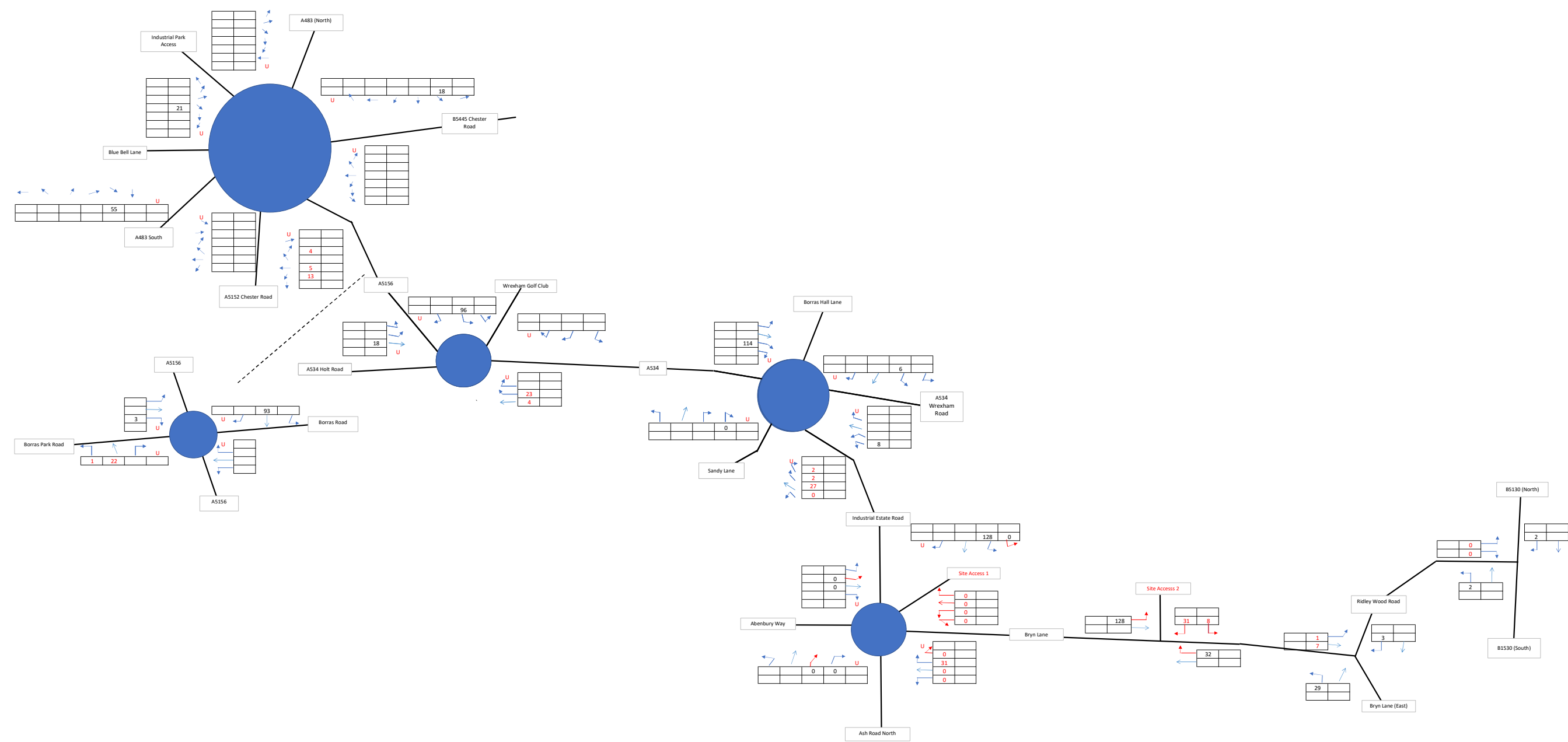


Figure 8b - Industrial Estate Development Trips (Lights) [Phase 1]
PM Peak: 1630-1730

Notes:

52

 Arrivals

139

 Departures

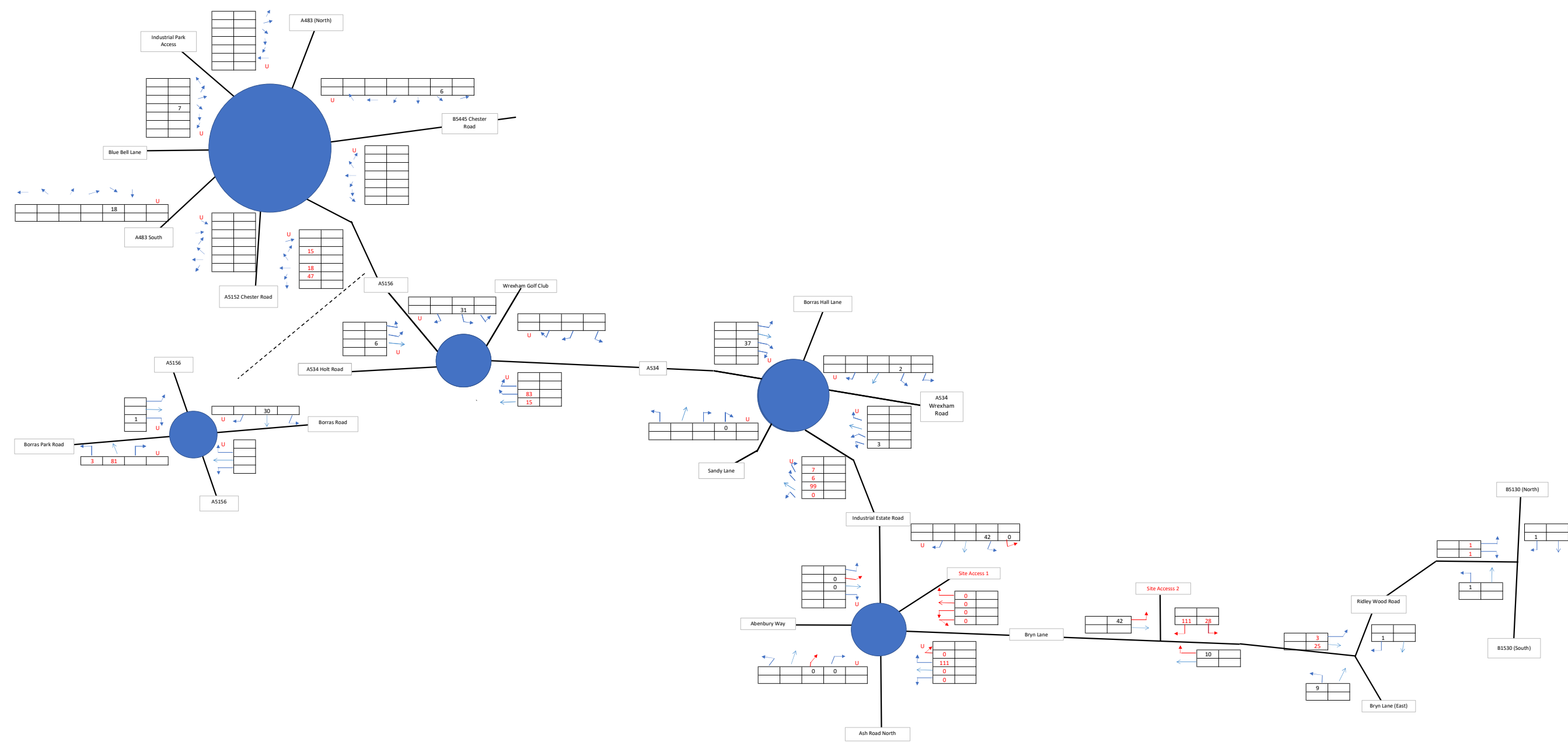


Figure 8c - Industrial Estate Development Trips (HGVs) [Phase 1]
AM Peak: 0800-0900

Notes:

18	Arrivals
26	Departures

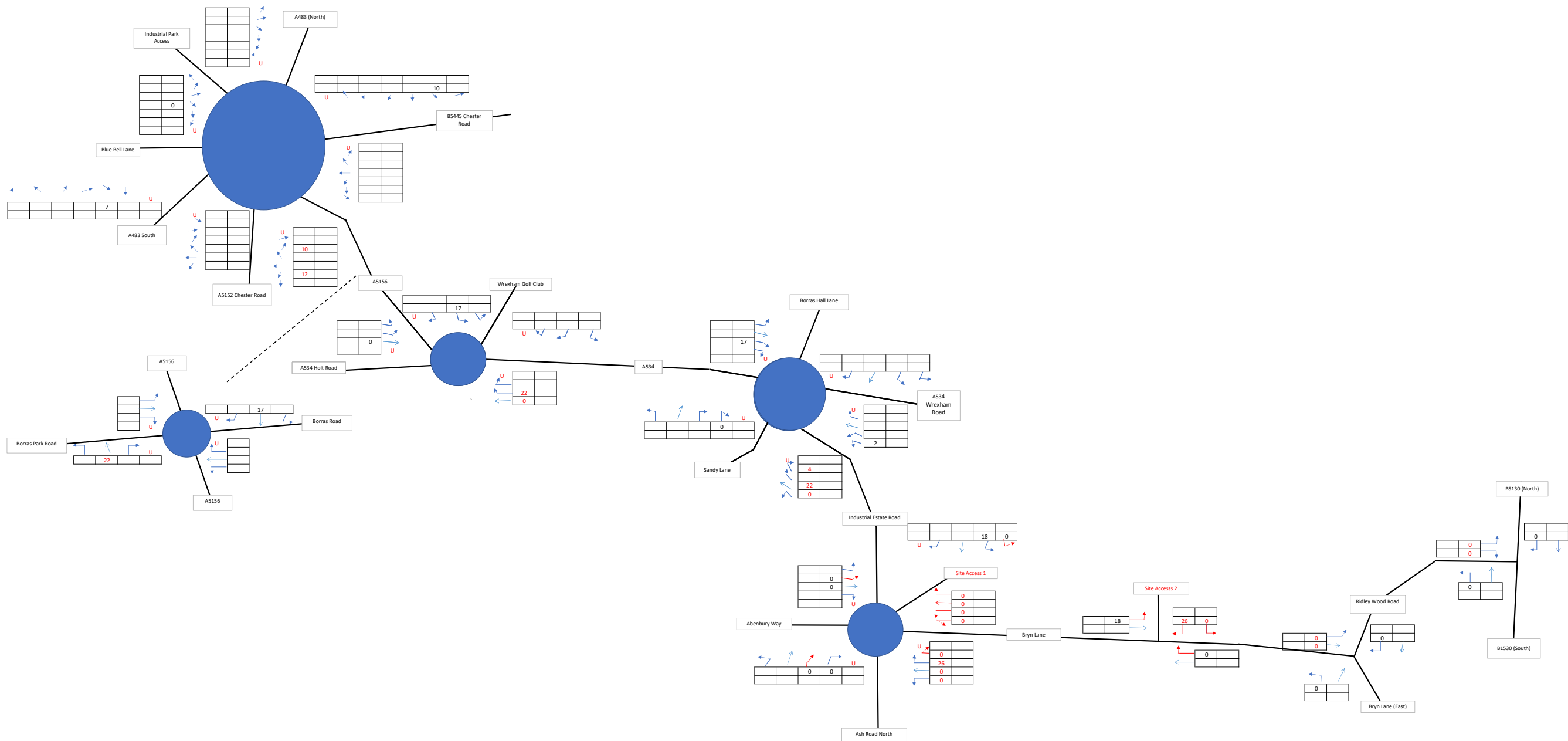


Figure 8d - Industrial Estate Development Trips (HGVs) [Phase 1]
PM Peak: 1630-1730

Notes:

26	Arrivals
19	Departures

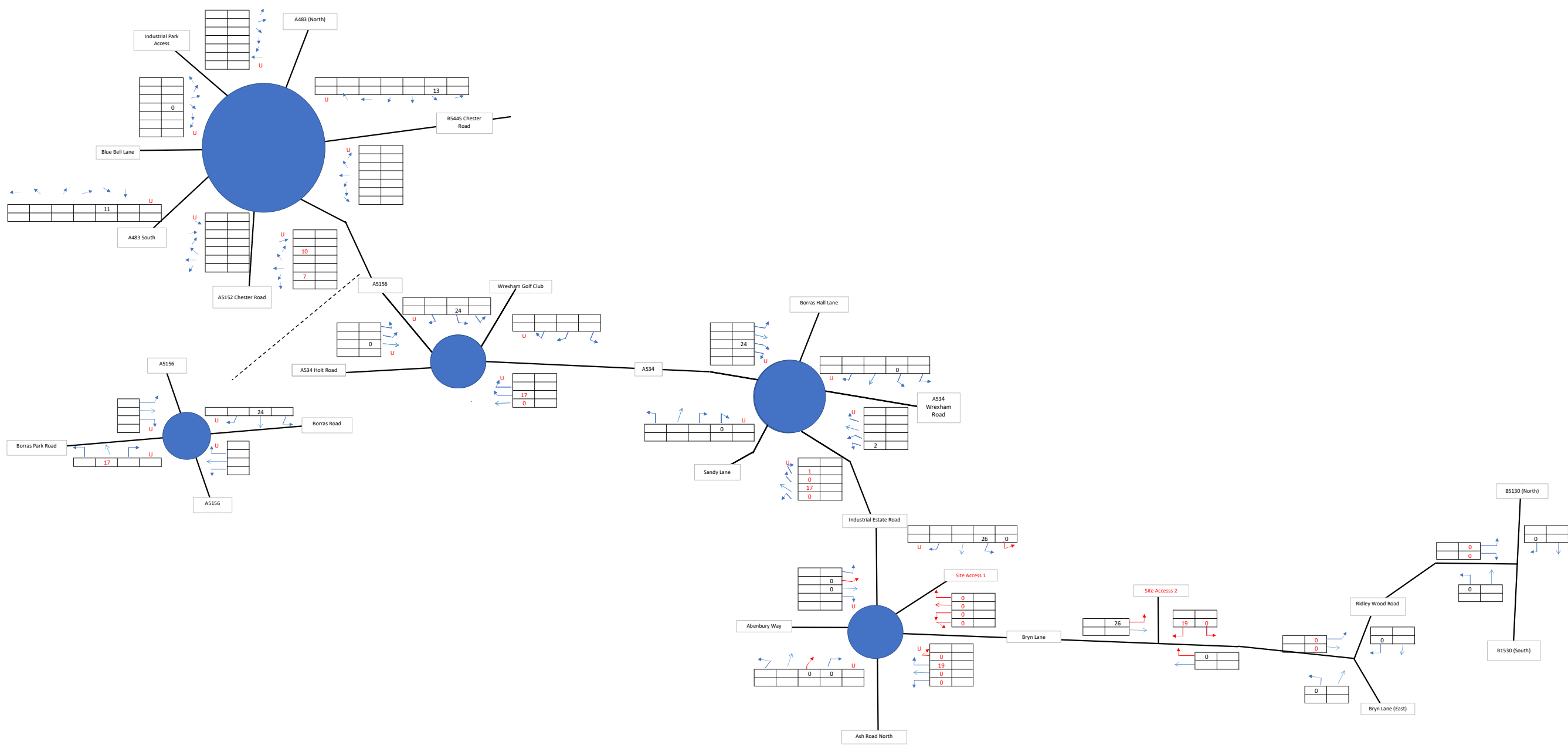


Figure 8e - Industrial Estate Development Trips (Lights) [Phase 2]
AM Peak: 0800-0900

Notes: 149 Arrivals
58 Departures

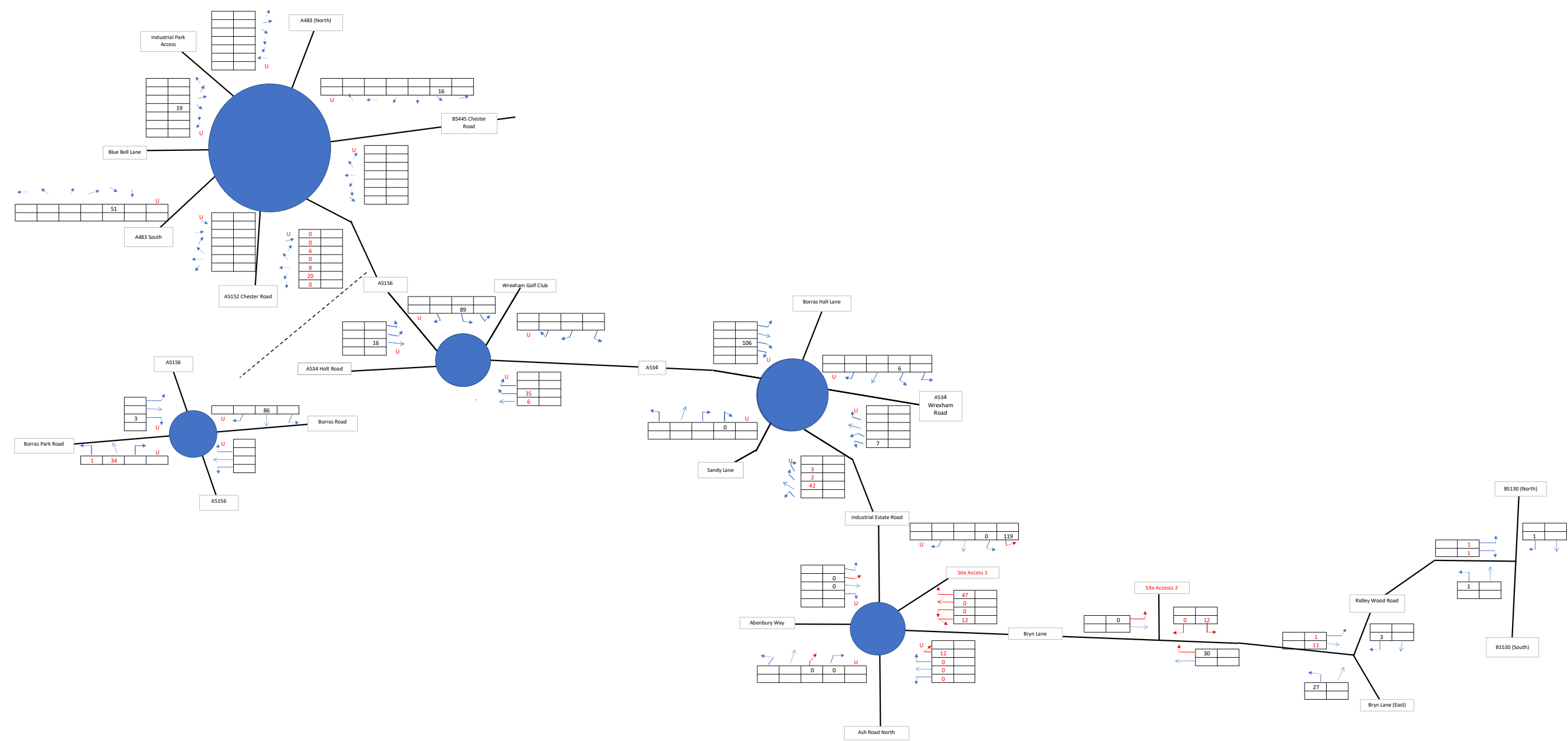


Figure 8e - Industrial Estate Development Trips (Lights) [Phase 2]
PM Peak: 1630-1730

Notes:

69

 Arrivals

132

 Departures

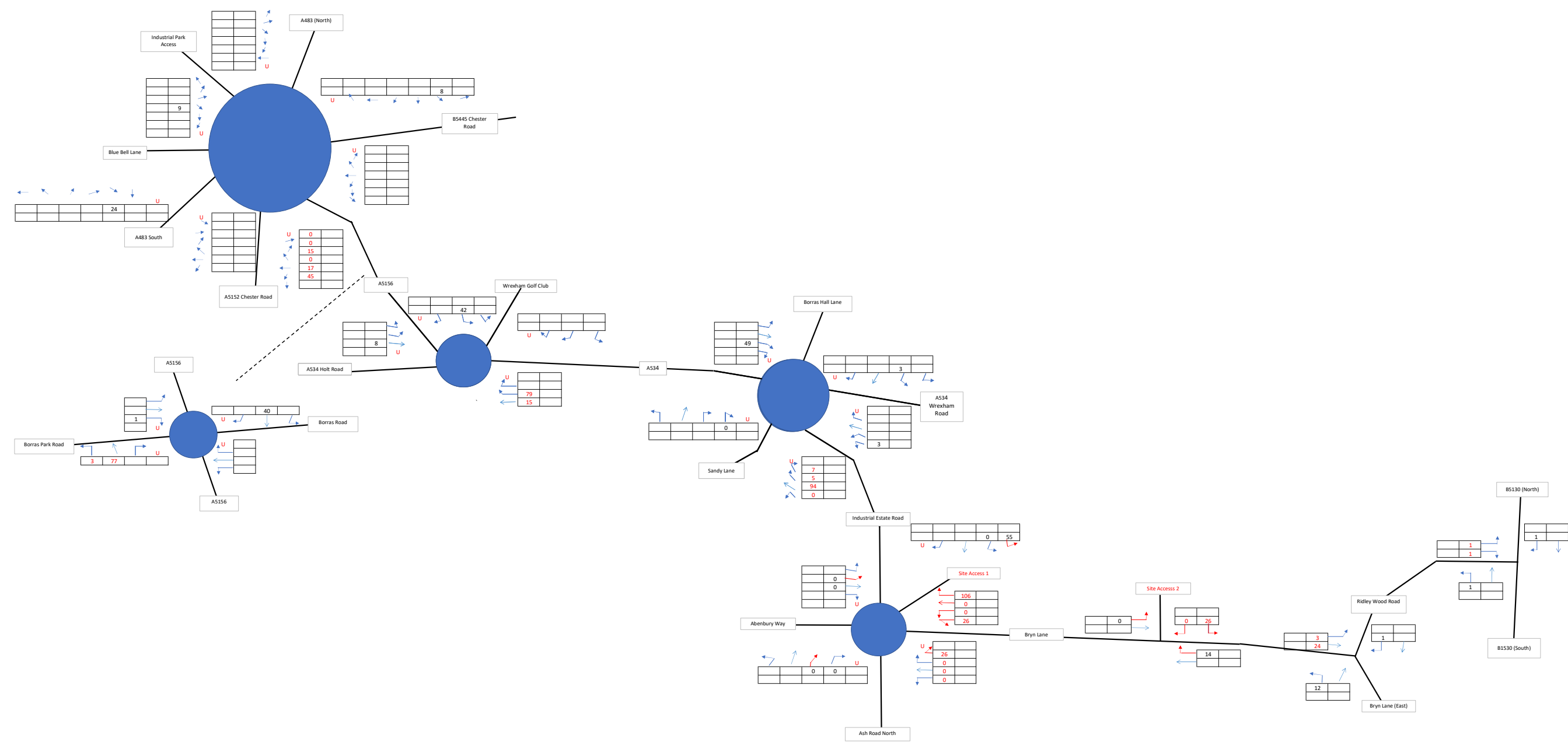


Figure 8g - Industrial Estate Development Trips (HGVs) [Phase 2]
AM Peak: 0800-0900

Notes:

17	Arrivals
25	Departures

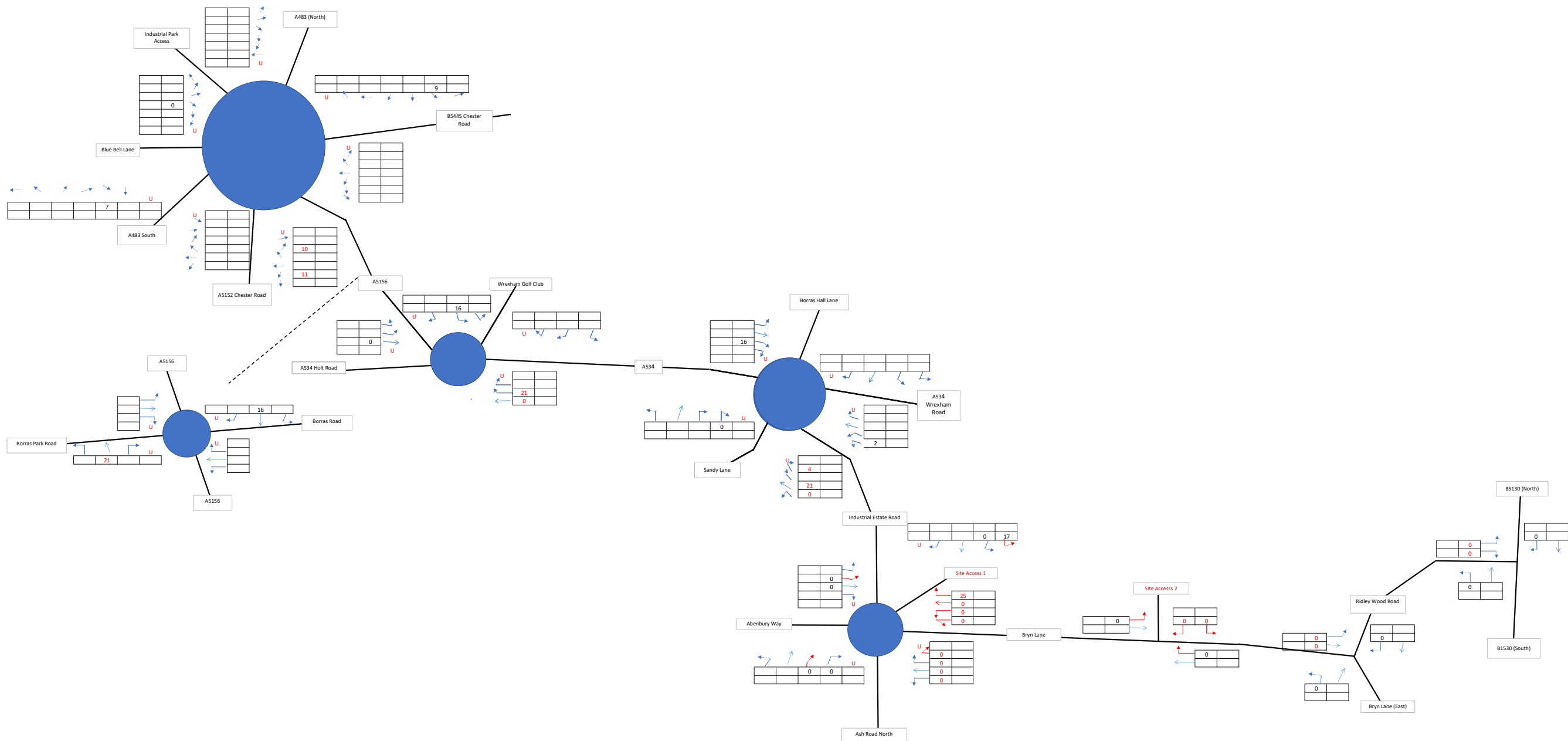


Figure 8h - Industrial Estate Development Trips (HGVs) [Phase 2]
PM Peak: 1630-1730

Notes: 25 Arrivals
18 Departures

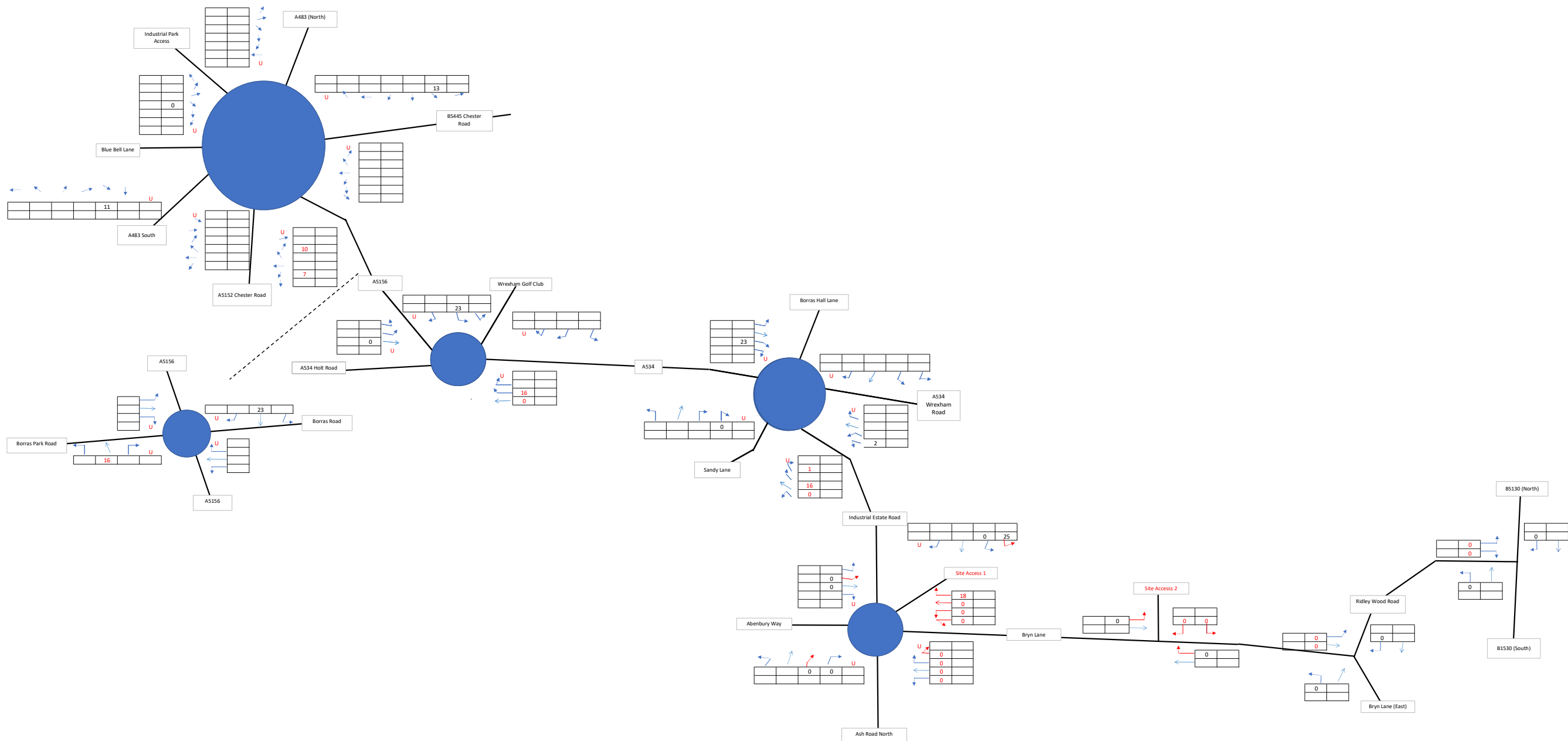


Figure 9 - Dummy Figure

Notes: #REF! Arrivals
#REF! Departures

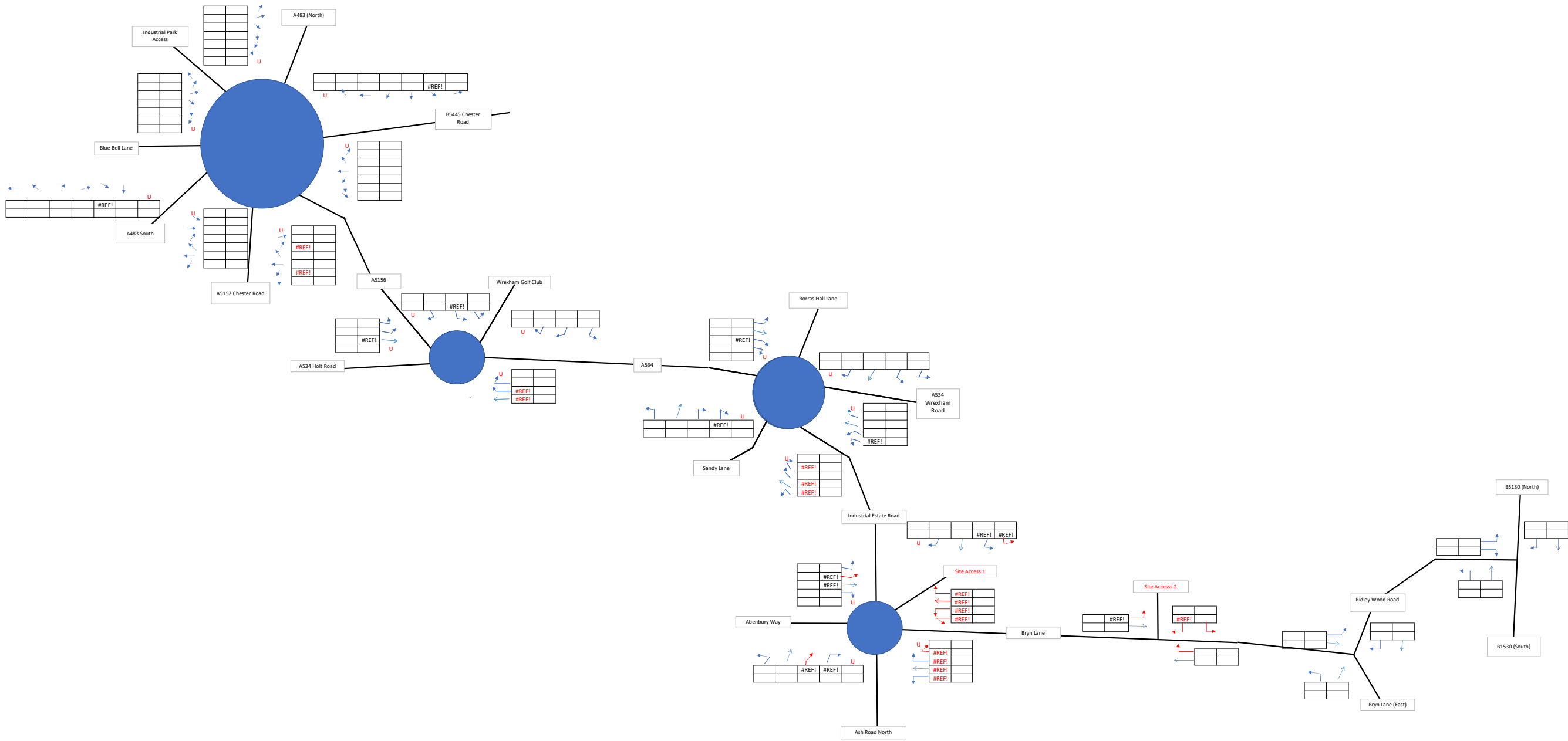


Figure 10 - Hotel Development Trips
AM Peak: 0800-0900

Notes:

9	Arrivals
18	Departures

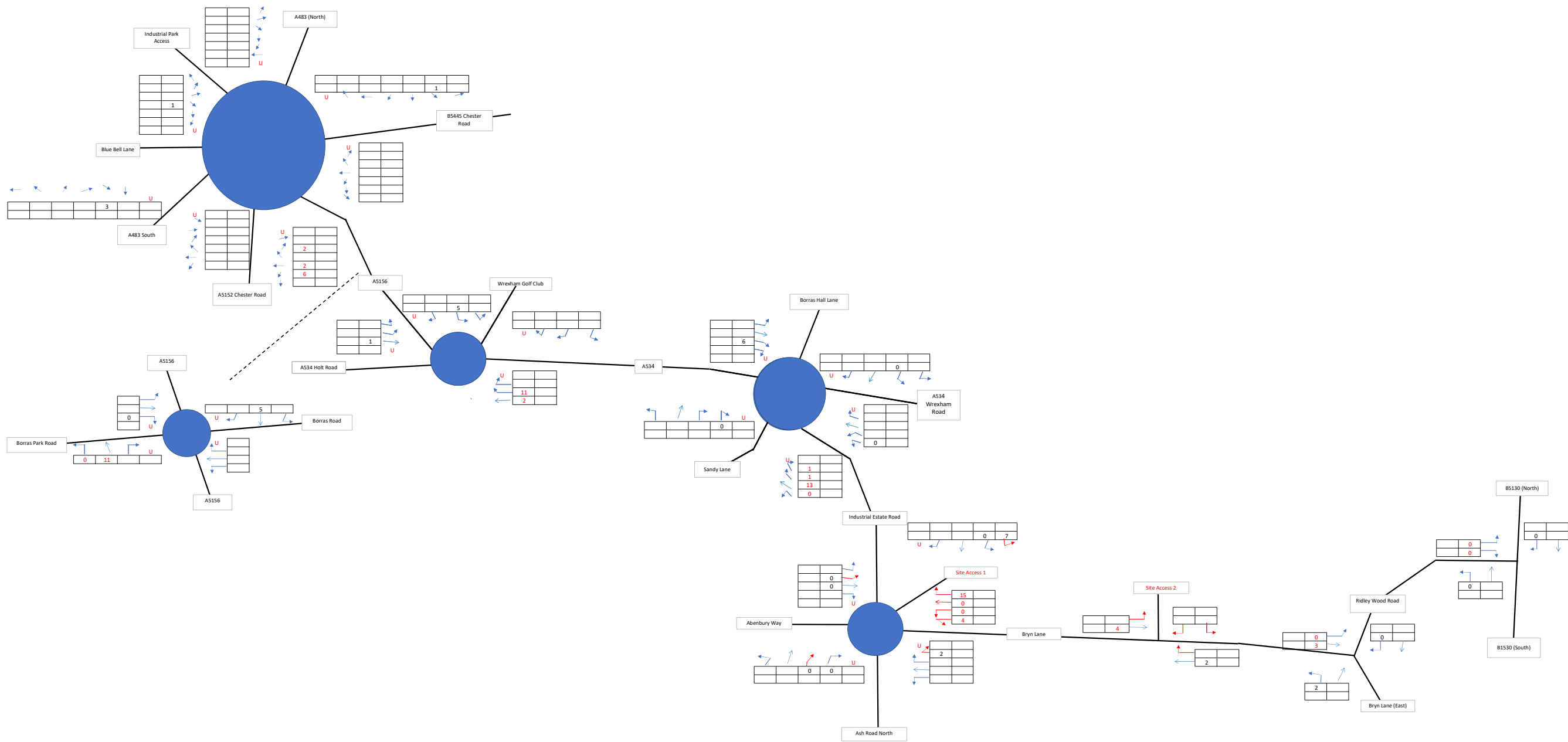


Figure 11 - Hotel Development Trips
PM Peak: 1630-1730

Notes:

13	Arrivals
8	Departures

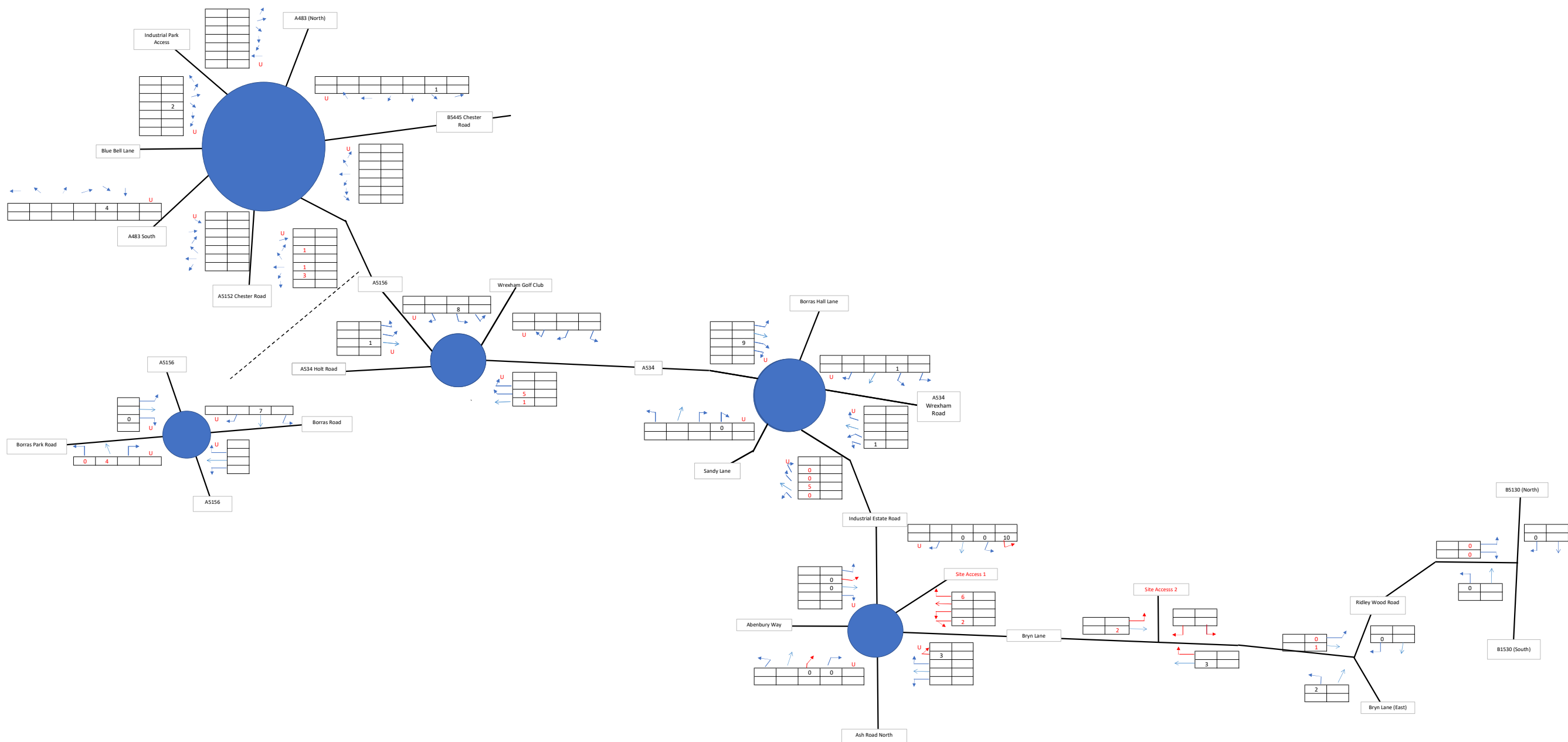


Figure 12 - Pass-By Trips (Local Centre, Drive-Thru & PFS)
AM Peak: 0800-0900

Notes:

283

 Arrivals

270

 Departures

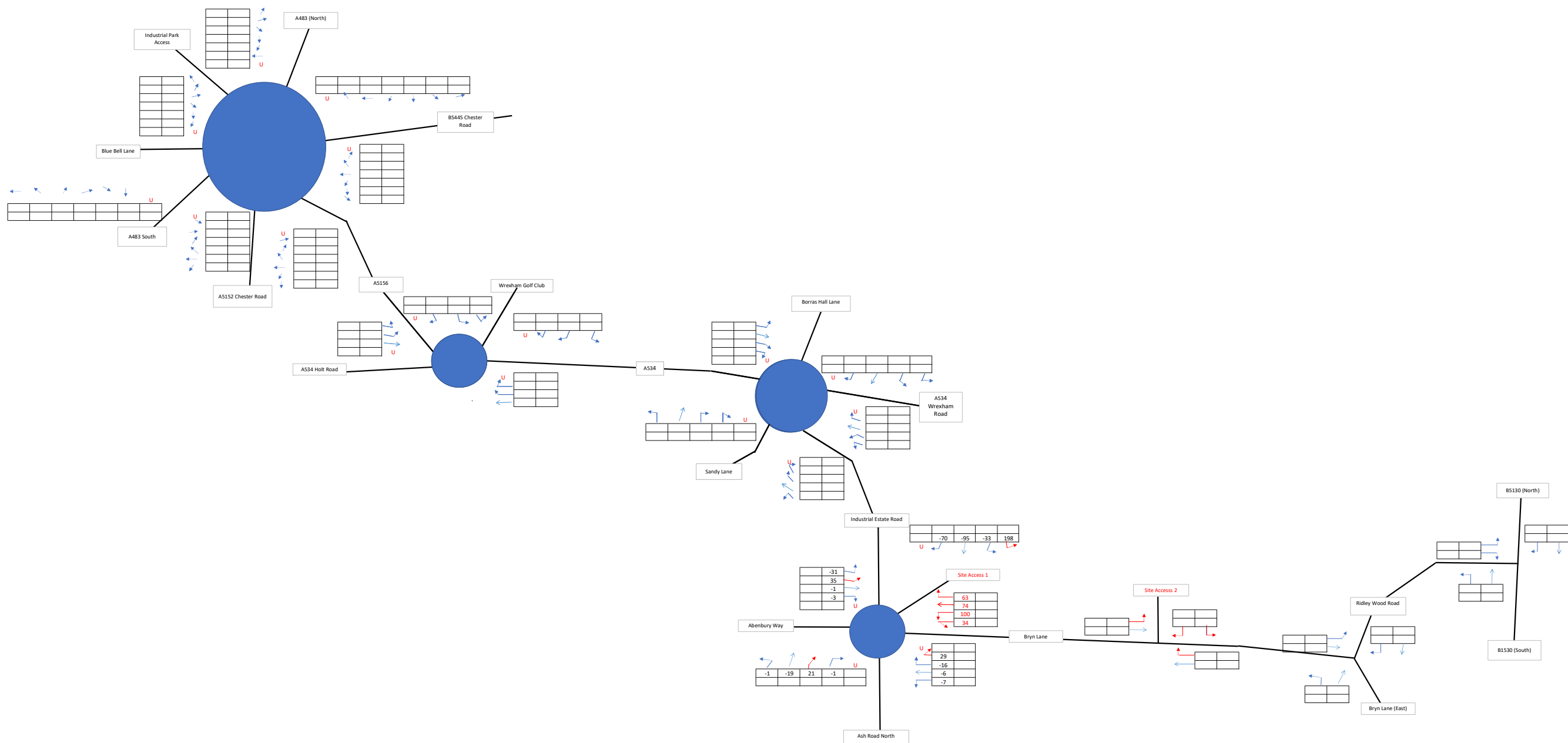


Figure 13 - Pass-By Trips (Local Centre, Drive-Thru & PFS)
PM Peak: 1630-1730

Notes:

332

 Arrivals

343

 Departures

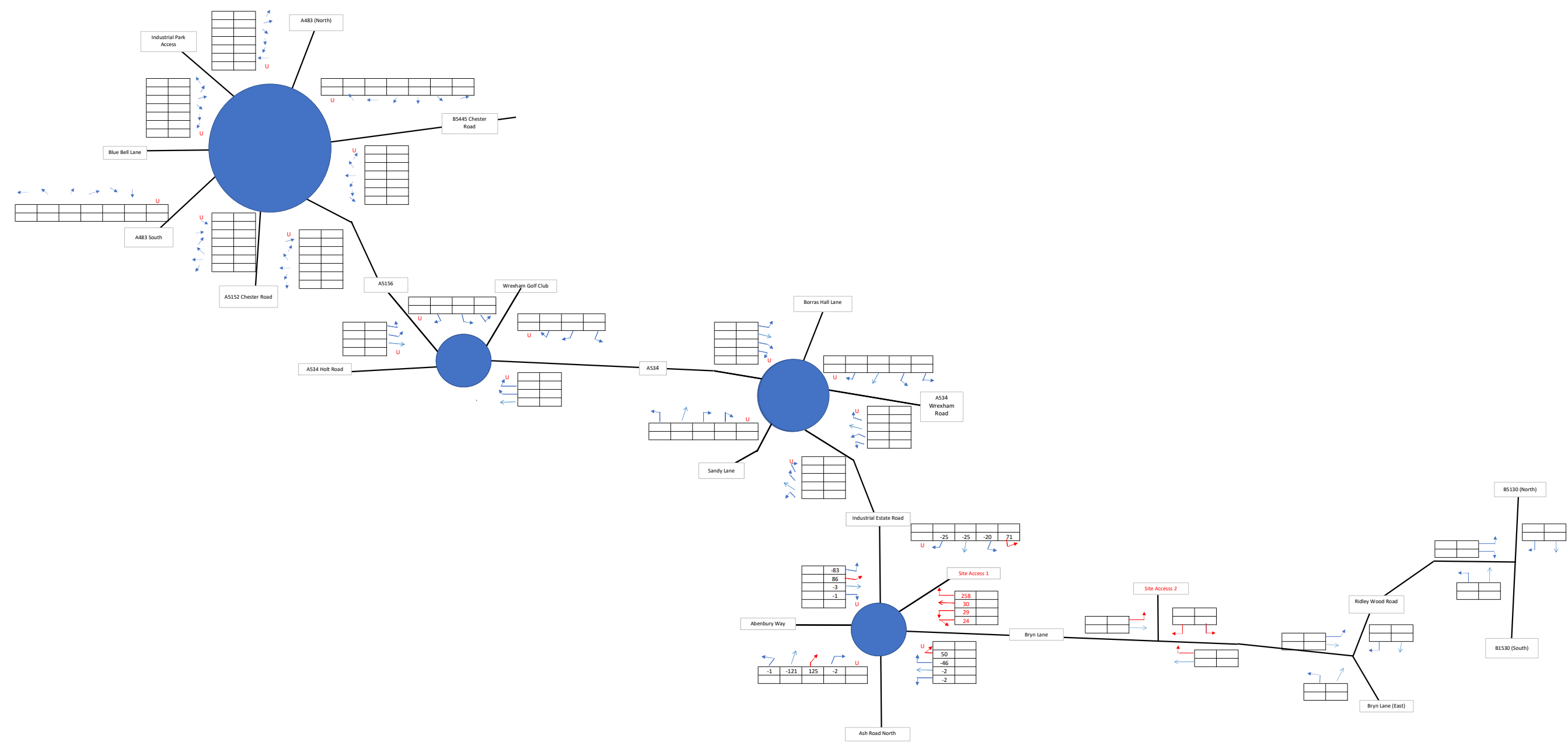


Figure 14 - New Trips (Local Centre, Drive-Thru & PFS)
AM Peak: 0800-0900

Notes:

31	Arrivals
30	Departures

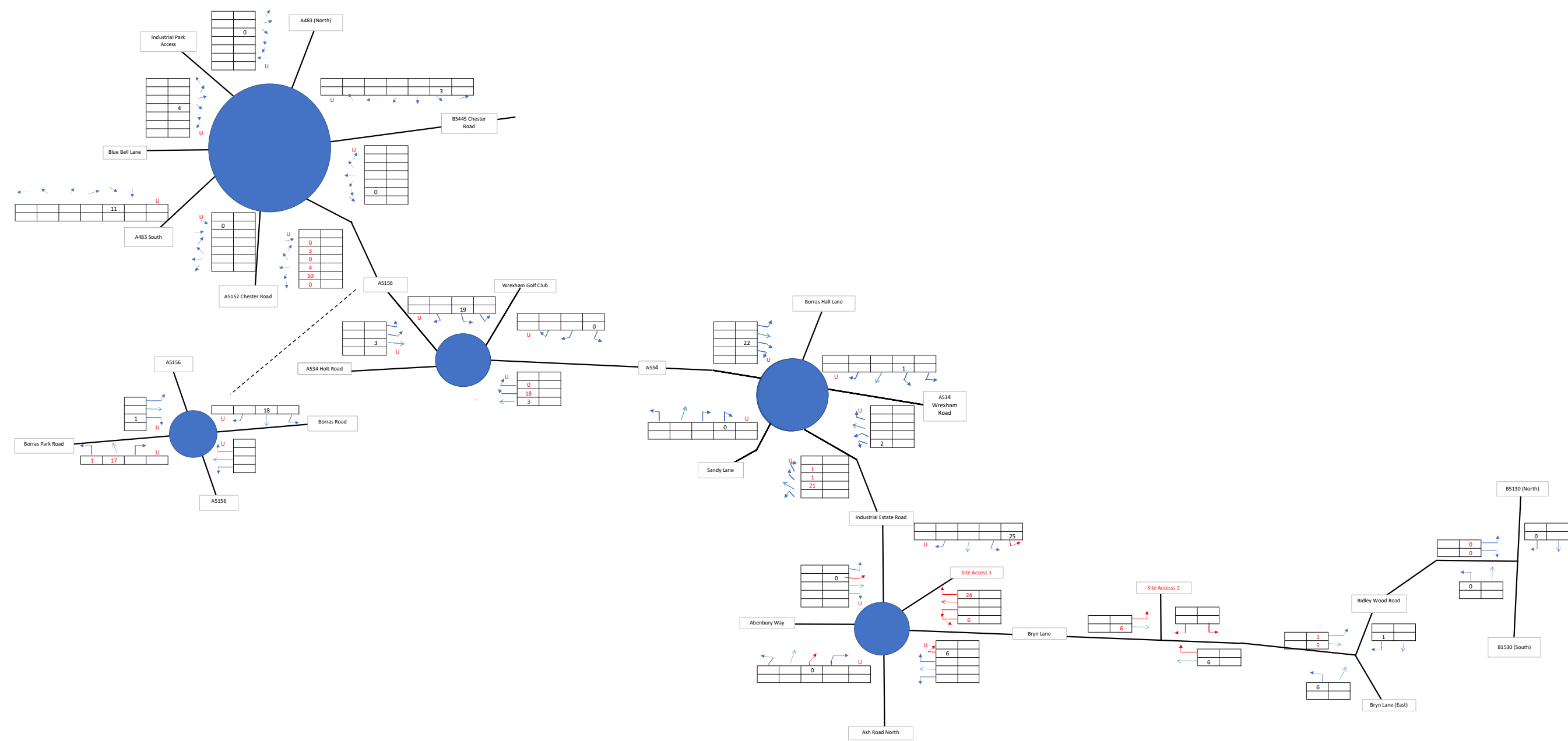
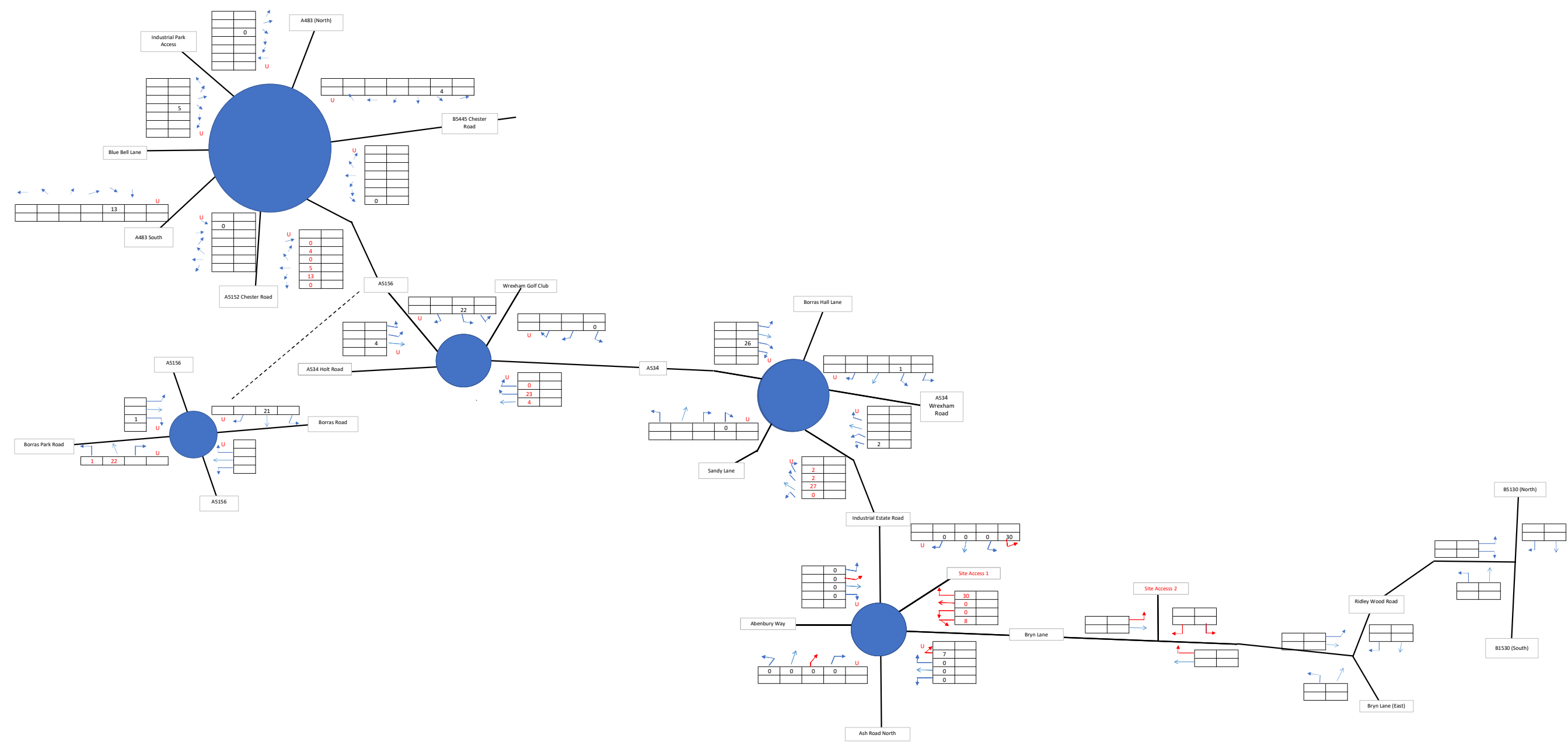


Figure 15 - New Trips (Local Centre, Drive-Thru & PFS)
PM Peak: 1630-1730

Notes:

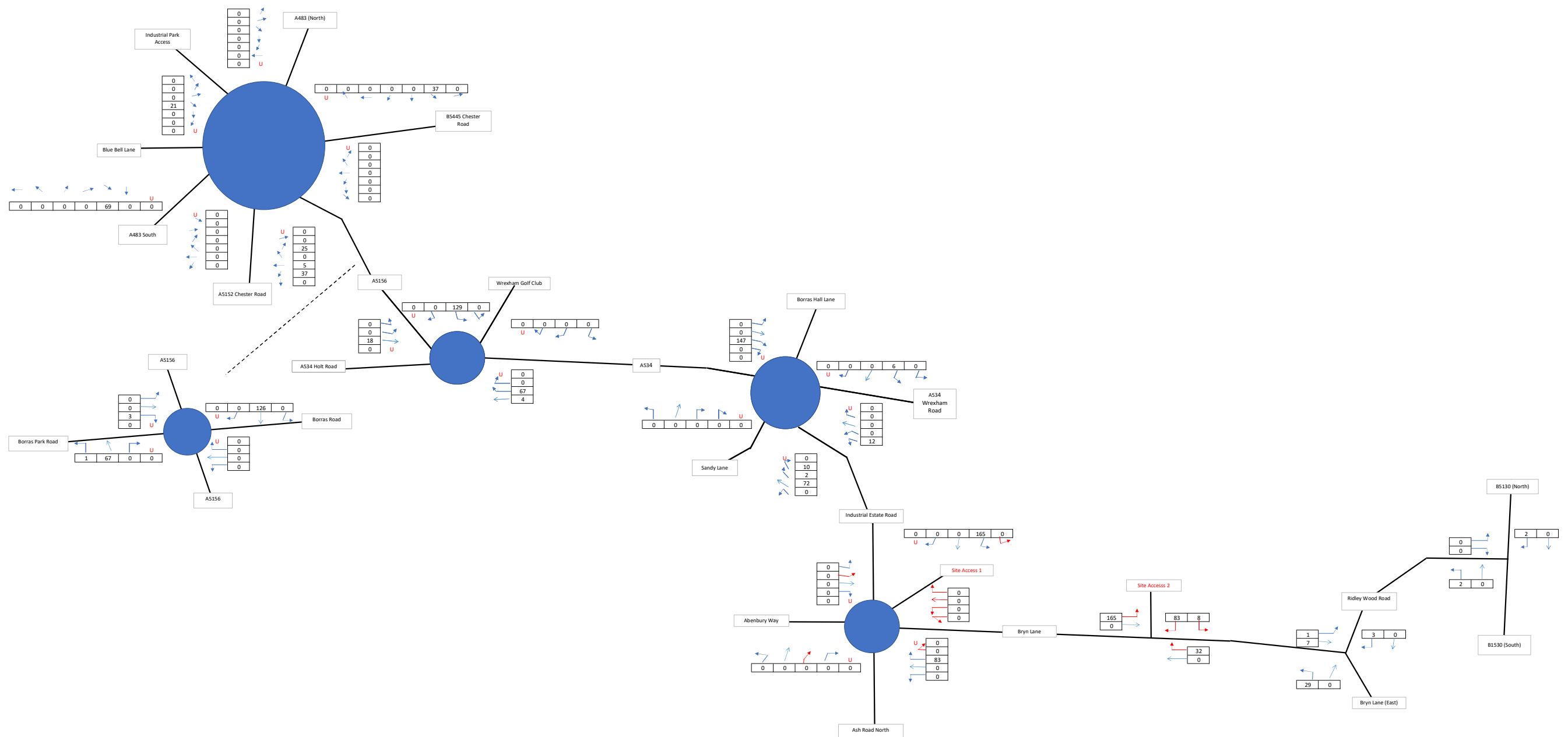
37	Arrivals
38	Departures



Notes:

123

 PCUs



Notes:

123

 PCUs:

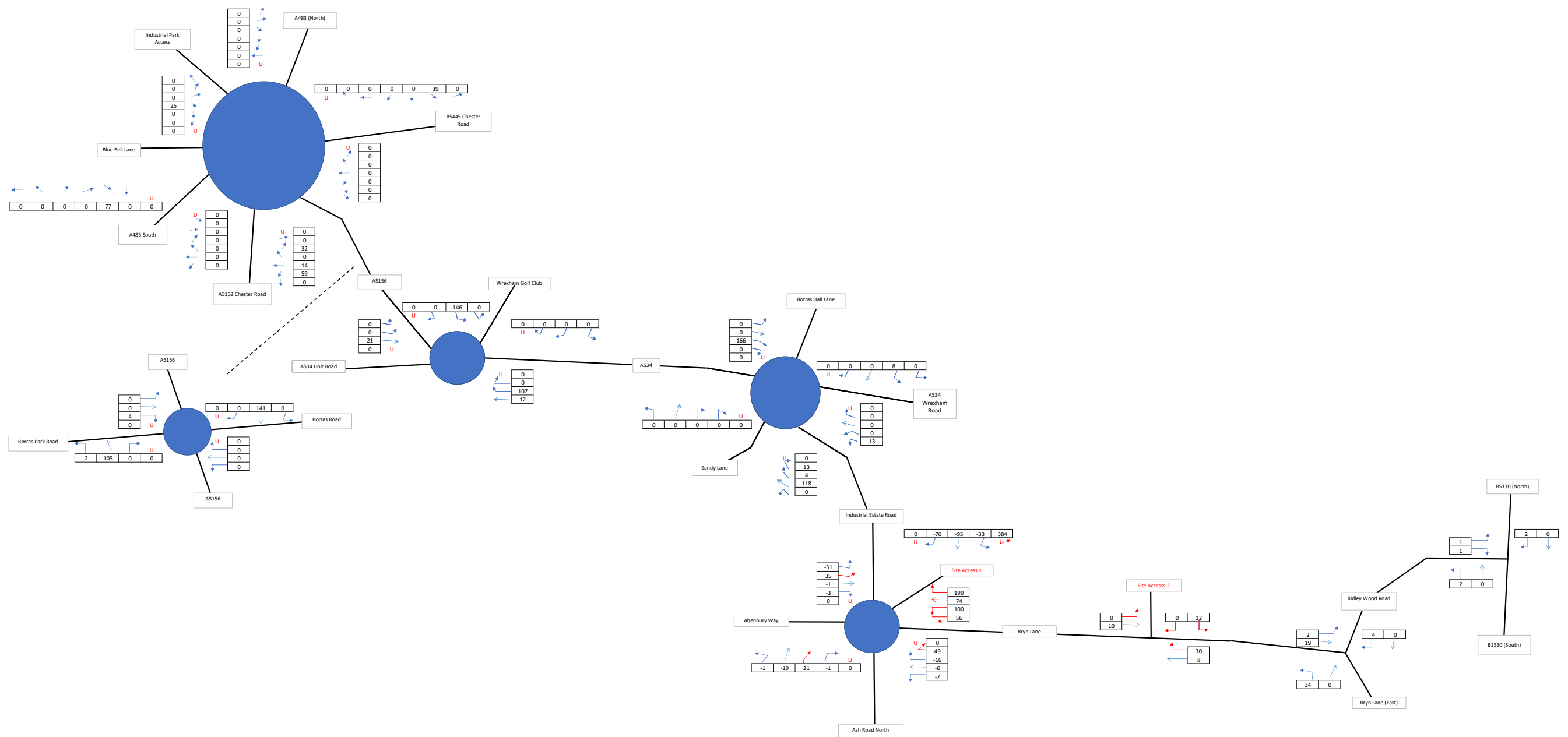
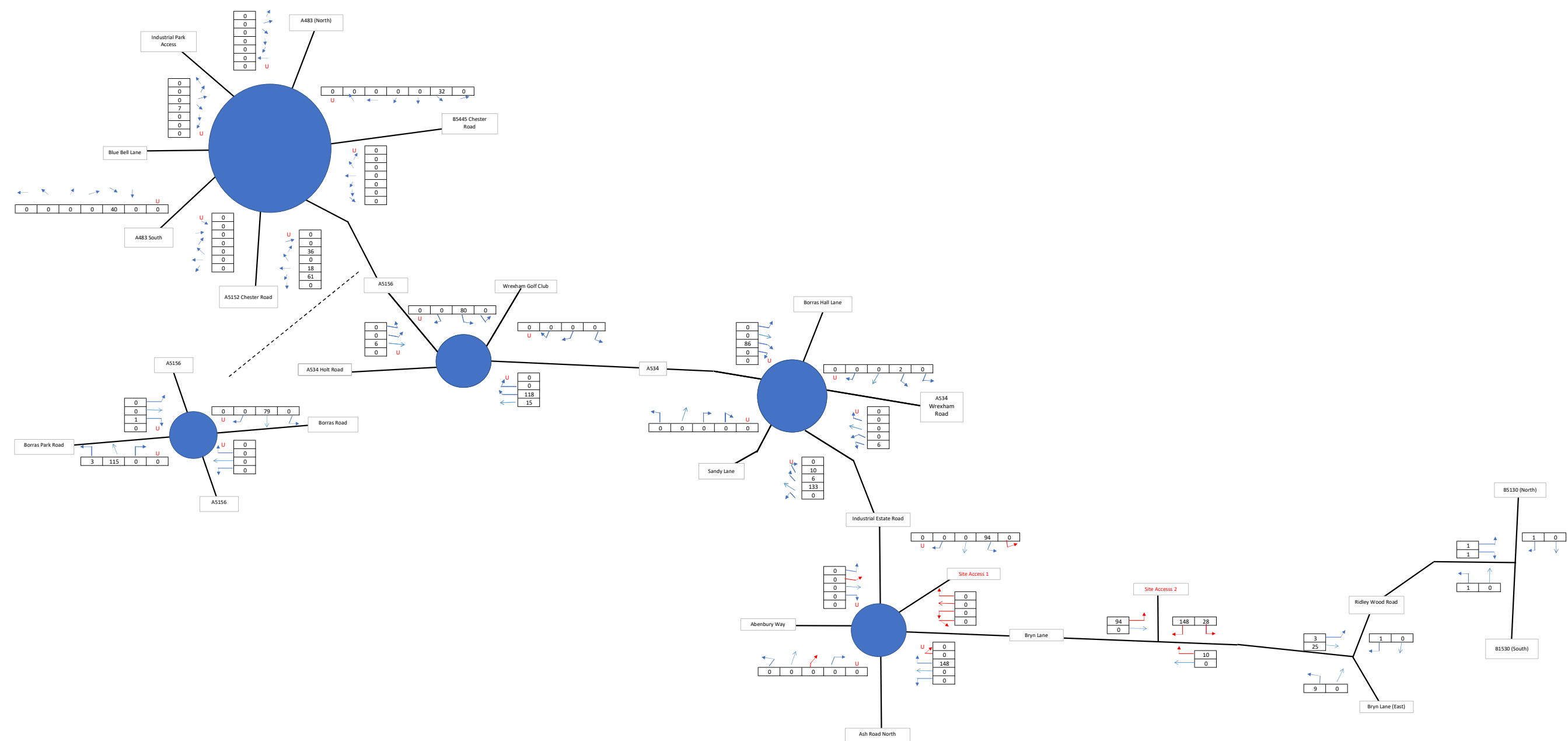


Figure 17 - Total Development Trips [Phase 1]
PM Peak: 1630-1730

Notes:

123

 PCUs



Notes:

123

 PCUs

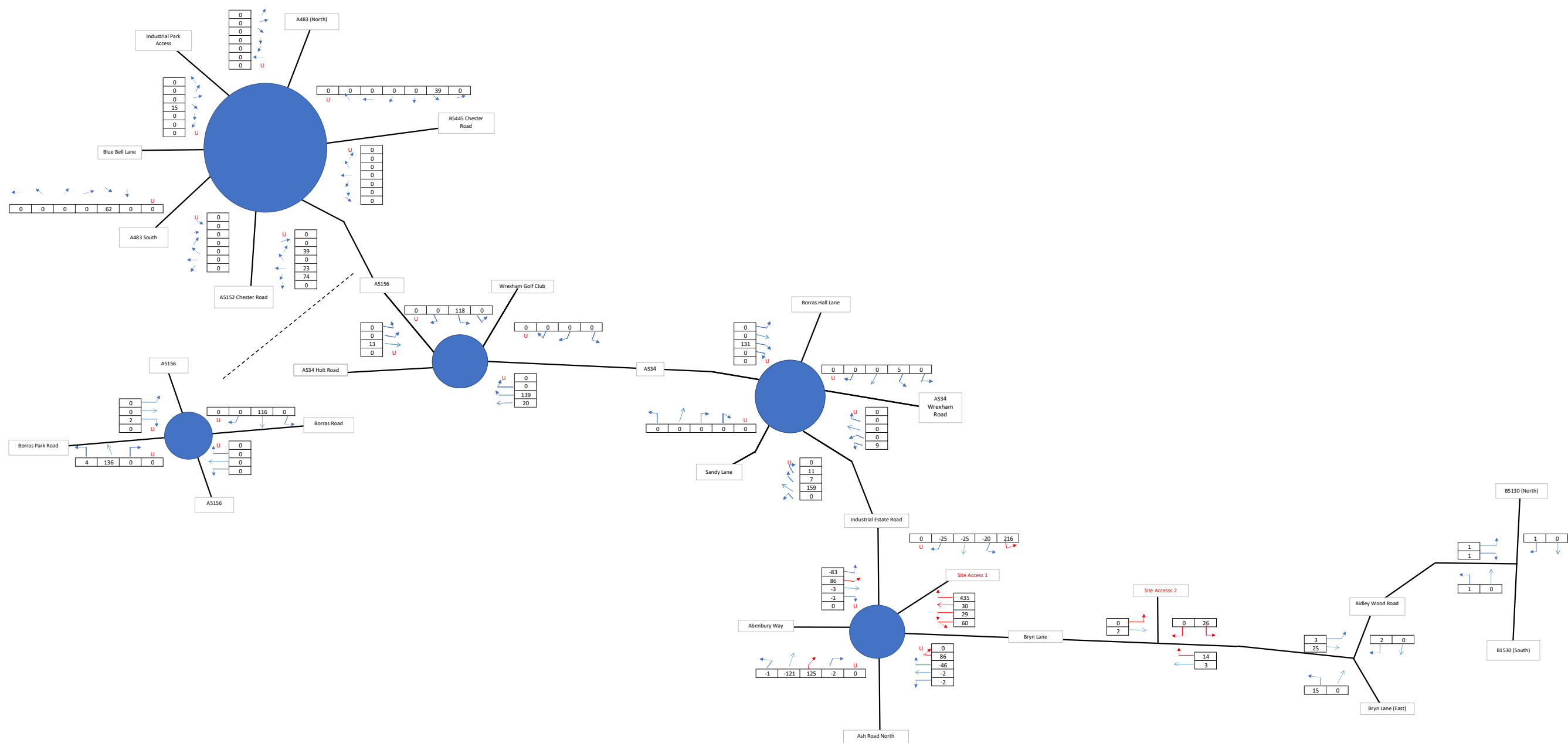


Figure 18 - Pacific Park Committed Traffic
AM Peak

Notes:

6	Arrivals
1	Departures

GFA 2567 sqm
Arr 0.228
Dep 0.028

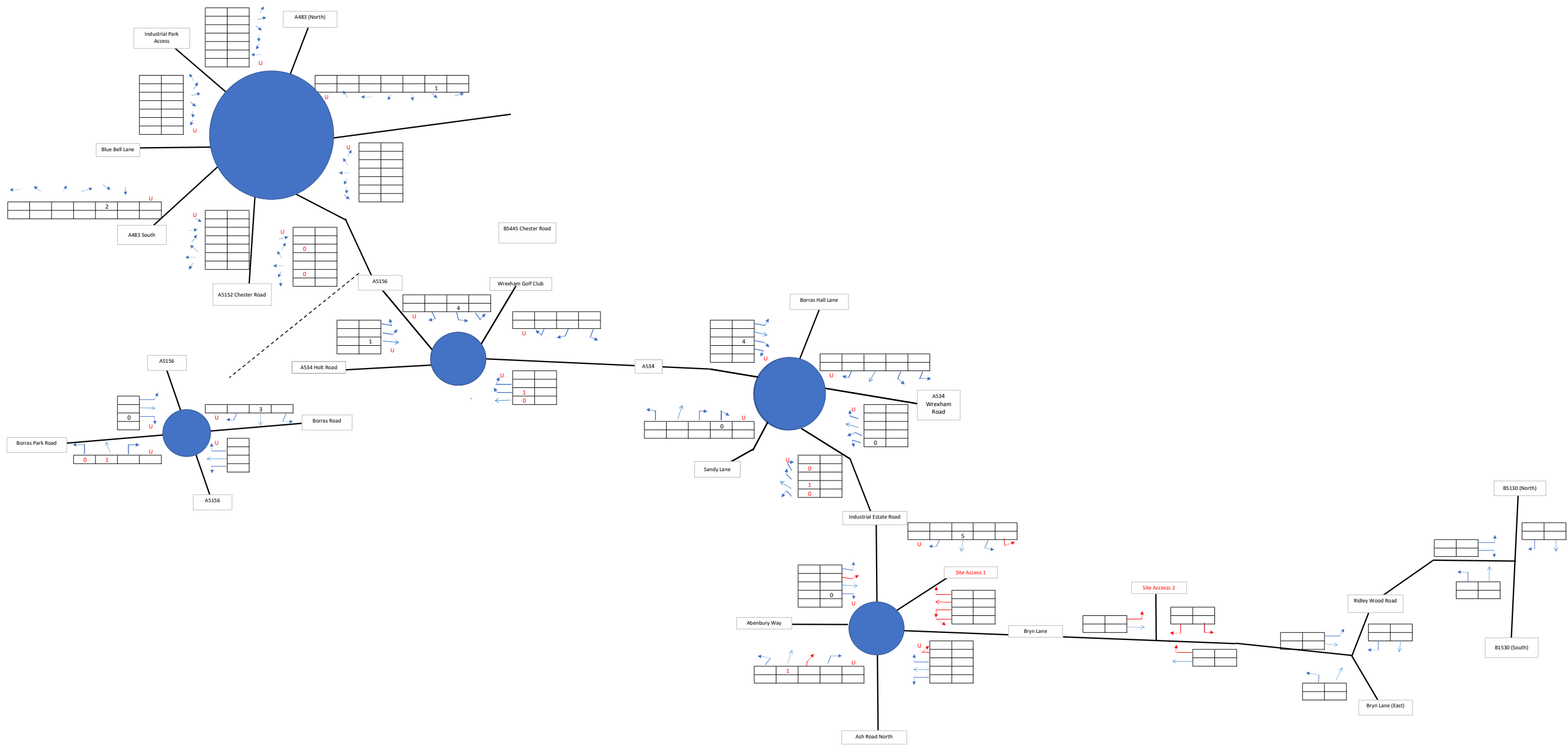


Figure 19 - Pacific Park Committed Traffic
PM Peak

Notes:

1	Arrivals
9	Departures

GFA 2567 sqm
Arr 0.039
Dep 0.361

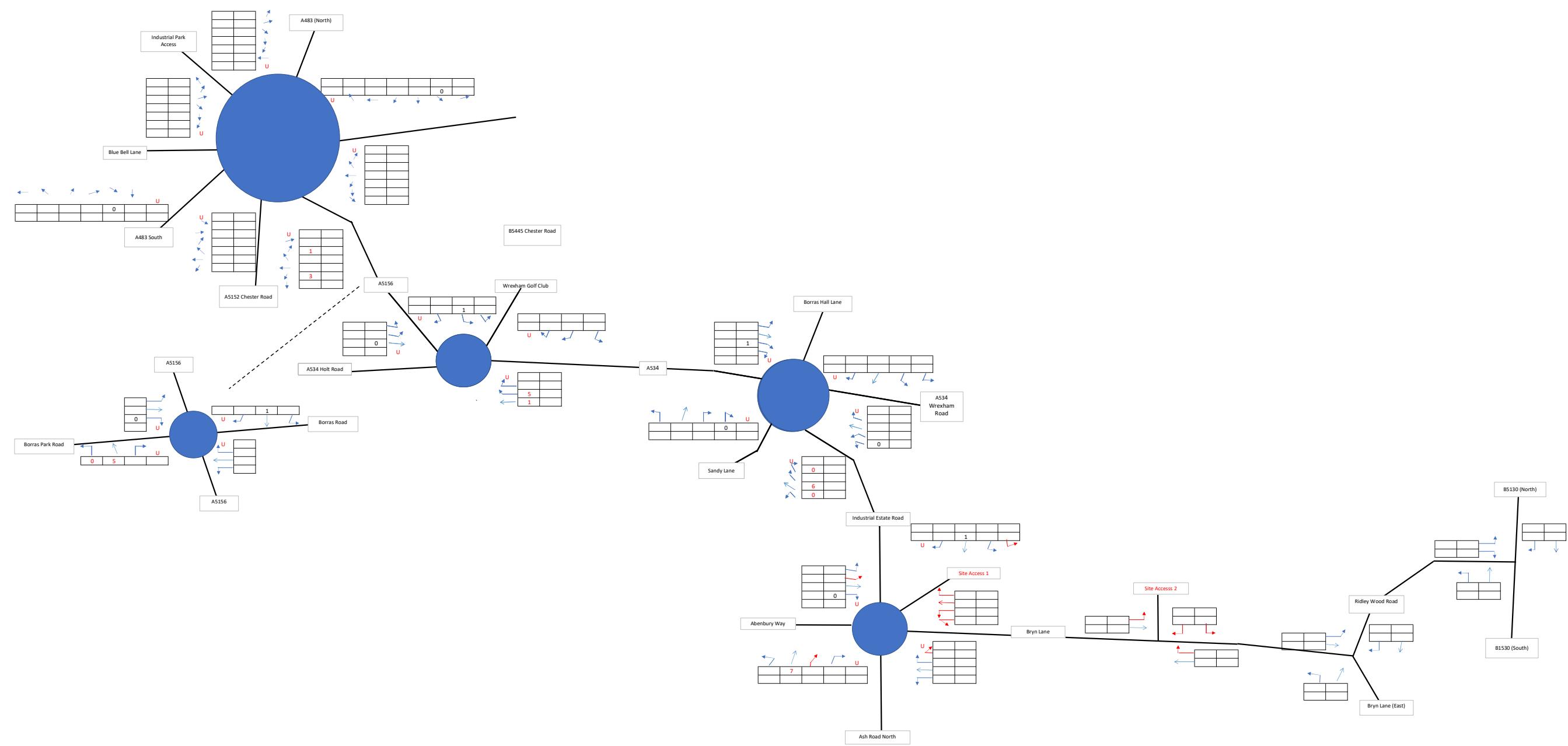


Figure 20 - Ash Road Committed Traffic
AM Peak

Notes:

6	Arrivals
1	Departures

GFA 2605 sqm
Arr 0.228
Dep 0.028

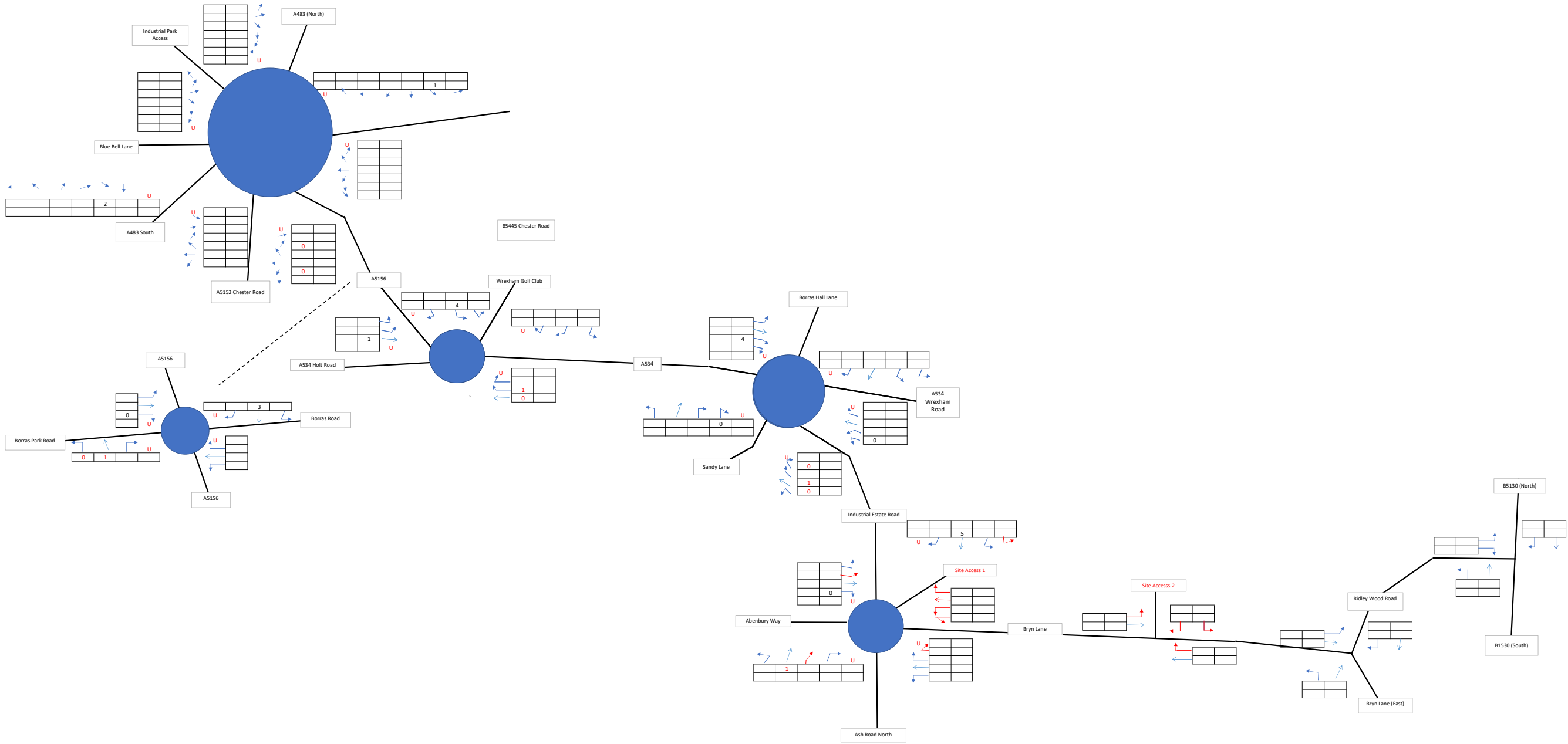


Figure 21 - Ash Road Committed Traffic
PM Peak

Notes:

1	Arrivals
9	Departures

GFA 2605 sqm
Arr 0.039
Dep 0.361

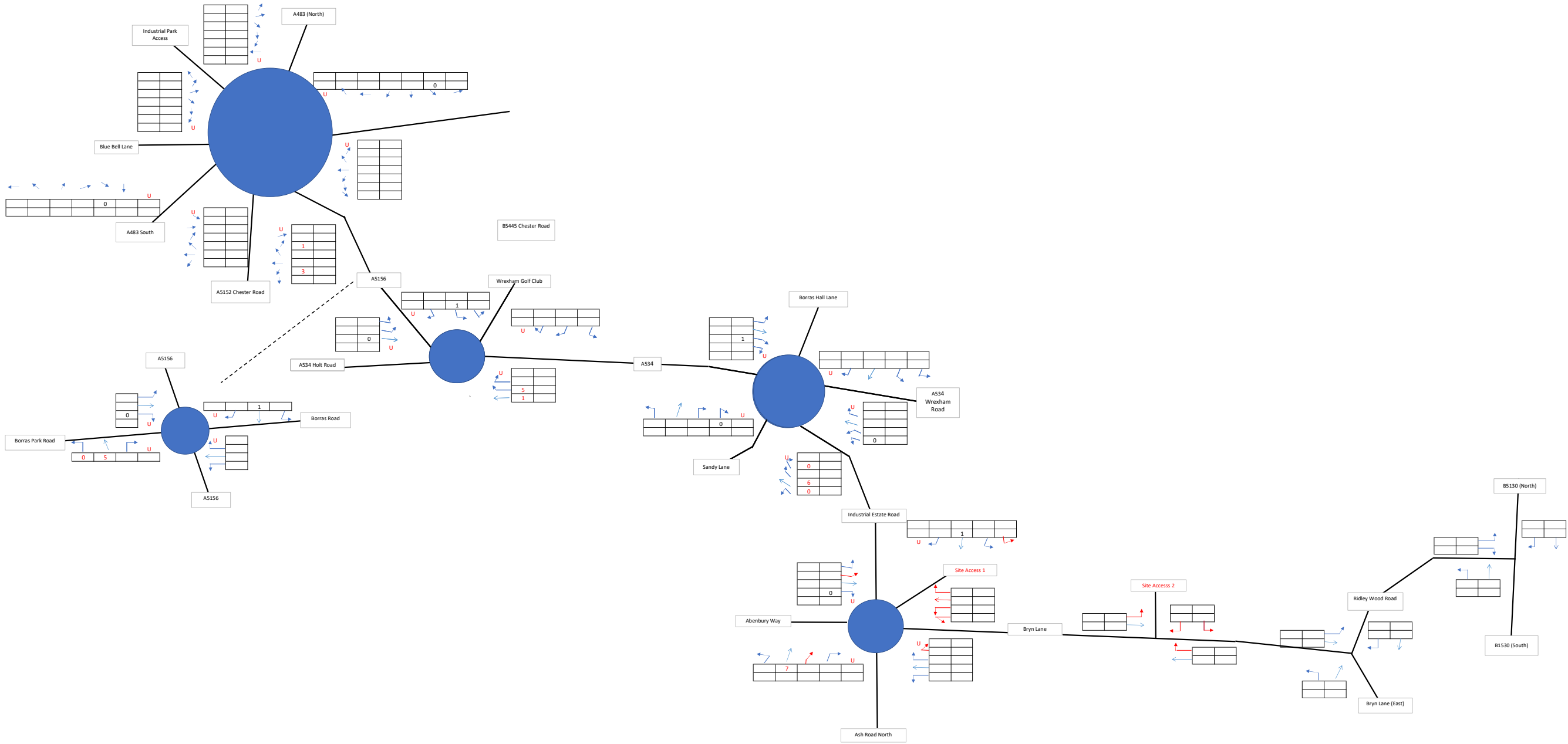


Figure 22 - KSS2 Development Traffic Distribution

Notes:

%	Arrivals
%	Departures

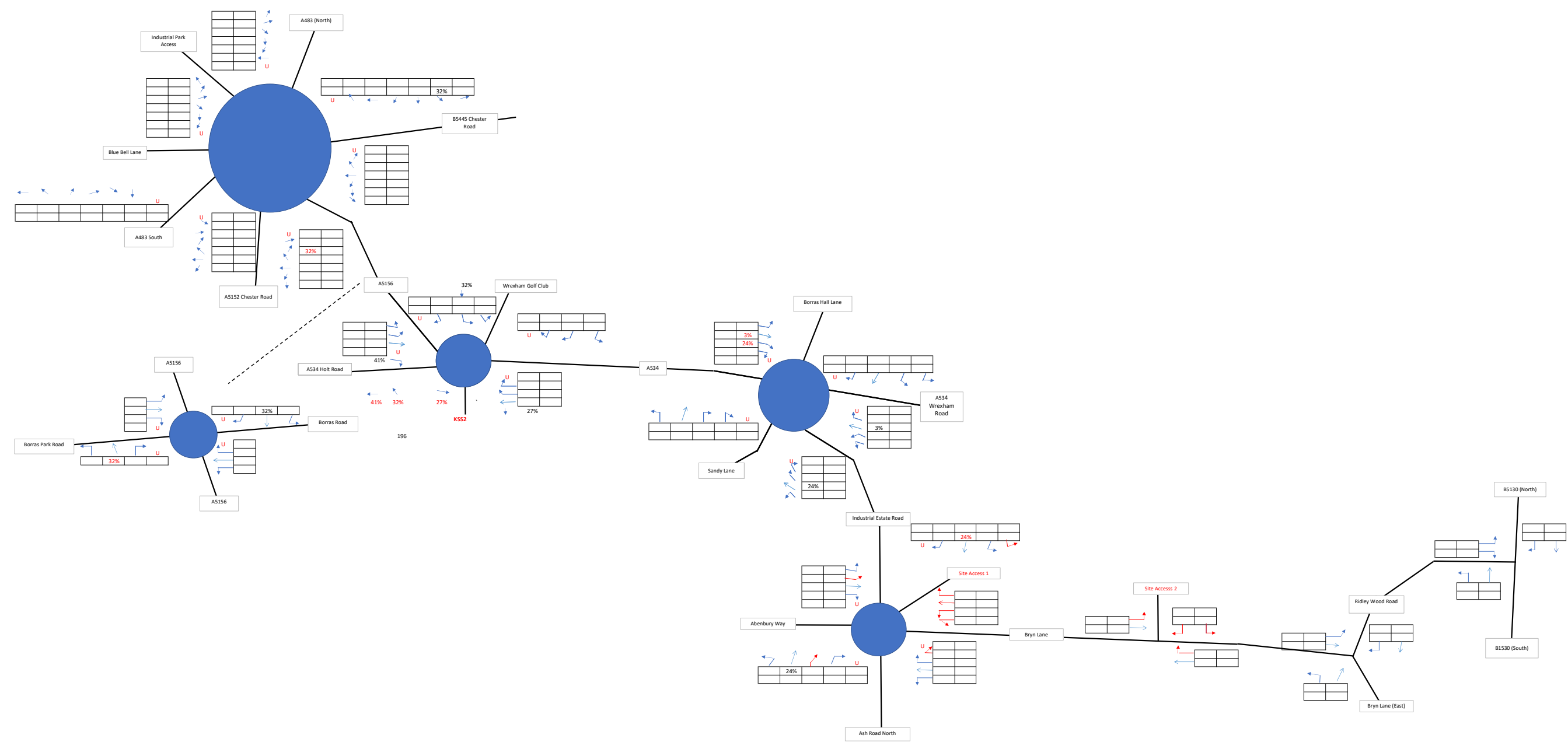


Figure 23 - KSS2 Development Trips
AM Peak

Notes:

237

 Arrivals

626

 Departures

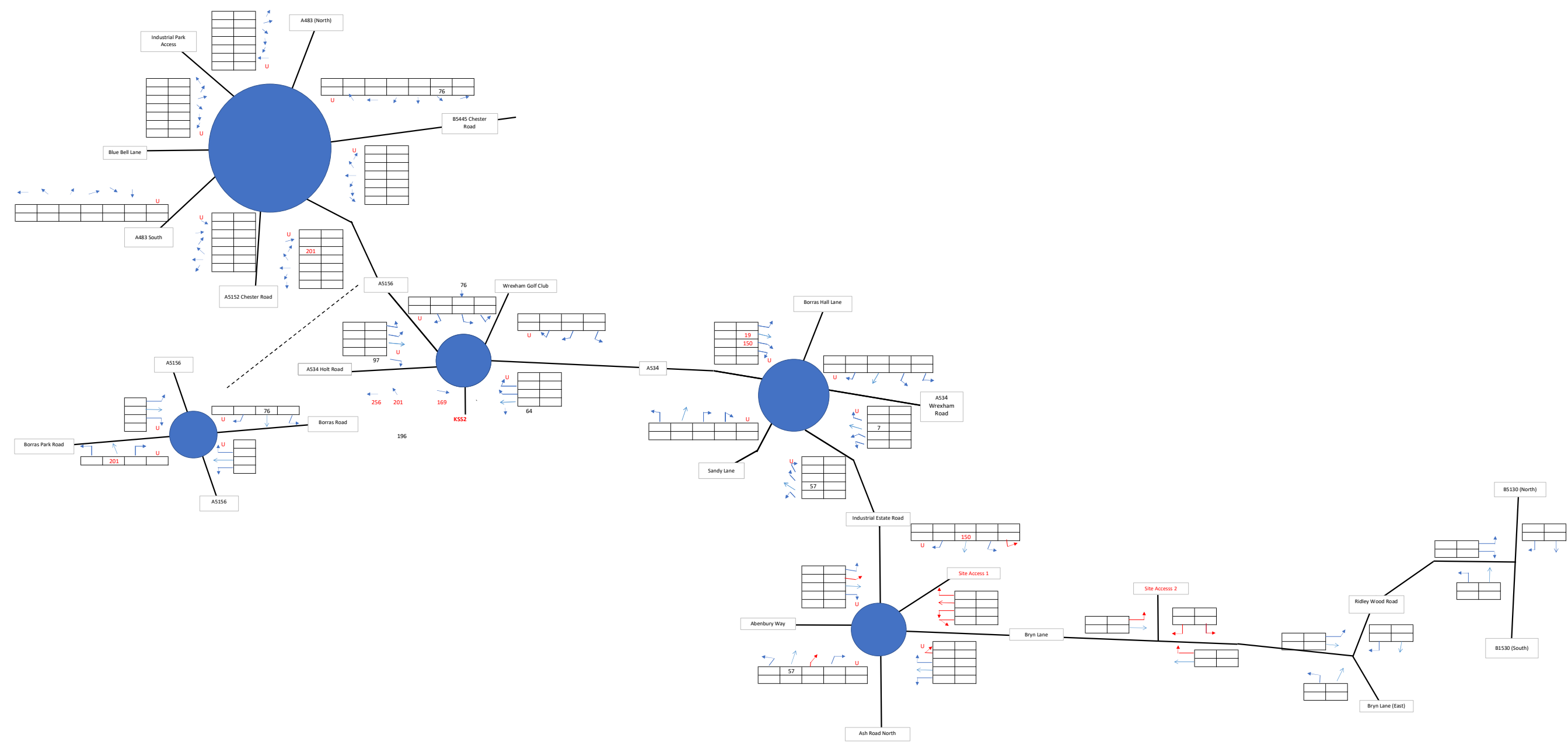


Figure 24 - KSS2 Development Trips
PM Peak

Notes: 547 Arrivals
301 Departures

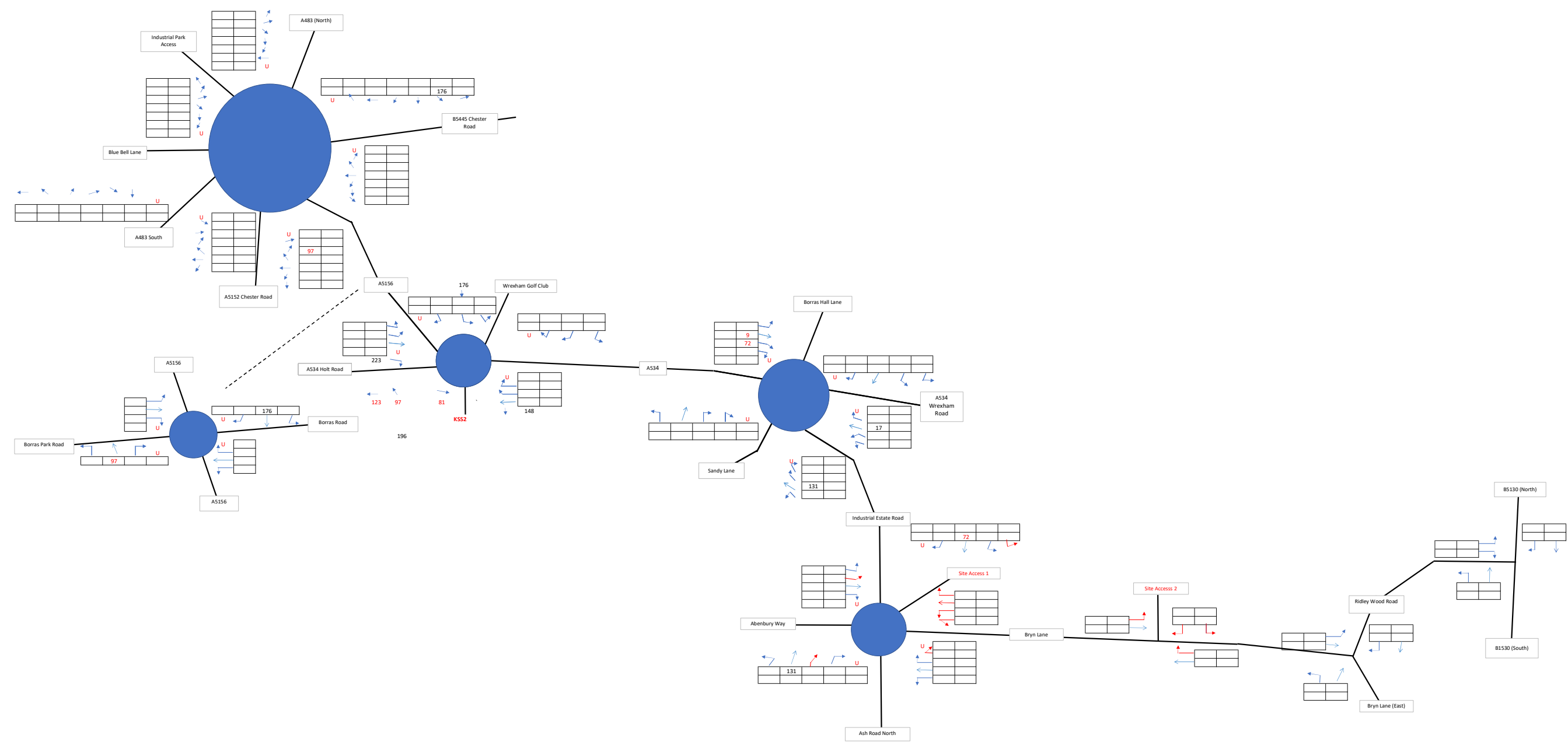


Figure 25 - Kingmoor Development Trips
AM Peak

Notes:

75	Arrivals (Lights)
50	Departures (Lights)

16	Arrivals (HGVs)
15	Departures (HGVs)

*Converted into PCUs

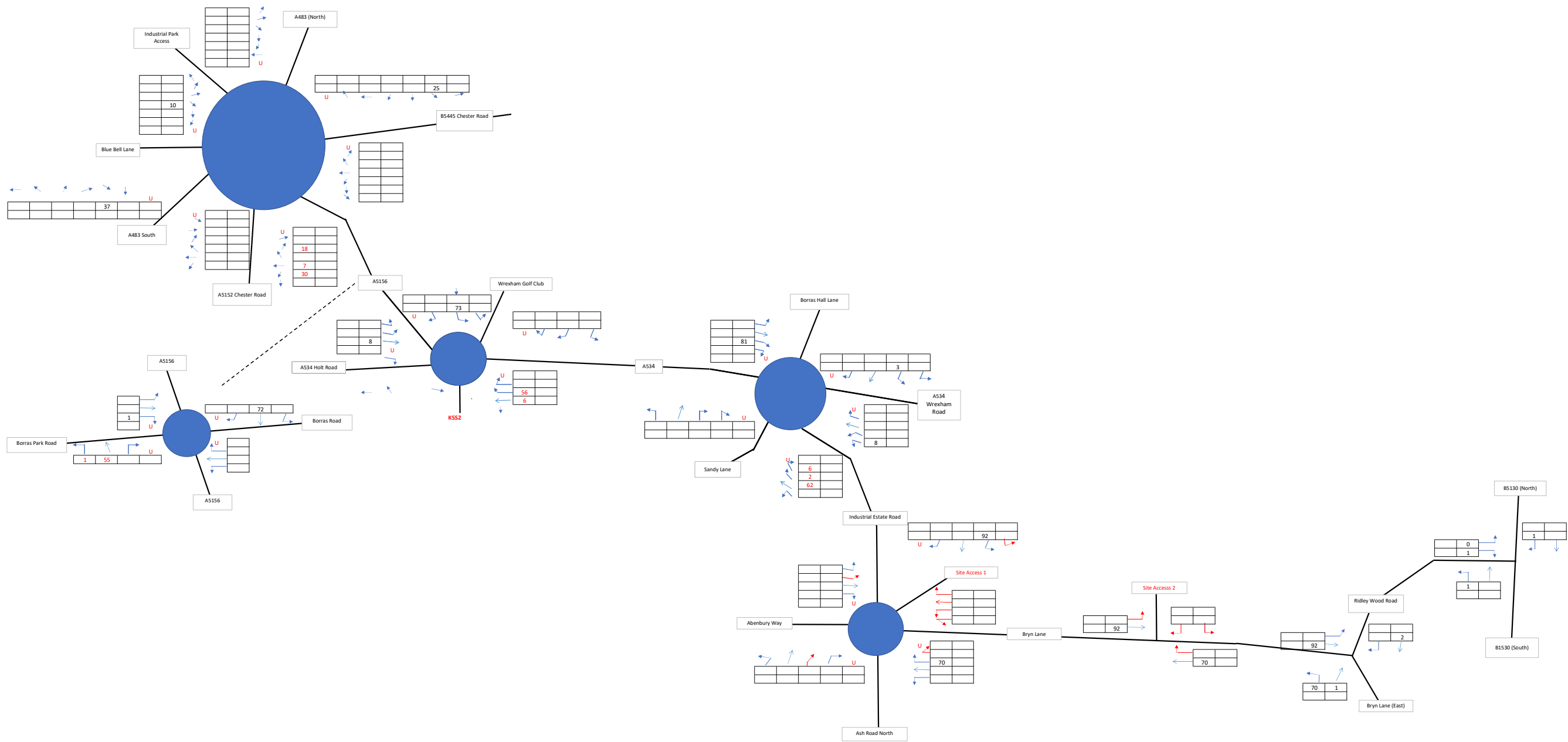


Figure 26 - Kingmoor Development Trips
PM Peak

Notes:

60	Arrivals (Lights)
98	Departures (Lights)

18	Arrivals (HGVs)
16	Departures (HGVs)

*Converted into PCUs

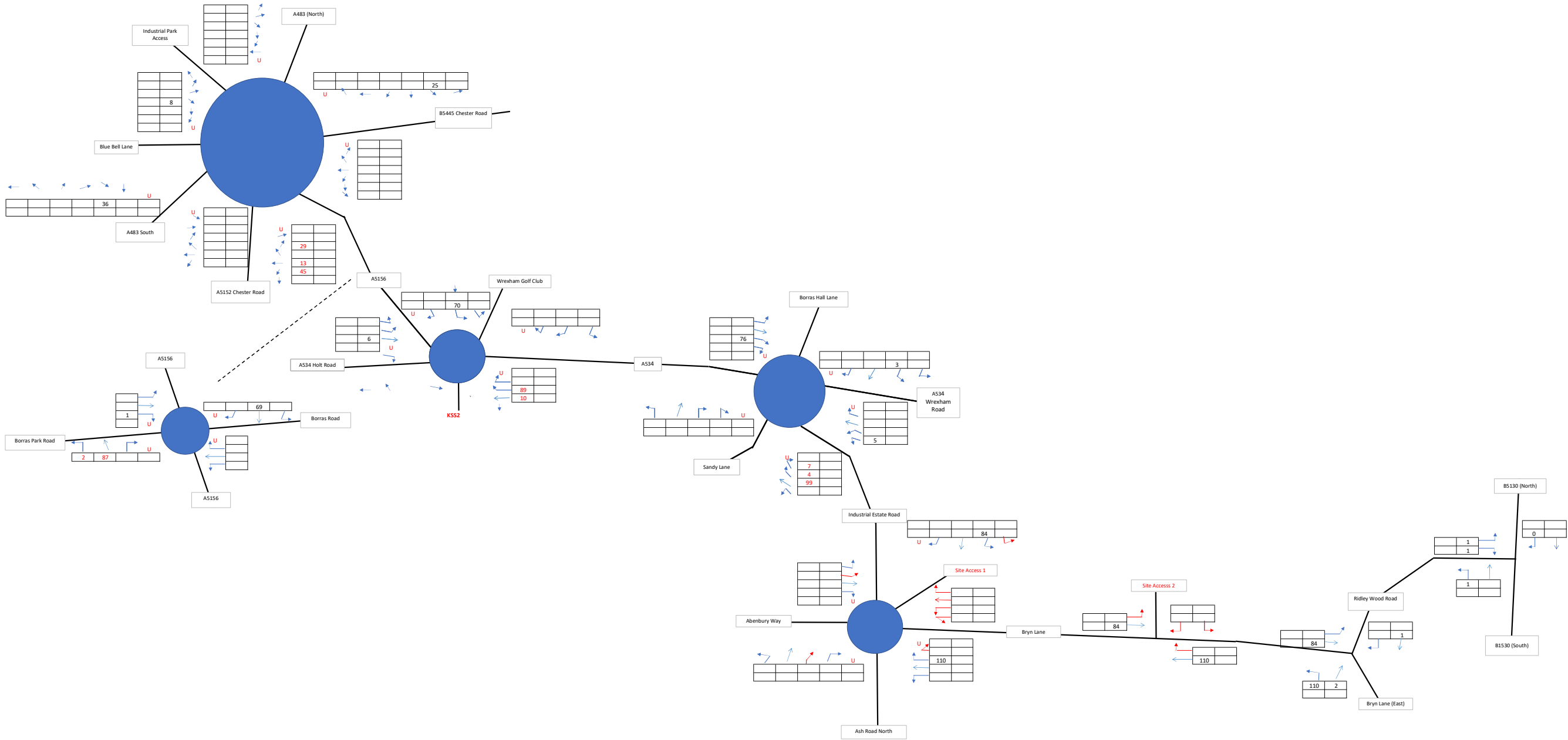


Figure 27 - 2030 Base + Committed
AM Peak: 0800-0900

Notes:

123

 PCUs

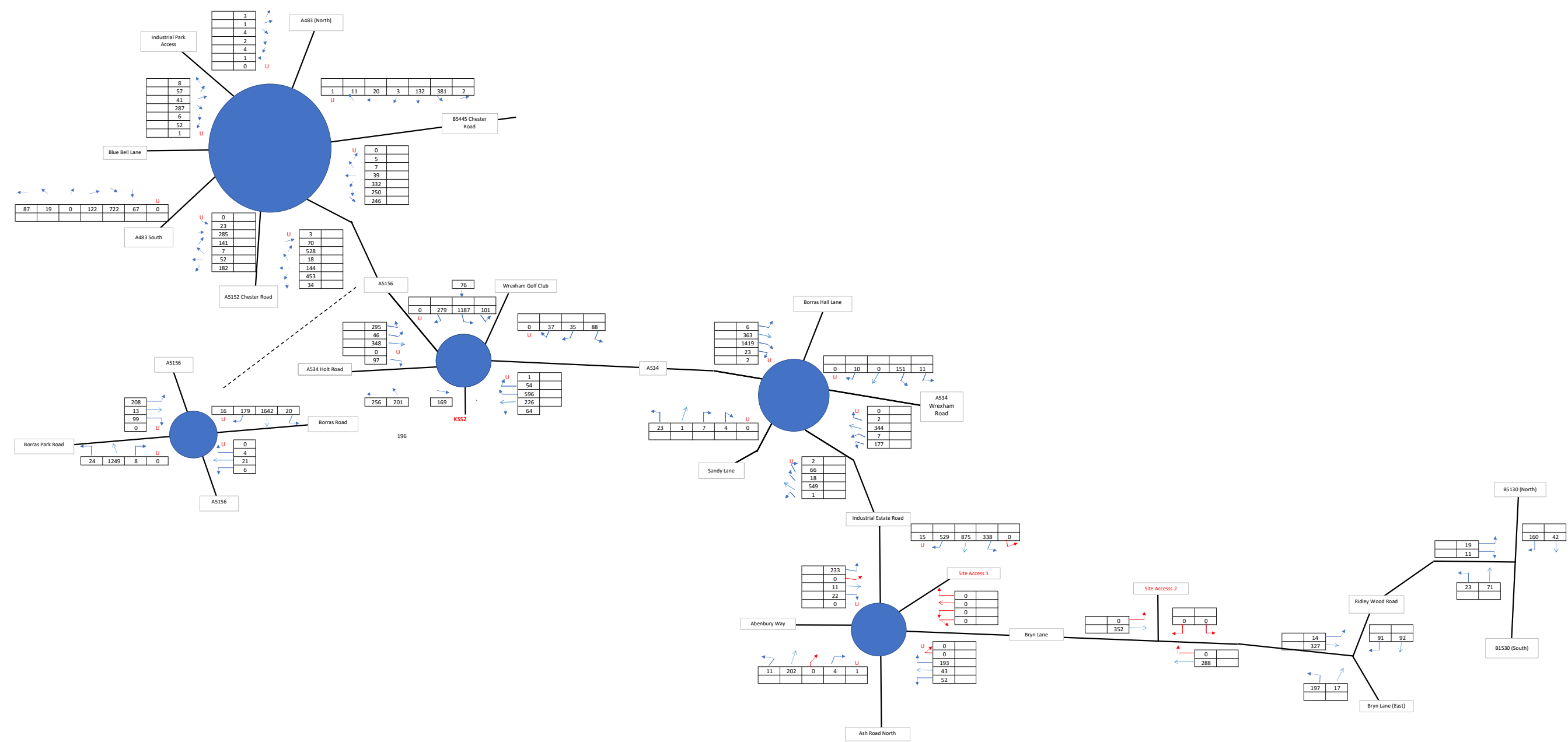


Figure 27a - 2030 Base + Development (Phase 1)
AM Peak: 0800-0900

Notes:

123

 PCUs

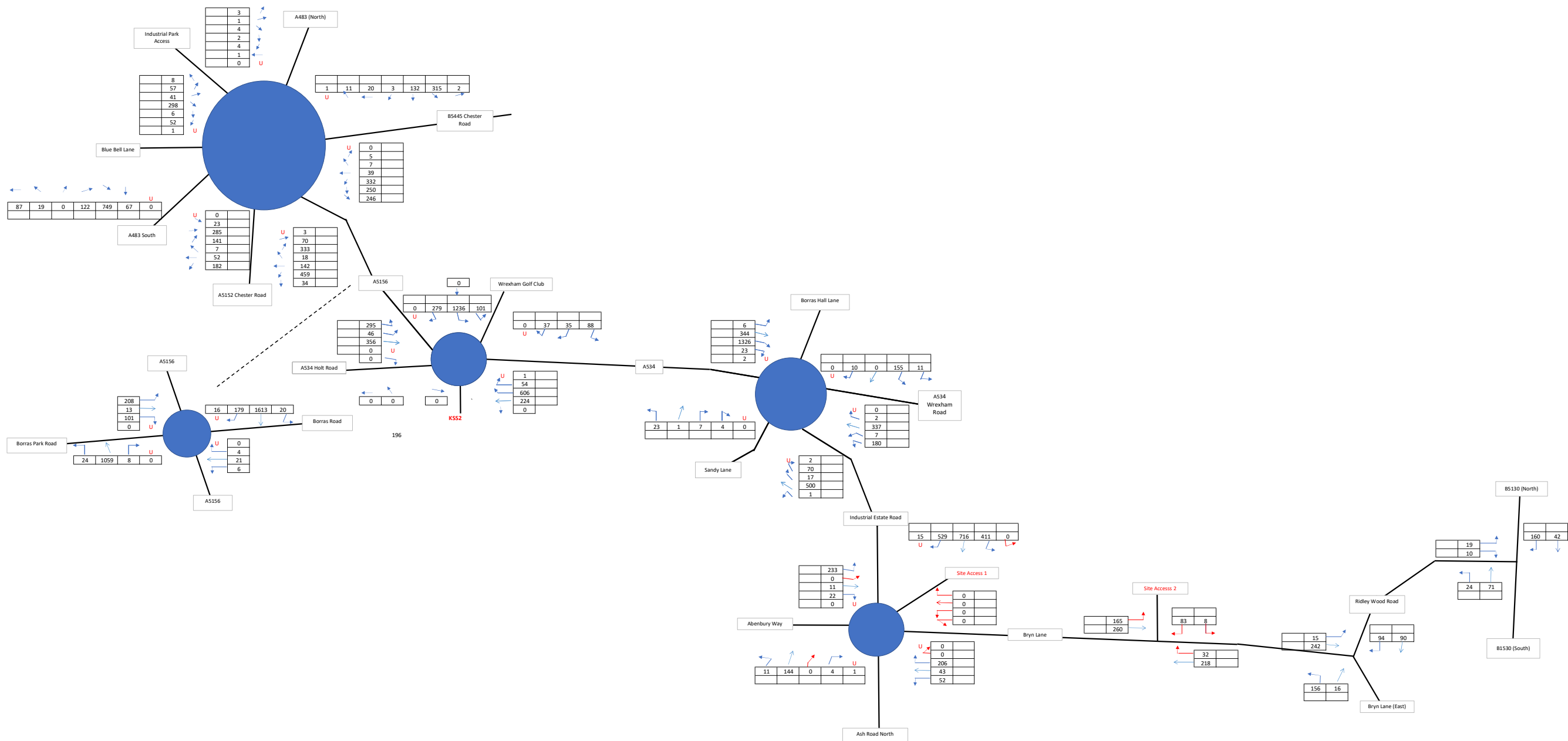


Figure 27b - 2030 Base + Development (Phase 1 + 2)
AM Peak: 0800-0900

Notes:

123

 PCUs

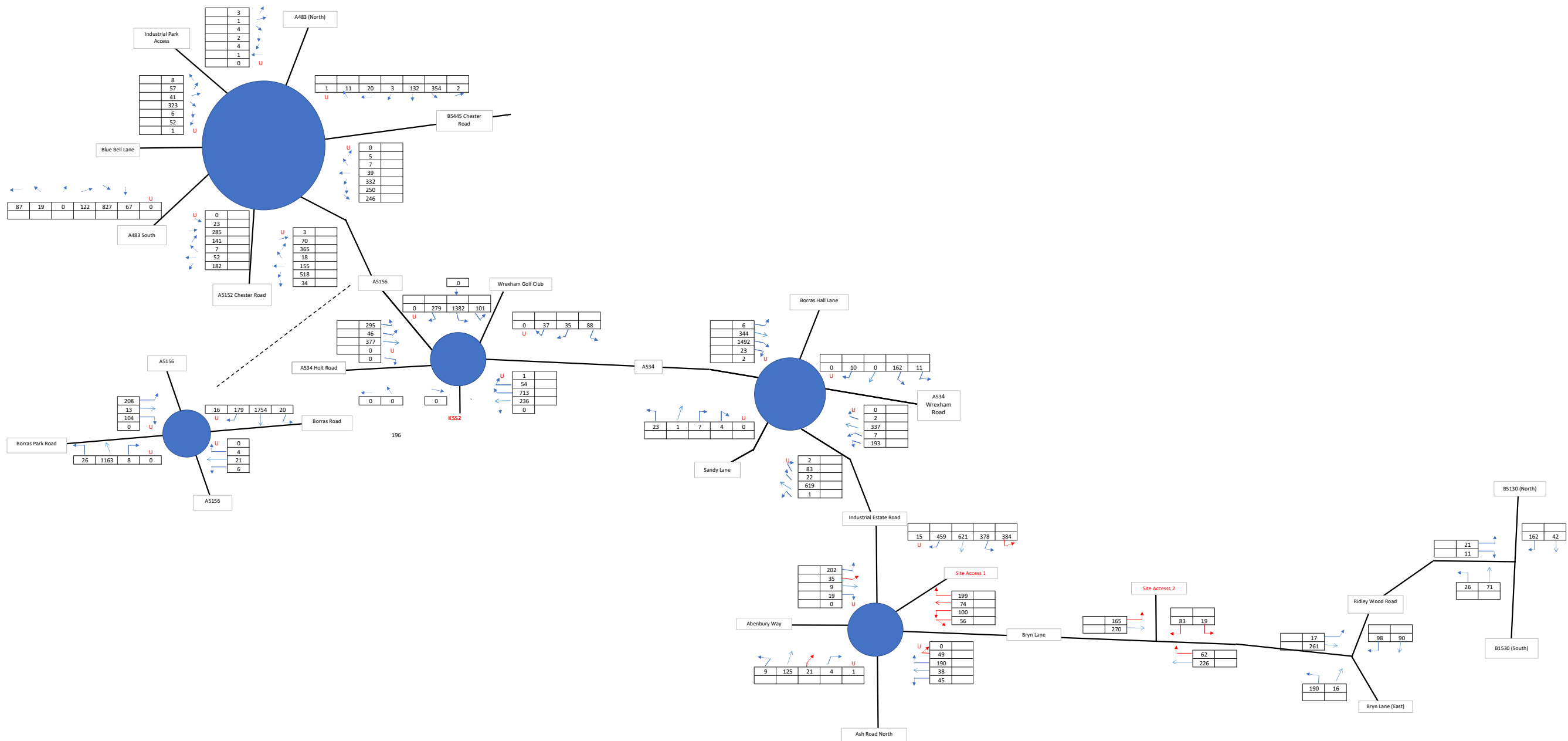


Figure 28 - 2030 Base + Committed
PM Peak: 1630-1730

Notes:

123

 PCUs

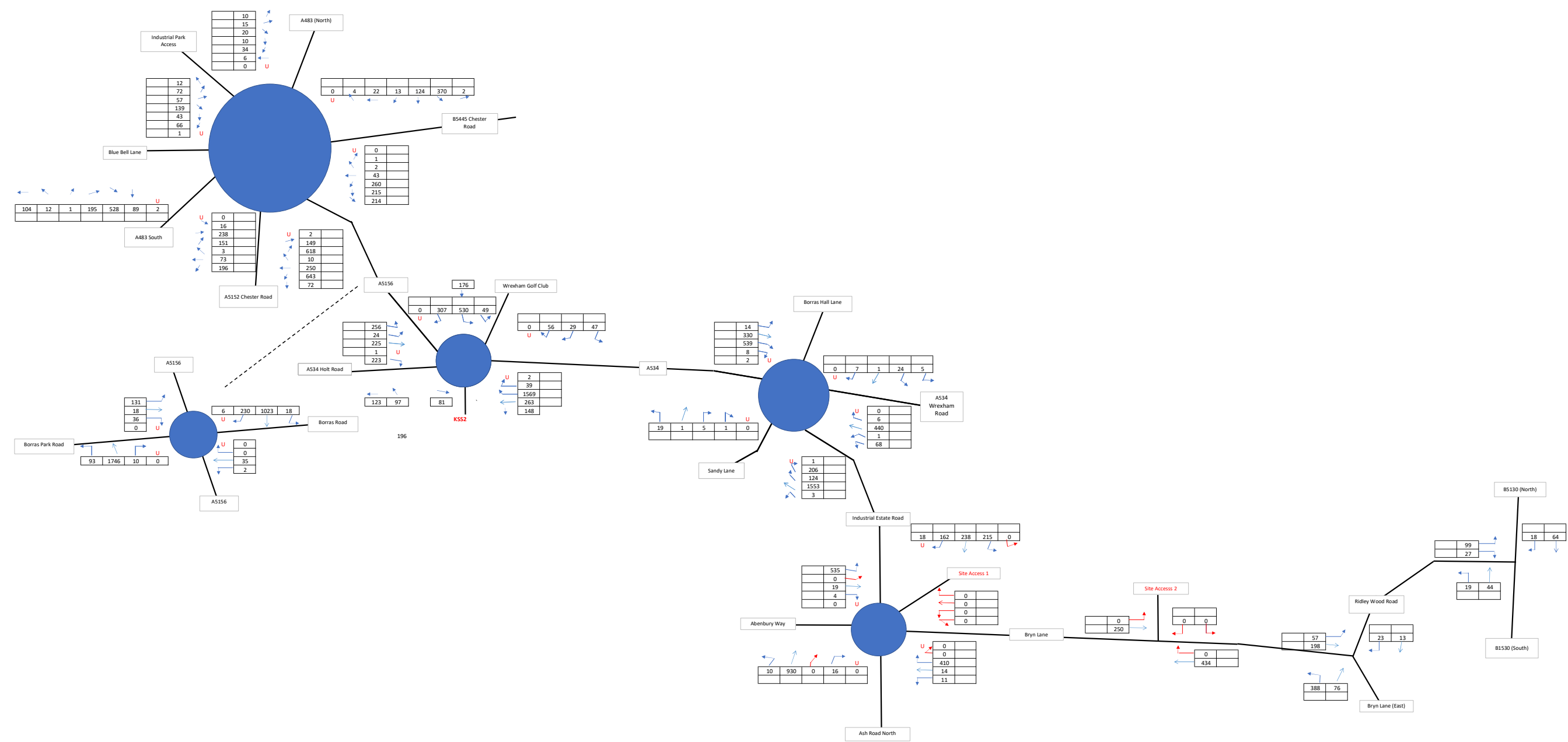


Figure 28a - 2030 Base + Development (Phase 1)
PM Peak: 1630-1730

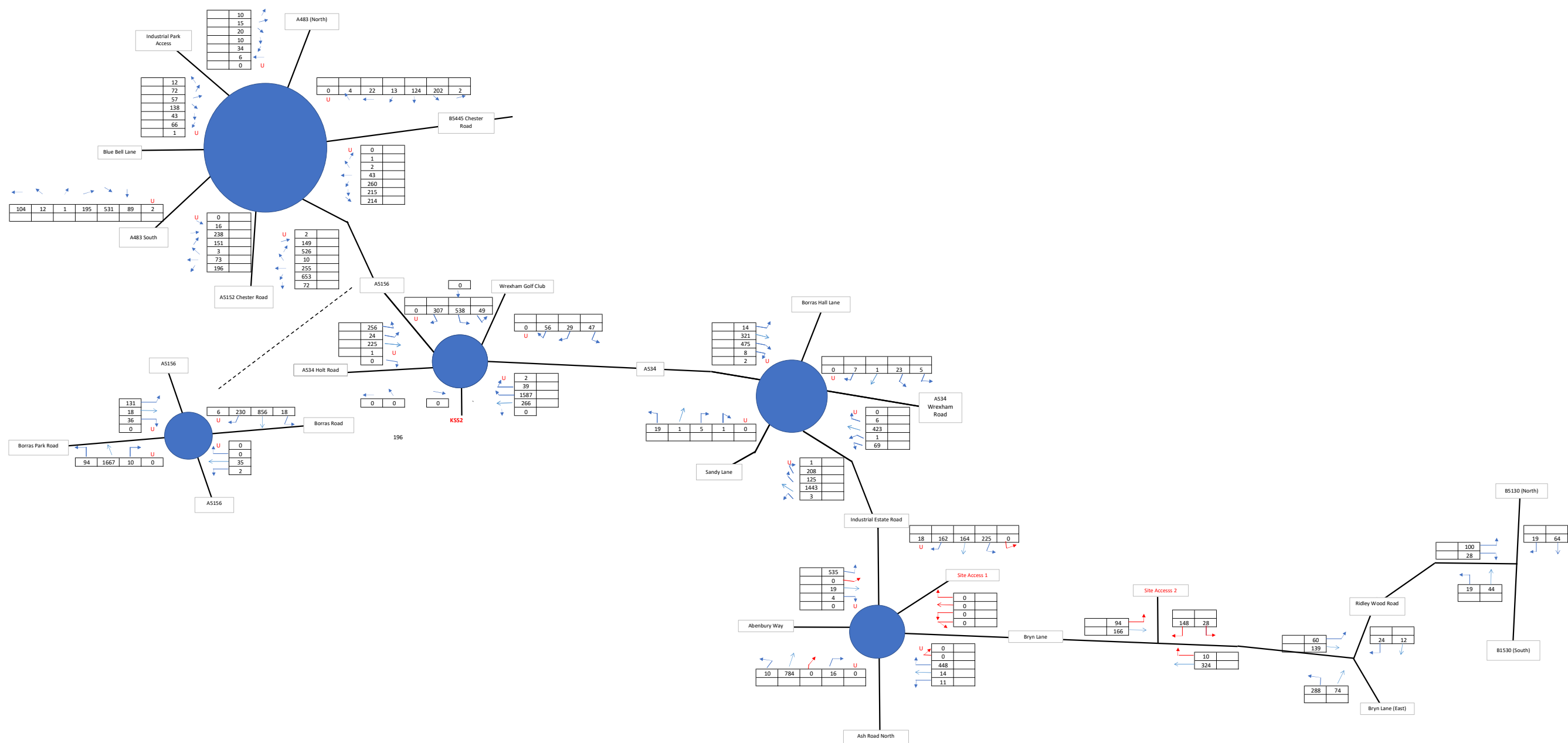
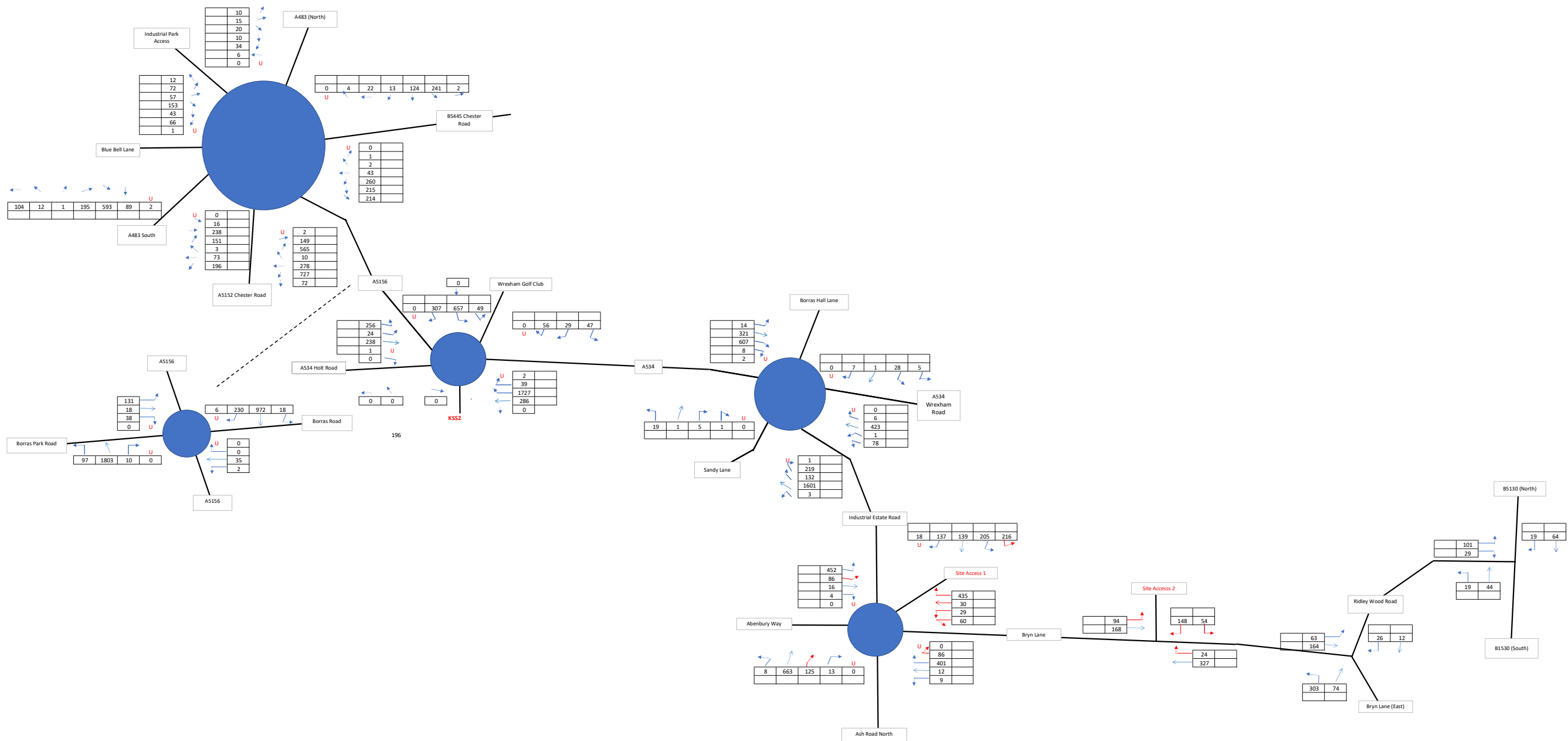


Figure 28b - 2030 Base + Development (Phase 1 + 2)
PM Peak: 1630-1730

Notes:

123

 PCUs



Notes:

123

 PCUs

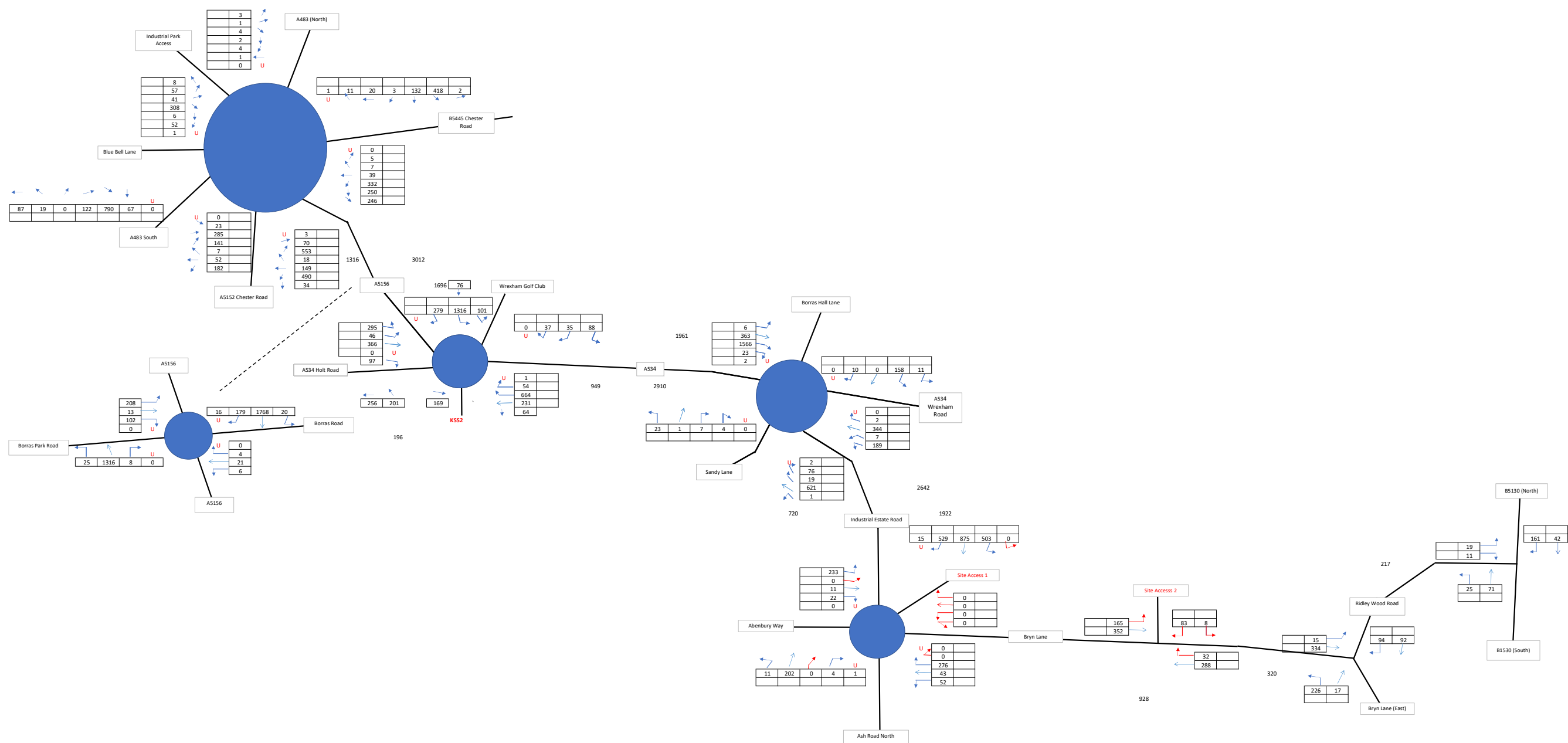


Figure 29a - 2030 Base + Development [Phase 1 + 2] + Committed
AM Peak: 0800-0900

