PROPOSED MIXED USE DEVELOPMENT, RUTHIN NORTH LINK ROAD, RUTHIN

TRANSPORT ASSESSMENT

PREPARED ON BEHALF OF:

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1.0 INTRODUCTION

1.1 Background

1.1.1 Cameron Rose Associates, on behalf of Aldi foodstores, have been asked to provide transport planning and highways advice in order to examine the highway and transportation issues associated with the proposed mixed use development, on land off Ruthin North Link Road in Ruthin. The application will be a hybrid application, with detailed permission sought for an Aldi foodstore and outline permission sought for B2/ B8 Employment.

1.1.2 The proposed Aldi foodstore would be single storey with a gross external area of 1,864 sqm; and will provide 135 car parking spaces (including eight disabled and nine parent and child parking spaces), in addition to six Sheffield type stands for the provision of 12 cycle parking spaces. The B2/ B8 employment element of the development will include the provision of three units with a combined gross external area of 653 sqm; and will provide 10 car parking spaces including two disabled parking spaces, in addition to three Sheffield type stands for the provision of six cycle parking spaces.

1.1.3 This Transport Assessment has been prepared to support the planning application for the proposed development and includes an analysis of the existing transport provision within the vicinity of the site, including sustainable transport facilities, traffic flows and the operation of the existing highway network. This Assessment considers the adequacy of this existing provision to accommodate the future demands associated with the application proposals.

1.1.4 Details of the proposed pedestrian and vehicular access arrangements, quantum of car and cycle parking and servicing arrangements are set out in this report, together with a detailed assessment of the potential traffic impact of the development proposals on the surrounding local highway network.

1.1.5 This Transport Assessment has been prepared in accordance with the parameters recommended in Planning Policy Wales Technical Advice Note 18. In addition, the specific scope of the report and study area assessed is consistent with that agreed with Denbighshire County Council as local Highway Authority.

1.1.6 This report concludes that the proposed development can be accommodated without detriment to the operational capacity or safety of the local highway network and that it can be readily accessed by sustainable modes.

1.2 Structure

1.2.1 The structure of the report herein is set out as follows:

- **Section 2.0** considers the location of the development site, the local highway network and the existing infrastructure provision for sustainable modes of transport;
- **Section 3.0** sets out the details of the development proposals, site access, parking provision and servicing arrangements;
- **Section 4.0** presents the baseline conditions of the local highway network;
- **Section 5.0** deals with the potential trip attraction of the proposed development considering the various trip types;
- **Section 6.0** considers the operational performance of the local highway network for a future assessment year, with and without the development in operations; and
- **Section 7.0** provides a summary and conclusion to the report derived from the analysis presented in the above chapters.

1.2.2 The report has been prepared solely in connection with the proposed development as stated above. As such, no responsibility is accepted to any third party for all or any part of this report, or in connection with any other development

2.0 THE DEVELOPMENT SITE

2.1 Site Location and Surrounding Area

2.1.1 The development site (Aldi and B2/ B8 Employment) has an overall site area of 8.97 acres. The undeveloped site is located in the northwest of Ruthin, on land off the A525 Lon Gwernydd. The site lies to the south of Lon Gwernydd, to the north of the Ruthin Livestock Market and to the east of the A525 Lon Gwernydd.

2.1.2 The location of the site in relation to the local highway network is illustrated in **Figure 2-1**.

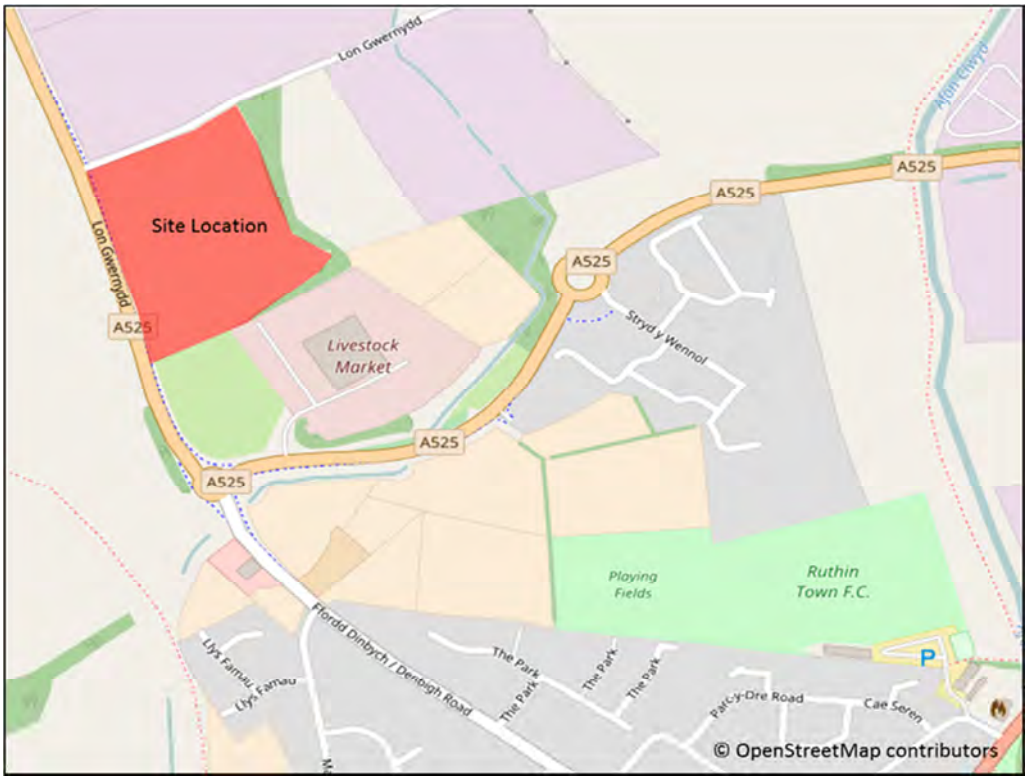

Figure 2-1: Site Location

2.2 Local Highway Network

2.2.1 As requested by the Local Highway Authority this Transport Assessment considers the following junctions.

- A525 Lon Gwernydd/ site access – priority controlled junction; and
- A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road – priority controlled roundabout junction.

2.2.2 The A525 Lon Gwernydd is a single carriageway road that bounds the site to the west and provides the proposed site access location. The road is subject to a 30 mph speed limit from the A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road roundabout for approximately 95 metres before a national speed limit restriction commences. A shared pedestrian/ cycle footway is present on the eastern side (site access side) of the carriageway.

2.2.3 The A525 Lon Gwernydd meets Ruthin North Link Road at a priority controlled roundabout junction. The junction flares to a two lane approach on all arms.

2.2.4 There is a shared pedestrian/ cycleway provided on both sides of the carriageway on Denbigh Road. On the western side of the carriageway the shared pedestrian/ cycleway extends from the roundabout to the petrol filling station. Along the frontage of the petrol filling station there is no footway present. The shared pedestrian/ cycleway then continue to the junction with Llain Goch. On the eastern side of the carriageway the shared pedestrian/ cycleway extends for approximately 110 metres from the roundabout, before cyclists are required to re-join the main carriageway. Denbigh Road is subject to a 30 mph speed limit.

2.2.5 Ruthin North Link Road is a single carriageway road subject to a 30 mph speed limit. Footways are present on the northern side of the carriageway. A shared pedestrian/ cycleway is present on the southern side of the carriageway, which continues from the roundabout to the residential development access, a distance of approximately 270 metres.

2.3 Accessibility by Sustainable Modes

2.3.1 This section provides an appraisal of the existing sustainable transport networks surrounding the proposed site, with due regard to the following:

- walking and cycling network; and
- public transport network.

Walking

2.3.2 The Institution of Highway and Transportation (IHT) document entitled 'Guidance for Journeys of Foot' (2000) suggests 'acceptable' walking distances for different journey purposes. They suggest that walking distances for pedestrians without mobility impairment, for commuting and education, are up to 500 metres as a desirable distance, up to 1,000 metres as an acceptable distance and 2,000 metres as the preferred maximum. The document recognises that:

'… that it is not always possible to achieve ideal results in all situations due to site constrains, costs or other practicalities and that compromises must sometimes, rightly, be made'.

2.3.3 The document goes on to advise that some 80% of walking journeys in urban areas are less than 1.0 mile long and that the average length is 1.0 kilometres (0.6 miles) and that this differs little by age or sex.

2.3.4 **Figure 2-2** indicates a two kilometre walking catchment from the development site. The catchment encompasses the majority of residential areas within Ruthin. This will make journeys on foot between local residential areas and the site a viable option. The proximity of these areas to the site also make commuter based walking trips to and from the site a realistic option.