Notes:

123

 PCUs

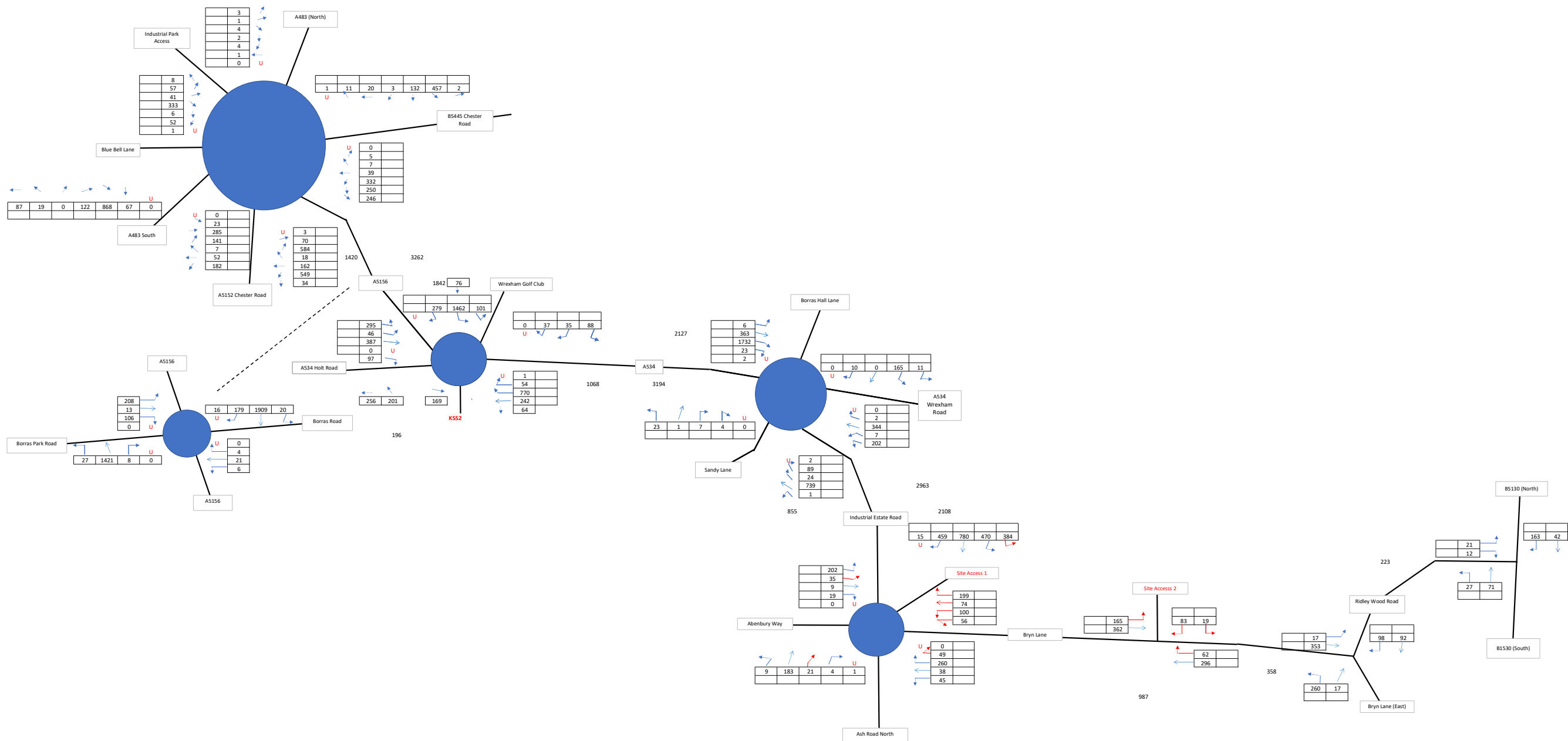


Figure 30 - 2030 Base + Development [Phase 1] + Committed
PM Peak: 1630-1730

Notes:

123

 PCUs

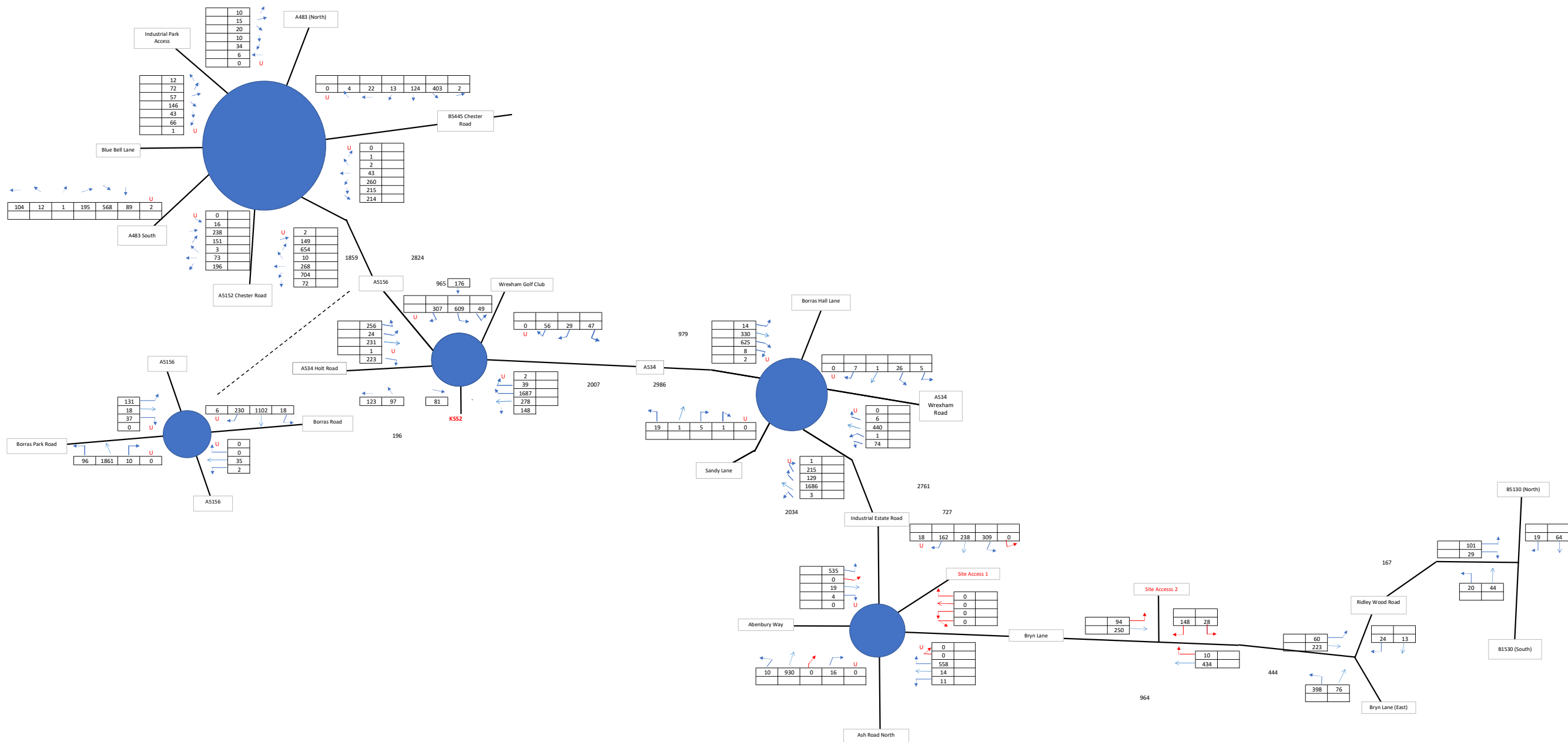
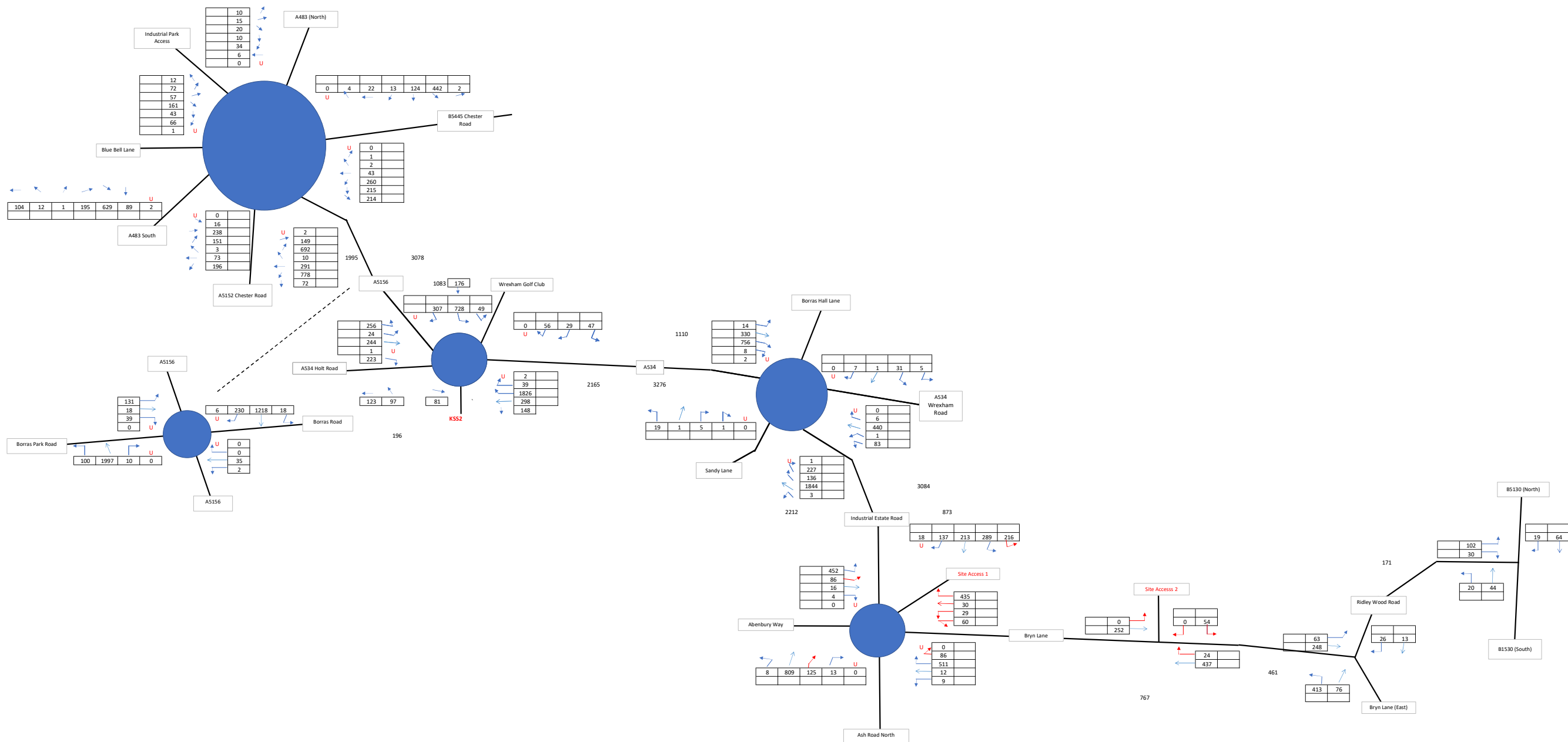


Figure 30a - 2030 Base + Development [Phase 1 + 2] + Committed
PM Peak: 1630-1730

Notes:

123

 PCUs



APPENDICES

APPENDIX A – ACCIDENT DATA



Validated Data

Crash Date: Saturday, September 01, 2018 **Time of Crash:** 5:15:00 PM **Crash Reference:** 201860W127126

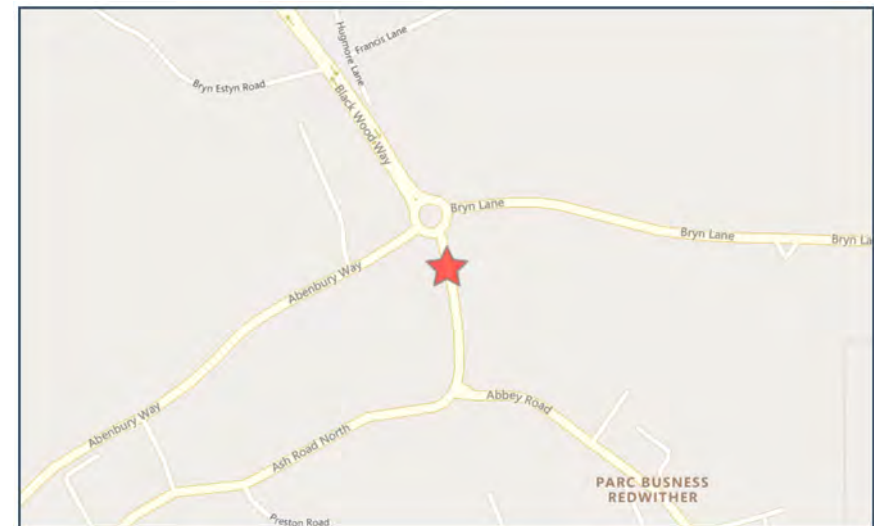
Highest Injury Severity: Serious
Highway Authority: Wrexham
Local Authority: Wrexham County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Using private drive or entrance
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: U0

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 338097 350817



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

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



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	Pedal cycle	-1	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None
2	Car (excluding private hire)	-1	Female	46 - 55	Vehicle is slowing down or stopping	Back	Unknown	None	None

Casualties

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

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

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crashmap.co.uk

Validated Data

Crash Date: Friday, October 12, 2018 **Time of Crash:** 2:20:00 PM **Crash Reference:** 201860W145697

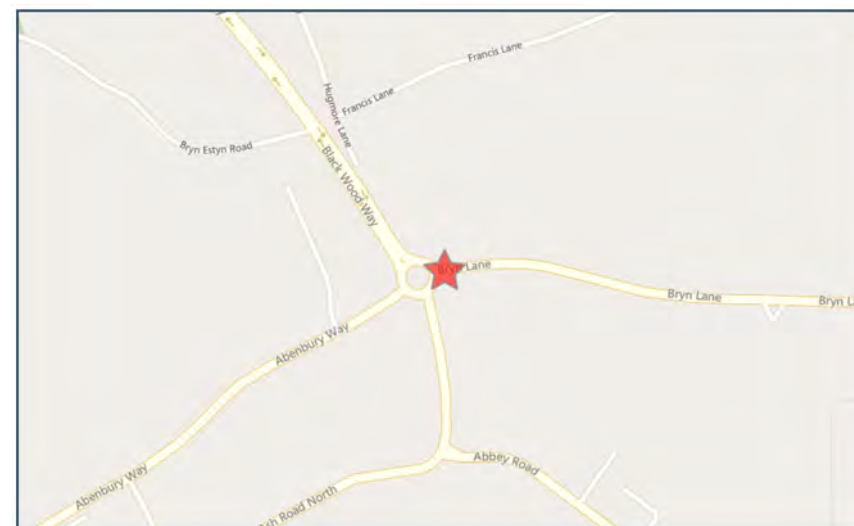
Highest Injury Severity: Slight
Highway Authority: Wrexham
Local Authority: Wrexham County Borough
Weather Description: Raining without high winds
Road Surface Description: Wet or Damp
Speed Limit: 40
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Roundabout
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Dual carriageway
Junction Control: Give way or uncontrolled

Road Number: U0

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 338114 350908



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

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



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	Male	26 - 35	Vehicle is in the act of turning left	Nearside	Unknown	None	None
2	Pedal cycle	-1	Male	36 - 45	Vehicle proceeding normally along the carriageway, on a left hand bend	Front	Unknown	None	None

Casualties

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

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

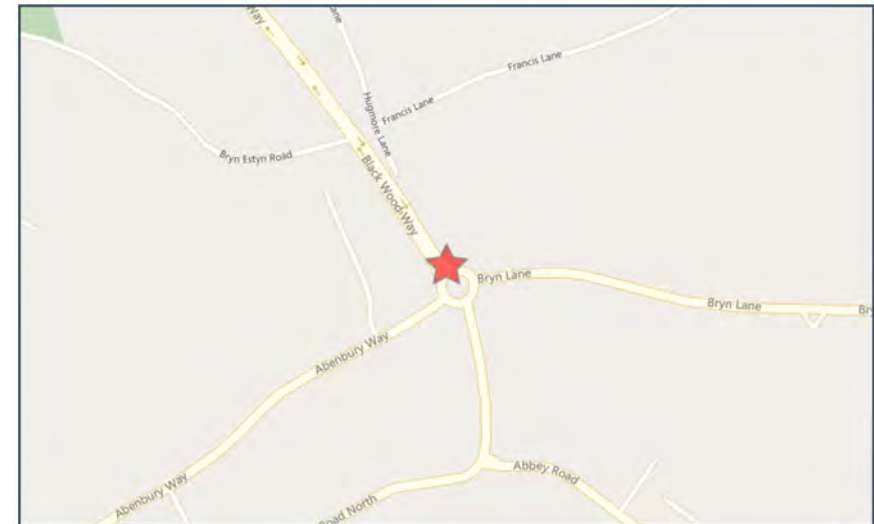
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Validated Data

Crash Date: Monday, April 26, 2021 **Time of Crash:** 6:10:00 AM **Crash Reference:** 202160Z057006

Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	338057 350923
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Unknown	None	None
2	Pedal cycle	-1	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Unknown	None	None

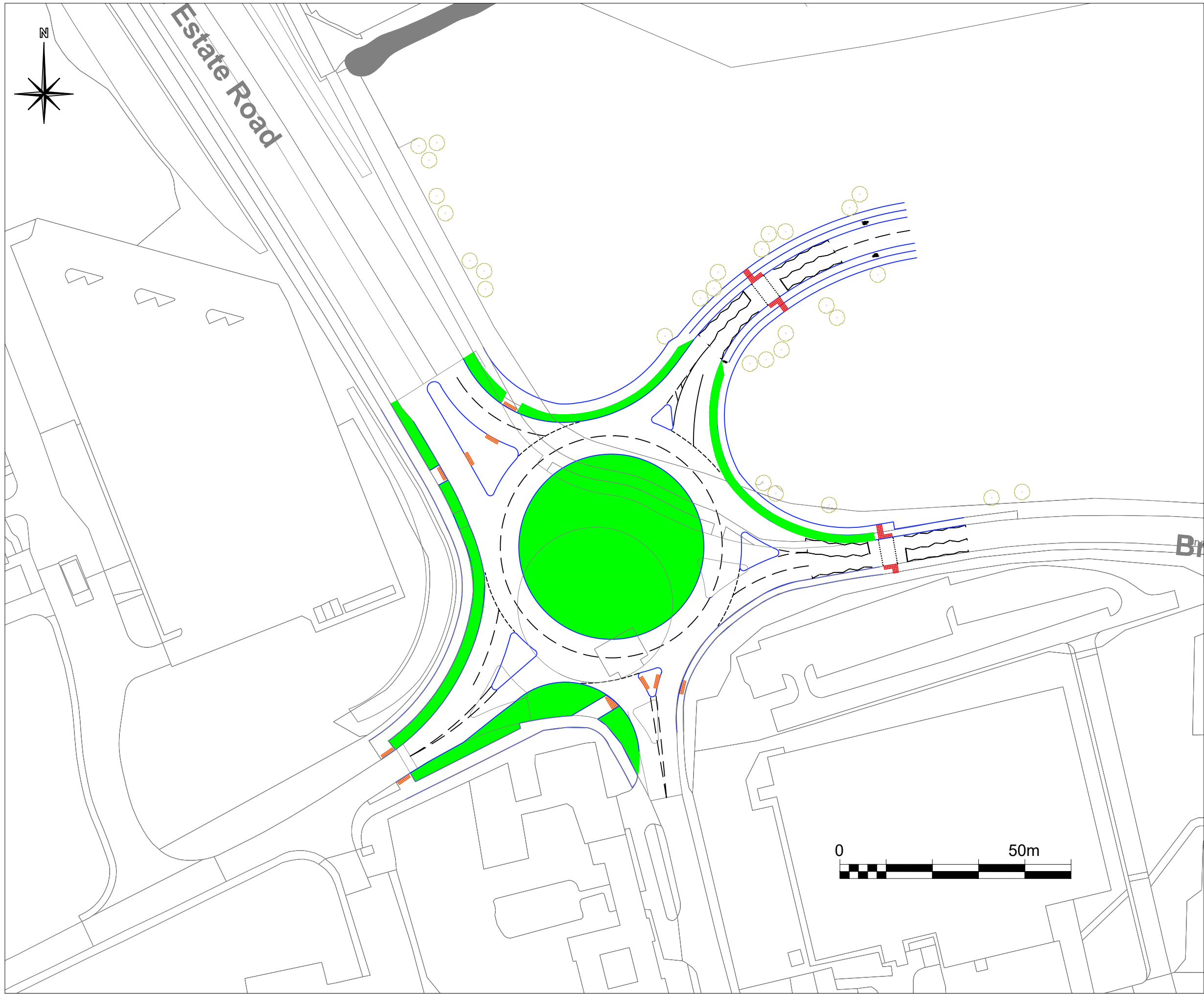
Casualties

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

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

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APPENDIX B – PROPOSED ACCESS ARRANGEMENTS



- Notes:**
1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
 2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.

B	30/06/23	Updated to Council's and RSA comments	TC	TC
A	26/06/23	Updated to team comments	TC	MC
Rev	Date	Description	Ckd	By

Cora^{iHt}

Adamson House, Towers Business Park
Wilmslow Road
Manchester
M20 2YF

Tel: 0161 955 4422
Email: manchester@coraiht.com
Web: www.coraiht.com

Client

Net World Sports Limited

Project

North of Bryn Lane
Wrexham

Title

Proposed Roundabout Access
Arrangement

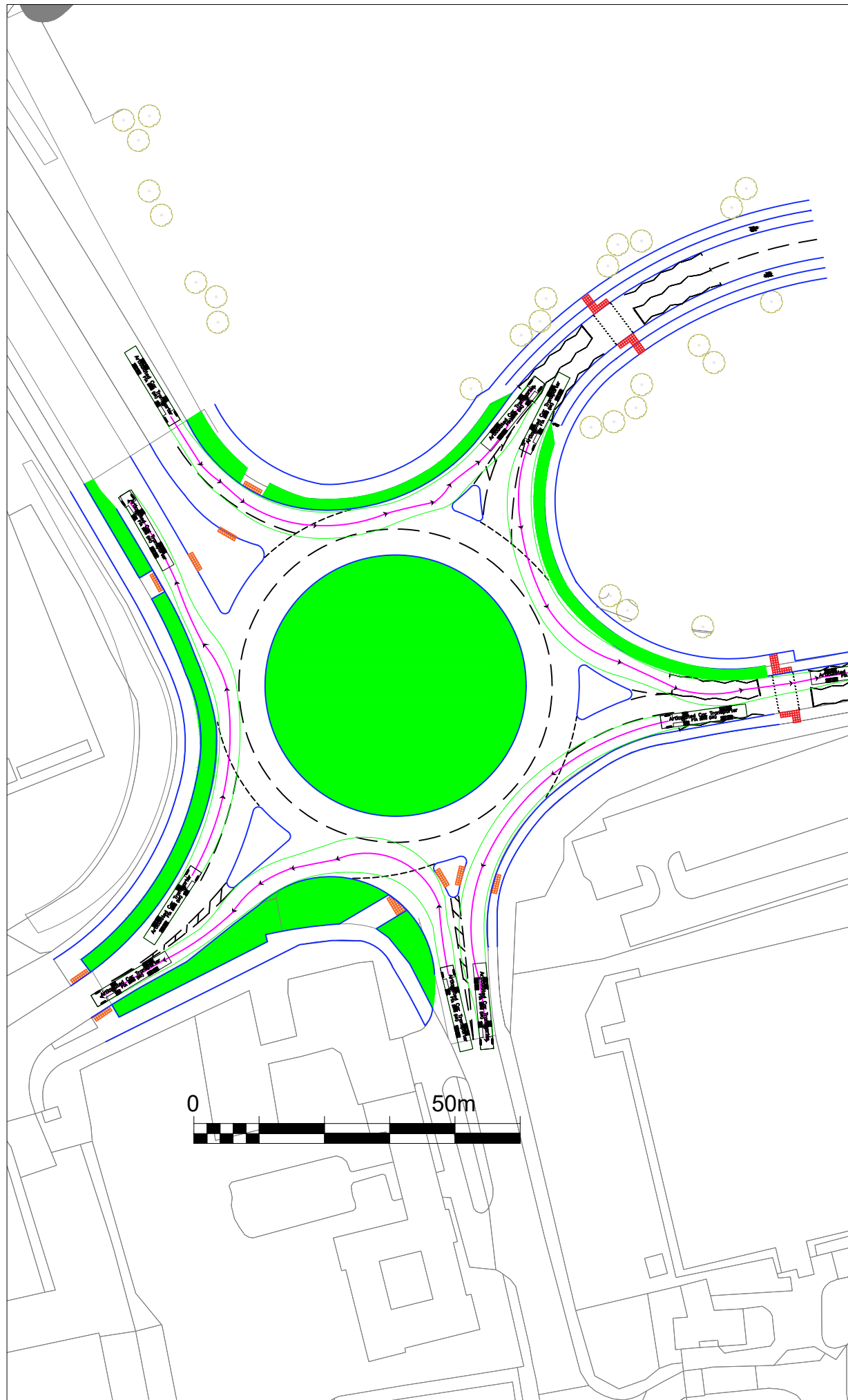
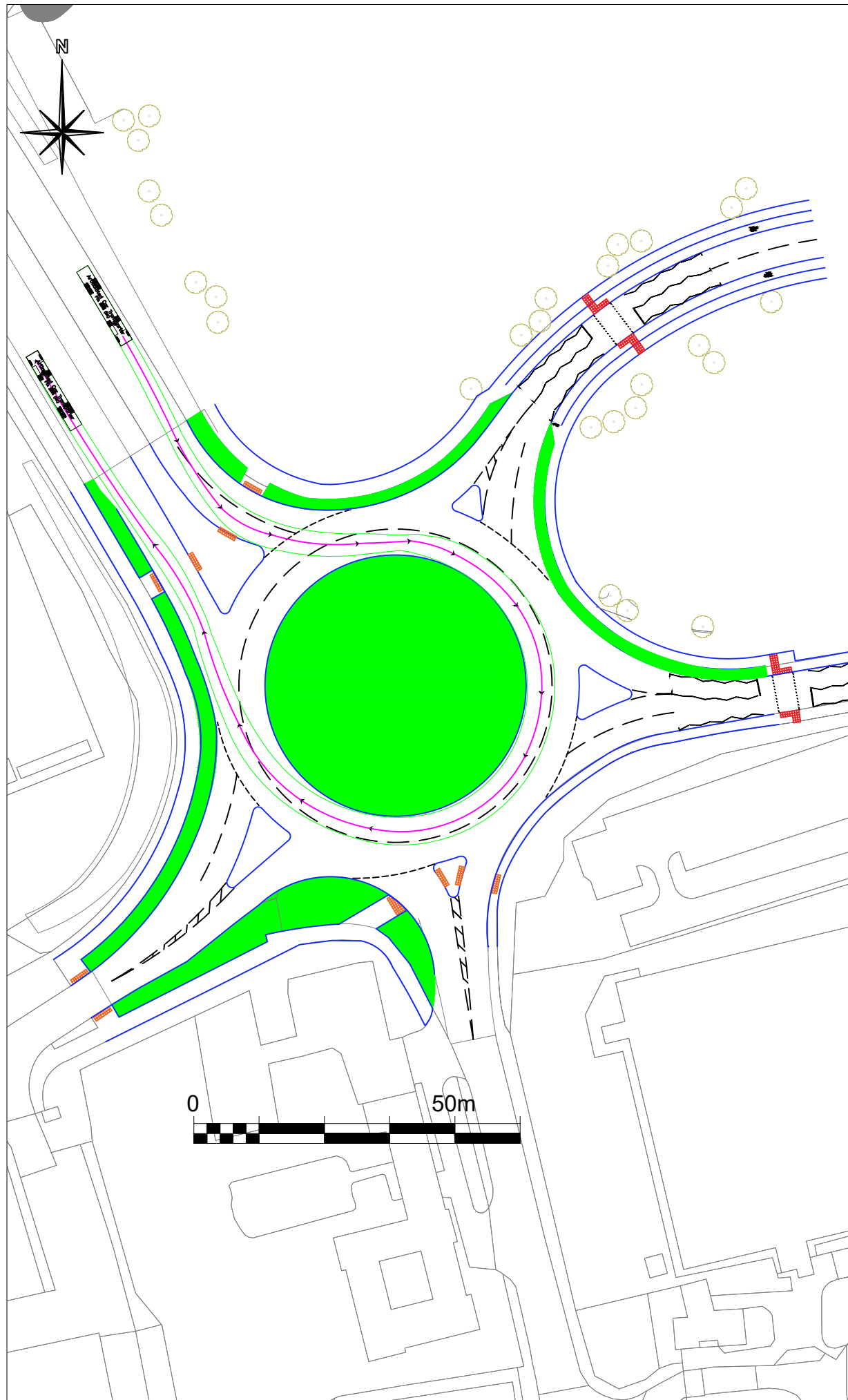
Drawing Status

Job No. 16-2067

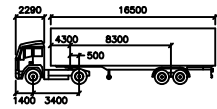
Drawn MC	Checked TC	Scale at A3 1:1000	Date 24/05/23	Issue Date -
-------------	---------------	-----------------------	------------------	-----------------

Drawing No. 101

B



- Notes:**
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 2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.



Articulated Car Transporter			
Tractor Width	mm	Lock to Lock Time	: 6.0
Tractor Width	: 2500	Steering Angle	: 21.2
Tractor Track	: 2500	Articulating Angle	: 70.0
Trailer Track	: 2500		

Rev	Date	Description	Ckd	By
-----	------	-------------	-----	----

Cora^{iHt}

Adamson House, Towers Business Park
Wilmslow Road
Manchester
M20 2YY

Tel: 0161 955 4422
Email: manchester@coraiht.com
Web: www.coraiht.com

Client

Net World Sports Limited

Project

North of Bryn Lane
Wrexham

Title

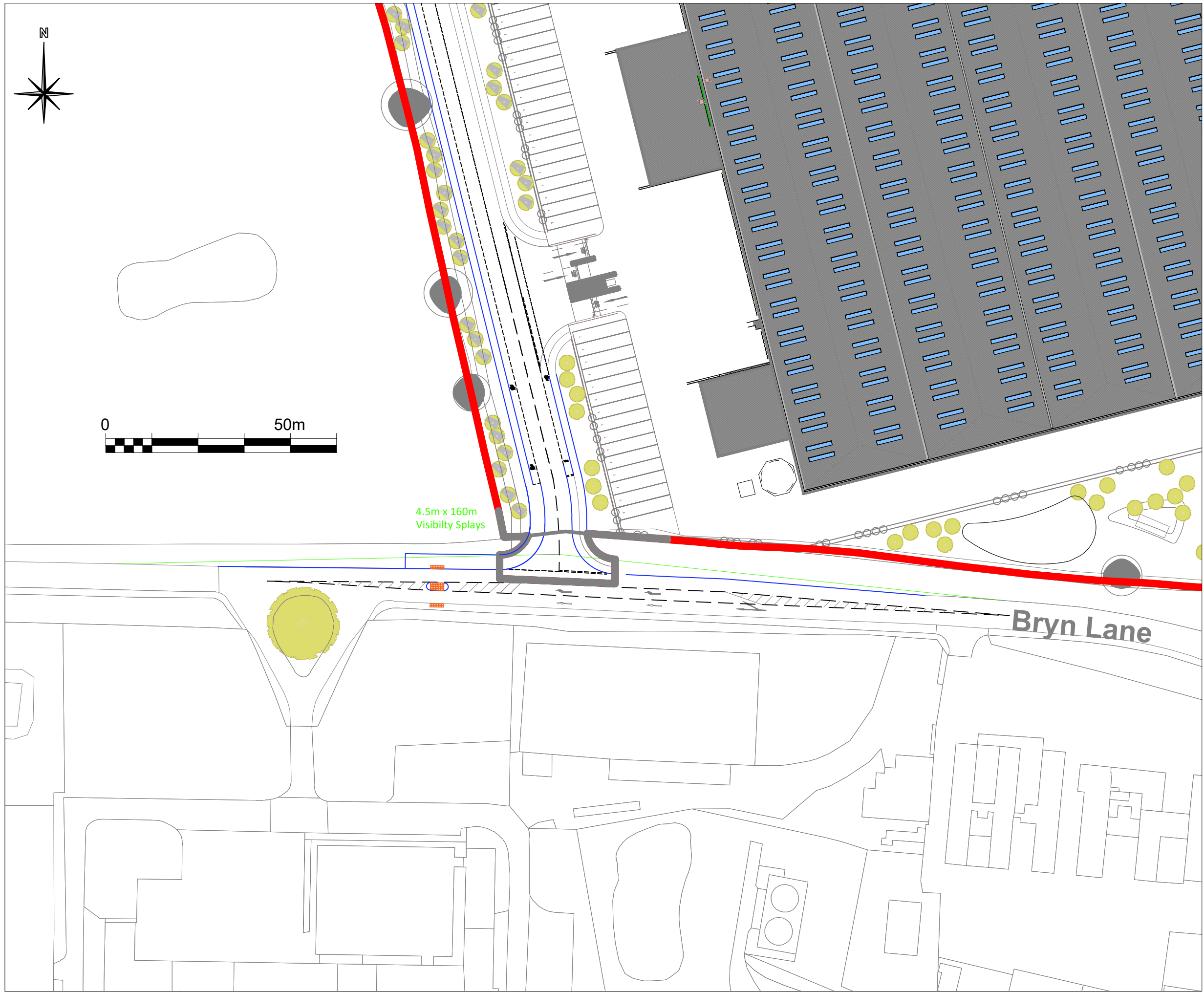
Proposed Roundabout Access
Tracking

Drawing Status

Job No. 16-2067

Drawn MC	Checked TC	Scale at A3 1:1000	Date 24/05/23	Issue Date -
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Drawing No.	104	-
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- Notes:**
1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
 2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.

C	07/01/23	Updated to capacity assessment	TC	MC
B	31/01/23	Updated to Council and RSA comments	TC	MC
A	26/06/23	Updated to team comments	TC	MC

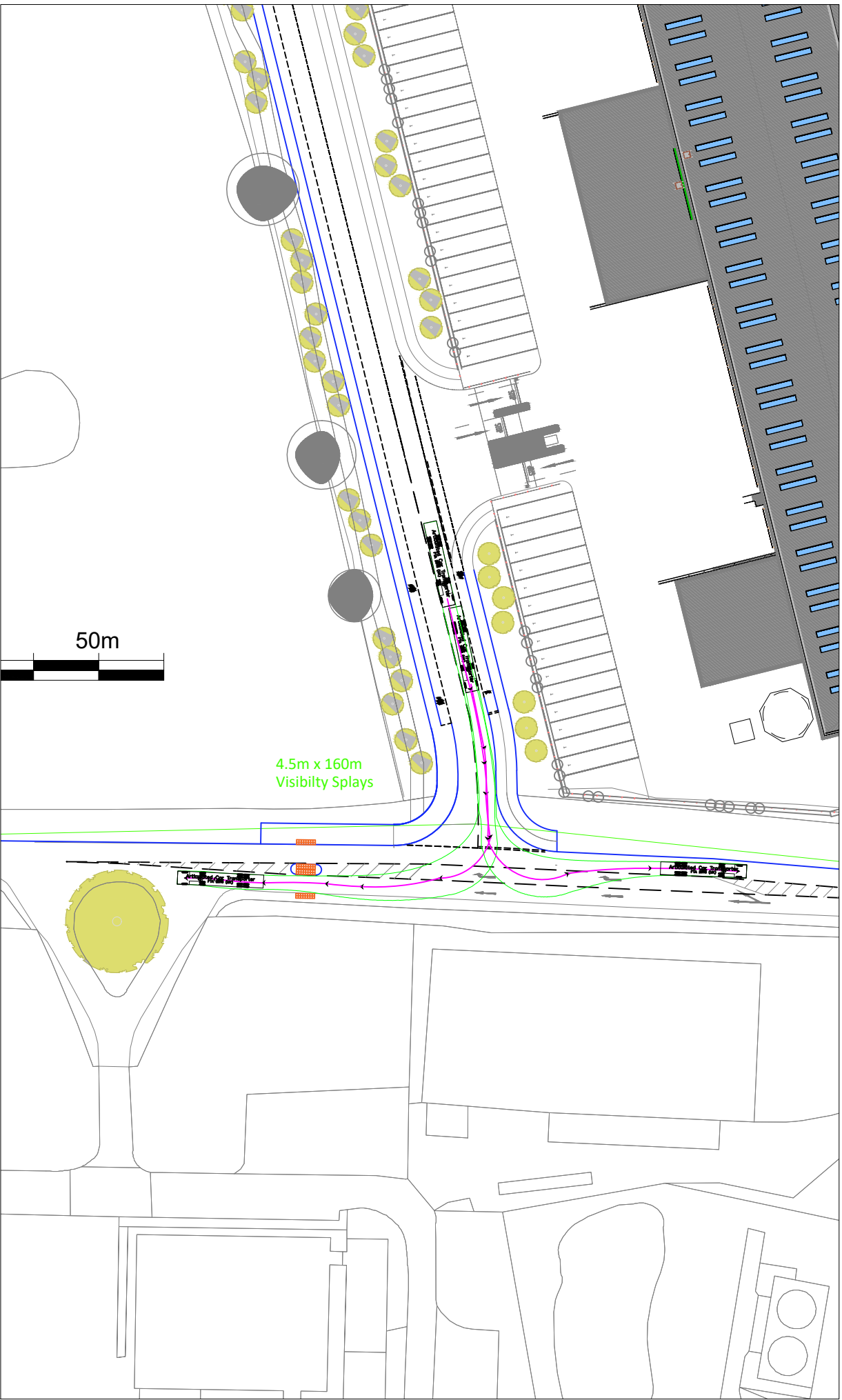
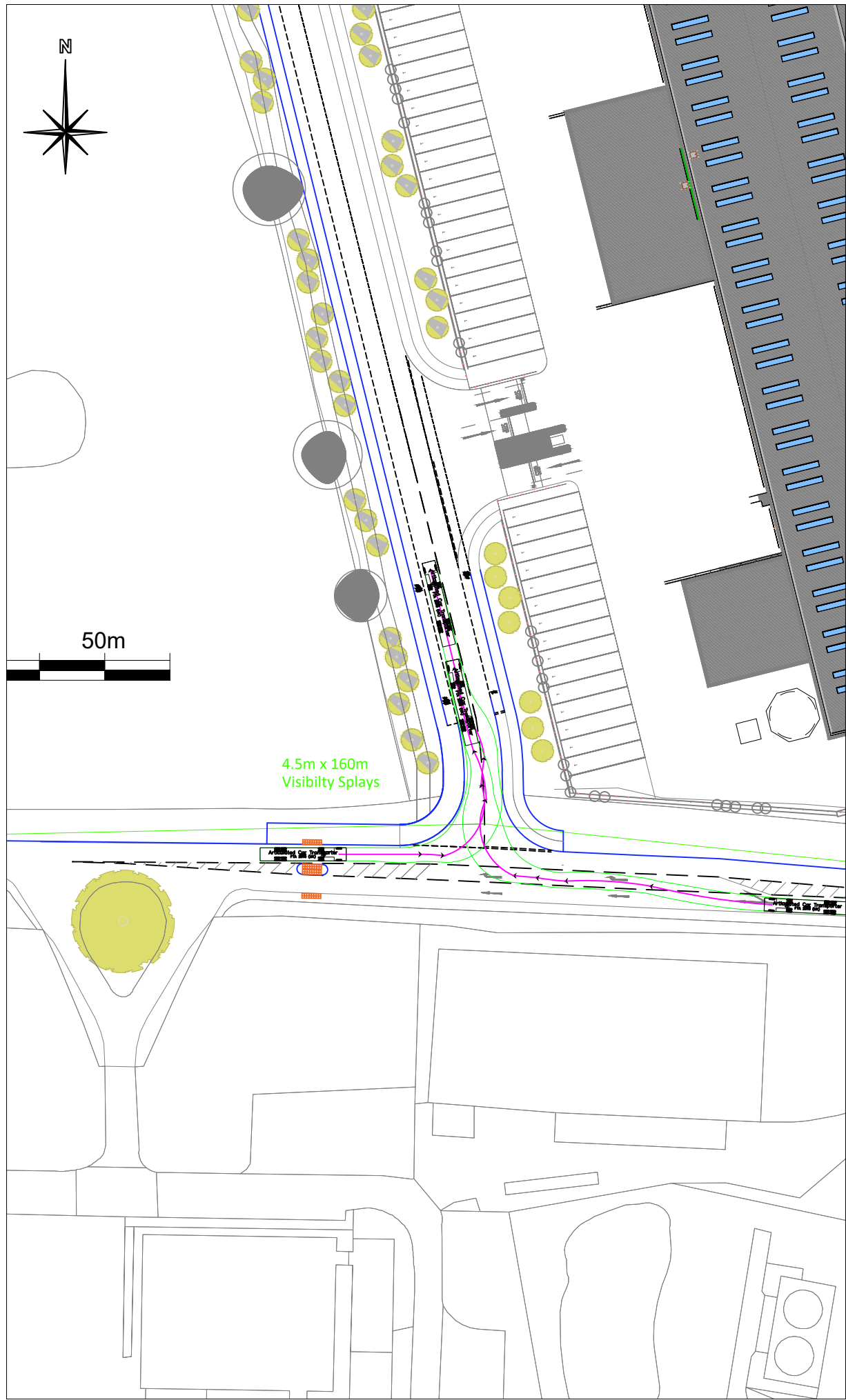
Rev	Date	Description	Ckd	By
-----	------	-------------	-----	----

CoraiHt

Adamson House, Towers Business Park
Wilmslow Road
Manchester
M20 2YJ

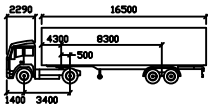
Tel: 0161 955 4422
Email: manchester@coraiht.com
Web: www.coraiht.com

Client	Net World Sports Limited			
Project	North of Bryn Lane Wrexham			
Title	Proposed Bryn Lane Access Arrangement			
Drawing Status				
Job No.	16-2067			
Drawn MC	Checked TC	Scale at A3 1:1000	Date 24/05/23	Issue Date -
Drawing No.	102			C



Notes:

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.



Articulated Car Transporter

Tractor Width	2500	Lock to Lock Time	6.0
Trailer Width	2500	Steering Angle	21.2
Tractor Track	2500	Articulating Angle	70.0
Trailer Track	2500		

Rev	Date	Description	Ckd	By
-----	------	-------------	-----	----

Cora^{iHt}

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Wilmslow Road
Manchester
M20 2YJ

Tel: 0161 955 4422
Email: manchester@coraiht.com
Web: www.coraiht.com

Client

Net World Sports Limited

Project

North of Bryn Lane
Wrexham

Title

Proposed Bryn Lane Access
Tracking

Drawing Status

Job No.