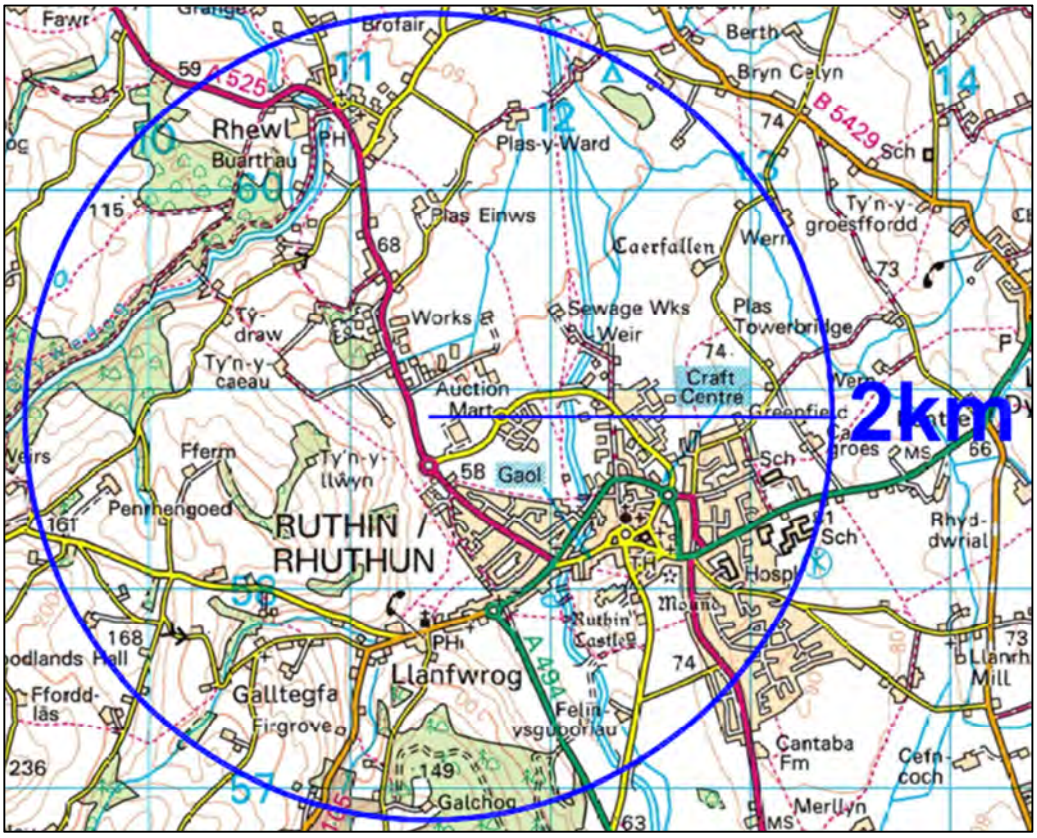

Figure 2-2: Walking Catchment

2.3.5 The site is served by an extensive pedestrian network, with footpaths provided along the eastern side of the A525 Lon Gwernydd, along the frontage of the site in the vicinity of the site and along both side of the carriageway on Ruthin North Link Road and Denbigh Road.

2.3.6 Dropped kerbs and tactile paving is provided to aid pedestrians crossing at the junction of the A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road.

2.4 Cycling

2.4.1 An acceptable cycle distance is considered to be up to five kilometres. PPG13 notes that:

'Cycling also has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport.'

2.4.2 The Department for Transport (DfT) Local Transport Note 2/08 also states that many utility cycle journeys are under three miles, although for commuters, a trip distance of over five miles is not uncommon.

2.4.3 **Figure 2-3** illustrates a five kilometre cycle catchment, which equates to around a 25 minute journey, travelling at a leisurely cycle speed of 12 kilometres per hour. The catchment illustrates that the whole of Ruthin and a number of surrounding villages are accessible.

2.4.4 This catchment indicates that cycling could be seen as a viable form of commutable transport for those working on-site and living in the surrounding residential areas. Thus the location of the proposed development would provide the opportunity for employees and visitors/ customers to access the site by bicycle.

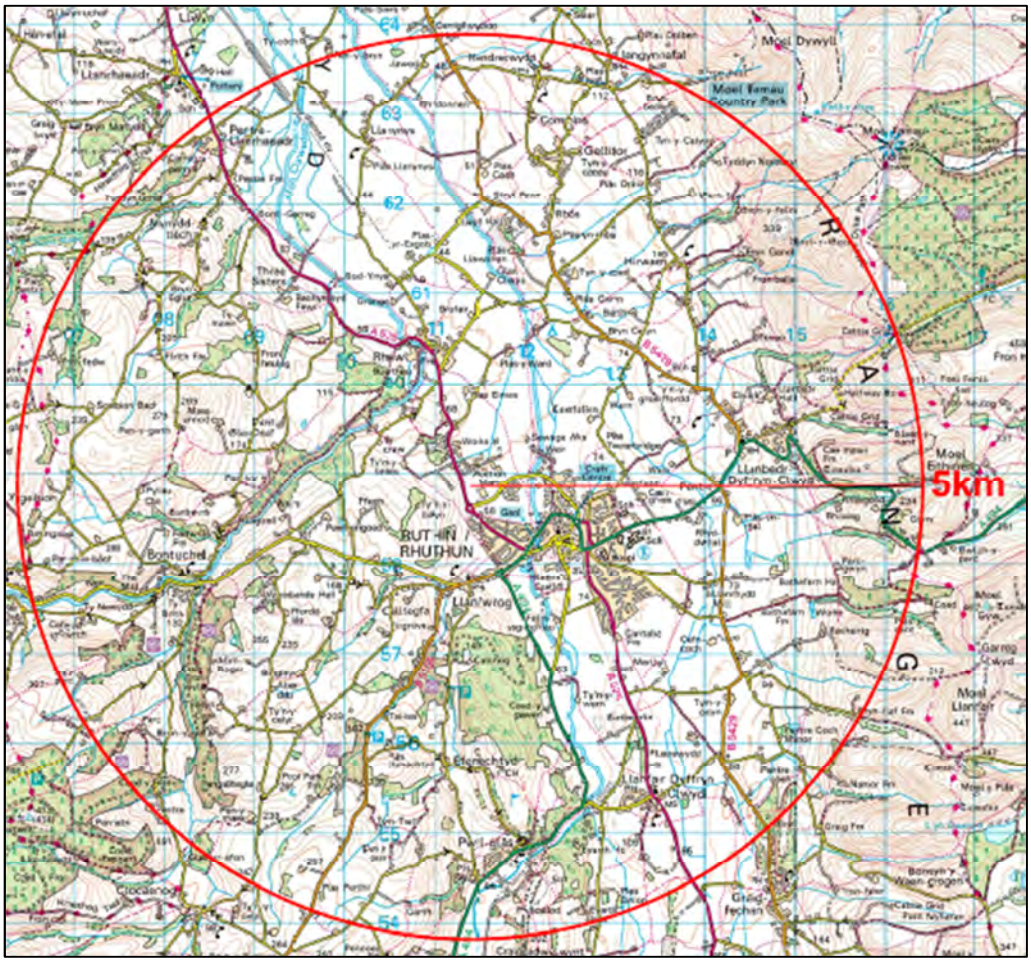

Figure 2-3: Cycling Catchment

2.4.5 A shared pedestrian/ cycle footway is present on the eastern side (site access side) of the carriageway on the A525 Lon Gwernydd.

2.4.6 There is a shared pedestrian/ cycleway provided on both sides of the carriageway on Denbigh Road. On the western side of the carriageway the shared pedestrian/ cycleway extends from the roundabout to the petrol filling station. Along the frontage of the petrol filling station there is no footway present. The shared pedestrian/ cycleway then continue to the junction with Llain Goch. On the eastern side of the carriageway the shared pedestrian/ cycleway extends for approximately 110 metres from the roundabout, before cyclists are required to re-join the main carriageway.

2.4.7 A shared pedestrian/ cycleway is present on the southern side of Ruthin North Link Road, which continues from the roundabout to the residential development access, a distance of approximately 270 metres.

Public Transport

Bus Services

2.4.8 The nearest bus stop to the proposed store is located on Ruthin North Link Road, approximately 600 metres from the site entrance. Further stops are accessible within an approximate 650 metre walk on Denbigh Road.

2.4.9 The A525 Lon Gwernydd and Denbigh Road are both allocated as a main bus route by Denbighshire County Council. Ruthin North Link Road is allocated as a route variation or infrequent service route.

2.4.10 The routes and frequencies of the bus services operating in close proximity of the site are summarised in **Table 2-1** with a route map illustrated in **Figure 2-4.**

Table 2-1: Bus Services and Headways

Service	Destination	Bus Headways (minutes)		
		Mon – Fri	Saturday	Sunday
55	Rhuthun/Ruthin - Corwen - Llangollen - Wrecsam/Wrexham	60 -120	60 – 120	-
71	Corwen - Cerrigydrudion Rhuthun/Ruthin - Dinbych/Denbigh	One Friday Service Only		
76	Dinbych/Denbigh - Llandyrnog - Rhuthun/Ruthin - Graigfechan	120	120	-
X51	Dinbych/Denbigh - Wrecsam/Wrexham	60	60	60 - 120

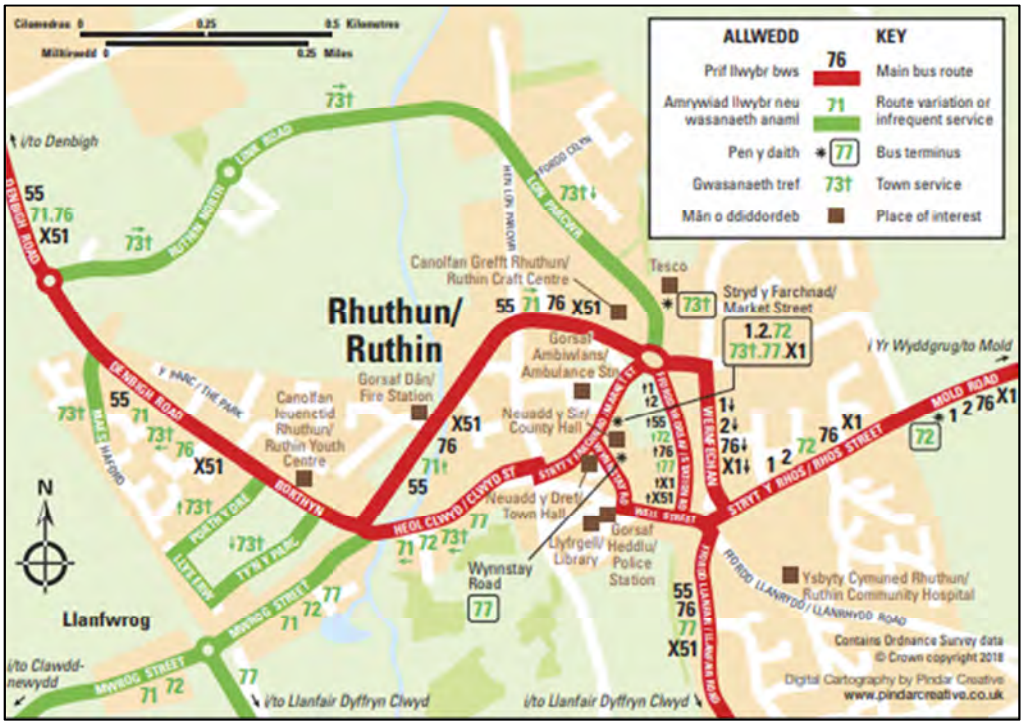

Figure 2-4: Ruthin Bus Services

2.4.11 The above table demonstrates that there are a variety of local destinations that can be reached via the bus services operating in the direct vicinity of the site.

2.4.12 The Travel Plan for the Aldi foodstore would include measures to encourage staff and customers to use public transport. A Framework Travel Plan is included in **Appendix C**.