16-2067

Drawn

Checked

Scale at A3

Date

Issue Date

Drawing No.

106

-

APPENDIX C – ROAD SAFETY AUDIT AND TRACKING

LAND NORTH OF BRYN LANE, WREXHAM PROPOSED S278 HIGHWAY WORKS

STAGE 1 ROAD SAFETY AUDIT

610/2023/170/01 Rev 1

21 December 2023

six:TEN Highways & Traffic Ltd
Unit 17 Lea Green Business Park
Eurolink, St Helens
Merseyside
WA9 4TR

t 0151 424 7680
m 07985 283074
e contact@610traffic.co.uk
www.610traffic.co.uk

Rev:	Issue Status:	Prepared by/Date:	Checked by/Date:	Approved by/Date:
0	DRAFT	Jon Preston 20 December 2023	Tristan Brooks 20 December 2023	
1	FINAL	Jon Preston 21 December 2023	Tristan Brooks 21 December 2023	Jon Preston 21 December 2023

Report Title:	Land North of Bryn Lane, Wrexham – Proposed S278 Highway Works Stage 1 Road Safety Audit
Date:	21 December 2023
Document Reference & Revision:	610/2023/170/01 Rev 1
Prepared by:	Six Ten Highways & Traffic Ltd
On behalf of:	Cora IHT

Disclaimer note

The client has confirmed that it is entering into the agreement under which this report is being prepared on its own behalf and not on behalf of, or for the benefit of any other party and has agreed that in any event of any claim arising out of or in connection with that agreement and/or the report itself it shall be entitled to recover from six:TEN Highways & Traffic Limited only the losses, if any, it has itself suffered.

This report therefore is for the private and confidential use of the client for whom it was prepared solely for the purposes requested by the client. It should not be reproduced in whole or in part or relied upon by any third party for any use whatsoever without the express written authority of six:TEN Highways & Traffic Limited.

CONTENTS

1.0	INTRODUCTION	2
2.0	ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT	4
3.0	ROAD SAFETY AUDIT TEAM STATEMENT	7

APPENDICES

APPENDIX ONE

4.0	LIST OF DRAWINGS AND DOCUMENTS SUPPLIED BY THE DESIGN ORGANISATION	8
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APPENDIX TWO

5.0	PROBLEM LOCATION PLAN	9
-----	-----------------------	---

APPENDIX THREE

6.0	PHOTOGRAPHS	12
-----	-------------	----

APPENDIX FOUR

7.0	PERSONAL INJURY COLLISION LOCATION PLAN	14
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1.0 INTRODUCTION

- 1.1 This report results from a preliminary design Stage 1 Road Safety Audit (RSA) carried out on the proposed S278 highway works at Bryn Lane, Wrexham at the request of Cora IHT the designer of the scheme who provided the audit information, and although there was no formal 'audit brief' the RSA team has accepted that sufficient information has been provided to undertake the Stage 1 RSA. The audit team has been approved by the Overseeing Organisation Wrexham County Borough Council to carryout RSAs on their highway network.
- 1.2 The Road Safety Audit Team was as follows:
- Jon Preston MCIHT MSoRSA
Audit Team Leader
- Tristan Brooks* Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Comp
Audit Team Member
- 1.3 Audit Team members marked with an asterisk above hold a Highways England approved Certificate of Competency (CoC) in Road Safety Audit, in accordance with Article (1–3) of EC Directive 2008/96/EC.
- 1.4 The audit took place at the St Helens office of six:TEN Highways and Traffic between 13 December 2023 and 21 December 2023. The Road Safety Audit was undertaken in accordance with the Road Safety Audit information provided. The audit comprised an examination of the documents provided as detailed in Appendix One.
- 1.5 The Audit Team visited the site together on Monday 19 December 2023 between 09:00hrs and 10:00hrs. During the site visit the weather was overcast and the carriageway surface was wet. During the site visit traffic movements in the vicinity of the proposed highway works were moderate with some pedestrian and cyclist movements observed.
- 1.6 At the location of the proposed access, Bryn Lane is currently subject to a 40mph speed limit and is not street lit. Bryn Lane roundabout is currently subject to a 40mph speed limit and is street lit.
- 1.7 The terms of reference of the audit are as described in GG 119 Rev.2. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Collision Investigation, Road Safety Engineering and Road Safety Audits.
- 1.8 The proposed highway works are associated with the construction of a potential industrial development and in summary includes:
- Provision of an additional arm on the northeast quadrant of the Bryn Lane roundabout to provide access to the proposed development;
 - Increase of the ICD of the existing Bryn Lane roundabout to accommodate the proposed new arm;
 - Provision of a ghost-island right-turn priority controlled T-junction on the northern side of Bryn Lane to provide access to the proposed development;
 - Provision of a major/minor priority controlled T-junction on the northwestern side of Ridley Wood Road to provide access to a proposed primary sub-station;

- Reduction in speed limit on Bryn Lane from 40mph to 30mph; and
 - Associated pedestrian and cyclist facilities throughout the scheme.
- 1.9 The Audit Team have not been informed of any Departures from Standard for the proposed scheme nor have they been made aware of any previous RSA's undertaken on the scheme.
- 1.10 Personal injury collision data has been obtained from the online Crashmap database which shows there has been four personal injury collisions in the vicinity of the proposed highway works during the five-year period 2018 – 2022. One collision occurred on Bryn Lane to the west of the junction with Ridley Wood Road which was classed as slight in severity and resulted in one casualty. Three collisions occurred at or near the Bryn Lane roundabout, two were classed as slight in severity resulting in two casualties and one classed as serious in severity resulting in one casualty. The location plan is shown in Appendix Four.
- 1.11 The scheme has been examined and this report compiled only regarding the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.
- 1.12 Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG 119 Rev 2, and in no way, imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

2.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

2.1 General

2.1.1 No road safety issues identified at this stage.

2.2 Local Alignment

2.2.1 No road safety issues identified at this stage.

2.3 Junctions

2.3.1 Location: Proposed junction on Bryn Lane and Bryn Lane Roundabout amendments

Problem

Summary: Excessive vehicular encroachment into opposing or adjacent lanes or onto the footway when manoeuvring through the junction/roundabout

The articulated vehicle swept path analysis detailed on the drawing provided for audit shows the vehicle encroaching wholly into the opposing lanes when turning into/out of the proposed access road on Bryn Lane and also over-running the footway. The drawing also shows an articulated vehicle encroaching into adjacent lanes on the Bryn Lane roundabout. Whilst it is recognised that some encroachment may occur, this excessive encroachment by an articulated vehicle into the opposing traffic lanes may increase the risk of low-speed head-on or side-impact collisions. Over-running the footway may increase the risk of vehicular/pedestrian collisions and encroachment into adjacent lanes may increase the risk of side-swipe type collisions.

Recommendation

It is recommended that amendments should be made to the proposed design to ensure any vehicle encroachment into opposing/adjacent lanes is kept to a minimum and that vehicles do not over-run the footway.

2.3.2 Location: At the proposed junction on Bryn Lane

Problem

Summary: Width of right-turn lane may result in vehicles encroaching into adjacent traffic lanes resulting in head-on or side-swipe collisions

The swept path analysis drawing provided for audit shows an articulated vehicle in the right-turn lane at the proposed junction on Bryn Lane encroaching into adjacent traffic lanes. This may increase the risk of head-on or side-swipe collisions.

Recommendation

It is recommended that the width of the right-turn lane on Bryn Lane should be increased to ensure vehicles within it do not encroach into adjacent traffic lanes.

2.4 Walking, Cycling and Horse Riding

2.4.1 Location: Proposed refuge island at the Bryn Lane junction

Problem

Summary: Refuge island may not be wide enough to accommodate a bicycle increasing the risk of vehicle/cyclist collisions

It was observed on site that there is a shared footway/cycleway on the southern side of Bryn Lane which may result in cyclists crossing Bryn Lane via the refuge island in order to access the proposed development. The drawing provided for audit does not show the width of the refuge island. There is a risk that a cyclist's bicycle waiting within the refuge island may over-hang the carriageway if the island is not wide enough. This may increase the risk of vehicle/cyclist collisions.

Recommendation

It is recommended that the proposed refuge island on Bryn Lane is designed so it is wide enough to accommodate a bicycle.

2.4.2 Location: At the proposed junction on Bryn Lane

Problem

Summary: Lack of appropriate facilities for pedestrians which may result in pedestrian trips/falls

The drawings do not show any appropriate crossing facilities for pedestrians wanting to cross the proposed site access road at the Bryn Lane junction such as dropped kerbs and tactile paving. A lack of appropriate facilities for pedestrians may result in them having to negotiate a full height kerb, increasing the risk of trips/falls and creating manoeuvrability issues for those with pushchairs, wheelchairs and mobility scooters.

Recommendation

It is recommended that uncontrolled pedestrian crossing facilities, such as dropped kerbs and tactile paving, should be provided on the proposed access road at the Bryn Lane junction.

2.4.3 Location: At the Bryn Lane roundabout

Problem

Summary: Incorrect tactile paving layout increases the risk pedestrian/vehicular collisions

The drawings provided for audit shows that the tactile paving layout at the proposed pedestrian crossings on the arms of the Bryn Lane roundabout is incorrect for the type of crossing. The locations of the crossings appears to show that the crossings will be uncontrolled, however, the tactile paving proposed is for controlled crossings. This may result in confusion for visually impaired pedestrians as to the type of crossings and may increase the risk of pedestrian/vehicular collisions.

Recommendation

It is recommended that the tactile paving layout should be amended to a standard layout for uncontrolled crossings on the arms of the Bryn Lane roundabout.

2.4.4 Location: Abenbury Way arm of the Bryn Lane roundabout

Problem

Summary: Uncontrolled pedestrian crossing away from the pedestrian desire line which may result in pedestrian trips/falls

The uncontrolled pedestrian crossing on the Abenbury Way arm of the Bryn Lane roundabout is located away from the pedestrian desire line for those pedestrians traversing the roundabout. This may result in pedestrians walking on the grass verge and having to negotiate a full height kerb, increasing the risk of trips/falls and creating manoeuvrability issues for those with pushchairs, wheelchairs and mobility scooters.

Recommendation

It is recommended that the uncontrolled pedestrian crossing on Bryn Lane is relocated to nearer the roundabout to incorporate the splitter islands as per the other arms of the roundabout.

2.5 Traffic Signs, Carriageway Markings and Lighting

2.5.1 Location: Proposed junction on Bryn Lane

Problem

Summary: Lack of street lighting for new junction arrangement may increase the risk of collisions during the hours of darkness

It was observed during the site that the proposed junction on Bryn Lane is located outside the limits of the existing street lighting provision. A lack of street lighting at the proposed junction and the approaches to it, where increased vehicle turning/braking manoeuvres will occur may increase the risk of vehicular, vehicular/pedestrian or vehicular/cyclist collisions during the hours of darkness.

Recommendation

It is recommended that street lighting is provided on Bryn Lane to incorporate the proposed junction and the approaches to it.

3.0 ROAD SAFETY AUDIT TEAM STATEMENT

We certify that the audit has been carried out in accordance with DMRB GG119 Rev 2.

AUDIT TEAM LEADER

Jon Preston MCIHT MSoRSA

Director

six:TEN Highways & Traffic Ltd

Signed:



Date: 21 December 2023

AUDIT TEAM MEMBER

Tristan Brooks Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Comp

Traffic & Road Safety Engineer

six:TEN Highways & Traffic Ltd

Signed:



Date: 21 December 2023

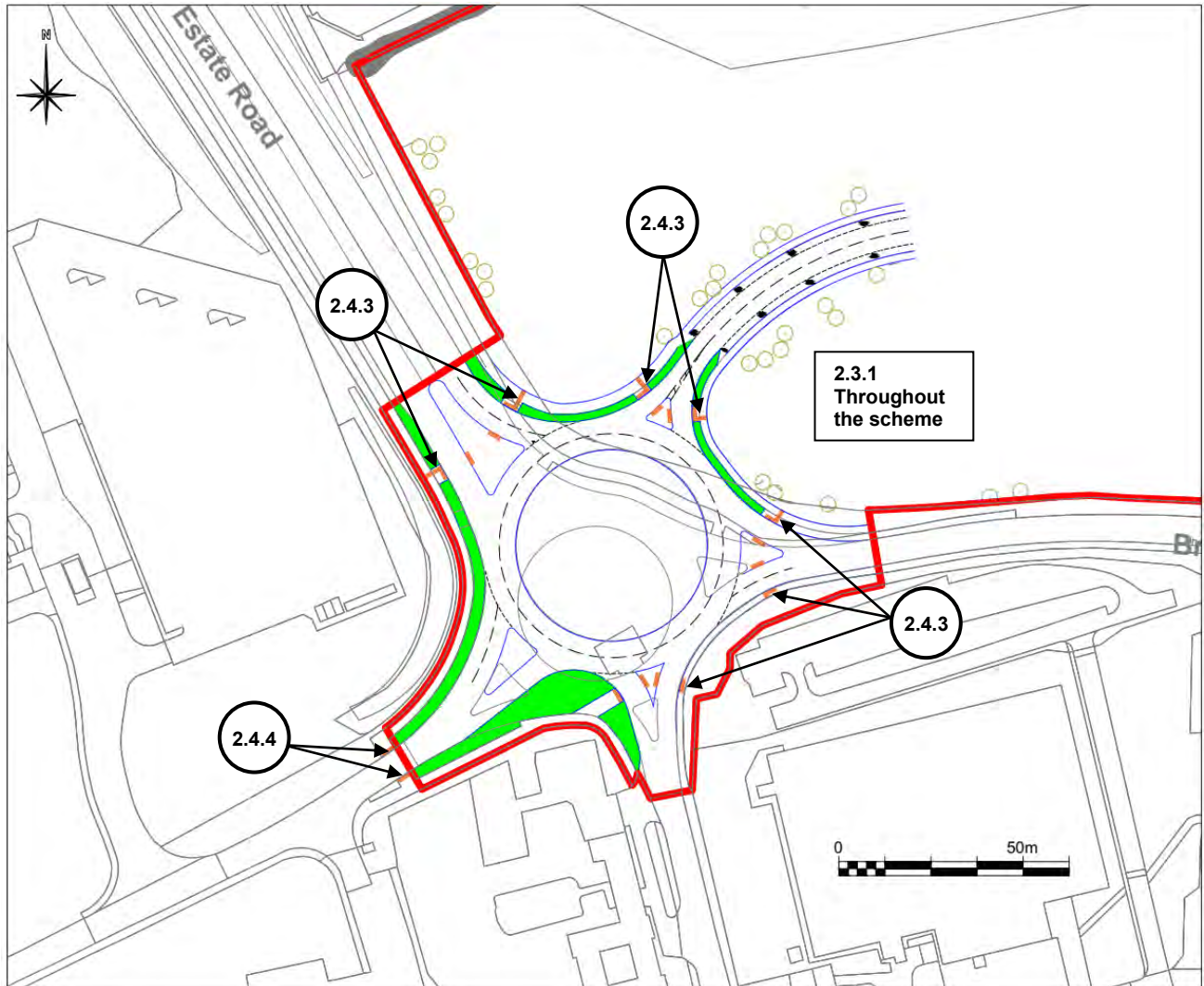
APPENDIX ONE

4.0 LIST OF DRAWINGS AND DOCUMENTS SUPPLIED BY THE DESIGN ORGANISATION

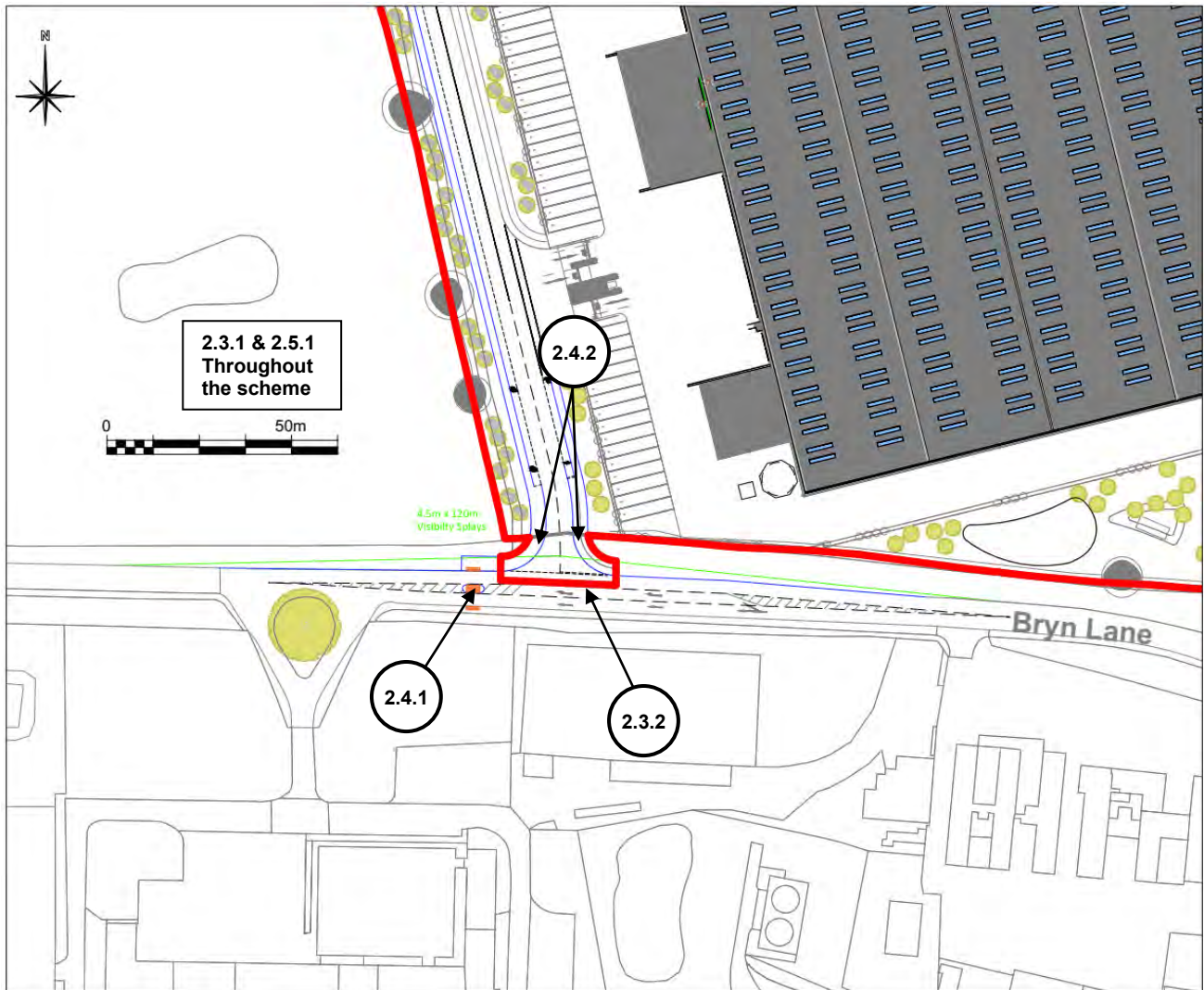
- 16-2067-101 Rev A Site Access Bryn Lane Roundabout
- 16-2067-102 Rev A Bryn Lane Site Access
- 16-2067-103A Primary Sub-station Site Access
- 16-2067-104 Rev A Site Access Bryn Lane Roundabout Tracking
- 16-2067-105 Bryn Lane Bryn Lane Site Access Tracking
- 16-2067 Bryn Lane Transport Assessment V3
- 5 year (up to December 2022) Personal Collision Data

APPENDIX TWO

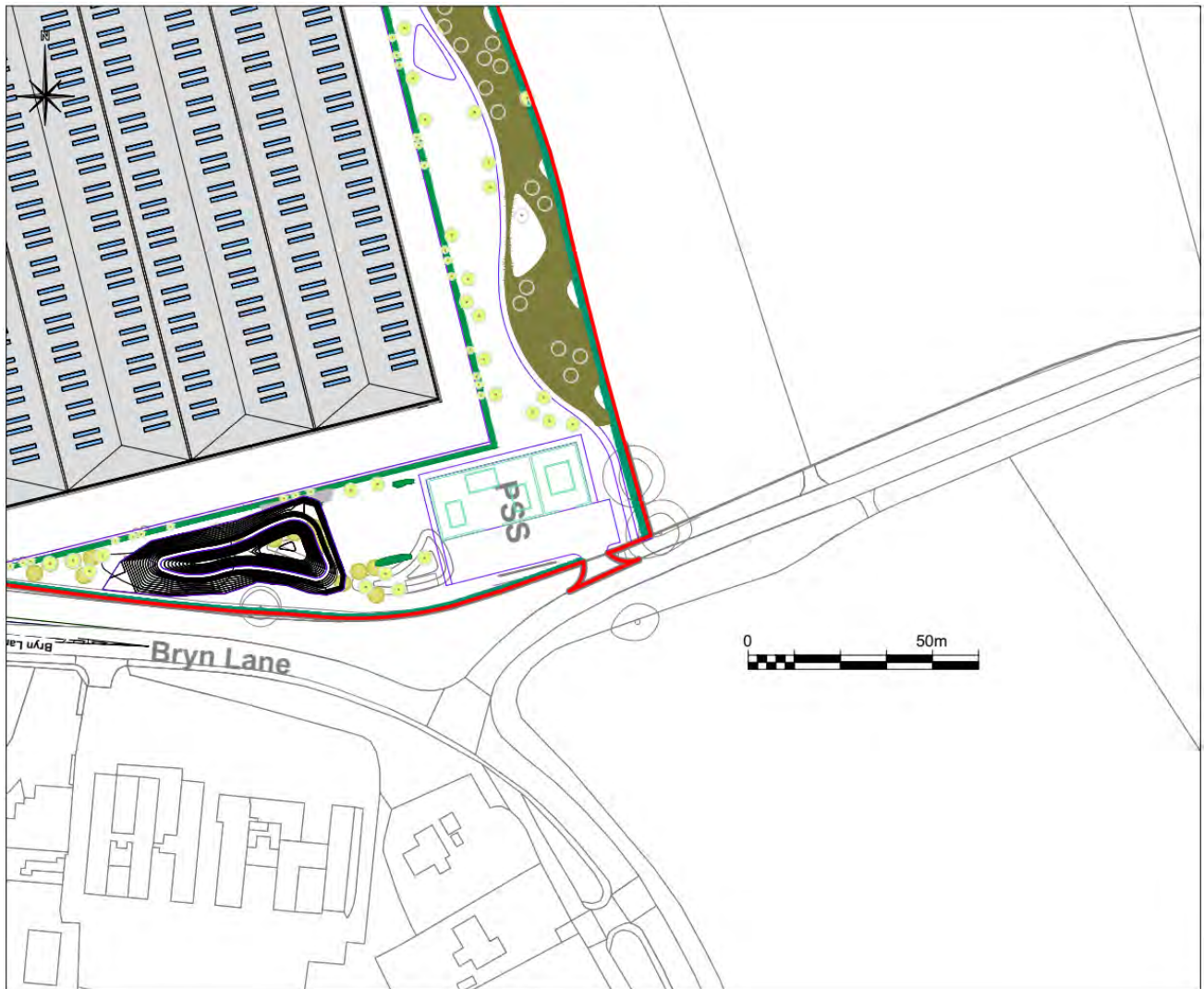
5.0 PROBLEM LOCATION PLAN



5.1 Bryn Lane Roundabout



5.2 Bryn Lane ghost-island right-turn junction



5.3 Ridley Wood Road major/minor priority junction

APPENDIX THREE

6.0 PHOTOGRAPHS



6.1 General view looking east on Bryn Lane towards the proposed junction.



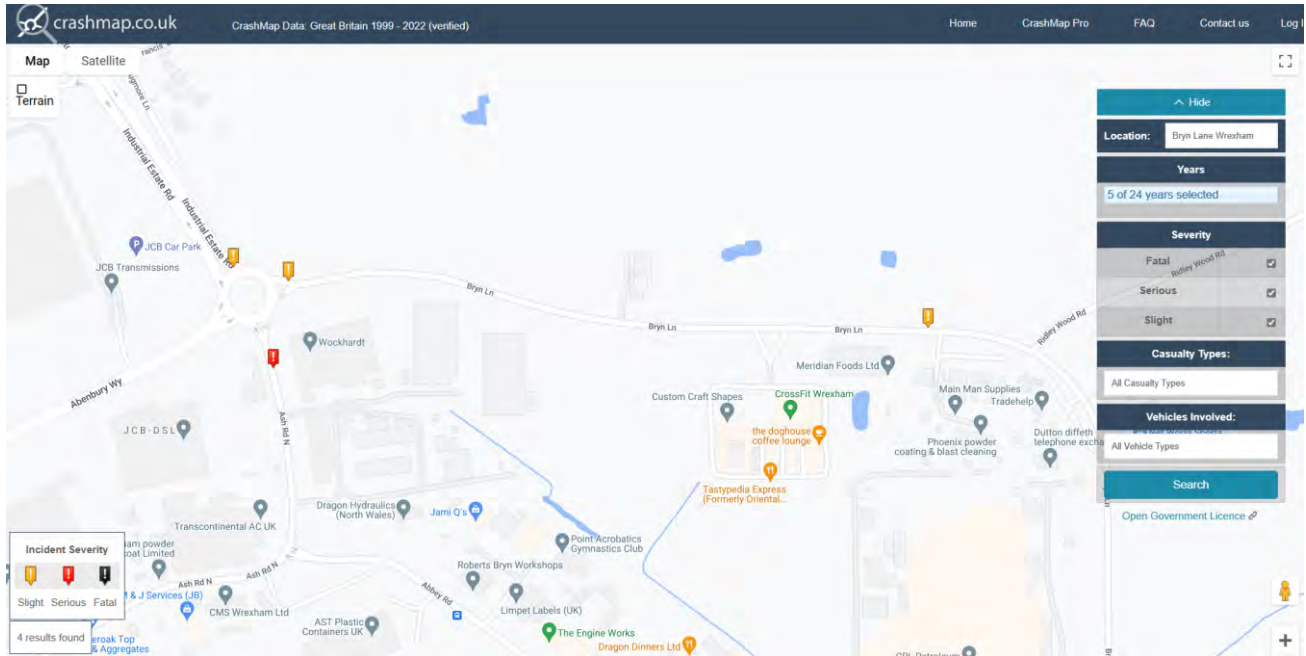
6.2 General view looking west on Bryn Lane towards the proposed junction.



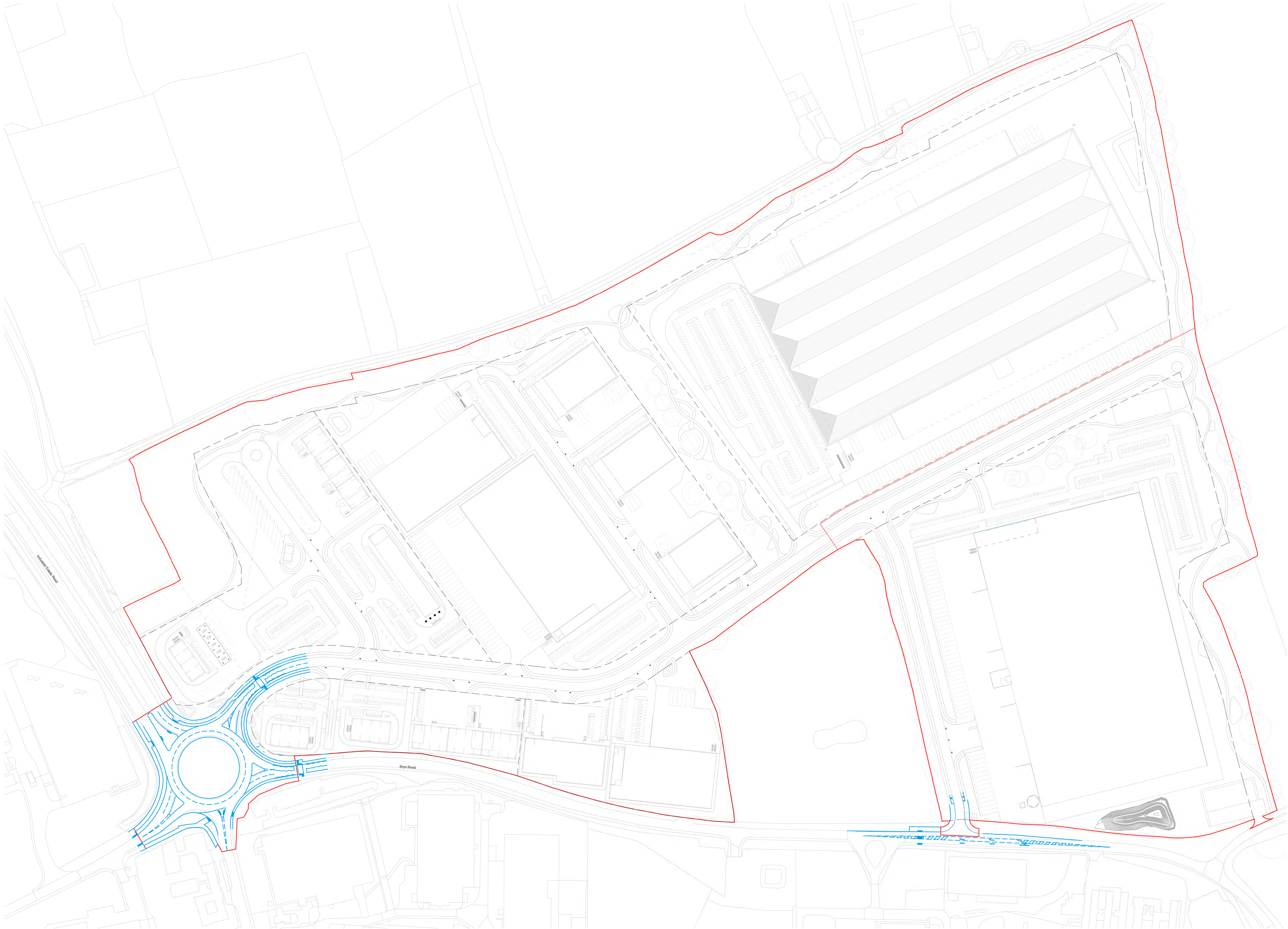
6.3 General view looking east on the Bryn Lane roundabout towards the proposed new development access arm

APPENDIX FOUR

7.0 PERSONAL INJURY COLLISION LOCATION PLAN



APPENDIX D – SITE LAYOUT PLANS



Proposed Illustrative Site Masterplan - New Roundabout
1 : 1000



SGP

Architects + Masterplanners

Waterfront House
2a Smith Way
Grove Park
Enderby
Leicester LE19 1SX

t: +44 (0)116 247 0557

www.stephengeorge.co.uk

Wrexham
Bryn Lane

Drawing Name:
Masterplan - Proposed New Roundabout

Drawing Stage: **FEASIBILITY**

Status: **S2**

SGP File Ref: 22136-SGP-ZZ-ZZ-A3-A-000001

22-136 12/02/2024 JMS MMS 1:1000 @ A0

SGP Project No. Date Drawn Team Scale Rev

Drawing Number: 22136-SGP-XX-ZZ-DR-A-11023

Project Code Originals Version Control Type Role Number



SCALE 1:1000

0m 50m 100m

APPENDIX E – EMPLOYMENT USE TRICS OUTPUT

Calculation Reference: AUDIT-704107-240112-0114

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : C - INDUSTRIAL UNIT
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	BO BEDFORD	1 days
	HC HAMPSHIRE	2 days
03	SOUTH WEST	
	BR BRISTOL CITY	1 days
	GS GLOUCESTERSHIRE	1 days
04	EAST ANGLIA	
	PB PETERBOROUGH	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	KS KIRKLEES	1 days
08	NORTH WEST	
	BP BLACKPOOL	1 days
	EC CHESHIRE EAST	2 days
10	WALES	
	VG VALE OF GLAMORGAN	1 days
11	SCOTLAND	
	FI FIFE	1 days
17	ULSTER (NORTHERN IRELAND)	
	TY TYRONE	1 days

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

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Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 1010 to 9216 (units: sqm)
 Range Selected by User: 1000 to 40000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/15 to 20/04/23

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

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	3 days
Thursday	7 days
Friday	2 days

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

Selected survey types:

Manual count	14 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	11
Neighbourhood Centre (PPS6 Local Centre)	2
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	10
Development Zone	1
Village	2
Out of Town	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	2 days - Selected
Servicing vehicles Excluded	12 days - Selected

Secondary Filtering selection:**Use Class:**

Not Known	14 days
-----------	---------

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

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):Population within 1 mile:

1,000 or Less	2 days
5,001 to 10,000	3 days
10,001 to 15,000	7 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

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

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	3 days
100,001 to 125,000	1 days
125,001 to 250,000	6 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	8 days
1.6 to 2.0	1 days
2.1 to 2.5	1 days

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

Travel Plan:

No	14 days
----	---------

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

PTAL Rating:

No PTAL Present	14 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	BO-02-C-01	PUMPS, MOTORS & FANS	BEDFORD
	POSTLEY ROAD		
	BEDFORD		
	KEMPSTON		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1045 sqm	
	Survey date: THURSDAY	15/10/20	Survey Type: MANUAL
2	BP-02-C-01	POWDER COATINGS	BLACKPOOL
	CHORLEY ROAD		
	BLACKPOOL		
	LITTLE CARLETON		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1010 sqm	
	Survey date: THURSDAY	20/06/19	Survey Type: MANUAL
3	BR-02-C-02	STAINLESS FITTINGS	BRISTOL CITY
	SOUTH LIBERTY LANE		
	BRISTOL		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1475 sqm	
	Survey date: TUESDAY	22/09/15	Survey Type: MANUAL
4	EC-02-C-01	OFFICE FURNITURE	CHESHIRE EAST
	BRUNEL ROAD		
	MACCLESFIELD		
	LYME GREEN BUS. PARK		
	Edge of Town		
	Development Zone		
	Total Gross floor area:	6658 sqm	
	Survey date: MONDAY	19/09/16	Survey Type: MANUAL
5	EC-02-C-02	FABRICS MANUFACTURE	CHESHIRE EAST
	CHARTER WAY		
	MACCLESFIELD		
	HURDSFIELD		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3200 sqm	
	Survey date: FRIDAY	07/05/21	Survey Type: MANUAL
6	FI-02-C-02	GLASS SPECIALISTS	FIFE
	DICKSON STREET		
	DUNFERMLINE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1240 sqm	
	Survey date: THURSDAY	20/04/23	Survey Type: MANUAL
7	GS-02-C-02	MARINE ENGINE PRODUCTION	GLOUCESTERSHIRE
	DAVY WAY		
	GLOUCESTER		
	HARDWICKE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1630 sqm	
	Survey date: FRIDAY	23/04/21	Survey Type: MANUAL
8	HC-02-C-01	ENGINEERING COMPANY	HAMPSHIRE
	JAYS CLOSE		
	BASINGSTOKE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3000 sqm	
	Survey date: THURSDAY	16/06/16	Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

9	HC-02-C-02 LONDON ROAD LAVERSTOKE	GIN DISTILLERY	HAMPSHIRE
	Neighbourhood Centre (PPS6 Local Centre) Village Total Gross floor area: 8000 sqm Survey date: WEDNESDAY 09/05/18		Survey Type: MANUAL
10	KS-02-C-01 INMOOR ROAD NEAR BRADFORD BIRKENSHAW	COMPUTER MANUFACTURER	KIRKLEES
	Neighbourhood Centre (PPS6 Local Centre) Village Total Gross floor area: 1890 sqm Survey date: WEDNESDAY 10/10/18		Survey Type: MANUAL
11	PB-02-C-01 NEWARK ROAD PETERBOROUGH FENGATE	STEEL FABRICATOR	PETERBOROUGH
	Edge of Town Industrial Zone Total Gross floor area: 1772 sqm Survey date: THURSDAY 29/09/22		Survey Type: MANUAL
12	TY-02-C-01 DRUM ROAD NEAR COOKSTOWN	ELECTRICAL MOTOR COMPANY	TYRONE
	Free Standing (PPS6 Out of Town) Out of Town Total Gross floor area: 2600 sqm Survey date: THURSDAY 14/03/19		Survey Type: MANUAL
13	VG-02-C-01 VERLON CLOSE BARRY	ALCOHOL ANALYSIS PRODUCTS	VALE OF GLAMORGAN
	Edge of Town Industrial Zone Total Gross floor area: 1500 sqm Survey date: THURSDAY 06/05/21		Survey Type: MANUAL
14	WK-02-C-01 CASTLE MOUND WAY RUGBY	MACHINE ENGINEERING	WARWICKSHIRE
	Edge of Town Industrial Zone Total Gross floor area: 9216 sqm Survey date: WEDNESDAY 10/11/21		Survey Type: MANUAL

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

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TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

TOTAL VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	4	3740	0.007	4	3740	0.000	4	3740	0.007
05:30 - 06:00	4	3740	0.067	4	3740	0.000	4	3740	0.067
06:00 - 06:30	6	2972	0.017	6	2972	0.017	6	2972	0.034
06:30 - 07:00	6	2972	0.123	6	2972	0.000	6	2972	0.123
07:00 - 07:30	13	3257	0.231	13	3257	0.043	13	3257	0.274
07:30 - 08:00	13	3257	0.187	13	3257	0.033	13	3257	0.220
08:00 - 08:30	14	3160	0.264	14	3160	0.034	14	3160	0.298
08:30 - 09:00	14	3160	0.194	14	3160	0.050	14	3160	0.244
09:00 - 09:30	14	3160	0.138	14	3160	0.050	14	3160	0.188
09:30 - 10:00	14	3160	0.138	14	3160	0.086	14	3160	0.224
10:00 - 10:30	14	3160	0.124	14	3160	0.066	14	3160	0.190
10:30 - 11:00	14	3160	0.120	14	3160	0.097	14	3160	0.217
11:00 - 11:30	14	3160	0.090	14	3160	0.075	14	3160	0.165
11:30 - 12:00	14	3160	0.079	14	3160	0.090	14	3160	0.169
12:00 - 12:30	14	3160	0.084	14	3160	0.122	14	3160	0.206
12:30 - 13:00	14	3160	0.104	14	3160	0.136	14	3160	0.240
13:00 - 13:30	14	3160	0.113	14	3160	0.181	14	3160	0.294
13:30 - 14:00	14	3160	0.113	14	3160	0.154	14	3160	0.267
14:00 - 14:30	14	3160	0.079	14	3160	0.075	14	3160	0.154
14:30 - 15:00	14	3160	0.099	14	3160	0.115	14	3160	0.214
15:00 - 15:30	14	3160	0.050	14	3160	0.120	14	3160	0.170
15:30 - 16:00	14	3160	0.057	14	3160	0.090	14	3160	0.147
16:00 - 16:30	14	3160	0.084	14	3160	0.190	14	3160	0.274
16:30 - 17:00	14	3160	0.045	14	3160	0.194	14	3160	0.239
17:00 - 17:30	14	3160	0.045	14	3160	0.310	14	3160	0.355
17:30 - 18:00	14	3160	0.050	14	3160	0.124	14	3160	0.174
18:00 - 18:30	13	3307	0.021	13	3307	0.091	13	3307	0.112
18:30 - 19:00	13	3307	0.016	13	3307	0.037	13	3307	0.053
19:00 - 19:30	5	4592	0.009	5	4592	0.009	5	4592	0.018
19:30 - 20:00	5	4592	0.009	5	4592	0.013	5	4592	0.022
20:00 - 20:30	5	4592	0.004	5	4592	0.057	5	4592	0.061
20:30 - 21:00	5	4592	0.000	5	4592	0.013	5	4592	0.013
21:00 - 21:30	1	8000	0.000	1	8000	0.000	1	8000	0.000
21:30 - 22:00	1	8000	0.000	1	8000	0.000	1	8000	0.000
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.761			2.672			5.433

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

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

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Parameter summary

Trip rate parameter range selected:	1010 - 9216 (units: sqm)
Survey date date range:	01/01/15 - 20/04/23
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Mott MacDonald Pier Head Liverpool

Licence No: 704107

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

OGVS**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	4	3740	0.000	4	3740	0.000	4	3740	0.000
05:30 - 06:00	4	3740	0.000	4	3740	0.000	4	3740	0.000
06:00 - 06:30	6	2972	0.000	6	2972	0.000	6	2972	0.000
06:30 - 07:00	6	2972	0.006	6	2972	0.000	6	2972	0.006
07:00 - 07:30	13	3257	0.007	13	3257	0.000	13	3257	0.007
07:30 - 08:00	13	3257	0.007	13	3257	0.009	13	3257	0.016
08:00 - 08:30	14	3160	0.005	14	3160	0.007	14	3160	0.012
08:30 - 09:00	14	3160	0.007	14	3160	0.005	14	3160	0.012
09:00 - 09:30	14	3160	0.009	14	3160	0.005	14	3160	0.014
09:30 - 10:00	14	3160	0.011	14	3160	0.007	14	3160	0.018
10:00 - 10:30	14	3160	0.016	14	3160	0.018	14	3160	0.034
10:30 - 11:00	14	3160	0.016	14	3160	0.009	14	3160	0.025
11:00 - 11:30	14	3160	0.009	14	3160	0.011	14	3160	0.020
11:30 - 12:00	14	3160	0.018	14	3160	0.016	14	3160	0.034
12:00 - 12:30	14	3160	0.009	14	3160	0.016	14	3160	0.025
12:30 - 13:00	14	3160	0.011	14	3160	0.009	14	3160	0.020
13:00 - 13:30	14	3160	0.009	14	3160	0.011	14	3160	0.020
13:30 - 14:00	14	3160	0.005	14	3160	0.007	14	3160	0.012
14:00 - 14:30	14	3160	0.005	14	3160	0.005	14	3160	0.010
14:30 - 15:00	14	3160	0.007	14	3160	0.005	14	3160	0.012
15:00 - 15:30	14	3160	0.000	14	3160	0.002	14	3160	0.002
15:30 - 16:00	14	3160	0.007	14	3160	0.002	14	3160	0.009
16:00 - 16:30	14	3160	0.009	14	3160	0.009	14	3160	0.018
16:30 - 17:00	14	3160	0.000	14	3160	0.002	14	3160	0.002
17:00 - 17:30	14	3160	0.007	14	3160	0.007	14	3160	0.014
17:30 - 18:00	14	3160	0.000	14	3160	0.000	14	3160	0.000
18:00 - 18:30	13	3307	0.000	13	3307	0.002	13	3307	0.002
18:30 - 19:00	13	3307	0.000	13	3307	0.000	13	3307	0.000
19:00 - 19:30	5	4592	0.000	5	4592	0.000	5	4592	0.000
19:30 - 20:00	5	4592	0.004	5	4592	0.000	5	4592	0.004
20:00 - 20:30	5	4592	0.000	5	4592	0.004	5	4592	0.004
20:30 - 21:00	5	4592	0.000	5	4592	0.004	5	4592	0.004
21:00 - 21:30	1	8000	0.000	1	8000	0.000	1	8000	0.000
21:30 - 22:00	1	8000	0.000	1	8000	0.000	1	8000	0.000
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.184			0.172			0.356

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

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

Calculation Reference: AUDIT-704107-240112-0120

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : F - WAREHOUSING (COMMERCIAL)
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	BO BEDFORD	1 days
	EX ESSEX	1 days
	HC HAMPSHIRE	2 days
	MW MEDWAY	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	BD BRADFORD	1 days
09	NORTH	
	TW TYNE & WEAR	1 days
10	WALES	
	NW NEWPORT	1 days
11	SCOTLAND	
	LO WEST LOTHIAN	2 days
17	ULSTER (NORTHERN IRELAND)	
	AN ANTRIM	2 days

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

Mott MacDonald Pier Head Liverpool

Licence No: 704107

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 3500 to 31000 (units: sqm)
 Range Selected by User: 1000 to 40000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/15 to 11/11/21

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

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	1 days
Thursday	5 days
Friday	4 days

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

Selected survey types:

Manual count	14 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	4
Edge of Town	9
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	11
Commercial Zone	2
Residential Zone	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	1 days - Selected
Servicing vehicles Excluded	13 days - Selected

Secondary Filtering selection:**Use Class:**

n/a	1 days
B8	13 days

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

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	3 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 100,000	1 days

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

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	1 days
25,001 to 50,000	2 days
50,001 to 75,000	1 days
125,001 to 250,000	5 days
250,001 to 500,000	3 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	8 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	1 days
No	13 days

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

PTAL Rating:

No PTAL Present	14 days
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This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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Licence No: 704107

LIST OF SITES relevant to selection parameters

1	AN-02-F-03	PACKAGING COMPANY	ANTRIM
	KENNEDY WAY		
	BELFAST		
	KENNEDY WAY IND. EST.		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	12234 sqm	
	Survey date: TUESDAY	11/10/16	Survey Type: MANUAL
2	AN-02-F-04	TESCO DISTRIBUTION CENTRE	ANTRIM
	APOLLO ROAD		
	BELFAST		
	BALMORAL		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	11000 sqm	
	Survey date: THURSDAY	14/03/19	Survey Type: MANUAL
3	BD-02-F-01	DISTRIBUTION COMPANY	BRADFORD
	STAITHGATE LANE		
	BRADFORD		
	NEWHALL		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	10446 sqm	
	Survey date: THURSDAY	14/03/19	Survey Type: MANUAL
4	BO-02-F-01	DRINKS WHOLESALER	BEDFORD
	CAMBRIDGE ROAD		
	BEDFORD		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3500 sqm	
	Survey date: THURSDAY	15/10/20	Survey Type: MANUAL
5	EX-02-F-01	SPORTS SUPPLEMENTS	ESSEX
	BRUNEL WAY		
	COLCHESTER		
	SEVERALLS INDUSTRIAL PK		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	6560 sqm	
	Survey date: FRIDAY	18/05/18	Survey Type: MANUAL
6	HC-02-F-02	LOGISTICS	HAMPSHIRE
	RUTHERFORD ROAD		
	BASINGSTOKE		
	Suburban Area (PPS6 Out of Centre)		
	Commercial Zone		
	Total Gross floor area:	13200 sqm	
	Survey date: THURSDAY	16/06/16	Survey Type: MANUAL
7	HC-02-F-03	PPE DISTRIBUTION	HAMPSHIRE
	WARSASH ROAD		
	PARK GATE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3665 sqm	
	Survey date: MONDAY	27/09/21	Survey Type: MANUAL
8	LO-02-F-01	LOGISTICS SERVICE	WEST LOTHIAN
	BATHGATE ROAD		
	ARMADALE		
	Edge of Town		
	Residential Zone		
	Total Gross floor area:	5855 sqm	
	Survey date: TUESDAY	08/06/21	Survey Type: MANUAL

Mott MacDonald Pier Head Liverpool

Licence No: 704107

LIST OF SITES relevant to selection parameters (Cont.)