2.5 Summary

2.5.1 Overall it is evident that the site is accessible to pedestrians, cyclists and users of public transport. The proposed development will include measures to promote the use of such sustainable modes of transport.

3.0 THE PROPOSED DEVELOPMENT

3.1 Overview

3.1.1 The application will be a hybrid application, with detailed permission sought for an Aldi foodstore and outline permission sought for B2/ B8 Employment.

3.1.2 The proposed Aldi foodstore would be single storey with a gross external area of 1,864 sqm; and will provide 135 car parking spaces (including eight disabled and nine parent and child parking spaces); in addition to six Sheffield type stands for the provision of 12 cycle parking spaces.

3.1.3 The B2/ B8 employment element of the development will include the provision of three units with a combined gross external area of 653 sqm. Unit 1A will have a gross external area of 281 sqm, Unit 1B and Unit 1C will have a gross external area of 186 sqm. The employment element will provide 10 car parking spaces including two disabled parking spaces, in addition to three Sheffield type stands for the provision of six cycle parking spaces.

3.1.4 The site layout for the Aldi foodstore is included in **Appendix A**.

3.2 Proposed Means of Access

3.2.1 Vehicular access to the site is proposed off the A525 Lon Gwernydd via a newly formed ghost island priority controlled T-junction. A general access arrangement plan is illustrated in drawing no. 324-01/GA-01 contained in **Appendix B**.

3.3 Accessibility Appraisal

3.3.1 As discussed earlier in the report, the proposal site offers a good level of accessibility by sustainable modes of transport, namely by walking, cycling, and public transport; for instance:

- The proposed development would provide retail opportunity within a reasonable walking and cycling distance of existing residential areas, reducing the need for these residents to travel further for their food shopping needs;

- Frequent bus services are accessible within an acceptable walking distance. The use of public transport will be promoted through the travel plan to employees at the site;

- The proposed scheme would incorporate facilities to encourage sustainable trip movements, including on site cycle parking and changing and locker facilities for staff.

3.4 Parking

Aldi Foodstore

3.4.1 The Aldi foodstore would be supported by the provision of 135 car parking spaces, including 17 accessible spaces comprising eight disabled and nine parent and child car parking spaces.

3.4.2 Denbighshire County Council's Parking Standards are defined within the Supplementary Planning Guidance Note: Parking Requirements in New Developments (October 2014). The town of Ruthin, within which the development site falls, are defined as Zone 1 for parking. Towns within Zone 1 are regarded by local people as their destination for most activities which are not met within their own settlement. The area has a full range of retail activity, doctor's surgery and many commercial businesses, all within walking distance. Built density is high with little private car parking.

3.4.3 The car parking standards for shops and small supermarkets with a GFA of between 1,000 – 2,000 sqm, within which the proposed development falls, are defined as one space per 40 sqm, i.e. 45 spaces. This is not considered adequate to meet the operational requirements of the foodstore. Therefore the parking standards for supermarkets and superstores in excess of 2,000 sqm have been applied. These standards state a requirement of one space per 14 sqm i.e. 126 spaces. The proposed development is in line with policy standards providing 135 car parking spaces.

3.4.4 In addition to car parking provision the guidance also states that:

- 6% of total capacity should be allocated for disabled parking provision i.e. eight spaces based on 135 car parking spaces. This level of provision has been incorporated into the design; and

- 5% of total capacity should be allocated for motorcycle parking provision. Eight spaces have been incorporated into the design

B2/ B8 Employment

3.4.5 The employment element will provide 10 car parking spaces including two disabled parking spaces, in addition to three Sheffield type stands for the provision of six cycle parking spaces.

3.4.6 The parking standards for industry are one space per 120 sqm non operation spaces and one per 85 sqm for operational spaces i.e. 13 spaces. The proposed development is in line with policy standards providing 10 car parking spaces.

3.4.7 In addition to car parking provision the guidance also states that:

- 5% of total capacity should be allocated for disabled parking provision i.e. one space based on 10 car parking spaces. This level of provision is in line with policy standards; and

- 5% of total capacity should be allocated for motorcycle parking provision i.e. one space based on 10 car parking spaces. This level of provision has been incorporated into the design

3.5 Cycle Parking

3.5.1 Based upon the standards contained within the Supplementary Planning Guidance Note: Parking Requirements in New Developments document, cycle parking provision should be provided at a level of one space per 150 sqm for the Aldi foodstore i.e. 12 cycle parking spaces; and one space per 500 sqm for the employment element i.e. one cycle parking space.

3.5.2 Covered cycle parking for up to 12 bicycles, in the form of six “Sheffield” type bicycle stands will be provided along the south eastern boundary of the Aldi foodstore. The level of parking proposed is anticipated to increase the attractiveness of cycling as a mode of transport to customers and employees of the site. Secure staff lockers will also be provided.

3.5.3 Six bicycles, in the form of three “Sheffield” type bicycle stands will be provided along the northern boundary of the employment element.

3.5.4 The location of cycle parking is illustrated in the site layout plan contained in **Appendix A**. The cycle parking benefits from being under the building canopy. The location of the cycle parking also benefits from natural surveillance afforded by its location alongside a glazed section of the proposed store. This is therefore an ideal location for customer cycle parking.

3.6 Servicing

3.6.1 The service vehicle access to the proposed foodstore will be located via the customer access off the A525 Lon Gwernydd.

3.6.2 Approximately four 16.5 metre articulated service vehicles would access the site per day, in association with the proposed discount foodstore. In addition to a daily milk delivery and bin collection via rigid vehicle.

3.6.3 A track plot analysis of a 16.5 metre refrigerated articulated vehicle has been undertaken using AutoTrack, a specialist computer package that allows designers to assess the swept path of different vehicles as they negotiate path alignments. The swept path of these vehicles to and from the site service ramp is satisfactory, as demonstrated in drawing 324-01/ATR-01 attached in **Appendix B**.

4.0 BASELINE TRAFFIC CONDITIONS

4.1 Introduction

4.1.1 This section provides an appraisal of the transport network surrounding the proposed development site, including the baseline traffic flows on the study area network and an analysis of accident records for the local highway network.

4.1.2 The study area, which was agreed with the local highway authority during pre-application discussions, includes the following junctions surrounding the site:

- A525 Lon Gwernydd / Site Access – priority controlled junction; and
- A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road – roundabout.

4.1.3 The following sections therefore present the methodology adopted to establish baseline conditions within the agreed study area.

4.2 Baseline Traffic Flows

4.2.1 Peak hour traffic flows have been derived from independent manual turning counts undertaken by PCC Traffic Information Consultancy on Friday 4 and Saturday 5 March 2016 at the junctions detailed above:

4.2.2 Surveys were undertaken for a Weekday AM (0800 – 1000), PM (1530 – 1030) and Saturday (1000 – 1600) peak periods. Analysis of the data has determined that the peak hours are 0800 – 0900 during the AM peak, 1545 – 1645 during the Weekday PM peak and 1130 – 1230 during the Saturday peak. The full survey results are attached in **Appendix D**. The resulting turning flows at the junction are illustrated in **Figure 4-1**.

4.3 Assessment Years

4.3.1 The base traffic has been growthed for assessment to a design year five years after application registration, 2024.

4.3.2 The TEMPRO database will be interrogated to obtain growth factors for Denbighshire 014 (W020000055) – Urban All, using the default planning assumptions. The resulting growth factors for the AM, PM and Saturday peak periods are shown in **Table 4-3**.

Table 4-3: Growth Factors – Denbighshire 014 (W020000055)

Growth Period	AM Peak Hour	PM Peak Hour	Saturday Peak Hour
2016– 2024	1.0930	1.0915	1.0966

4.3.3 The growth factors presented above, have been applied to the surveyed traffic flows. The resulting 2024 (design year) baseline traffic flows are illustrated in **Figure 4-2**.

4.4 Personal Injury Accident Data

4.4.1 Personal Injury Accident data has been obtained from Denbighshire County Council for the proposed study area for the most recent five year period for which data is complete (from the time of ordering).

4.4.2 The personal injury accident data would suggest that there is no particular trend or pattern of road accidents in the vicinity of the site resulting from any deficiencies in the local road network, or the operation of the site.

5.0 DEVELOPMENT TRIP ATTRACTION, ASSIGNMENT AND DISTRIBUTION

5.1 Proposed Aldi Food Store Trip Attraction

5.1.1 The traffic attraction of the proposed foodstore has been estimated on the basis of comparable survey data contained within the TRICS database. Survey data for discount foodstores has been used to assess the likely traffic attraction of the proposed development.

5.1.2 The trip rates presented below consider the traffic attraction of the proposed store before the effects of pass-by, transferred or linked trips are taken into consideration.

5.1.3 The trip rates are summarised below in **Table 5-1**, the full calculation and output from TRICS is attached in **Appendix F**.

Table 5-1: Discount Foodstore Trip Rates per 100 sqm GFA

Peak Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	1.062	0.616	1.678
PM Peak (1600 – 1700)	3.566	3.672	7.238
Saturday Peak (1100 – 1200)	6.983	6.779	13.762

5.1.4 The quantum of traffic attracted by the 1,864 sqm GEA Aldi foodstore, based on these trip rates, is summarised in **Table 5-2**.

Table 5-2: Discount Foodstore Vehicular Trip Attraction

Peak Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	20	11	31
PM Peak (1600 – 1700)	66	68	135
Saturday Peak (1100 – 1200)	130	126	257

5.1.5 The trip attraction of the proposed foodstore is anticipated to be 31 two-way trips in the Weekday AM peak hour, 135 two-way trips in the Weekday PM peak hour and 257 in the Saturday peak hour.

Trip Types

5.1.6 It is widely accepted that, the total number of trips attracted to a new retail development are not comprised wholly of new trips to the local highway network. Many of the trips may in fact already exist on the network, albeit at another location, or where a visit to the store will be incorporated into an existing pattern of travel behaviour. The following vehicular trip types have been identified in association with new retail developments (Guidance on Transport Assessment, DfT, 2007):

- New Trips: Trips that do not appear anywhere on the road network prior to the opening of the development.
- Pass-by Trips: Trips which are already present on the road network directly adjacent to the point of access to the site, which will turn into the site.
- Linked Trips: Trips that will have multiple destinations either within the proposed development site, between both the development site and existing adjacent sites, or between the development site and an established town centre.
- Diverted Trips: Trips which are already present on the local road network but not the road from which the site access is taken and will divert from their existing use to access the site.
- Transferred Trips: Trips which are already present on the local road network, accessing similar sites in close proximity to the proposed development. Slightly different from diverted trips, these wholly transfer from using an existing development to a new one, i.e. shoppers switching to a new foodstore that is more conveniently located for them.