9	LO-02-F-02	HAULAGE COMPANY	WEST LOTHIAN
	INCHMUIR ROAD		
	BATHGATE		
	WHITEHILL IND. ESTATE		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	17626 sqm	
	Survey date: THURSDAY	11/11/21	Survey Type: MANUAL
10	MW-02-F-02	COMMERCIAL WAREHOUSING	MEDWAY
	MILLS ROAD		
	AYLESFORD		
	QUARRY WOOD		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11200 sqm	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
11	NW-02-F-02	AMAZON DEPOT	NEWPORT
	LLANWERN WORKS		
	NEWPORT		
	Free Standing (PPS6 Out of Town)		
	Industrial Zone		
	Total Gross floor area:	4836 sqm	
	Survey date: WEDNESDAY	25/11/20	Survey Type: MANUAL
12	SF-02-F-03	ROAD HAULAGE	SUFFOLK
	CENTRAL AVENUE		
	IPSWICH		
	WARREN HEATH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	4700 sqm	
	Survey date: FRIDAY	18/09/15	Survey Type: MANUAL
13	TW-02-F-01	ASDA DISTRIBUTION CENTRE	TYNE & WEAR
	MANDARIN WAY		
	WASHINGTON		
	PATTISON IND. ESTATE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	31000 sqm	
	Survey date: FRIDAY	13/11/15	Survey Type: MANUAL
14	WM-02-F-02	LOGISTICS FIRM	WEST MIDLANDS
	SOVEREIGN ROAD		
	BIRMINGHAM		
	KINGS NORTON		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	3625 sqm	
	Survey date: MONDAY	09/11/15	Survey Type: MANUAL

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

Mott MacDonald Pier Head Liverpool

Licence No: 704107

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

TOTAL VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	5	9685	0.064	5	9685	0.027	5	9685	0.091
05:30 - 06:00	5	9685	0.085	5	9685	0.052	5	9685	0.137
06:00 - 06:30	6	8877	0.096	6	8877	0.071	6	8877	0.167
06:30 - 07:00	6	8877	0.192	6	8877	0.054	6	8877	0.246
07:00 - 07:30	14	9961	0.086	14	9961	0.092	14	9961	0.178
07:30 - 08:00	14	9961	0.108	14	9961	0.050	14	9961	0.158
08:00 - 08:30	14	9961	0.086	14	9961	0.057	14	9961	0.143
08:30 - 09:00	14	9961	0.094	14	9961	0.062	14	9961	0.156
09:00 - 09:30	14	9961	0.081	14	9961	0.054	14	9961	0.135
09:30 - 10:00	14	9961	0.078	14	9961	0.059	14	9961	0.137
10:00 - 10:30	14	9961	0.066	14	9961	0.064	14	9961	0.130
10:30 - 11:00	14	9961	0.070	14	9961	0.069	14	9961	0.139
11:00 - 11:30	14	9961	0.060	14	9961	0.065	14	9961	0.125
11:30 - 12:00	14	9961	0.063	14	9961	0.066	14	9961	0.129
12:00 - 12:30	14	9961	0.052	14	9961	0.058	14	9961	0.110
12:30 - 13:00	14	9961	0.059	14	9961	0.057	14	9961	0.116
13:00 - 13:30	14	9961	0.058	14	9961	0.071	14	9961	0.129
13:30 - 14:00	14	9961	0.087	14	9961	0.072	14	9961	0.159
14:00 - 14:30	14	9961	0.055	14	9961	0.068	14	9961	0.123
14:30 - 15:00	14	9961	0.069	14	9961	0.072	14	9961	0.141
15:00 - 15:30	14	9961	0.061	14	9961	0.104	14	9961	0.165
15:30 - 16:00	14	9961	0.059	14	9961	0.065	14	9961	0.124
16:00 - 16:30	14	9961	0.071	14	9961	0.090	14	9961	0.161
16:30 - 17:00	14	9961	0.055	14	9961	0.081	14	9961	0.136
17:00 - 17:30	14	9961	0.057	14	9961	0.113	14	9961	0.170
17:30 - 18:00	14	9961	0.048	14	9961	0.091	14	9961	0.139
18:00 - 18:30	14	9961	0.035	14	9961	0.083	14	9961	0.118
18:30 - 19:00	14	9961	0.060	14	9961	0.044	14	9961	0.104
19:00 - 19:30	5	9685	0.035	5	9685	0.066	5	9685	0.101
19:30 - 20:00	5	9685	0.033	5	9685	0.041	5	9685	0.074
20:00 - 20:30	4	7700	0.036	4	7700	0.065	4	7700	0.101
20:30 - 21:00	4	7700	0.042	4	7700	0.036	4	7700	0.078
21:00 - 21:30	1	5855	0.017	1	5855	0.000	1	5855	0.017
21:30 - 22:00	1	5855	0.017	1	5855	0.017	1	5855	0.034
22:00 - 22:30	1	5855	0.000	1	5855	0.000	1	5855	0.000
22:30 - 23:00	1	5855	0.000	1	5855	0.000	1	5855	0.000
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.235			2.136			4.371

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

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Parameter summary

Trip rate parameter range selected:	3500 - 31000 (units: sqm)
Survey date range:	01/01/15 - 11/11/21
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Mott MacDonald Pier Head Liverpool

Licence No: 704107

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

OGVS**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	5	9685	0.019	5	9685	0.012	5	9685	0.031
05:30 - 06:00	5	9685	0.019	5	9685	0.037	5	9685	0.056
06:00 - 06:30	6	8877	0.019	6	8877	0.034	6	8877	0.053
06:30 - 07:00	6	8877	0.019	6	8877	0.028	6	8877	0.047
07:00 - 07:30	14	9961	0.022	14	9961	0.028	14	9961	0.050
07:30 - 08:00	14	9961	0.014	14	9961	0.027	14	9961	0.041
08:00 - 08:30	14	9961	0.022	14	9961	0.027	14	9961	0.049
08:30 - 09:00	14	9961	0.020	14	9961	0.036	14	9961	0.056
09:00 - 09:30	14	9961	0.016	14	9961	0.030	14	9961	0.046
09:30 - 10:00	14	9961	0.026	14	9961	0.024	14	9961	0.050
10:00 - 10:30	14	9961	0.030	14	9961	0.028	14	9961	0.058
10:30 - 11:00	14	9961	0.025	14	9961	0.025	14	9961	0.050
11:00 - 11:30	14	9961	0.028	14	9961	0.023	14	9961	0.051
11:30 - 12:00	14	9961	0.019	14	9961	0.021	14	9961	0.040
12:00 - 12:30	14	9961	0.024	14	9961	0.020	14	9961	0.044
12:30 - 13:00	14	9961	0.024	14	9961	0.012	14	9961	0.036
13:00 - 13:30	14	9961	0.018	14	9961	0.023	14	9961	0.041
13:30 - 14:00	14	9961	0.031	14	9961	0.024	14	9961	0.055
14:00 - 14:30	14	9961	0.017	14	9961	0.019	14	9961	0.036
14:30 - 15:00	14	9961	0.023	14	9961	0.022	14	9961	0.045
15:00 - 15:30	14	9961	0.024	14	9961	0.025	14	9961	0.049
15:30 - 16:00	14	9961	0.032	14	9961	0.014	14	9961	0.046
16:00 - 16:30	14	9961	0.034	14	9961	0.024	14	9961	0.058
16:30 - 17:00	14	9961	0.031	14	9961	0.019	14	9961	0.050
17:00 - 17:30	14	9961	0.027	14	9961	0.016	14	9961	0.043
17:30 - 18:00	14	9961	0.029	14	9961	0.032	14	9961	0.061
18:00 - 18:30	14	9961	0.019	14	9961	0.015	14	9961	0.034
18:30 - 19:00	14	9961	0.022	14	9961	0.009	14	9961	0.031
19:00 - 19:30	5	9685	0.017	5	9685	0.021	5	9685	0.038
19:30 - 20:00	5	9685	0.019	5	9685	0.025	5	9685	0.044
20:00 - 20:30	4	7700	0.032	4	7700	0.052	4	7700	0.084
20:30 - 21:00	4	7700	0.016	4	7700	0.026	4	7700	0.042
21:00 - 21:30	1	5855	0.017	1	5855	0.000	1	5855	0.017
21:30 - 22:00	1	5855	0.000	1	5855	0.017	1	5855	0.017
22:00 - 22:30	1	5855	0.000	1	5855	0.000	1	5855	0.000
22:30 - 23:00	1	5855	0.000	1	5855	0.000	1	5855	0.000
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.754			0.795			1.549

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

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

APPENDIX F – MIXED USE TRICS OUTPUT

Calculation Reference: AUDIT-662801-230516-0507

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

01	GREATER LONDON	
	WF WALTHAM FOREST	1 days
03	SOUTH WEST	
	BR BRISTOL CITY	1 days
	NS NORTH SOMERSET	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
	LN LINCOLNSHIRE	2 days
	NN NORTH NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	1 days
09	NORTH	
	TV TEES VALLEY	1 days
10	WALES	
	VG VALE OF GLAMORGAN	1 days
11	SCOTLAND	
	AD ABERDEEN CITY	2 days
	FI FIFE	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 210 to 752 (units: sqm)
 Range Selected by User: 123 to 800 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/15 to 15/09/22

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

Selected survey days:

Monday	1 days
Tuesday	4 days
Wednesday	2 days
Thursday	3 days
Friday	7 days

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

Selected survey types:

Manual count	17 days
Directional ATC Count	0 days

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

Selected Locations:

Town Centre	1
Edge of Town Centre	4
Suburban Area (PPS6 Out of Centre)	4

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

Selected Location Sub Categories:

Industrial Zone	2
Development Zone	2
Residential Zone	1
Retail Zone	2
Built-Up Zone	2
Out of Town	1
High Street	2
No Sub Category	5

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	4 days - Selected
Servicing vehicles Excluded	13 days - Selected

Secondary Filtering selection:

Use Class:

Not Known	17 days
-----------	---------

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	2 days
15,001 to 20,000	3 days
20,001 to 25,000	1 days
25,001 to 50,000	6 days
50,001 to 100,000	1 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	6 days
250,001 to 500,000	2 days
500,001 or More	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	10 days
1.1 to 1.5	7 days

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

Travel Plan:

No	17 days
----	---------

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

PTAL Rating:

No PTAL Present	16 days
5 Very Good	1 days

This data displays the number of selected surveys with PTAL Ratings.

CORA IHT WILMSLOW ROAD MANCHESTER

Licence No: 662801

LIST OF SITES relevant to selection parameters

1	AD-06-D-01	MCDONALD 'S	ABERDEEN CITY
	BEDFORD ROAD		
	ABERDEEN		
	KITTYBREWSTER RET. PK		
	Edge of Town Centre		
	Retail Zone		
	Total Gross floor area:	472 sqm	
	Survey date: TUESDAY	19/11/19	Survey Type: MANUAL
2	AD-06-D-02	BURGER KING	ABERDEEN CITY
	WELLINGTON ROAD		
	ABERDEEN		
	ALTENS		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	300 sqm	
	Survey date: FRIDAY	22/11/19	Survey Type: MANUAL
3	BR-06-D-01	MCDONALD'S	BRISTOL CITY
	SHEENE ROAD		
	BRISTOL		
	BEDMINSTER		
	Neighbourhood Centre (PPS6 Local Centre)		
	High Street		
	Total Gross floor area:	210 sqm	
	Survey date: MONDAY	21/09/15	Survey Type: MANUAL
4	CA-06-D-02	MCDONALD'S	CAMBRIDGESHIRE
	NEWMARKET ROAD		
	CAMBRIDGE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	435 sqm	
	Survey date: TUESDAY	19/09/17	Survey Type: MANUAL
5	FI-06-D-02	KFC	FIFE
	WHIMBREL PLACE		
	DUNFERMLINE		
	HALBEATH		
	Edge of Town		
	Development Zone		
	Total Gross floor area:	275 sqm	
	Survey date: TUESDAY	22/03/16	Survey Type: MANUAL
6	LE-06-D-01	MCDONALD'S	LEICESTERSHIRE
	MELTON ROAD		
	NEAR MKT HARBOROUGH		
	WEST LANGTON		
	Free Standing (PPS6 Out of Town)		
	Out of Town		
	Total Gross floor area:	370 sqm	
	Survey date: WEDNESDAY	22/06/22	Survey Type: MANUAL
7	LN-06-D-01	MCDONALD'S	LINCOLNSHIRE
	RUSTON WAY		
	LINCOLN		
	Edge of Town Centre		
	Built-Up Zone		
	Total Gross floor area:	435 sqm	
	Survey date: FRIDAY	28/06/19	Survey Type: MANUAL

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Licence No: 662801

LIST OF SITES relevant to selection parameters (Cont.)

8	LN-06-D-02 RYHALL ROAD STAMFORD	MCDONALD'S	LINCOLNSHIRE
	Edge of Town Retail Zone Total Gross floor area:	490 sqm	
	Survey date: WEDNESDAY	13/10/21	Survey Type: MANUAL
9	MS-06-D-01 SAINT HELENS LINKWAY SAINT HELENS	MCDONALD'S	MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total Gross floor area:	463 sqm	
	Survey date: FRIDAY	16/04/21	Survey Type: MANUAL
10	NN-06-D-01 LITTLE COLLIERS FIELD CORBY GREAT OAKLEY	MCDONALD'S	NORTH NORTHAMPTONSHIRE
	Edge of Town Development Zone Total Gross floor area:	690 sqm	
	Survey date: THURSDAY	16/06/22	Survey Type: MANUAL
11	NS-06-D-01 MARCHFIELDS WAY WESTON-SUPER-MARE	KFC	NORTH SOMERSET
	Suburban Area (PPS6 Out of Centre) No Sub Category Total Gross floor area:	230 sqm	
	Survey date: THURSDAY	15/09/22	Survey Type: MANUAL
12	SY-06-D-02 UPPER NEW STREET BARNSELY	MCDONALD'S	SOUTH YORKSHIRE
	Edge of Town Centre Built-Up Zone Total Gross floor area:	415 sqm	
	Survey date: TUESDAY	08/09/20	Survey Type: MANUAL
13	TV-06-D-01 BURN ROAD HARTLEPOOL	MCDONALD'S	TEES VALLEY
	Edge of Town Centre Industrial Zone Total Gross floor area:	400 sqm	
	Survey date: FRIDAY	04/09/20	Survey Type: MANUAL
14	VG-06-D-01 CARDIFF ROAD BARRY	MCDONALD'S	VALE OF GLAMORGAN
	Edge of Town Industrial Zone Total Gross floor area:	405 sqm	
	Survey date: THURSDAY	24/09/20	Survey Type: MANUAL
15	WF-06-D-01 HIGH ROAD LEYTONSTONE	MCDONALD'S	WALTHAM FOREST
	Town Centre High Street Total Gross floor area:	752 sqm	
	Survey date: FRIDAY	01/12/17	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

16	WM-06-D-03	KFC	WEST MIDLANDS
	COVENTRY ROAD		
	BIRMINGHAM		
	SHELDON		
	Neighbourhood Centre (PPS6 Local Centre)		
	No Sub Category		
	Total Gross floor area:	418 sqm	
	Survey date: FRIDAY	26/11/21	Survey Type: MANUAL
17	WO-06-D-01	KFC	WORCESTERSHIRE
	CLEWS ROAD		
	REDDITCH		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Gross floor area:	436 sqm	
	Survey date: FRIDAY	02/10/20	Survey Type: MANUAL

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH
TOTAL VEHICLES
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	1	490	0.204	1	490	0.000	1	490	0.204
06:00 - 07:00	10	469	5.441	10	469	4.480	10	469	9.921
07:00 - 08:00	13	433	10.440	13	433	9.038	13	433	19.478
08:00 - 09:00	13	433	13.033	13	433	12.482	13	433	25.515
09:00 - 10:00	13	433	13.885	13	433	13.885	13	433	27.770
10:00 - 11:00	17	423	12.326	17	423	11.882	17	423	24.208
11:00 - 12:00	17	423	13.758	17	423	12.799	17	423	26.557
12:00 - 13:00	17	423	19.136	17	423	18.274	17	423	37.410
13:00 - 14:00	17	423	18.052	17	423	18.997	17	423	37.049
14:00 - 15:00	17	423	13.813	17	423	14.230	17	423	28.043
15:00 - 16:00	17	423	15.926	17	423	15.453	17	423	31.379
16:00 - 17:00	17	423	16.620	17	423	16.829	17	423	33.449
17:00 - 18:00	17	423	18.232	17	423	18.177	17	423	36.409
18:00 - 19:00	17	423	18.274	17	423	18.941	17	423	37.215
19:00 - 20:00	17	423	14.689	17	423	15.745	17	423	30.434
20:00 - 21:00	17	423	12.646	17	423	13.438	17	423	26.084
21:00 - 22:00	17	423	9.477	17	423	9.714	17	423	19.191
22:00 - 23:00	13	435	7.137	13	435	7.684	13	435	14.821
23:00 - 24:00	11	462	3.952	11	462	4.581	11	462	8.533
Total Rates:			237.441			236.629			473.670

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

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

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Parameter summary

Trip rate parameter range selected:	210 - 752 (units: sqm)
Survey date range:	01/01/15 - 15/09/22
Number of weekdays (Monday-Friday):	17
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-662801-230306-0355

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 13 - PETROL FILLING STATIONS
 Category : A - PETROL FILLING STATIONS
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	BO BEDFORD	1 days
	SC SURREY	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WM WEST MIDLANDS	2 days
08	NORTH WEST	
	LC LANCASHIRE	1 days
09	NORTH	
	NB NORTHUMBERLAND	1 days

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

Primary Filtering selection:

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

Parameter: Filling bays
 Actual Range: 4 to 11 (units:)
 Range Selected by User: 4 to 16 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 10/05/22

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

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	4 days
Friday	2 days

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

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	4
Edge of Town	4
Neighbourhood Centre (PPS6 Local Centre)	2

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

Selected Location Sub Categories:

Residential Zone	9
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This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	11 days - Selected

Secondary Filtering selection:

Use Class:

Sui Generis	11 days
-------------	---------

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000	3 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
25,001 to 50,000	3 days

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

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	5 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	6 days

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

Travel Plan:

No	11 days
----	---------

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

PTAL Rating:

No PTAL Present	11 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	BO-13-A-01 HIGH STREET BEDFORD KEMPSTON Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total Filling bays: Survey date: THURSDAY	BP 8 15/10/20	BEDFORD Survey Type: MANUAL
2	CA-13-A-04 CHERRY HINTON ROAD CAMBRIDGE CAMBRIDGE Suburban Area (PPS6 Out of Centre) Residential Zone Total Filling bays: Survey date: WEDNESDAY	BP 8 19/10/11	CAMBRIDGESHIRE Survey Type: MANUAL
3	DV-13-A-03 MAIN ROAD EXETER PINHOE Edge of Town Residential Zone Total Filling bays: Survey date: THURSDAY	GULF 4 28/11/13	DEVON Survey Type: MANUAL
4	LC-13-A-01 VICTORIA ROAD PRESTON WALTON LE DALE Edge of Town Centre Built-Up Zone Total Filling bays: Survey date: MONDAY	MURCO 8 14/05/12	LANCASHIRE Survey Type: MANUAL
5	LE-13-A-03 GLENFIELD ROAD LEICESTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Filling bays: Survey date: THURSDAY	TOTAL 8 27/09/12	LEICESTERSHIRE Survey Type: MANUAL
6	NB-13-A-03 BURRADON ROAD NEAR CRAMLINGTON ANNITSFORD Edge of Town Residential Zone Total Filling bays: Survey date: THURSDAY	BP 11 22/11/12	NORTHUMBERLAND Survey Type: MANUAL
7	SC-13-A-01 HORLEY ROAD REDHILL SOUTH EARLSWOOD Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total Filling bays: Survey date: TUESDAY	SHELL 6 10/05/22	SURREY Survey Type: MANUAL
8	SH-13-A-01 THE MOUNT SHREWSBURY FRANKWELL Edge of Town Residential Zone Total Filling bays: Survey date: FRIDAY	LOCAL 4 30/05/14	SHROPSHIRE Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

9	WM-13-A-03	TOTAL		WEST MIDLANDS
	CHESTER ROAD			
	BIRMINGHAM			
	CASTLE BROMWICH			
	Edge of Town			
	Residential Zone			
	Total Filling bays:	8		
	Survey date: TUESDAY	18/10/11	Survey Type: MANUAL	
10	WM-13-A-04	SHELL		WEST MIDLANDS
	STATION ROAD			
	BIRMINGHAM			
	STECHFORD			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Filling bays:	8		
	Survey date: TUESDAY	23/10/12	Survey Type: MANUAL	
11	WS-13-A-02	MURCO		WEST SUSSEX
	SOMPTING AVENUE			
	WORTHING			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Filling bays:	6		
	Survey date: FRIDAY	17/10/14	Survey Type: MANUAL	

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

CORA IHT WILMSLOW ROAD MANCHESTER

Licence No: 662801

TRIP RATE for Land Use 13 - PETROL FILLING STATIONS/A - PETROL FILLING STATIONS

TOTAL VEHICLES

Calculation factor: 1 BAYS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	7	7	3.292	7	7	3.083	7	7	6.375
07:00 - 08:00	11	7	5.051	11	7	4.911	11	7	9.962
08:00 - 09:00	11	7	5.709	11	7	5.620	11	7	11.329
09:00 - 10:00	11	7	5.557	11	7	5.595	11	7	11.152
10:00 - 11:00	11	7	5.709	11	7	5.671	11	7	11.380
11:00 - 12:00	11	7	5.215	11	7	5.241	11	7	10.456
12:00 - 13:00	11	7	5.709	11	7	5.835	11	7	11.544
13:00 - 14:00	11	7	5.392	11	7	5.456	11	7	10.848
14:00 - 15:00	11	7	5.228	11	7	4.987	11	7	10.215
15:00 - 16:00	11	7	6.101	11	7	5.911	11	7	12.012
16:00 - 17:00	11	7	6.051	11	7	6.241	11	7	12.292
17:00 - 18:00	11	7	5.861	11	7	5.861	11	7	11.722
18:00 - 19:00	11	7	5.266	11	7	5.354	11	7	10.620
19:00 - 20:00	9	7	4.578	9	7	4.641	9	7	9.219
20:00 - 21:00	9	7	3.531	9	7	3.656	9	7	7.187
21:00 - 22:00	9	7	2.141	9	7	2.469	9	7	4.610
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			80.391			80.532			160.923

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

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

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Parameter summary

Trip rate parameter range selected: 4 - 11 (units:)
 Survey date range: 01/01/10 - 10/05/22
 Number of weekdays (Monday-Friday): 11
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

Calculation Reference: AUDIT-662801-240130-0145

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : A - HOTELS
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	GS GLOUCESTERSHIRE	1 days
	SG SOUTH GLOUCESTERSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	2 days
08	NORTH WEST	
	AC CHESHIRE WEST & CHESTER	1 days
09	NORTH	
	TV TEES VALLEY	1 days
	TW TYNE & WEAR	2 days
10	WALES	
	CF CARDIFF	1 days

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

Primary Filtering selection:

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

Parameter: Number of bedrooms
 Actual Range: 56 to 157 (units:)
 Range Selected by User: 50 to 300 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 12/11/21

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

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	2 days
Thursday	2 days
Friday	3 days

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

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	9
Neighbourhood Centre (PPS6 Local Centre)	2

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

Selected Location Sub Categories:

Development Zone	2
Residential Zone	2
Retail Zone	1
Built-Up Zone	1
Village	2
No Sub Category	3

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	13 days - Selected

Secondary Filtering selection:

Use Class:

C1	11 days
----	---------

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

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	2 days
20,001 to 25,000	5 days
25,001 to 50,000	1 days

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

Population within 5 miles:

25,001 to 50,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	5 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	5 days

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

Travel Plan:

No	11 days
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This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

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

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LIST OF SITES relevant to selection parameters

1	AC-06-A-01	RAMADA JARVIS	CHESTIRE WEST & CHESTER
	WHITCHURCH ROAD		
	CHESTER		
	CHRISTLETON		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Number of bedrooms:	126	
	Survey date: WEDNESDAY	15/10/08	Survey Type: MANUAL
2	CA-06-A-03	TRAVELODGE	CAMBRIDGESHIRE
	CLIFTON WAY		
	CAMBRIDGE		
	CAMBRIDGE LEISURE PARK		
	Suburban Area (PPS6 Out of Centre)		
	Built-Up Zone		
	Total Number of bedrooms:	120	
	Survey date: FRIDAY	16/10/09	Survey Type: MANUAL
3	CF-06-A-05	PARK INN BY RADISSON	CARDIFF
	CIRCLE WAY EAST		
	CARDIFF		
	LLANEDEYRN		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of bedrooms:	132	
	Survey date: WEDNESDAY	21/03/18	Survey Type: MANUAL
4	GS-06-A-02	PREMIER INN	GLOUCESTERSHIRE
	GLOUCESTER ROAD		
	CHELTENHAM SPA		
	SAINT MARKS		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of bedrooms:	67	
	Survey date: THURSDAY	28/11/13	Survey Type: MANUAL
5	SG-06-A-02	HOLIDAY INN EXPRESS	SOUTH GLOUCESTERSHIRE
	NEW ROAD		
	BRISTOL		
	STOKE GIFFORD		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of bedrooms:	157	
	Survey date: THURSDAY	04/11/21	Survey Type: MANUAL
6	TV-06-A-02	HOTEL	TEES VALLEY
	MARTON ROAD		
	MIDDLESBROUGH		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of bedrooms:	74	
	Survey date: FRIDAY	18/12/09	Survey Type: MANUAL
7	TW-06-A-01	PREMIER TRAV. INN	TYNE & WEAR
	CITY ROAD		
	NEWCASTLE		
	QUAYSIDE		
	Suburban Area (PPS6 Out of Centre)		
	Development Zone		
	Total Number of bedrooms:	82	
	Survey date: TUESDAY	26/04/05	Survey Type: MANUAL
8	TW-06-A-02	TRAVELODGE	TYNE & WEAR
	CASPER WAY		
	GATESHEAD		
	SWALWELL		
	Suburban Area (PPS6 Out of Centre)		
	Development Zone		
	Total Number of bedrooms:	60	
	Survey date: FRIDAY	13/11/15	Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

9	WM-06-A-04	PURPLE HOTEL	WEST MIDLANDS
	CUCKOO ROAD		
	BIRMINGHAM		
	NECHELLS		
	Suburban Area (PPS6 Out of Centre)		
	Retail Zone		
	Total Number of bedrooms:		90
	Survey date: TUESDAY		25/11/08
			Survey Type: MANUAL
10	WM-06-A-05	HOTEL	WEST MIDLANDS
	BIRMINGHAM ROAD		
	BIRMINGHAM		
	HOPWOOD		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Number of bedrooms:		56
	Survey date: MONDAY		09/11/15
			Survey Type: MANUAL
11	WS-06-A-03	EXPRESS BY HOL. INN	WEST SUSSEX
	HASLETT AVENUE EAST		
	CRAWLEY		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of bedrooms:		74
	Survey date: MONDAY		07/12/09
			Survey Type: MANUAL

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
 TOTAL VEHICLES
 Calculation factor: 1 BEDRMS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	94	0.039	11	94	0.100	11	94	0.139
08:00 - 09:00	11	94	0.088	11	94	0.183	11	94	0.271
09:00 - 10:00	11	94	0.101	11	94	0.131	11	94	0.232
10:00 - 11:00	11	94	0.063	11	94	0.094	11	94	0.157
11:00 - 12:00	11	94	0.065	11	94	0.080	11	94	0.145
12:00 - 13:00	11	94	0.057	11	94	0.062	11	94	0.119
13:00 - 14:00	11	94	0.066	11	94	0.068	11	94	0.134
14:00 - 15:00	11	94	0.065	11	94	0.065	11	94	0.130
15:00 - 16:00	11	94	0.086	11	94	0.077	11	94	0.163
16:00 - 17:00	11	94	0.101	11	94	0.058	11	94	0.159
17:00 - 18:00	11	94	0.128	11	94	0.075	11	94	0.203
18:00 - 19:00	11	94	0.141	11	94	0.066	11	94	0.207
19:00 - 20:00	11	94	0.089	11	94	0.052	11	94	0.141
20:00 - 21:00	11	94	0.068	11	94	0.036	11	94	0.104
21:00 - 22:00	10	96	0.043	10	96	0.025	10	96	0.068
22:00 - 23:00	2	116	0.026	2	116	0.026	2	116	0.052
23:00 - 24:00	2	116	0.009	2	116	0.000	2	116	0.009
Total Rates:			1.235			1.198			2.433

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

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

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Parameter summary

Trip rate parameter range selected:

56 - 157 (units:)

Survey date date range:

01/01/05 - 12/11/21

Number of weekdays (Monday-Friday):

11

Number of Saturdays:

0

Number of Sundays:

0

Surveys automatically removed from selection:

2

Surveys manually removed from selection:

0

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

Calculation Reference: AUDIT-662801-240130-0150

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : I - SHOPPING CENTRE - LOCAL SHOPS
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	SC SURREY	1 days
03	SOUTH WEST	
	BR BRISTOL CITY	1 days
06	WEST MIDLANDS	
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	DR DONCASTER	1 days
08	NORTH WEST	
	AC CHESHIRE WEST & CHESTER	2 days
	LC LANCASHIRE	1 days
09	NORTH	
	TV TEES VALLEY	2 days
	TW TYNE & WEAR	2 days

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

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Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 260 to 4052 (units: sqm)
 Range Selected by User: 210 to 8310 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 18/10/22

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

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	1 days
Thursday	2 days
Friday	4 days

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

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Neighbourhood Centre (PPS6 Local Centre)	10

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

Selected Location Sub Categories:

Residential Zone	10
High Street	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	11 days - Selected

Secondary Filtering selection:

Use Class:

n/a	11 days
-----	---------

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

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days
20,001 to 25,000	4 days
25,001 to 50,000	4 days

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

Population within 5 miles:

100,001 to 125,000	3 days
125,001 to 250,000	4 days
250,001 to 500,000	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	8 days

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

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	11 days

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

Travel Plan:

No	11 days
----	---------

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

PTAL Rating:

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

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LIST OF SITES relevant to selection parameters

1	AC-01-I-02	LOCAL SHOPS		CHESHIRE WEST & CHESTER
	CHRISTLETON ROAD			
	CHESTER			
	BOUGHTON HEATH			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	260 sqm		
	Survey date: TUESDAY	15/05/12	Survey Type: MANUAL	
2	AC-01-I-03	LOCAL SHOPS		CHESHIRE WEST & CHESTER
	MILL LANE			
	CHESTER			
	BACHE			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	365 sqm		
	Survey date: THURSDAY	17/05/12	Survey Type: MANUAL	
3	BR-01-I-01	LOCAL SHOPS		BRISTOL CITY
	BELLAND DRIVE			
	BRISTOL			
	WHITCHURCH			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	770 sqm		
	Survey date: TUESDAY	22/09/15	Survey Type: MANUAL	
4	DR-01-I-01	LOCAL SHOPS		DONCASTER
	EVERINGHAM ROAD			
	DONCASTER			
	CANTLEY			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	1645 sqm		
	Survey date: FRIDAY	17/09/21	Survey Type: MANUAL	
5	LC-01-I-01	LOCAL SHOPS		LANCASHIRE
	TALBOT ROW			
	NEAR CHORLEY			
	EUXTON			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	720 sqm		
	Survey date: MONDAY	17/10/11	Survey Type: MANUAL	
6	SC-01-I-01	LOCAL SHOPS		SURREY
	CHURCH ROAD			
	MILFORD			
	Edge of Town Centre			
	Residential Zone			
	Total Gross floor area:	359 sqm		
	Survey date: FRIDAY	24/09/10	Survey Type: MANUAL	
7	TV-01-I-03	LOCAL SHOPS		TEES VALLEY
	ACKLAM ROAD			
	MIDDLESBROUGH			
	ACKLAM			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:	1840 sqm		
	Survey date: FRIDAY	04/10/13	Survey Type: MANUAL	

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LIST OF SITES relevant to selection parameters (Cont.)

8	TV-01-I-04	LOCAL SHOPS	TEES VALLEY
	CARGO FLEET LANE		
	MIDDLESBROUGH		
	ORMESBY		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	585 sqm	
	Survey date: MONDAY	07/10/13	Survey Type: MANUAL
9	TW-01-I-02	LOCAL SHOPS	TYNE & WEAR
	DURHAM ROAD		
	SUNDERLAND		
	BARNES PARK		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	540 sqm	
	Survey date: WEDNESDAY	21/11/12	Survey Type: MANUAL
10	TW-01-I-03	LOCAL SHOPS	TYNE & WEAR
	VICTORIA ROAD		
	WASHINGTON		
	CONCORD		
	Neighbourhood Centre (PPS6 Local Centre)		
	High Street		
	Total Gross floor area:	2700 sqm	
	Survey date: FRIDAY	24/05/19	Survey Type: MANUAL
11	WO-01-I-02	LOCAL SHOPS	WORCESTERSHIRE
	CRANHAM DRIVE		
	WORCESTER		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	4052 sqm	
	Survey date: THURSDAY	22/05/14	Survey Type: MANUAL

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	848	1.336	3	848	0.983	3	848	2.319
07:00 - 08:00	11	1258	2.587	11	1258	2.334	11	1258	4.921
08:00 - 09:00	11	1258	3.310	11	1258	2.956	11	1258	6.266
09:00 - 10:00	11	1258	4.040	11	1258	3.672	11	1258	7.712
10:00 - 11:00	11	1258	3.896	11	1258	3.751	11	1258	7.647
11:00 - 12:00	11	1258	4.084	11	1258	4.134	11	1258	8.218
12:00 - 13:00	11	1258	4.647	11	1258	4.532	11	1258	9.179
13:00 - 14:00	11	1258	4.373	11	1258	4.337	11	1258	8.710
14:00 - 15:00	11	1258	3.751	11	1258	3.867	11	1258	7.618
15:00 - 16:00	11	1258	3.910	11	1258	4.192	11	1258	8.102
16:00 - 17:00	11	1258	4.047	11	1258	3.744	11	1258	7.791
17:00 - 18:00	11	1258	4.199	11	1258	4.575	11	1258	8.774
18:00 - 19:00	11	1258	4.445	11	1258	4.676	11	1258	9.121
19:00 - 20:00	9	1468	3.982	9	1468	4.050	9	1468	8.032
20:00 - 21:00	9	1468	2.619	9	1468	2.687	9	1468	5.306
21:00 - 22:00	7	1206	2.642	7	1206	2.903	7	1206	5.545
22:00 - 23:00	1	359	0.557	1	359	2.507	1	359	3.064
23:00 - 24:00									
Total Rates:			58.425			59.900			118.325

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

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

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Parameter summary

Trip rate parameter range selected:	260 - 4052 (units: sqm)
Survey date range:	01/01/10 - 18/10/22
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	848	0.079	3	848	0.039	3	848	0.118
07:00 - 08:00	11	1258	0.058	11	1258	0.058	11	1258	0.116
08:00 - 09:00	11	1258	0.058	11	1258	0.036	11	1258	0.094
09:00 - 10:00	11	1258	0.058	11	1258	0.043	11	1258	0.101
10:00 - 11:00	11	1258	0.007	11	1258	0.022	11	1258	0.029
11:00 - 12:00	11	1258	0.022	11	1258	0.029	11	1258	0.051
12:00 - 13:00	11	1258	0.014	11	1258	0.007	11	1258	0.021
13:00 - 14:00	11	1258	0.014	11	1258	0.022	11	1258	0.036
14:00 - 15:00	11	1258	0.000	11	1258	0.000	11	1258	0.000
15:00 - 16:00	11	1258	0.007	11	1258	0.000	11	1258	0.007
16:00 - 17:00	11	1258	0.007	11	1258	0.014	11	1258	0.021
17:00 - 18:00	11	1258	0.014	11	1258	0.022	11	1258	0.036
18:00 - 19:00	11	1258	0.007	11	1258	0.014	11	1258	0.021
19:00 - 20:00	9	1468	0.008	9	1468	0.015	9	1468	0.023
20:00 - 21:00	9	1468	0.000	9	1468	0.000	9	1468	0.000
21:00 - 22:00	7	1206	0.012	7	1206	0.012	7	1206	0.024
22:00 - 23:00	1	359	0.000	1	359	0.000	1	359	0.000
23:00 - 24:00									
Total Rates:			0.365			0.333			0.698

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

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

APPENDIX G – BRYN LANE ACCESS PICADY OUTOUT

Junctions 10				
PICADY 10 - Priority Intersection Module				
Version: 10.0.1.1519				
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com				
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Filename: Site Access, Bryn Lane - February 2024.j10

Path: C:\Users\mchau\Downloads\Wrexham (2)

Report generation date: 08/02/2024 13:33:13

- »2030 Base + Development + Committed (Phase 1), AM
- »2030 Base + Development + Committed (Phase 1), PM
- »2037 Base + Development + Committed (Phase 1), AM
- »2037 Base + Development + Committed (Phase 1), PM
- »2030 Base + Development + Committed (Phase 1 + 2), AM
- »2030 Base + Development + Committed (Phase 1 + 2), PM
- »2037 Base + Development + Committed (Phase 1 + 2), AM
- »2037 Base + Development + Committed (Phase 1 + 2), PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2030 Base + Development + Committed (Phase 1)									
Stream B-AC	D1	0.3	11.55	0.24	B	D2	0.8	14.65	0.44	B
Stream C-B		0.1	6.70	0.06	A		0.0	5.96	0.02	A
	2037 Base + Development + Committed (Phase 1)									
Stream B-AC	D3	0.3	10.76	0.23	B	D4	0.8	14.94	0.45	B
Stream C-B		0.1	6.75	0.06	A		0.0	5.99	0.02	A
	2030 Base + Development + Committed (Phase 1 + 2)									
Stream B-AC	D5	0.4	11.96	0.27	B	D6	1.0	15.67	0.49	C
Stream C-B		0.1	7.18	0.12	A		0.0	6.12	0.04	A
	2037 Base + Development + Committed (Phase 1 + 2)									
Stream B-AC	D7	0.4	12.17	0.28	B	D8	1.0	15.98	0.50	C
Stream C-B		0.1	7.23	0.12	A		0.0	6.15	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	Site Access / Bryn Lane
Location	Wrexham
Site number	
Date	05/05/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	LAPTOP-DTQ9HGBB\mchau
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	2030 Base + Development + Committed (Phase 1)	AM	ONE HOUR	07:45	09:15	15
D2	2030 Base + Development + Committed (Phase 1)	PM	ONE HOUR	16:15	17:45	15
D3	2037 Base + Development + Committed (Phase 1)	AM	ONE HOUR	07:45	09:15	15
D4	2037 Base + Development + Committed (Phase 1)	PM	ONE HOUR	16:15	17:45	15
D5	2030 Base + Development + Committed (Phase 1 + 2)	AM	ONE HOUR	07:45	09:15	15
D6	2030 Base + Development + Committed (Phase 1 + 2)	PM	ONE HOUR	16:15	17:45	15
D7	2037 Base + Development + Committed (Phase 1 + 2)	AM	ONE HOUR	07:45	09:15	15
D8	2037 Base + Development + Committed (Phase 1 + 2)	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2030 Base + Development + Committed (Phase 1), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.36	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.36	A

Arms

Arms

Arm	Name	Description	Arm type
A	Bryn Lane (West)		Major
B	Site Access		Minor
C	Bryn Lane (East)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	10.00		✓	3.00	120.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.65	45	45

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	548	0.082	0.208	0.131	0.298
B-C	695	0.088	0.222	-	-
C-B	699	0.224	0.224	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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	2030 Base + Development + Committed (Phase 1)	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		✓	517	100.000
B		✓	91	100.000
C		✓	320	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A	B	C
	A	0	165	352
	B	83	0	8
	C	288	32	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		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	0.24	11.55	0.3	B
C-A				
C-B	0.06	6.70	0.1	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	69	458	0.149	68	0.2	9.205	A
C-A	217			217			
C-B	24	612	0.039	24	0.0	6.116	A
A-B	124			124			
A-C	265			265			

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	82	439	0.186	82	0.2	10.072	B
C-A	259			259			
C-B	29	595	0.048	29	0.1	6.352	A
A-B	148			148			
A-C	316			316			

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	100	412	0.243	100	0.3	11.525	B
C-A	317			317			
C-B	35	572	0.062	35	0.1	6.705	A
A-B	182			182			
A-C	388			388			

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	100	412	0.243	100	0.3	11.553	B
C-A	317			317			
C-B	35	572	0.062	35	0.1	6.705	A
A-B	182			182			
A-C	388			388			

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	82	439	0.186	82	0.2	10.104	B
C-A	259			259			
C-B	29	595	0.048	29	0.1	6.353	A
A-B	148			148			
A-C	316			316			

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	69	458	0.150	69	0.2	9.247	A
C-A	217			217			
C-B	24	612	0.039	24	0.0	6.122	A
A-B	124			124			
A-C	265			265			

2030 Base + Development + Committed (Phase 1), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.74	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.74	A

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	2030 Base + Development + Committed (Phase 1)	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		✓	344	100.000
B		✓	176	100.000
C		✓	444	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A	B	C
From	A	0	94
	B	148	0
	C	434	10