5.1.7 The importance of non-primary trips, i.e. Pass-by, Linked, Diverted and Transferred trips are emphasised by retailers who suggest that they rely heavily on these trip types in order to survive.

5.1.8 The premise of non-primary trips is one that is particularly true in locations where the highway network experiences peak hour congestion as customers are unlikely to embark on a single purpose home based trip to undertake food shopping at these times. During the hours of peak traffic demand on the local highway network, it is likely that the majority of customers to the proposed foodstore, who travel by car, would have already been present on the local highway network.

5.1.9 The TRICS Research Report 14/1: Pass-By & Diverted Trips presents updated research on the proportion of trip types. Those relevant to the proposed Aldi foodstore include:

- Commercial research carried out by Somerfield and Tesco and reiterated in the TRICS research paper 14-1, have presented a correlation between the proximity of a store to a town centre and the propensity for store customers to visit other shops within a town centre;
- TRICS research paper 14-1 also states that as a stores proximity to a town centre increase, the potential percentage of pass-by trips also increase; and
- Stores with a GFA of 4,000 sqm or less are more likely to act as convenience stores, whilst those with a GFA higher than 4,000 sqm are more likely to act as comparison stores. Convenience stores are more likely to produce pass-by trips.

5.1.10 The research goes on to state that having given due consideration to these parameters, the development should develop an appropriate percentage of pass-by and diverted trips, following usual best practice.

5.1.11 Best practice research presented within TRICS Report 95/2 suggests the following peak hour proportions of retail trip types.

Table 5-3: Foodstore Trip Types

Trip Type	Weekday Peak Hour Proportions	Saturday Peak Hour Proportions
New/ Transferred Trips	25 - 60%	50 – 90%
Pass-By Trips	5 – 30%	5 – 10%
Diverted Trips	20 – 45%	5 - 40%

5.1.12 The proportion of pass-by and diverted trips is influenced by the local network and thus for the purpose of this analysis, pass-by trips are considered to be those trips which are already travelling on the A525 Lon Gwernydd and diverted trips are those on Ruthin North Link Road and Denbigh Road.

5.1.13 In terms of the TRICS Research Report 14/1, the proposed store is classed as a convenience store and the proximity to the town centre of the proposed foodstore, will offer the opportunity for Pass-By trips to be made to the foodstore.

5.1.14 Based on the information presented above, the following proportions of each trip type have been adopted in this analysis for both the Weekday and Saturday scenarios.

Table 5-4: Foodstore Trip Types Used in Analysis

Trip Type	Weekday Peak Hour Proportions	Saturday Peak Hour Proportions
New/ Transferred Trips	55%	75%
Pass-By Trips	15%	5%
Diverted Trips	30%	20%

5.1.15 The resulting trip attraction for each trip type are summarised in **Table 5-5**.

Table 5-5: Vehicle Trip Attraction by Trip Type – Average Trip Rates

Peak	Trip Type	Proportion	Trip Attraction (Average)		
			Arrivals	Departures	Two-Way
AM Peak	New/ Transferred	55%	11	6	17
	Pass-by	15%	3	2	5
	Diverted	30%	6	3	9
	Total	**100%**	**20**	**11**	**31**
PM Peak	New/ Transferred	55%	37	38	74
	Pass-by	15%	10	10	20
	Diverted	30%	20	21	40
	Total	**100%**	**66**	**68**	**135**
Saturday Peak	New/ Transferred	75%	98	95	192
	Pass-by	5%	7	6	13
	Diverted	20%	26	25	51
	Total	**100%**	**130**	**126**	**257**

5.1.16 However, in order to present a robust assessment it has been assumed that 100% of trips to the site are New to the study area.

Trip Distribution and Assignment

5.1.17 Based on the catchment area of the site and the location of existing/ consented Aldi foodstores, it has been assumed that 90% of trips will turn left out of the development towards Ruthin and that 10% of trips will turn right and travel towards Denbighshire.

5.1.18 At the junction of the A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road, trips will be distribution based on existing turning proportions, based on the surveyed traffic flows.

5.1.19 The distribution of the Aldi development traffic flows is illustrated in **Figure 5-1** and the assignment of traffic is illustrated in **Figure 5-2**.

5.2 Employment Use Proposed Use Trip Attraction

5.2.1 The traffic attraction of the proposed employment use will be estimated on the basis of comparable survey data contained within the TRICS database. Survey data for Employment – Industrial Estate will be used to assess the likely traffic attraction of the proposed development.

5.2.2 The average trip rates are summarised below in **Table 5-6**, the full calculation and output from TRICS is attached in **Appendix F**. No trip rates are provided for the Saturday peak period. It has therefore been assumed for robustness that the Saturday trip rates will equate to 50% of the average of the AM and PM peak trip rates.