Vehicle Mix

Heavy Vehicle Percentages

From	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	0.44	14.65	0.8	B
C-A				
C-B	0.02	5.96	0.0	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	133	480	0.276	131	0.4	10.270	B
C-A	327			327			
C-B	8	642	0.012	7	0.0	5.677	A
A-B	71			71			
A-C	188			188			

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	158	463	0.342	158	0.5	11.769	B
C-A	390			390			
C-B	9	630	0.014	9	0.0	5.794	A
A-B	85			85			
A-C	225			225			

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	194	439	0.441	193	0.8	14.534	B
C-A	478			478			
C-B	11	615	0.018	11	0.0	5.962	A
A-B	103			103			
A-C	275			275			

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	194	439	0.441	194	0.8	14.648	B
C-A	478			478			
C-B	11	615	0.018	11	0.0	5.962	A
A-B	103			103			
A-C	275			275			

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	158	463	0.342	159	0.5	11.890	B
C-A	390			390			
C-B	9	630	0.014	9	0.0	5.796	A
A-B	85			85			
A-C	225			225			

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	133	480	0.276	133	0.4	10.392	B
C-A	327			327			
C-B	8	642	0.012	8	0.0	5.678	A
A-B	71			71			
A-C	188			188			

2037 Base + Development + Committed (Phase 1), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.25	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.25	A

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	2037 Base + Development + Committed (Phase 1)	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		✓	532	100.000
B		✓	91	100.000
C		✓	333	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A	B	C
	A	0	367
	B	83	0
	C	301	32

Vehicle Mix

Heavy Vehicle Percentages

From	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	0.23	10.76	0.3	B
C-A				
C-B	0.06	6.75	0.1	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	69	474	0.145	68	0.2	8.849	A
C-A	227			227			
C-B	24	610	0.040	24	0.0	6.143	A
A-B	276			276			
A-C	124			124			

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	82	458	0.179	82	0.2	9.570	A
C-A	271			271			
C-B	29	592	0.049	29	0.1	6.386	A
A-B	330			330			
A-C	148			148			

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	100	435	0.230	100	0.3	10.739	B
C-A	331			331			
C-B	35	568	0.062	35	0.1	6.751	A
A-B	404			404			
A-C	182			182			

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	100	435	0.230	100	0.3	10.757	B
C-A	331			331			
C-B	35	568	0.062	35	0.1	6.751	A
A-B	404			404			
A-C	182			182			

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	82	458	0.179	82	0.2	9.596	A
C-A	271			271			
C-B	29	592	0.049	29	0.1	6.389	A
A-B	330			330			
A-C	148			148			

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	69	474	0.145	69	0.2	8.887	A
C-A	227			227			
C-B	24	610	0.040	24	0.0	6.146	A
A-B	276			276			
A-C	124			124			

2037 Base + Development + Committed (Phase 1), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.71	A

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	2037 Base + Development + Committed (Phase 1)	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		✓	354	100.000
B		✓	176	100.000
C		✓	462	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A	B	C
From	A	0	94
	B	148	0
	C	452	10

Vehicle Mix

Heavy Vehicle Percentages

From	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	0.45	14.94	0.8	B
C-A				
C-B	0.02	5.99	0.0	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	133	477	0.278	131	0.4	10.370	B
C-A	340			340			
C-B	8	640	0.012	7	0.0	5.692	A
A-B	71			71			
A-C	196			196			

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	158	459	0.345	158	0.5	11.918	B
C-A	406			406			
C-B	9	628	0.014	9	0.0	5.812	A
A-B	85			85			
A-C	234			234			

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	194	435	0.446	193	0.8	14.818	B
C-A	498			498			
C-B	11	612	0.018	11	0.0	5.987	A
A-B	103			103			
A-C	286			286			

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	194	435	0.446	194	0.8	14.939	B
C-A	498			498			
C-B	11	612	0.018	11	0.0	5.987	A
A-B	103			103			
A-C	286			286			

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	158	459	0.345	159	0.5	12.045	B
C-A	406			406			
C-B	9	628	0.014	9	0.0	5.815	A
A-B	85			85			
A-C	234			234			

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	133	477	0.278	133	0.4	10.491	B
C-A	340			340			
C-B	8	640	0.012	8	0.0	5.695	A
A-B	71			71			
A-C	196			196			

2030 Base + Development + Committed (Phase 1 + 2), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.69	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.69	A

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	2030 Base + Development + Committed (Phase 1 + 2)	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		✓	527	100.000
B		✓	102	100.000
C		✓	358	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	165	362
	B	83	0	19
	C	296	62	0

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A	B	C
	0	0	0
	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.27	11.96	0.4	B
C-A				
C-B	0.12	7.18	0.1	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	77	463	0.166	76	0.2	9.274	A
C-A	223			223			
C-B	47	611	0.076	46	0.1	6.377	A
A-B	124			124			
A-C	273			273			

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	92	442	0.207	91	0.3	10.251	B
C-A	266			266			
C-B	56	593	0.094	56	0.1	6.694	A
A-B	148			148			
A-C	325			325			

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	112	413	0.272	112	0.4	11.927	B
C-A	326			326			
C-B	68	570	0.120	68	0.1	7.177	A
A-B	182			182			
A-C	399			399			

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	112	413	0.272	112	0.4	11.963	B
C-A	326			326			
C-B	68	570	0.120	68	0.1	7.180	A
A-B	182			182			
A-C	399			399			

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	92	442	0.207	92	0.3	10.293	B
C-A	266			266			
C-B	56	593	0.094	56	0.1	6.700	A
A-B	148			148			
A-C	325			325			

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	77	463	0.166	77	0.2	9.325	A
C-A	223			223			
C-B	47	611	0.076	47	0.1	6.386	A
A-B	124			124			
A-C	273			273			

2030 Base + Development + Committed (Phase 1 + 2), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.28	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.28	A

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	2030 Base + Development + Committed (Phase 1 + 2)	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		✓	346	100.000
B		✓	202	100.000
C		✓	461	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	94	252
	B	148	0	54
	C	437	24	0

Vehicle Mix

Heavy Vehicle Percentages

From	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	0.49	15.67	1.0	C
C-A				
C-B	0.04	6.12	0.0	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	152	493	0.308	150	0.4	10.446	B
C-A	329			329			
C-B	18	641	0.028	18	0.0	5.776	A
A-B	71			71			
A-C	190			190			

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	182	476	0.382	181	0.6	12.175	B
C-A	393			393			
C-B	22	630	0.034	22	0.0	5.917	A
A-B	85			85			
A-C	227			227			

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	222	452	0.492	221	0.9	15.505	C
C-A	481			481			
C-B	26	614	0.043	26	0.0	6.124	A
A-B	103			103			
A-C	277			277			

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	222	452	0.492	222	1.0	15.674	C
C-A	481			481			
C-B	26	614	0.043	26	0.0	6.124	A
A-B	103			103			
A-C	277			277			

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	182	476	0.382	183	0.6	12.341	B
C-A	393			393			
C-B	22	630	0.034	22	0.0	5.920	A
A-B	85			85			
A-C	227			227			

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	152	493	0.308	153	0.5	10.599	B
C-A	329			329			
C-B	18	641	0.028	18	0.0	5.779	A
A-B	71			71			
A-C	190			190			

2037 Base + Development + Committed (Phase 1 + 2), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.67	A

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	2037 Base + Development + Committed (Phase 1 + 2)	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		✓	542	100.000
B		✓	102	100.000
C		✓	370	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	165	377
	B	83	0	19
	C	308	62	0

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A	B	C
	0	0	0
	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.28	12.17	0.4	B
C-A				
C-B	0.12	7.23	0.1	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	77	460	0.167	76	0.2	9.358	A
C-A	232			232			
C-B	47	608	0.077	46	0.1	6.406	A
A-B	124			124			
A-C	284			284			

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	92	438	0.209	91	0.3	10.374	B
C-A	277			277			
C-B	56	590	0.094	56	0.1	6.732	A
A-B	148			148			
A-C	339			339			

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	112	408	0.275	112	0.4	12.134	B
C-A	339			339			
C-B	68	566	0.121	68	0.1	7.230	A
A-B	182			182			
A-C	415			415			

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	112	408	0.275	112	0.4	12.172	B
C-A	339			339			
C-B	68	566	0.121	68	0.1	7.233	A
A-B	182			182			
A-C	415			415			

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	92	438	0.209	92	0.3	10.418	B
C-A	277			277			
C-B	56	590	0.094	56	0.1	6.738	A
A-B	148			148			
A-C	339			339			

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	77	460	0.167	77	0.2	9.413	A
C-A	232			232			
C-B	47	608	0.077	47	0.1	6.415	A
A-B	124			124			
A-C	284			284			

2037 Base + Development + Committed (Phase 1 + 2), 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	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.26	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.26	A

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	2037 Base + Development + Committed (Phase 1 + 2)	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		✓	355	100.000
B		✓	202	100.000
C		✓	479	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	94	261
	B	148	0	54
	C	455	24	0

Vehicle Mix

Heavy Vehicle Percentages

From	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	0.50	15.98	1.0	C
C-A				
C-B	0.04	6.15	0.0	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	152	490	0.310	150	0.4	10.537	B
C-A	343			343			
C-B	18	640	0.028	18	0.0	5.791	A
A-B	71			71			
A-C	196			196			

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	182	472	0.384	181	0.6	12.323	B
C-A	409			409			
C-B	22	628	0.034	22	0.0	5.935	A
A-B	85			85			
A-C	235			235			

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	222	447	0.497	221	1.0	15.802	C
C-A	501			501			
C-B	26	612	0.043	26	0.0	6.147	A
A-B	103			103			
A-C	287			287			

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	222	447	0.497	222	1.0	15.984	C
C-A	501			501			
C-B	26	612	0.043	26	0.0	6.147	A
A-B	103			103			
A-C	287			287			

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	182	472	0.384	183	0.6	12.499	B
C-A	409			409			
C-B	22	628	0.034	22	0.0	5.938	A
A-B	85			85			
A-C	235			235			

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	152	490	0.310	153	0.5	10.692	B
C-A	343			343			
C-B	18	640	0.028	18	0.0	5.791	A
A-B	71			71			
A-C	196			196			

APPENDIX H – EXISTING INDUSTRIAL ESTATE ROAD / BRYN LANE ROUNDABOUT ARCADY OUTPUT

Junctions 10		
ARCADY 10 - Roundabout Module		
Version: 10.0.1.1519		
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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: Bryn Lane, Industrial Estate Road, Ash Road North ARCADY (Existing).j10

Path: C:\Users\mchau\Downloads\Wrexham (2)

Report generation date: 01/02/2024 11:52:07

-
- »2023 Base, AM
 - »2023 Base, PM
 - »2030 Base, AM
 - »2030 Base, PM
 - »2030 Base + Committed, AM
 - »2030 Base + Committed, PM
 - »2037 Base, AM
 - »2037 Base, PM
 - »2037 Base + Committed, AM
 - »2037 Base + Committed, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2023 Base									
1 - Bryn Lane	D1	0.3	4.75	0.23	A	D2	0.3	3.00	0.22	A
2 - Ash Road North		0.1	3.15	0.13	A		1.4	6.11	0.59	A
3 - Abenbury Way		0.3	3.95	0.23	A		3.2	20.31	0.77	C
4 - Industrial Estate Road		1.7	3.82	0.62	A		0.2	1.79	0.20	A
	2030 Base									
1 - Bryn Lane	D3	0.3	5.14	0.26	A	D4	0.3	3.08	0.23	A
2 - Ash Road North		0.2	3.25	0.14	A		1.7	6.89	0.63	A
3 - Abenbury Way		0.3	4.06	0.25	A		5.1	31.97	0.85	D
4 - Industrial Estate Road		1.9	4.24	0.66	A		0.3	1.81	0.21	A
	2030 Base + Committed									
1 - Bryn Lane	D5	0.6	6.87	0.38	A	D6	0.5	3.59	0.32	A
2 - Ash Road North		0.2	3.59	0.19	A		3.5	12.11	0.78	B
3 - Abenbury Way		0.4	4.41	0.26	A		27.1	149.69	1.06	F
4 - Industrial Estate Road		3.3	6.29	0.77	A		0.4	1.99	0.28	A
	2037 Base									
1 - Bryn Lane	D7	0.4	5.63	0.28	A	D8	0.3	3.17	0.25	A
2 - Ash Road North		0.2	3.35	0.15	A		2.0	7.91	0.67	A
3 - Abenbury Way		0.4	4.18	0.26	A		10.6	62.50	0.95	F
4 - Industrial Estate Road		2.3	4.79	0.70	A		0.3	1.84	0.22	A
	2037 Base + Committed									
1 - Bryn Lane	D9	0.7	7.77	0.42	A	D10	0.5	3.71	0.34	A
2 - Ash Road North		0.3	3.72	0.21	A		4.6	15.50	0.83	C
3 - Abenbury Way		0.4	4.56	0.28	A		56.2	285.90	1.19	F
4 - Industrial Estate Road		4.2	7.57	0.81	A		0.4	2.02	0.29	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	Industrial Estate Road / Bryn Lane / Ash Road North / Abenbury Way
Location	Wrexham
Site number	
Date	09/02/2023
Version	
Status	(new file)
Identifier	
Client	LIDL
Jobnumber	
Enumerator	LAPTOP-DTQ9HGGB\mchau
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	2023 Base	AM	ONE HOUR	07:45	09:15	15
D2	2023 Base	PM	ONE HOUR	16:15	17:45	15
D3	2030 Base	AM	ONE HOUR	07:45	09:15	15
D4	2030 Base	PM	ONE HOUR	16:15	17:45	15
D5	2030 Base + Committed	AM	ONE HOUR	07:45	09:15	15
D6	2030 Base + Committed	PM	ONE HOUR	16:15	17:45	15
D7	2037 Base	AM	ONE HOUR	07:45	09:15	15
D8	2037 Base	PM	ONE HOUR	16:15	17:45	15
D9	2037 Base + Committed	AM	ONE HOUR	07:45	09:15	15
D10	2037 Base + Committed	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2023 Base, 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	untitled	Standard Roundabout		1, 2, 3, 4	3.88	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.88	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Bryn Lane		
2	Ash Road North		
3	Abenbury Way		
4	Industrial Estate 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)	Entry only	Exit only
1 - Bryn Lane	3.60	7.00	17.7	40.7	59.7	34.6		
2 - Ash Road North	3.60	7.50	21.0	10.0	59.7	35.2		
3 - Abenbury Way	3.60	5.00	5.0	60.3	59.7	34.5		
4 - Industrial Estate Road	7.00	9.70	7.5	48.0	59.7	34.2		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Bryn Lane	0.569	1744
2 - Ash Road North	0.543	1709
3 - Abenbury Way	0.500	1337
4 - Industrial Estate Road	0.708	2536

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	2023 Base	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 - Bryn Lane		✓	206	100.000
2 - Ash Road North		✓	151	100.000
3 - Abenbury Way		✓	251	100.000
4 - Industrial Estate Road		✓	1422	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
From	1 - Bryn Lane	0	49	41	116
	2 - Ash Road North	4	1	10	136
	3 - Abenbury Way	10	21	0	220
	4 - Industrial Estate Road	232	676	500	14

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
From	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.23	4.75	0.3	A
2 - Ash Road North	0.13	3.15	0.1	A
3 - Abenbury Way	0.23	3.95	0.3	A
4 - Industrial Estate Road	0.62	3.82	1.7	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 - Bryn Lane	155	910	1227	0.126	155	0.1	3.356	A
2 - Ash Road North	114	504	1436	0.079	113	0.1	2.721	A
3 - Abenbury Way	189	203	1235	0.153	188	0.2	3.437	A
4 - Industrial Estate Road	1071	27	2517	0.425	1068	0.7	2.478	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 - Bryn Lane	185	1089	1125	0.165	185	0.2	3.829	A
2 - Ash Road North	136	603	1382	0.098	136	0.1	2.887	A
3 - Abenbury Way	226	243	1215	0.186	225	0.2	3.636	A
4 - Industrial Estate Road	1278	32	2513	0.509	1277	1.0	2.910	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 - Bryn Lane	227	1332	986	0.230	226	0.3	4.735	A
2 - Ash Road North	166	738	1309	0.127	166	0.1	3.149	A
3 - Abenbury Way	276	298	1188	0.233	276	0.3	3.947	A
4 - Industrial Estate Road	1566	40	2508	0.624	1563	1.6	3.801	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 - Bryn Lane	227	1334	985	0.230	227	0.3	4.746	A
2 - Ash Road North	166	739	1308	0.127	166	0.1	3.151	A
3 - Abenbury Way	276	298	1188	0.233	276	0.3	3.949	A
4 - Industrial Estate Road	1566	40	2508	0.624	1566	1.7	3.819	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 - Bryn Lane	185	1092	1123	0.165	186	0.2	3.841	A
2 - Ash Road North	136	604	1381	0.098	136	0.1	2.892	A
3 - Abenbury Way	226	244	1215	0.186	226	0.2	3.643	A
4 - Industrial Estate Road	1278	32	2513	0.509	1281	1.0	2.926	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 - Bryn Lane	155	913	1225	0.127	155	0.1	3.368	A
2 - Ash Road North	114	506	1435	0.079	114	0.1	2.726	A
3 - Abenbury Way	189	204	1235	0.153	189	0.2	3.445	A
4 - Industrial Estate Road	1071	27	2517	0.425	1072	0.7	2.492	A

2023 Base, 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	untitled	Standard Roundabout		1, 2, 3, 4	8.36	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.36	A

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	2023 Base	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 - Bryn Lane		✓	306	100.000
2 - Ash Road North		✓	765	100.000
3 - Abenbury Way		✓	527	100.000
4 - Industrial Estate Road		✓	449	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	10	13	283
	2 - Ash Road North	15	0	9	741
	3 - Abenbury Way	18	4	0	505
	4 - Industrial Estate Road	124	155	153	17

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.22	3.00	0.3	A
2 - Ash Road North	0.59	6.11	1.4	A
3 - Abenbury Way	0.77	20.31	3.2	C
4 - Industrial Estate Road	0.20	1.79	0.2	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 - Bryn Lane	230	247	1604	0.144	230	0.2	2.618	A
2 - Ash Road North	576	350	1519	0.379	574	0.6	3.796	A
3 - Abenbury Way	397	792	941	0.422	394	0.7	6.548	A
4 - Industrial Estate Road	338	28	2516	0.134	337	0.2	1.651	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 - Bryn Lane	275	296	1576	0.175	275	0.2	2.766	A
2 - Ash Road North	688	419	1482	0.464	687	0.9	4.520	A
3 - Abenbury Way	474	948	863	0.549	472	1.2	9.165	A
4 - Industrial Estate Road	404	33	2513	0.161	403	0.2	1.706	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 - Bryn Lane	337	362	1538	0.219	337	0.3	2.995	A
2 - Ash Road North	842	513	1431	0.589	840	1.4	6.067	A
3 - Abenbury Way	580	1160	757	0.767	573	3.0	18.880	C
4 - Industrial Estate Road	494	40	2507	0.197	494	0.2	1.787	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 - Bryn Lane	337	362	1538	0.219	337	0.3	2.996	A
2 - Ash Road North	842	513	1431	0.589	842	1.4	6.115	A
3 - Abenbury Way	580	1163	756	0.768	580	3.2	20.315	C
4 - Industrial Estate Road	494	41	2507	0.197	494	0.2	1.787	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 - Bryn Lane	275	296	1576	0.175	275	0.2	2.768	A
2 - Ash Road North	688	419	1482	0.464	690	0.9	4.557	A
3 - Abenbury Way	474	952	861	0.550	481	1.3	9.665	A
4 - Industrial Estate Road	404	34	2512	0.161	404	0.2	1.706	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 - Bryn Lane	230	248	1603	0.144	231	0.2	2.622	A
2 - Ash Road North	576	351	1519	0.379	577	0.6	3.828	A
3 - Abenbury Way	397	796	939	0.423	399	0.7	6.693	A
4 - Industrial Estate Road	338	28	2516	0.134	338	0.2	1.652	A

2030 Base, 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	untitled	Standard Roundabout		1, 2, 3, 4	4.24	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.24	A

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	2030 Base	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 - Bryn Lane		✓	218	100.000
2 - Ash Road North		✓	160	100.000
3 - Abenbury Way		✓	266	100.000
4 - Industrial Estate Road		✓	1506	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	52	43	123
	2 - Ash Road North	4	1	11	144
	3 - Abenbury Way	11	22	0	233
	4 - Industrial Estate Road	246	716	529	15

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.26	5.14	0.3	A
2 - Ash Road North	0.14	3.25	0.2	A
3 - Abenbury Way	0.25	4.06	0.3	A
4 - Industrial Estate Road	0.66	4.24	1.9	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 - Bryn Lane	164	963	1196	0.137	163	0.2	3.483	A
2 - Ash Road North	120	533	1420	0.085	120	0.1	2.769	A
3 - Abenbury Way	200	215	1229	0.163	199	0.2	3.494	A
4 - Industrial Estate Road	1134	29	2516	0.451	1131	0.8	2.595	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 - Bryn Lane	196	1152	1089	0.180	196	0.2	4.029	A
2 - Ash Road North	144	638	1363	0.106	144	0.1	2.951	A
3 - Abenbury Way	239	258	1208	0.198	239	0.2	3.714	A
4 - Industrial Estate Road	1354	34	2512	0.539	1352	1.2	3.100	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 - Bryn Lane	240	1410	942	0.255	240	0.3	5.119	A
2 - Ash Road North	176	780	1286	0.137	176	0.2	3.243	A
3 - Abenbury Way	293	316	1179	0.248	293	0.3	4.060	A
4 - Industrial Estate Road	1658	42	2506	0.662	1655	1.9	4.213	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 - Bryn Lane	240	1413	941	0.255	240	0.3	5.136	A
2 - Ash Road North	176	782	1285	0.137	176	0.2	3.245	A
3 - Abenbury Way	293	316	1179	0.248	293	0.3	4.062	A
4 - Industrial Estate Road	1658	42	2506	0.662	1658	1.9	4.243	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 - Bryn Lane	196	1156	1087	0.180	196	0.2	4.047	A
2 - Ash Road North	144	640	1362	0.106	144	0.1	2.955	A
3 - Abenbury Way	239	258	1208	0.198	239	0.2	3.718	A
4 - Industrial Estate Road	1354	34	2512	0.539	1357	1.2	3.124	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 - Bryn Lane	164	967	1194	0.137	164	0.2	3.498	A
2 - Ash Road North	120	535	1419	0.085	121	0.1	2.774	A
3 - Abenbury Way	200	216	1229	0.163	200	0.2	3.500	A
4 - Industrial Estate Road	1134	29	2516	0.451	1135	0.8	2.609	A

2030 Base, 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	untitled	Standard Roundabout		1, 2, 3, 4	11.66	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.66	B

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	2030 Base	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 - Bryn Lane		✓	325	100.000
2 - Ash Road North		✓	810	100.000
3 - Abenbury Way		✓	558	100.000
4 - Industrial Estate Road		✓	475	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	11	14	300
	2 - Ash Road North	16	0	10	784
	3 - Abenbury Way	19	4	0	535
	4 - Industrial Estate Road	131	164	162	18

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.23	3.08	0.3	A
2 - Ash Road North	0.63	6.89	1.7	A
3 - Abenbury Way	0.85	31.97	5.1	D
4 - Industrial Estate Road	0.21	1.81	0.3	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 - Bryn Lane	245	261	1595	0.153	244	0.2	2.662	A
2 - Ash Road North	610	371	1508	0.404	607	0.7	3.984	A
3 - Abenbury Way	420	838	918	0.458	417	0.8	7.140	A
4 - Industrial Estate Road	358	29	2515	0.142	357	0.2	1.667	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 - Bryn Lane	292	313	1566	0.187	292	0.2	2.824	A
2 - Ash Road North	728	444	1468	0.496	727	1.0	4.847	A
3 - Abenbury Way	502	1004	835	0.601	499	1.5	10.638	B
4 - Industrial Estate Road	427	35	2511	0.170	427	0.2	1.726	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 - Bryn Lane	358	383	1526	0.234	358	0.3	3.079	A
2 - Ash Road North	892	544	1414	0.631	889	1.7	6.815	A
3 - Abenbury Way	614	1228	723	0.850	601	4.7	27.179	D
4 - Industrial Estate Road	523	42	2506	0.209	523	0.3	1.814	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 - Bryn Lane	358	383	1526	0.234	358	0.3	3.080	A
2 - Ash Road North	892	544	1414	0.631	892	1.7	6.888	A
3 - Abenbury Way	614	1231	721	0.852	613	5.1	31.968	D
4 - Industrial Estate Road	523	43	2506	0.209	523	0.3	1.814	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 - Bryn Lane	292	313	1566	0.187	292	0.2	2.826	A
2 - Ash Road North	728	444	1468	0.496	731	1.0	4.901	A
3 - Abenbury Way	502	1008	833	0.602	516	1.6	11.845	B
4 - Industrial Estate Road	427	36	2511	0.170	427	0.2	1.727	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 - Bryn Lane	245	262	1595	0.153	245	0.2	2.668	A
2 - Ash Road North	610	372	1507	0.405	611	0.7	4.021	A
3 - Abenbury Way	420	843	915	0.459	423	0.9	7.350	A
4 - Industrial Estate Road	358	30	2515	0.142	358	0.2	1.667	A

2030 Base + Committed, 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	untitled	Standard Roundabout		1, 2, 3, 4	5.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.92	A

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	2030 Base + Committed	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 - Bryn Lane		✓	288	100.000
2 - Ash Road North		✓	218	100.000
3 - Abenbury Way		✓	266	100.000
4 - Industrial Estate Road		✓	1757	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	52	43	193
	2 - Ash Road North	4	1	11	202
	3 - Abenbury Way	11	22	0	233
	4 - Industrial Estate Road	338	875	529	15

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.38	6.87	0.6	A
2 - Ash Road North	0.19	3.59	0.2	A
3 - Abenbury Way	0.26	4.41	0.4	A
4 - Industrial Estate Road	0.77	6.29	3.3	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 - Bryn Lane	217	1082	1129	0.192	216	0.2	3.939	A
2 - Ash Road North	164	585	1392	0.118	164	0.1	2.929	A
3 - Abenbury Way	200	311	1181	0.170	199	0.2	3.662	A
4 - Industrial Estate Road	1323	28	2516	0.526	1318	1.1	2.995	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 - Bryn Lane	259	1294	1008	0.257	258	0.3	4.801	A
2 - Ash Road North	196	700	1329	0.147	196	0.2	3.175	A
3 - Abenbury Way	239	373	1151	0.208	239	0.3	3.947	A
4 - Industrial Estate Road	1580	34	2512	0.629	1577	1.7	3.842	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 - Bryn Lane	317	1582	844	0.376	316	0.6	6.805	A
2 - Ash Road North	240	856	1245	0.193	240	0.2	3.581	A
3 - Abenbury Way	293	456	1109	0.264	292	0.4	4.407	A
4 - Industrial Estate Road	1934	42	2506	0.772	1928	3.3	6.155	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 - Bryn Lane	317	1588	841	0.377	317	0.6	6.866	A
2 - Ash Road North	240	859	1243	0.193	240	0.2	3.587	A
3 - Abenbury Way	293	457	1108	0.264	293	0.4	4.413	A
4 - Industrial Estate Road	1934	42	2506	0.772	1934	3.3	6.286	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 - Bryn Lane	259	1302	1004	0.258	260	0.4	4.846	A
2 - Ash Road North	196	704	1327	0.148	196	0.2	3.185	A
3 - Abenbury Way	239	374	1150	0.208	240	0.3	3.957	A
4 - Industrial Estate Road	1580	34	2512	0.629	1586	1.7	3.916	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 - Bryn Lane	217	1088	1126	0.193	217	0.2	3.964	A
2 - Ash Road North	164	588	1390	0.118	164	0.1	2.938	A
3 - Abenbury Way	200	313	1180	0.170	200	0.2	3.676	A
4 - Industrial Estate Road	1323	29	2516	0.526	1325	1.1	3.028	A

2030 Base + Committed, 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	untitled	Standard Roundabout		1, 2, 3, 4	37.93	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	37.93	E

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	2030 Base + Committed	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 - Bryn Lane		✓	435	100.000
2 - Ash Road North		✓	956	100.000
3 - Abenbury Way		✓	558	100.000
4 - Industrial Estate Road		✓	633	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	11	14	410
	2 - Ash Road North	16	0	10	930
	3 - Abenbury Way	19	4	0	535
	4 - Industrial Estate Road	215	238	162	18

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.32	3.59	0.5	A
2 - Ash Road North	0.78	12.11	3.5	B
3 - Abenbury Way	1.06	149.69	27.1	F
4 - Industrial Estate Road	0.28	1.99	0.4	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 - Bryn Lane	327	317	1564	0.209	326	0.3	2.906	A
2 - Ash Road North	720	453	1463	0.492	716	1.0	4.793	A
3 - Abenbury Way	420	1030	822	0.511	416	1.0	8.781	A
4 - Industrial Estate Road	477	29	2515	0.189	476	0.2	1.764	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 - Bryn Lane	391	379	1529	0.256	391	0.3	3.164	A
2 - Ash Road North	859	543	1415	0.607	857	1.5	6.429	A
3 - Abenbury Way	502	1233	720	0.696	497	2.2	15.794	C
4 - Industrial Estate Road	569	35	2511	0.227	569	0.3	1.852	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 - Bryn Lane	479	464	1480	0.324	478	0.5	3.591	A
2 - Ash Road North	1053	664	1349	0.780	1045	3.4	11.585	B
3 - Abenbury Way	614	1505	584	1.052	557	16.5	78.221	F
4 - Industrial Estate Road	697	40	2507	0.278	697	0.4	1.988	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 - Bryn Lane	479	464	1480	0.324	479	0.5	3.594	A
2 - Ash Road North	1053	665	1348	0.781	1052	3.5	12.109	B
3 - Abenbury Way	614	1512	581	1.058	572	27.1	149.685	F
4 - Industrial Estate Road	697	41	2507	0.278	697	0.4	1.988	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 - Bryn Lane	391	380	1528	0.256	392	0.3	3.168	A
2 - Ash Road North	859	544	1414	0.608	867	1.6	6.663	A
3 - Abenbury Way	502	1243	715	0.701	600	2.6	51.137	F
4 - Industrial Estate Road	569	39	2508	0.227	569	0.3	1.859	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 - Bryn Lane	327	318	1563	0.209	328	0.3	2.915	A
2 - Ash Road North	720	455	1462	0.492	722	1.0	4.880	A
3 - Abenbury Way	420	1037	818	0.513	426	1.1	9.314	A
4 - Industrial Estate Road	477	30	2515	0.189	477	0.2	1.768	A

2037 Base, 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	untitled	Standard Roundabout		1, 2, 3, 4	4.69	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.69	A

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	2037 Base	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 - Bryn Lane		✓	231	100.000
2 - Ash Road North		✓	168	100.000
3 - Abenbury Way		✓	281	100.000
4 - Industrial Estate Road		✓	1593	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
From	1 - Bryn Lane	0	55	46	130
	2 - Ash Road North	4	1	11	152
	3 - Abenbury Way	11	24	0	246
	4 - Industrial Estate Road	260	757	560	16

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.28	5.63	0.4	A
2 - Ash Road North	0.15	3.35	0.2	A
3 - Abenbury Way	0.26	4.18	0.4	A
4 - Industrial Estate Road	0.70	4.79	2.3	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 - Bryn Lane	174	1019	1165	0.149	173	0.2	3.630	A
2 - Ash Road North	126	564	1403	0.090	126	0.1	2.819	A
3 - Abenbury Way	212	227	1223	0.173	211	0.2	3.551	A
4 - Industrial Estate Road	1199	30	2515	0.477	1196	0.9	2.723	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 - Bryn Lane	208	1219	1051	0.198	207	0.2	4.268	A
2 - Ash Road North	151	675	1343	0.112	151	0.1	3.019	A
3 - Abenbury Way	253	272	1201	0.210	252	0.3	3.795	A
4 - Industrial Estate Road	1432	36	2511	0.570	1430	1.3	3.329	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 - Bryn Lane	254	1492	896	0.284	254	0.4	5.603	A
2 - Ash Road North	185	826	1261	0.147	185	0.2	3.344	A
3 - Abenbury Way	309	333	1170	0.264	309	0.4	4.177	A
4 - Industrial Estate Road	1754	44	2505	0.700	1750	2.3	4.744	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 - Bryn Lane	254	1495	894	0.285	254	0.4	5.628	A
2 - Ash Road North	185	828	1260	0.147	185	0.2	3.347	A
3 - Abenbury Way	309	334	1170	0.264	309	0.4	4.182	A
4 - Industrial Estate Road	1754	44	2505	0.700	1754	2.3	4.791	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 - Bryn Lane	208	1224	1048	0.198	208	0.2	4.289	A
2 - Ash Road North	151	678	1341	0.113	151	0.1	3.024	A
3 - Abenbury Way	253	273	1200	0.210	253	0.3	3.802	A
4 - Industrial Estate Road	1432	36	2511	0.570	1436	1.3	3.364	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 - Bryn Lane	174	1024	1162	0.150	174	0.2	3.644	A
2 - Ash Road North	126	567	1402	0.090	127	0.1	2.825	A
3 - Abenbury Way	212	228	1223	0.173	212	0.2	3.563	A
4 - Industrial Estate Road	1199	30	2515	0.477	1201	0.9	2.745	A

2037 Base, 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	untitled	Standard Roundabout		1, 2, 3, 4	19.91	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	19.91	C

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	2037 Base	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 - Bryn Lane		✓	343	100.000
2 - Ash Road North		✓	856	100.000
3 - Abenbury Way		✓	589	100.000
4 - Industrial Estate Road		✓	502	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	11	15	317
	2 - Ash Road North	17	0	10	829
	3 - Abenbury Way	20	4	0	565
	4 - Industrial Estate Road	139	173	171	19

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.25	3.17	0.3	A
2 - Ash Road North	0.67	7.91	2.0	A
3 - Abenbury Way	0.95	62.50	10.6	F
4 - Industrial Estate Road	0.22	1.84	0.3	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 - Bryn Lane	258	276	1587	0.163	257	0.2	2.705	A
2 - Ash Road North	644	392	1497	0.431	641	0.8	4.196	A
3 - Abenbury Way	443	886	894	0.496	440	1.0	7.860	A
4 - Industrial Estate Road	378	31	2514	0.150	377	0.2	1.684	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 - Bryn Lane	308	330	1557	0.198	308	0.2	2.883	A
2 - Ash Road North	770	469	1455	0.529	768	1.1	5.232	A
3 - Abenbury Way	529	1061	806	0.657	526	1.8	12.681	B
4 - Industrial Estate Road	451	37	2510	0.180	451	0.2	1.747	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 - Bryn Lane	378	404	1515	0.249	377	0.3	3.165	A
2 - Ash Road North	942	574	1398	0.674	939	2.0	7.784	A
3 - Abenbury Way	649	1297	688	0.943	622	8.5	43.328	E
4 - Industrial Estate Road	553	44	2505	0.221	552	0.3	1.843	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 - Bryn Lane	378	404	1514	0.249	378	0.3	3.166	A
2 - Ash Road North	942	575	1397	0.674	942	2.0	7.906	A
3 - Abenbury Way	649	1301	686	0.945	640	10.6	62.502	F
4 - Industrial Estate Road	553	45	2504	0.221	553	0.3	1.843	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 - Bryn Lane	308	330	1556	0.198	309	0.2	2.887	A
2 - Ash Road North	770	470	1454	0.529	773	1.1	5.313	A
3 - Abenbury Way	529	1066	804	0.659	564	2.0	17.021	C
4 - Industrial Estate Road	451	38	2509	0.180	452	0.2	1.751	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 - Bryn Lane	258	276	1587	0.163	258	0.2	2.709	A
2 - Ash Road North	644	393	1496	0.431	646	0.8	4.242	A
3 - Abenbury Way	443	892	891	0.498	447	1.0	8.187	A
4 - Industrial Estate Road	378	31	2514	0.150	378	0.2	1.684	A

2037 Base + Committed, 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	untitled	Standard Roundabout		1, 2, 3, 4	6.94	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.94	A

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)
D9	2037 Base + Committed	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 - Bryn Lane		✓	301	100.000
2 - Ash Road North		✓	227	100.000
3 - Abenbury Way		✓	281	100.000
4 - Industrial Estate Road		✓	1844	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	55	46	200
	2 - Ash Road North	4	1	11	211
	3 - Abenbury Way	11	24	0	246
	4 - Industrial Estate Road	352	916	560	16

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.42	7.77	0.7	A
2 - Ash Road North	0.21	3.72	0.3	A
3 - Abenbury Way	0.28	4.56	0.4	A
4 - Industrial Estate Road	0.81	7.57	4.2	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 - Bryn Lane	227	1138	1097	0.207	226	0.3	4.125	A
2 - Ash Road North	171	616	1375	0.124	170	0.1	2.987	A
3 - Abenbury Way	212	324	1175	0.180	211	0.2	3.730	A
4 - Industrial Estate Road	1388	30	2515	0.552	1383	1.2	3.169	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 - Bryn Lane	271	1361	970	0.279	270	0.4	5.141	A
2 - Ash Road North	204	738	1309	0.156	204	0.2	3.257	A
3 - Abenbury Way	253	388	1143	0.221	252	0.3	4.041	A
4 - Industrial Estate Road	1658	36	2511	0.660	1655	1.9	4.194	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 - Bryn Lane	331	1663	798	0.415	330	0.7	7.669	A
2 - Ash Road North	250	901	1220	0.205	250	0.3	3.709	A
3 - Abenbury Way	309	474	1100	0.281	309	0.4	4.551	A
4 - Industrial Estate Road	2030	44	2505	0.811	2022	4.1	7.316	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 - Bryn Lane	331	1670	794	0.417	331	0.7	7.773	A
2 - Ash Road North	250	905	1218	0.205	250	0.3	3.716	A
3 - Abenbury Way	309	476	1099	0.281	309	0.4	4.558	A
4 - Industrial Estate Road	2030	44	2505	0.811	2030	4.2	7.566	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 - Bryn Lane	271	1371	964	0.281	272	0.4	5.206	A
2 - Ash Road North	204	743	1306	0.156	204	0.2	3.269	A
3 - Abenbury Way	253	390	1142	0.221	253	0.3	4.052	A
4 - Industrial Estate Road	1658	36	2511	0.660	1667	2.0	4.309	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 - Bryn Lane	227	1144	1093	0.207	227	0.3	4.160	A
2 - Ash Road North	171	620	1373	0.124	171	0.1	2.995	A
3 - Abenbury Way	212	326	1174	0.180	212	0.2	3.744	A
4 - Industrial Estate Road	1388	30	2515	0.552	1391	1.2	3.211	A

2037 Base + Committed, 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	untitled	Standard Roundabout		1, 2, 3, 4	69.15	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	69.15	F

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)
D10	2037 Base + Committed	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 - Bryn Lane		✓	453	100.000
2 - Ash Road North		✓	1001	100.000
3 - Abenbury Way		✓	589	100.000
4 - Industrial Estate Road		✓	660	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	11	15	427
	2 - Ash Road North	17	0	10	974
	3 - Abenbury Way	20	4	0	565
	4 - Industrial Estate Road	223	247	171	19

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road
	1 - Bryn Lane	0	0	0	0
	2 - Ash Road North	0	0	0	0
	3 - Abenbury Way	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.34	3.71	0.5	A
2 - Ash Road North	0.83	15.50	4.6	C
3 - Abenbury Way	1.19	285.90	56.2	F
4 - Industrial Estate Road	0.29	2.02	0.4	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 - Bryn Lane	341	331	1556	0.219	340	0.3	2.958	A
2 - Ash Road North	754	474	1452	0.519	749	1.1	5.094	A
3 - Abenbury Way	443	1077	799	0.555	439	1.2	9.873	A
4 - Industrial Estate Road	497	31	2514	0.198	496	0.2	1.783	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 - Bryn Lane	407	396	1519	0.268	407	0.4	3.237	A
2 - Ash Road North	900	568	1401	0.642	897	1.8	7.101	A
3 - Abenbury Way	529	1289	692	0.765	522	3.0	20.391	C
4 - Industrial Estate Road	593	37	2510	0.236	593	0.3	1.877	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 - Bryn Lane	499	485	1469	0.340	498	0.5	3.708	A
2 - Ash Road North	1102	695	1332	0.827	1092	4.4	14.374	B
3 - Abenbury Way	649	1571	551	1.177	540	30.2	128.486	F
4 - Industrial Estate Road	727	41	2507	0.290	726	0.4	2.021	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 - Bryn Lane	499	485	1468	0.340	499	0.5	3.711	A
2 - Ash Road North	1102	696	1332	0.828	1101	4.6	15.495	C
3 - Abenbury Way	649	1581	546	1.188	545	56.2	285.902	F
4 - Industrial Estate Road	727	41	2507	0.290	727	0.4	2.021	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 - Bryn Lane	407	398	1518	0.268	408	0.4	3.246	A
2 - Ash Road North	900	569	1401	0.642	911	1.8	7.506	A
3 - Abenbury Way	529	1303	685	0.773	673	20.3	208.248	F
4 - Industrial Estate Road	593	43	2506	0.237	594	0.3	1.882	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 - Bryn Lane	341	333	1555	0.219	341	0.3	2.966	A
2 - Ash Road North	754	476	1451	0.519	757	1.1	5.206	A
3 - Abenbury Way	443	1085	794	0.558	519	1.3	17.075	C
4 - Industrial Estate Road	497	34	2512	0.198	497	0.2	1.786	A

Junctions 10		
ARCADY 10 - Roundabout Module		
Version: 10.0.1.1519		
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Filename: Proposed Site Access ARCADY (Impr).j10

Path: C:\Users\mchau\Downloads\Wrexham (2)

Report generation date: 08/02/2024 14:00:54

-
- »2030 Base + Committed, AM
 - »2030 Base + Committed, PM
 - »2030 Base + Committed + Development (Phase 1), AM
 - »2030 Base + Committed + Development (Phase 1), PM
 - »2030 Base + Committed + Development (Phase 1 + 2), AM
 - »2030 Base + Committed + Development (Phase 1 + 2), PM
 - »2037 Base + Committed, AM
 - »2037 Base + Committed, PM
 - »2037 Base + Committed + Development (Phase 1), AM
 - »2037 Base + Committed + Development (Phase 1), PM
 - »2037 Base + Committed + Development (Phase 1 + 2), AM
 - »2037 Base + Committed + Development (Phase 1 + 2), PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2030 Base + Committed									
1 - Bryn Lane	D1	0.4	4.07	0.26	A	D2	0.3	2.62	0.26	A
2 - Ash Road North		0.2	2.95	0.16	A		2.1	7.11	0.68	A
3 - Abenbury Way		0.2	2.16	0.15	A		0.9	5.02	0.46	A
4 - Industrial Estate Road		2.7	5.09	0.73	A		0.4	1.85	0.26	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2030 Base + Committed + Development (Phase 1)									
1 - Bryn Lane	D3	0.5	4.55	0.34	A	D4	0.5	2.98	0.35	A
2 - Ash Road North		0.2	3.08	0.17	A		2.5	8.54	0.71	A
3 - Abenbury Way		0.2	2.23	0.15	A		1.0	5.81	0.50	A
4 - Industrial Estate Road		4.0	6.85	0.80	A		0.4	1.96	0.30	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2030 Base + Committed + Development (Phase 1 + 2)									
1 - Bryn Lane	D5	0.7	5.64	0.40	A	D6	0.8	4.06	0.43	A
2 - Ash Road North		0.2	3.39	0.17	A		6.5	23.40	0.88	C
3 - Abenbury Way		0.2	2.44	0.17	A		1.9	11.65	0.67	B
4 - Industrial Estate Road		8.3	13.38	0.90	B		0.7	2.45	0.40	A
5 - Proposed Site Access		0.9	7.21	0.49	A		0.6	3.52	0.37	A
	2037 Base + Committed									
1 - Bryn Lane	D7	0.4	4.38	0.29	A	D8	0.4	2.69	0.27	A
2 - Ash Road North		0.2	3.04	0.17	A		2.5	8.16	0.71	A
3 - Abenbury Way		0.2	2.19	0.16	A		1.0	5.62	0.50	A
4 - Industrial Estate Road		3.3	5.91	0.77	A		0.4	1.88	0.28	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2037 Base + Committed + Development (Phase 1)									
1 - Bryn Lane	D9	0.6	4.93	0.37	A	D10	0.6	3.06	0.36	A
2 - Ash Road North		0.2	3.17	0.18	A		3.0	10.10	0.76	B
3 - Abenbury Way		0.2	2.27	0.16	A		1.2	6.62	0.54	A
4 - Industrial Estate Road		5.0	8.39	0.84	A		0.5	1.99	0.31	A
5 - Proposed Site Access		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	2037 Base + Committed + Development (Phase 1 + 2)									
1 - Bryn Lane	D11	0.8	6.21	0.43	A	D12	0.8	4.21	0.45	A
2 - Ash Road North		0.2	3.59	0.20	A		10.6	36.90	0.93	E
3 - Abenbury Way		0.2	2.51	0.18	A		2.7	15.20	0.73	C
4 - Industrial Estate Road		13.5	21.37	0.94	C		0.7	2.50	0.41	A
5 - Proposed Site Access		1.0	8.07	0.51	A		0.6	3.58	0.38	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	Industrial Estate Road / Bryn Lane / Ash Road North / Abenbury Way
Location	Wrexham
Site number	
Date	09/02/2023
Version	
Status	(new file)
Identifier	
Client	LIDL
Jobnumber	
Enumerator	LAPTOP-DTQ9HGGB\mchau
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	2030 Base + Committed	AM	ONE HOUR	07:45	09:15	15
D2	2030 Base + Committed	PM	ONE HOUR	16:15	17:45	15
D3	2030 Base + Committed + Development (Phase 1)	AM	ONE HOUR	07:45	09:15	15
D4	2030 Base + Committed + Development (Phase 1)	PM	ONE HOUR	16:15	17:45	15
D5	2030 Base + Committed + Development (Phase 1 + 2)	AM	ONE HOUR	07:45	09:15	15
D6	2030 Base + Committed + Development (Phase 1 + 2)	PM	ONE HOUR	16:15	17:45	15
D7	2037 Base + Committed	AM	ONE HOUR	07:45	09:15	15
D8	2037 Base + Committed	PM	ONE HOUR	16:15	17:45	15
D9	2037 Base + Committed + Development (Phase 1)	AM	ONE HOUR	07:45	09:15	15
D10	2037 Base + Committed + Development (Phase 1)	PM	ONE HOUR	16:15	17:45	15
D11	2037 Base + Committed + Development (Phase 1 + 2)	AM	ONE HOUR	07:45	09:15	15
D12	2037 Base + Committed + Development (Phase 1 + 2)	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
AL	100.000

2030 Base + Committed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.48	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.48	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Bryn Lane		
2	Ash Road North		
3	Abenbury Way		
4	Industrial Estate Road		
5	Proposed Site Access		

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)	Entry only	Exit only
1 - Bryn Lane	3.77	8.01	33.4	38.9	70.0	28.0		
2 - Ash Road North	4.33	9.11	15.2	20.0	70.0	48.0		
3 - Abenbury Way	3.92	8.82	30.2	57.7	70.0	30.0		
4 - Industrial Estate Road	8.50	9.02	9.5	37.4	70.0	41.0		
5 - Proposed Site Access	3.65	10.00	19.5	25.2	70.0	31.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Bryn Lane	0.579	2119
2 - Ash Road North	0.523	1907
3 - Abenbury Way	0.597	2234
4 - Industrial Estate Road	0.654	2668
5 - Proposed Site Access	0.564	2062

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	2030 Base + Committed	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 - Bryn Lane		✓	288	100.000
2 - Ash Road North		✓	217	100.000
3 - Abenbury Way		✓	266	100.000
4 - Industrial Estate Road		✓	1757	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	52	43	193	0
	2 - Ash Road North	4	0	11	202	0
	3 - Abenbury Way	11	22	0	233	0
	4 - Industrial Estate Road	338	875	529	15	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.26	4.07	0.4	A
2 - Ash Road North	0.16	2.95	0.2	A
3 - Abenbury Way	0.15	2.16	0.2	A
4 - Industrial Estate Road	0.73	5.09	2.7	A
5 - Proposed Site Access	0.00	0.00	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
1 - Bryn Lane	217	1082	1493	0.145	216	0.2	2.818	A
2 - Ash Road North	163	585	1601	0.102	163	0.1	2.504	A
3 - Abenbury Way	200	311	2049	0.098	200	0.1	1.947	A
4 - Industrial Estate Road	1323	28	2650	0.499	1319	1.0	2.697	A
5 - Proposed Site Access	0	1347	1302	0.000	0	0.0	0.000	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 - Bryn Lane	259	1294	1370	0.189	259	0.2	3.238	A
2 - Ash Road North	195	700	1540	0.127	195	0.1	2.675	A
3 - Abenbury Way	239	372	2012	0.119	239	0.1	2.030	A
4 - Industrial Estate Road	1580	33	2646	0.597	1578	1.5	3.364	A
5 - Proposed Site Access	0	1611	1153	0.000	0	0.0	0.000	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 - Bryn Lane	317	1583	1203	0.264	317	0.4	4.060	A
2 - Ash Road North	239	857	1459	0.164	239	0.2	2.951	A
3 - Abenbury Way	293	455	1962	0.149	293	0.2	2.156	A
4 - Industrial Estate Road	1934	41	2641	0.732	1930	2.7	5.026	A
5 - Proposed Site Access	0	1970	950	0.000	0	0.0	0.000	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 - Bryn Lane	317	1586	1201	0.264	317	0.4	4.073	A
2 - Ash Road North	239	859	1458	0.164	239	0.2	2.953	A
3 - Abenbury Way	293	456	1962	0.149	293	0.2	2.156	A
4 - Industrial Estate Road	1934	41	2641	0.732	1934	2.7	5.091	A
5 - Proposed Site Access	0	1975	948	0.000	0	0.0	0.000	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 - Bryn Lane	259	1299	1367	0.189	259	0.2	3.250	A
2 - Ash Road North	195	703	1539	0.127	195	0.1	2.679	A
3 - Abenbury Way	239	373	2012	0.119	239	0.1	2.031	A
4 - Industrial Estate Road	1580	33	2646	0.597	1584	1.5	3.408	A
5 - Proposed Site Access	0	1618	1149	0.000	0	0.0	0.000	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 - Bryn Lane	217	1086	1490	0.146	217	0.2	2.829	A
2 - Ash Road North	163	588	1599	0.102	163	0.1	2.507	A
3 - Abenbury Way	200	312	2048	0.098	200	0.1	1.949	A
4 - Industrial Estate Road	1323	28	2650	0.499	1325	1.0	2.722	A
5 - Proposed Site Access	0	1353	1299	0.000	0	0.0	0.000	A

2030 Base + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.61	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.61	A

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	2030 Base + Committed	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 - Bryn Lane		✓	435	100.000
2 - Ash Road North		✓	956	100.000
3 - Abenbury Way		✓	558	100.000
4 - Industrial Estate Road		✓	633	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	11	14	410	0
	2 - Ash Road North	16	0	10	930	0
	3 - Abenbury Way	19	4	0	535	0
	4 - Industrial Estate Road	215	238	162	18	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.26	2.62	0.3	A
2 - Ash Road North	0.68	7.11	2.1	A
3 - Abenbury Way	0.46	5.02	0.9	A
4 - Industrial Estate Road	0.26	1.85	0.4	A
5 - Proposed Site Access	0.00	0.00	0.0	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 - Bryn Lane	327	317	1935	0.169	327	0.2	2.236	A
2 - Ash Road North	720	454	1669	0.431	717	0.8	3.755	A
3 - Abenbury Way	420	1031	1619	0.260	419	0.3	2.998	A
4 - Industrial Estate Road	477	29	2649	0.180	476	0.2	1.656	A
5 - Proposed Site Access	0	505	1777	0.000	0	0.0	0.000	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 - Bryn Lane	391	379	1900	0.206	391	0.3	2.386	A
2 - Ash Road North	859	543	1623	0.530	858	1.1	4.698	A
3 - Abenbury Way	502	1234	1498	0.335	501	0.5	3.610	A
4 - Industrial Estate Road	569	35	2645	0.215	569	0.3	1.733	A
5 - Proposed Site Access	0	604	1721	0.000	0	0.0	0.000	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 - Bryn Lane	479	464	1850	0.259	479	0.3	2.624	A
2 - Ash Road North	1053	665	1559	0.675	1049	2.0	7.006	A
3 - Abenbury Way	614	1509	1333	0.461	613	0.8	4.990	A
4 - Industrial Estate Road	697	43	2640	0.264	697	0.4	1.852	A
5 - Proposed Site Access	0	739	1645	0.000	0	0.0	0.000	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 - Bryn Lane	479	465	1850	0.259	479	0.3	2.624	A
2 - Ash Road North	1053	665	1559	0.675	1052	2.1	7.106	A
3 - Abenbury Way	614	1513	1331	0.462	614	0.9	5.024	A
4 - Industrial Estate Road	697	43	2640	0.264	697	0.4	1.852	A
5 - Proposed Site Access	0	740	1644	0.000	0	0.0	0.000	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 - Bryn Lane	391	380	1899	0.206	391	0.3	2.387	A
2 - Ash Road North	859	543	1623	0.530	863	1.1	4.762	A
3 - Abenbury Way	502	1239	1494	0.336	503	0.5	3.638	A
4 - Industrial Estate Road	569	35	2645	0.215	569	0.3	1.736	A
5 - Proposed Site Access	0	605	1721	0.000	0	0.0	0.000	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 - Bryn Lane	327	318	1935	0.169	328	0.2	2.239	A
2 - Ash Road North	720	455	1669	0.431	721	0.8	3.804	A
3 - Abenbury Way	420	1036	1615	0.260	421	0.4	3.014	A
4 - Industrial Estate Road	477	29	2649	0.180	477	0.2	1.657	A
5 - Proposed Site Access	0	506	1776	0.000	0	0.0	0.000	A

2030 Base + Committed + Development (Phase 1), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.80	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.80	A

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	2030 Base + Committed + Development (Phase 1)	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 - Bryn Lane		✓	371	100.000
2 - Ash Road North		✓	218	100.000
3 - Abenbury Way		✓	266	100.000
4 - Industrial Estate Road		✓	1922	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	52	43	276	0
	2 - Ash Road North	4	1	11	202	0
	3 - Abenbury Way	11	22	0	233	0
	4 - Industrial Estate Road	503	875	529	15	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.34	4.55	0.5	A
2 - Ash Road North	0.17	3.08	0.2	A
3 - Abenbury Way	0.15	2.23	0.2	A
4 - Industrial Estate Road	0.80	6.85	4.0	A
5 - Proposed Site Access	0.00	0.00	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
1 - Bryn Lane	279	1082	1493	0.187	278	0.2	2.963	A
2 - Ash Road North	164	648	1568	0.105	164	0.1	2.563	A
3 - Abenbury Way	200	374	2011	0.100	200	0.1	1.987	A
4 - Industrial Estate Road	1447	29	2649	0.546	1442	1.2	2.970	A
5 - Proposed Site Access	0	1471	1232	0.000	0	0.0	0.000	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 - Bryn Lane	334	1294	1370	0.243	333	0.3	3.472	A
2 - Ash Road North	196	775	1501	0.131	196	0.1	2.756	A
3 - Abenbury Way	239	447	1967	0.122	239	0.1	2.083	A
4 - Industrial Estate Road	1728	34	2645	0.653	1725	1.9	3.901	A
5 - Proposed Site Access	0	1759	1069	0.000	0	0.0	0.000	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 - Bryn Lane	408	1582	1204	0.339	408	0.5	4.520	A
2 - Ash Road North	240	947	1411	0.170	240	0.2	3.073	A
3 - Abenbury Way	293	547	1907	0.154	293	0.2	2.229	A
4 - Industrial Estate Road	2116	42	2640	0.801	2108	3.9	6.661	A
5 - Proposed Site Access	0	2150	849	0.000	0	0.0	0.000	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 - Bryn Lane	408	1587	1200	0.340	408	0.5	4.546	A
2 - Ash Road North	240	950	1410	0.170	240	0.2	3.076	A
3 - Abenbury Way	293	548	1907	0.154	293	0.2	2.230	A
4 - Industrial Estate Road	2116	42	2640	0.801	2116	4.0	6.852	A
5 - Proposed Site Access	0	2158	845	0.000	0	0.0	0.000	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 - Bryn Lane	334	1302	1365	0.244	334	0.3	3.496	A
2 - Ash Road North	196	779	1499	0.131	196	0.2	2.762	A
3 - Abenbury Way	239	449	1966	0.122	239	0.1	2.084	A
4 - Industrial Estate Road	1728	34	2645	0.653	1736	1.9	3.995	A
5 - Proposed Site Access	0	1770	1063	0.000	0	0.0	0.000	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 - Bryn Lane	279	1088	1490	0.188	280	0.2	2.975	A
2 - Ash Road North	164	651	1566	0.105	164	0.1	2.569	A
3 - Abenbury Way	200	375	2010	0.100	200	0.1	1.989	A
4 - Industrial Estate Road	1447	29	2649	0.546	1450	1.2	3.010	A
5 - Proposed Site Access	0	1478	1228	0.000	0	0.0	0.000	A

2030 Base + Committed + Development (Phase 1), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.16	A

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	2030 Base + Committed + Development (Phase 1)	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 - Bryn Lane		✓	583	100.000
2 - Ash Road North		✓	956	100.000
3 - Abenbury Way		✓	558	100.000
4 - Industrial Estate Road		✓	727	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	11	14	558	0
	2 - Ash Road North	16	0	10	930	0
	3 - Abenbury Way	19	4	0	535	0
	4 - Industrial Estate Road	309	238	162	18	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.35	2.98	0.5	A
2 - Ash Road North	0.71	8.54	2.5	A
3 - Abenbury Way	0.50	5.81	1.0	A
4 - Industrial Estate Road	0.30	1.96	0.4	A
5 - Proposed Site Access	0.00	0.00	0.0	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 - Bryn Lane	439	317	1935	0.227	438	0.3	2.404	A
2 - Ash Road North	720	565	1611	0.447	717	0.8	4.008	A
3 - Abenbury Way	420	1142	1553	0.271	419	0.4	3.170	A
4 - Industrial Estate Road	547	29	2649	0.207	546	0.3	1.712	A
5 - Proposed Site Access	0	576	1737	0.000	0	0.0	0.000	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 - Bryn Lane	524	379	1900	0.276	524	0.4	2.616	A
2 - Ash Road North	859	676	1553	0.553	858	1.2	5.163	A
3 - Abenbury Way	502	1366	1418	0.354	501	0.5	3.922	A
4 - Industrial Estate Road	654	35	2645	0.247	653	0.3	1.806	A
5 - Proposed Site Access	0	688	1674	0.000	0	0.0	0.000	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 - Bryn Lane	642	464	1850	0.347	641	0.5	2.976	A
2 - Ash Road North	1053	827	1474	0.714	1048	2.4	8.353	A
3 - Abenbury Way	614	1670	1237	0.497	613	1.0	5.752	A
4 - Industrial Estate Road	800	43	2640	0.303	800	0.4	1.956	A
5 - Proposed Site Access	0	843	1586	0.000	0	0.0	0.000	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 - Bryn Lane	642	465	1850	0.347	642	0.5	2.978	A
2 - Ash Road North	1053	828	1474	0.714	1052	2.5	8.537	A
3 - Abenbury Way	614	1676	1234	0.498	614	1.0	5.813	A
4 - Industrial Estate Road	800	43	2640	0.303	800	0.4	1.957	A
5 - Proposed Site Access	0	843	1586	0.000	0	0.0	0.000	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 - Bryn Lane	524	380	1899	0.276	525	0.4	2.619	A
2 - Ash Road North	859	677	1553	0.553	864	1.3	5.263	A
3 - Abenbury Way	502	1374	1414	0.355	503	0.6	3.960	A
4 - Industrial Estate Road	654	35	2645	0.247	654	0.3	1.810	A
5 - Proposed Site Access	0	689	1673	0.000	0	0.0	0.000	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 - Bryn Lane	439	318	1935	0.227	439	0.3	2.406	A
2 - Ash Road North	720	567	1610	0.447	721	0.8	4.059	A
3 - Abenbury Way	420	1148	1549	0.271	421	0.4	3.193	A
4 - Industrial Estate Road	547	29	2649	0.207	548	0.3	1.712	A
5 - Proposed Site Access	0	577	1736	0.000	0	0.0	0.000	A

2030 Base + Committed + Development (Phase 1 + 2), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	10.27	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.27	B

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	2030 Base + Committed + Development (Phase 1 + 2)	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 - Bryn Lane		✓	392	100.000
2 - Ash Road North		✓	197	100.000
3 - Abenbury Way		✓	265	100.000
4 - Industrial Estate Road		✓	2108	100.000
5 - Proposed Site Access		✓	429	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	45	38	260	49
	2 - Ash Road North	4	1	9	183	0
	3 - Abenbury Way	9	19	0	202	35
	4 - Industrial Estate Road	470	780	459	15	384
	5 - Proposed Site Access	56	100	74	199	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.40	5.64	0.7	A
2 - Ash Road North	0.17	3.39	0.2	A
3 - Abenbury Way	0.17	2.44	0.2	A
4 - Industrial Estate Road	0.90	13.38	8.3	B
5 - Proposed Site Access	0.49	7.21	0.9	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 - Bryn Lane	295	1235	1404	0.210	294	0.3	3.240	A
2 - Ash Road North	148	820	1478	0.100	148	0.1	2.707	A
3 - Abenbury Way	200	533	1916	0.104	199	0.1	2.097	A
4 - Industrial Estate Road	1587	88	2610	0.608	1581	1.5	3.475	A
5 - Proposed Site Access	323	1318	1319	0.245	322	0.3	3.606	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 - Bryn Lane	352	1477	1264	0.279	352	0.4	3.946	A
2 - Ash Road North	177	982	1393	0.127	177	0.1	2.959	A
3 - Abenbury Way	238	638	1853	0.129	238	0.1	2.229	A
4 - Industrial Estate Road	1895	105	2599	0.729	1891	2.6	5.051	A
5 - Proposed Site Access	386	1576	1173	0.329	385	0.5	4.565	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 - Bryn Lane	432	1800	1077	0.401	430	0.7	5.555	A
2 - Ash Road North	217	1198	1280	0.169	217	0.2	3.385	A
3 - Abenbury Way	292	781	1768	0.165	292	0.2	2.438	A
4 - Industrial Estate Road	2321	129	2584	0.898	2300	7.8	11.919	B
5 - Proposed Site Access	472	1918	980	0.482	471	0.9	7.040	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 - Bryn Lane	432	1812	1070	0.403	432	0.7	5.637	A
2 - Ash Road North	217	1204	1277	0.170	217	0.2	3.395	A
3 - Abenbury Way	292	783	1767	0.165	292	0.2	2.440	A
4 - Industrial Estate Road	2321	129	2584	0.898	2319	8.3	13.384	B
5 - Proposed Site Access	472	1933	971	0.486	472	0.9	7.209	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 - Bryn Lane	352	1495	1254	0.281	354	0.4	4.004	A
2 - Ash Road North	177	991	1389	0.128	177	0.1	2.972	A
3 - Abenbury Way	238	641	1851	0.129	238	0.1	2.231	A
4 - Industrial Estate Road	1895	105	2599	0.729	1917	2.7	5.444	A
5 - Proposed Site Access	386	1598	1161	0.332	387	0.5	4.665	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 - Bryn Lane	295	1243	1399	0.211	296	0.3	3.264	A
2 - Ash Road North	148	826	1475	0.101	148	0.1	2.715	A
3 - Abenbury Way	200	536	1914	0.104	200	0.1	2.101	A
4 - Industrial Estate Road	1587	88	2610	0.608	1592	1.6	3.553	A
5 - Proposed Site Access	323	1327	1313	0.246	324	0.3	3.638	A

2030 Base + Committed + Development (Phase 1 + 2), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	9.96	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.96	A

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	2030 Base + Committed + Development (Phase 1 + 2)	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 - Bryn Lane		✓	618	100.000
2 - Ash Road North		✓	955	100.000
3 - Abenbury Way		✓	558	100.000
4 - Industrial Estate Road		✓	873	100.000
5 - Proposed Site Access		✓	554	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	9	12	511	86
	2 - Ash Road North	13	0	8	809	125
	3 - Abenbury Way	16	4	0	452	86
	4 - Industrial Estate Road	289	213	137	18	216
	5 - Proposed Site Access	60	29	30	435	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.43	4.06	0.8	A
2 - Ash Road North	0.88	23.40	6.5	C
3 - Abenbury Way	0.67	11.65	1.9	B
4 - Industrial Estate Road	0.40	2.45	0.7	A
5 - Proposed Site Access	0.37	3.52	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 - Bryn Lane	465	650	1743	0.267	464	0.4	2.813	A
2 - Ash Road North	719	923	1424	0.505	715	1.0	5.048	A
3 - Abenbury Way	420	1497	1340	0.313	418	0.5	3.899	A
4 - Industrial Estate Road	657	247	2506	0.262	656	0.4	1.945	A
5 - Proposed Site Access	417	518	1769	0.236	416	0.3	2.657	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 - Bryn Lane	556	778	1669	0.333	555	0.5	3.230	A
2 - Ash Road North	859	1104	1329	0.646	855	1.8	7.548	A
3 - Abenbury Way	502	1791	1164	0.431	500	0.7	5.411	A
4 - Industrial Estate Road	785	296	2474	0.317	784	0.5	2.130	A
5 - Proposed Site Access	498	620	1712	0.291	498	0.4	2.964	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 - Bryn Lane	680	952	1568	0.434	679	0.8	4.047	A
2 - Ash Road North	1051	1351	1200	0.876	1035	6.0	20.053	C
3 - Abenbury Way	614	2180	932	0.659	610	1.9	11.024	B
4 - Industrial Estate Road	961	360	2432	0.395	960	0.7	2.444	A
5 - Proposed Site Access	610	759	1634	0.373	609	0.6	3.512	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 - Bryn Lane	680	953	1567	0.434	680	0.8	4.059	A
2 - Ash Road North	1051	1353	1199	0.877	1050	6.5	23.404	C
3 - Abenbury Way	614	2197	922	0.666	614	1.9	11.655	B
4 - Industrial Estate Road	961	363	2430	0.395	961	0.7	2.449	A
5 - Proposed Site Access	610	760	1633	0.373	610	0.6	3.517	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 - Bryn Lane	556	780	1668	0.333	557	0.5	3.244	A
2 - Ash Road North	859	1107	1328	0.647	877	1.9	8.294	A
3 - Abenbury Way	502	1815	1150	0.436	506	0.8	5.629	A
4 - Industrial Estate Road	785	300	2471	0.318	786	0.5	2.137	A
5 - Proposed Site Access	498	621	1711	0.291	499	0.4	2.972	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 - Bryn Lane	465	653	1741	0.267	466	0.4	2.822	A
2 - Ash Road North	719	926	1422	0.506	722	1.0	5.169	A
3 - Abenbury Way	420	1508	1334	0.315	421	0.5	3.951	A
4 - Industrial Estate Road	657	249	2505	0.262	658	0.4	1.949	A
5 - Proposed Site Access	417	520	1768	0.236	417	0.3	2.664	A

2037 Base + Committed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.10	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.10	A

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	2037 Base + Committed	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 - Bryn Lane		✓	301	100.000
2 - Ash Road North		✓	227	100.000
3 - Abenbury Way		✓	281	100.000
4 - Industrial Estate Road		✓	1844	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	55	46	200	0
	2 - Ash Road North	4	1	11	211	0
	3 - Abenbury Way	11	24	0	246	0
	4 - Industrial Estate Road	352	916	560	16	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.29	4.38	0.4	A
2 - Ash Road North	0.17	3.04	0.2	A
3 - Abenbury Way	0.16	2.19	0.2	A
4 - Industrial Estate Road	0.77	5.91	3.3	A
5 - Proposed Site Access	0.00	0.00	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
1 - Bryn Lane	227	1138	1460	0.155	226	0.2	2.915	A
2 - Ash Road North	171	617	1584	0.108	170	0.1	2.546	A
3 - Abenbury Way	212	324	2041	0.104	211	0.1	1.967	A
4 - Industrial Estate Road	1388	30	2648	0.524	1384	1.1	2.838	A
5 - Proposed Site Access	0	1414	1264	0.000	0	0.0	0.000	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 - Bryn Lane	271	1362	1331	0.203	270	0.3	3.394	A
2 - Ash Road North	204	738	1521	0.134	204	0.2	2.733	A
3 - Abenbury Way	253	388	2002	0.126	252	0.1	2.056	A
4 - Industrial Estate Road	1658	36	2644	0.627	1655	1.7	3.633	A
5 - Proposed Site Access	0	1691	1108	0.000	0	0.0	0.000	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 - Bryn Lane	331	1665	1155	0.287	331	0.4	4.364	A
2 - Ash Road North	250	903	1435	0.174	250	0.2	3.038	A
3 - Abenbury Way	309	475	1951	0.159	309	0.2	2.193	A
4 - Industrial Estate Road	2030	44	2639	0.769	2024	3.2	5.793	A
5 - Proposed Site Access	0	2068	895	0.000	0	0.0	0.000	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 - Bryn Lane	331	1670	1152	0.288	331	0.4	4.384	A
2 - Ash Road North	250	905	1433	0.174	250	0.2	3.041	A
3 - Abenbury Way	309	476	1950	0.159	309	0.2	2.193	A
4 - Industrial Estate Road	2030	44	2639	0.769	2030	3.3	5.908	A
5 - Proposed Site Access	0	2074	892	0.000	0	0.0	0.000	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 - Bryn Lane	271	1369	1327	0.204	271	0.3	3.414	A
2 - Ash Road North	204	741	1519	0.134	204	0.2	2.740	A
3 - Abenbury Way	253	389	2002	0.126	253	0.1	2.059	A
4 - Industrial Estate Road	1658	36	2644	0.627	1664	1.7	3.695	A
5 - Proposed Site Access	0	1700	1103	0.000	0	0.0	0.000	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 - Bryn Lane	227	1144	1457	0.156	227	0.2	2.929	A
2 - Ash Road North	171	620	1583	0.108	171	0.1	2.552	A
3 - Abenbury Way	212	326	2040	0.104	212	0.1	1.970	A
4 - Industrial Estate Road	1388	30	2648	0.524	1391	1.1	2.869	A
5 - Proposed Site Access	0	1421	1260	0.000	0	0.0	0.000	A

2037 Base + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.16	A

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	2037 Base + Committed	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 - Bryn Lane		✓	453	100.000
2 - Ash Road North		✓	1001	100.000
3 - Abenbury Way		✓	589	100.000
4 - Industrial Estate Road		✓	660	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	11	15	427	0
	2 - Ash Road North	17	0	10	974	0
	3 - Abenbury Way	20	4	0	565	0
	4 - Industrial Estate Road	223	247	171	19	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.27	2.69	0.4	A
2 - Ash Road North	0.71	8.16	2.5	A
3 - Abenbury Way	0.50	5.62	1.0	A
4 - Industrial Estate Road	0.28	1.88	0.4	A
5 - Proposed Site Access	0.00	0.00	0.0	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 - Bryn Lane	341	331	1927	0.177	340	0.2	2.267	A
2 - Ash Road North	754	475	1658	0.454	750	0.8	3.950	A
3 - Abenbury Way	443	1078	1591	0.279	442	0.4	3.130	A
4 - Industrial Estate Road	497	31	2648	0.188	496	0.2	1.672	A
5 - Proposed Site Access	0	527	1765	0.000	0	0.0	0.000	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 - Bryn Lane	407	396	1890	0.216	407	0.3	2.428	A
2 - Ash Road North	900	568	1610	0.559	898	1.3	5.047	A
3 - Abenbury Way	529	1290	1464	0.362	529	0.6	3.847	A
4 - Industrial Estate Road	593	37	2644	0.224	593	0.3	1.754	A
5 - Proposed Site Access	0	630	1706	0.000	0	0.0	0.000	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 - Bryn Lane	499	485	1838	0.271	498	0.4	2.687	A
2 - Ash Road North	1102	695	1543	0.714	1097	2.4	7.995	A
3 - Abenbury Way	649	1577	1292	0.502	647	1.0	5.562	A
4 - Industrial Estate Road	727	45	2638	0.275	726	0.4	1.882	A
5 - Proposed Site Access	0	771	1627	0.000	0	0.0	0.000	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 - Bryn Lane	499	486	1838	0.271	499	0.4	2.687	A
2 - Ash Road North	1102	696	1543	0.714	1102	2.5	8.159	A
3 - Abenbury Way	649	1582	1289	0.503	648	1.0	5.616	A
4 - Industrial Estate Road	727	45	2638	0.275	727	0.4	1.882	A
5 - Proposed Site Access	0	772	1626	0.000	0	0.0	0.000	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 - Bryn Lane	407	397	1889	0.216	408	0.3	2.429	A
2 - Ash Road North	900	569	1609	0.559	905	1.3	5.141	A
3 - Abenbury Way	529	1297	1460	0.363	531	0.6	3.884	A
4 - Industrial Estate Road	593	37	2644	0.224	594	0.3	1.758	A
5 - Proposed Site Access	0	631	1706	0.000	0	0.0	0.000	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 - Bryn Lane	341	332	1927	0.177	341	0.2	2.270	A
2 - Ash Road North	754	476	1658	0.455	755	0.8	3.997	A
3 - Abenbury Way	443	1084	1587	0.279	444	0.4	3.151	A
4 - Industrial Estate Road	497	31	2648	0.188	497	0.2	1.676	A
5 - Proposed Site Access	0	528	1764	0.000	0	0.0	0.000	A

2037 Base + Committed + Development (Phase 1), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	6.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.93	A

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)
D9	2037 Base + Committed + Development (Phase 1)	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 - Bryn Lane		✓	384	100.000
2 - Ash Road North		✓	227	100.000
3 - Abenbury Way		✓	281	100.000
4 - Industrial Estate Road		✓	2009	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
From		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
	1 - Bryn Lane	0	55	46	283	0
	2 - Ash Road North	4	1	11	211	0
	3 - Abenbury Way	11	24	0	246	0
	4 - Industrial Estate Road	517	916	560	16	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.37	4.93	0.6	A
2 - Ash Road North	0.18	3.17	0.2	A
3 - Abenbury Way	0.16	2.27	0.2	A
4 - Industrial Estate Road	0.84	8.39	5.0	A
5 - Proposed Site Access	0.00	0.00	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
1 - Bryn Lane	289	1138	1460	0.198	288	0.2	3.068	A
2 - Ash Road North	171	679	1552	0.110	170	0.1	2.606	A
3 - Abenbury Way	212	386	2003	0.106	211	0.1	2.008	A
4 - Industrial Estate Road	1512	30	2648	0.571	1507	1.3	3.141	A
5 - Proposed Site Access	0	1537	1195	0.000	0	0.0	0.000	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 - Bryn Lane	345	1361	1331	0.259	345	0.3	3.647	A
2 - Ash Road North	204	812	1482	0.138	204	0.2	2.816	A
3 - Abenbury Way	253	463	1958	0.129	252	0.1	2.110	A
4 - Industrial Estate Road	1806	36	2644	0.683	1803	2.1	4.262	A
5 - Proposed Site Access	0	1839	1025	0.000	0	0.0	0.000	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 - Bryn Lane	423	1662	1157	0.365	422	0.6	4.890	A
2 - Ash Road North	250	992	1388	0.180	250	0.2	3.163	A
3 - Abenbury Way	309	566	1896	0.163	309	0.2	2.268	A
4 - Industrial Estate Road	2212	44	2639	0.838	2201	4.9	8.016	A
5 - Proposed Site Access	0	2245	796	0.000	0	0.0	0.000	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 - Bryn Lane	423	1670	1153	0.367	423	0.6	4.932	A
2 - Ash Road North	250	996	1386	0.180	250	0.2	3.169	A
3 - Abenbury Way	309	567	1896	0.163	309	0.2	2.269	A
4 - Industrial Estate Road	2212	44	2639	0.838	2211	5.0	8.393	A
5 - Proposed Site Access	0	2255	790	0.000	0	0.0	0.000	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 - Bryn Lane	345	1372	1325	0.261	346	0.4	3.683	A
2 - Ash Road North	204	818	1479	0.138	204	0.2	2.824	A
3 - Abenbury Way	253	464	1957	0.129	253	0.1	2.112	A
4 - Industrial Estate Road	1806	36	2644	0.683	1817	2.2	4.414	A
5 - Proposed Site Access	0	1853	1016	0.000	0	0.0	0.000	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 - Bryn Lane	289	1145	1457	0.198	290	0.2	3.085	A
2 - Ash Road North	171	683	1550	0.110	171	0.1	2.613	A
3 - Abenbury Way	212	388	2002	0.106	212	0.1	2.011	A
4 - Industrial Estate Road	1512	30	2648	0.571	1516	1.3	3.188	A
5 - Proposed Site Access	0	1546	1190	0.000	0	0.0	0.000	A

2037 Base + Committed + Development (Phase 1), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.89	A

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)
D10	2037 Base + Committed + Development (Phase 1)	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 - Bryn Lane		✓	601	100.000
2 - Ash Road North		✓	1001	100.000
3 - Abenbury Way		✓	589	100.000
4 - Industrial Estate Road		✓	754	100.000
5 - Proposed Site Access		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	11	15	575	0
	2 - Ash Road North	17	0	10	974	0
	3 - Abenbury Way	20	4	0	565	0
	4 - Industrial Estate Road	317	247	171	19	0
	5 - Proposed Site Access	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.36	3.06	0.6	A
2 - Ash Road North	0.76	10.10	3.0	B
3 - Abenbury Way	0.54	6.62	1.2	A
4 - Industrial Estate Road	0.31	1.99	0.5	A
5 - Proposed Site Access	0.00	0.00	0.0	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 - Bryn Lane	452	331	1927	0.235	451	0.3	2.436	A
2 - Ash Road North	754	586	1600	0.471	750	0.9	4.217	A
3 - Abenbury Way	443	1189	1524	0.291	442	0.4	3.321	A
4 - Industrial Estate Road	568	31	2648	0.214	567	0.3	1.729	A
5 - Proposed Site Access	0	597	1725	0.000	0	0.0	0.000	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 - Bryn Lane	540	396	1890	0.286	540	0.4	2.667	A
2 - Ash Road North	900	701	1540	0.584	898	1.4	5.586	A
3 - Abenbury Way	529	1423	1385	0.382	529	0.6	4.202	A
4 - Industrial Estate Road	678	37	2644	0.256	678	0.3	1.830	A
5 - Proposed Site Access	0	714	1659	0.000	0	0.0	0.000	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 - Bryn Lane	662	485	1838	0.360	661	0.6	3.056	A
2 - Ash Road North	1102	858	1458	0.756	1096	3.0	9.774	A
3 - Abenbury Way	649	1738	1196	0.542	646	1.2	6.521	A
4 - Industrial Estate Road	830	45	2638	0.315	830	0.5	1.990	A
5 - Proposed Site Access	0	875	1568	0.000	0	0.0	0.000	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 - Bryn Lane	662	486	1838	0.360	662	0.6	3.059	A
2 - Ash Road North	1102	859	1458	0.756	1102	3.0	10.104	B
3 - Abenbury Way	649	1745	1192	0.544	648	1.2	6.620	A
4 - Industrial Estate Road	830	45	2638	0.315	830	0.5	1.990	A
5 - Proposed Site Access	0	875	1568	0.000	0	0.0	0.000	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 - Bryn Lane	540	397	1889	0.286	541	0.4	2.670	A
2 - Ash Road North	900	702	1540	0.585	906	1.4	5.742	A
3 - Abenbury Way	529	1432	1379	0.384	532	0.6	4.258	A
4 - Industrial Estate Road	678	37	2644	0.256	678	0.3	1.831	A
5 - Proposed Site Access	0	715	1658	0.000	0	0.0	0.000	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 - Bryn Lane	452	332	1927	0.235	453	0.3	2.442	A
2 - Ash Road North	754	588	1599	0.471	756	0.9	4.277	A
3 - Abenbury Way	443	1196	1520	0.292	444	0.4	3.348	A
4 - Industrial Estate Road	568	31	2648	0.214	568	0.3	1.733	A
5 - Proposed Site Access	0	599	1724	0.000	0	0.0	0.000	A

2037 Base + Committed + Development (Phase 1 + 2), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	15.38	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.38	C

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)
D11	2037 Base + Committed + Development (Phase 1 + 2)	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 - Bryn Lane		✓	404	100.000
2 - Ash Road North		✓	228	100.000
3 - Abenbury Way		✓	281	100.000
4 - Industrial Estate Road		✓	2194	100.000
5 - Proposed Site Access		✓	429	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	48	40	267	49
	2 - Ash Road North	4	1	10	192	21
	3 - Abenbury Way	10	21	0	215	35
	4 - Industrial Estate Road	484	821	489	16	384
	5 - Proposed Site Access	56	100	74	199	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.43	6.21	0.8	A
2 - Ash Road North	0.20	3.59	0.2	A
3 - Abenbury Way	0.18	2.51	0.2	A
4 - Industrial Estate Road	0.94	21.37	13.5	C
5 - Proposed Site Access	0.51	8.07	1.0	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
1 - Bryn Lane	304	1290	1372	0.222	303	0.3	3.364	A
2 - Ash Road North	172	850	1462	0.117	171	0.1	2.787	A
3 - Abenbury Way	212	562	1899	0.111	211	0.1	2.133	A
4 - Industrial Estate Road	1652	106	2599	0.636	1645	1.7	3.747	A
5 - Proposed Site Access	323	1384	1281	0.252	322	0.3	3.747	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 - Bryn Lane	363	1543	1226	0.296	363	0.4	4.167	A
2 - Ash Road North	205	1017	1375	0.149	205	0.2	3.077	A
3 - Abenbury Way	253	672	1833	0.138	252	0.2	2.277	A
4 - Industrial Estate Road	1972	127	2585	0.763	1967	3.1	5.770	A
5 - Proposed Site Access	386	1655	1128	0.342	385	0.5	4.839	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 - Bryn Lane	445	1872	1036	0.429	444	0.7	6.065	A
2 - Ash Road North	251	1238	1259	0.199	251	0.2	3.570	A
3 - Abenbury Way	309	822	1743	0.177	309	0.2	2.510	A
4 - Industrial Estate Road	2416	155	2566	0.941	2380	12.0	16.843	C
5 - Proposed Site Access	472	2003	932	0.507	470	1.0	7.768	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 - Bryn Lane	445	1891	1024	0.434	445	0.8	6.209	A
2 - Ash Road North	251	1247	1254	0.200	251	0.2	3.587	A
3 - Abenbury Way	309	824	1742	0.178	309	0.2	2.512	A
4 - Industrial Estate Road	2416	155	2566	0.941	2410	13.5	21.365	C
5 - Proposed Site Access	472	2028	918	0.514	472	1.0	8.069	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 - Bryn Lane	363	1573	1208	0.301	364	0.4	4.272	A
2 - Ash Road North	205	1031	1367	0.150	205	0.2	3.100	A
3 - Abenbury Way	253	676	1831	0.138	253	0.2	2.283	A
4 - Industrial Estate Road	1972	127	2585	0.763	2013	3.3	6.725	A
5 - Proposed Site Access	386	1693	1107	0.348	388	0.5	5.019	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 - Bryn Lane	304	1300	1367	0.223	305	0.3	3.391	A
2 - Ash Road North	172	856	1459	0.118	172	0.1	2.799	A
3 - Abenbury Way	212	565	1897	0.112	212	0.1	2.136	A
4 - Industrial Estate Road	1652	106	2598	0.636	1658	1.8	3.854	A
5 - Proposed Site Access	323	1395	1275	0.253	324	0.3	3.786	A

2037 Base + Committed + Development (Phase 1 + 2), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Bryn Lane - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Abenbury Way - 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	untitled	Standard Roundabout		1, 2, 3, 4, 5	14.35	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.35	B

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)
D12	2037 Base + Committed + Development (Phase 1 + 2)	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 - Bryn Lane		✓	636	100.000
2 - Ash Road North		✓	1001	100.000
3 - Abenbury Way		✓	589	100.000
4 - Industrial Estate Road		✓	899	100.000
5 - Proposed Site Access		✓	554	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	10	12	528	86
	2 - Ash Road North	14	0	9	853	125
	3 - Abenbury Way	17	4	0	482	86
	4 - Industrial Estate Road	296	222	146	19	216
	5 - Proposed Site Access	60	29	30	435	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Bryn Lane	2 - Ash Road North	3 - Abenbury Way	4 - Industrial Estate Road	5 - Proposed Site Access
From	1 - Bryn Lane	0	0	0	0	0
	2 - Ash Road North	0	0	0	0	0
	3 - Abenbury Way	0	0	0	0	0
	4 - Industrial Estate Road	0	0	0	0	0
	5 - Proposed Site Access	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Bryn Lane	0.45	4.21	0.8	A
2 - Ash Road North	0.93	36.90	10.6	E
3 - Abenbury Way	0.73	15.20	2.7	C
4 - Industrial Estate Road	0.41	2.50	0.7	A
5 - Proposed Site Access	0.38	3.58	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 - Bryn Lane	479	665	1734	0.276	477	0.4	2.859	A
2 - Ash Road North	754	943	1414	0.533	749	1.1	5.381	A
3 - Abenbury Way	443	1544	1312	0.338	441	0.5	4.125	A
4 - Industrial Estate Road	677	249	2505	0.270	675	0.4	1.965	A
5 - Proposed Site Access	417	539	1758	0.237	416	0.3	2.680	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 - Bryn Lane	572	795	1659	0.345	571	0.5	3.308	A
2 - Ash Road North	900	1128	1317	0.683	896	2.1	8.482	A
3 - Abenbury Way	529	1847	1131	0.468	528	0.9	5.955	A
4 - Industrial Estate Road	808	298	2473	0.327	808	0.5	2.161	A
5 - Proposed Site Access	498	645	1698	0.293	498	0.4	2.999	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 - Bryn Lane	700	973	1556	0.450	699	0.8	4.198	A
2 - Ash Road North	1102	1381	1184	0.931	1074	9.1	27.656	D
3 - Abenbury Way	649	2239	897	0.723	642	2.5	13.776	B
4 - Industrial Estate Road	990	360	2432	0.407	989	0.7	2.493	A
5 - Proposed Site Access	610	789	1617	0.377	609	0.6	3.572	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 - Bryn Lane	700	974	1555	0.450	700	0.8	4.211	A
2 - Ash Road North	1102	1383	1183	0.931	1096	10.6	36.897	E
3 - Abenbury Way	649	2262	883	0.734	648	2.7	15.201	C
4 - Industrial Estate Road	990	365	2429	0.407	990	0.7	2.500	A
5 - Proposed Site Access	610	790	1616	0.377	610	0.6	3.577	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 - Bryn Lane	572	797	1658	0.345	573	0.5	3.323	A
2 - Ash Road North	900	1131	1315	0.684	933	2.2	10.214	B
3 - Abenbury Way	529	1887	1108	0.478	536	0.9	6.376	A
4 - Industrial Estate Road	808	304	2469	0.327	809	0.5	2.169	A
5 - Proposed Site Access	498	647	1697	0.293	499	0.4	3.005	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 - Bryn Lane	479	667	1733	0.276	479	0.4	2.874	A
2 - Ash Road North	754	947	1412	0.534	758	1.2	5.542	A
3 - Abenbury Way	443	1556	1305	0.340	445	0.5	4.194	A
4 - Industrial Estate Road	677	251	2504	0.270	677	0.4	1.972	A
5 - Proposed Site Access	417	541	1757	0.237	417	0.3	2.688	A