Table 5-6: Employment – Industrial Estate Trip Rates per 100 sqm GFA

Peak Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	0.438	0.216	0.654
PM Peak (1600 – 1700)	0.230	0.379	0.609
Saturday Peak (1100 – 1200)	0.167	0.149	0.316

5.2.3 The quantum of traffic attracted by the 653 sqm GEA employment element, based on these trip rates, is summarised in **Table 5-7**.

Table 5-7: Employment – Industrial Estate Vehicular Trip Attraction

Peak Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	3	1	4
PM Peak (1600 – 1700)	1	2	4
Saturday Peak (1100 – 1200)	1	1	2

5.2.4 The trip attraction of the proposed employment land use is anticipated to be four two-way trips in the Weekday AM peak hour, four two-way trips in the Weekday PM peak hour and two in the Saturday peak hour.

Trip Distribution and Assignment

5.2.5 The distribution of new trips on the local highway network will be based on existing turning proportions, based on the surveyed traffic flows. The distribution of the employment development traffic flows is illustrated in **Figure 5-3**.

Summary

5.2.6 The total development traffic flows are illustrated in **Figure 5-4**. The 2024 Base plus Development traffic flows are illustrated in **Figure 5-5**.

6.0 IMPACT OF DEVELOPMENT PROPOSALS ON THE OPERATIONAL PERFORMANCE OF THE LOCAL HIGHWAY NETWORK

6.1 Introduction

6.1.1 The following capacity assessments will demonstrate that the impact of this level of traffic would not be material on the operational performance of the local highway network.

6.2 Junction Capacity Assessments

6.2.1 Capacity assessments have been undertaken for a Weekday AM, PM and Saturday peak period. Assessments have been undertaken for the following junctions, as requested by highway officers during pre-application discussions, using the software noted:

- A525 Lon Gwernydd / Site Access – PICADY; and
- A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road – ARCADY.

A525 Lon Gwernydd/ Site Access

6.2.2 The results of the PICADY assessment are set out in **Appendix G** and summarised in **Table 6-1**.

Table 6-1: A525 Lon Gwernydd/ Site Access – PICADY Results

Scenario	Arm	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		RFC	Q	RFC	Q	RFC	Q
2024 Base plus Development	Site Access	0.03	0	0.16	0	0.27	0
	Lon Gwernydd (n)	0.04	0	0.13	0	0.24	0

6.2.3 The junction will operate well within acceptable capacity limits during each of the peak periods surveyed. The maximum RFC occurs during the Saturday peak period of 0.27, with no associated queue, on the site access arm.

6.2.4 It is therefore considered that the proposed site access is sufficient to accommodate the development proposals.

A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road

6.2.5 The results of the ARCADY assessment are set out in **Appendix H** and summarised in **Table 6-2**.

Table 6-2: A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road – ARCADY Results

Scenario	Arm	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		RFC	Q	RFC	Q	RFC	Q
2016 Survey	Lon Gwernydd	0.37	1	0.32	1	0.24	0
	Ruthin North Link Road	0.26	0	0.27	0	0.20	0
	Denbigh Road	0.28	0	0.22	0	0.20	0
2024 Base	Lon Gwernydd	0.41	1	0.35	1	0.26	0
	Ruthin North Link Road	0.28	0	0.29	0	0.23	0
	Denbigh Road	0.31	1	0.24	0	0.22	0
2024 Base plus Development	Lon Gwernydd	0.41	1	0.39	1	0.33	1
	Ruthin North Link Road	0.29	0	0.32	1	0.28	0
	Denbigh Road	0.32	1	0.27	0	0.27	0

6.2.6 The junction will operate within acceptable capacity limits during each of the peak periods surveyed. The maximum RFC occurs during the AM peak period of 0.41, with an associated queue of one pcu on Lon Gwernydd. There is no increase in queue compared to the 2024 base scenario.

6.2.7 It is therefore considered that the proposed development will not have a material impact on the junction's performance.

6.3 Summary

6.3.1 It is therefore considered that in operational capacity terms, the proposed development will not have a material impact on the operational performance of the local highway network.

7.0 SUMMARY AND CONCLUSIONS

7.1 Summary

7.1.1 Cameron Rose Associates, on behalf of Aldi foodstores, have been asked to provide transport planning and highways advice in order to examine the highway and transportation issues associated with the proposed mixed use development, on land off Ruthin North Link Road in Ruthin. The application will be a hybrid application, with detailed permission sought for an Aldi foodstore and outline permission sought for B2/ B8 Employment.

7.1.2 The proposed Aldi foodstore would be single storey with a gross external area of 1,864 sqm; and will provide 135 car parking spaces (including eight disabled and nine parent and child parking spaces), in addition to six Sheffield type stands for the provision of 12 cycle parking spaces. The B2/ B8 employment element of the development will include the provision of three units with a combined gross external area of 653 sqm; and will provide 10 car parking spaces including two disabled parking spaces, in addition to three Sheffield type stands for the provision of six cycle parking spaces.

7.1.3 The proposed Aldi store will provide local residents with a discount food retail store, enhancing the community's existing food retail choices and reducing the need to travel for food shopping. The proposed development will reduce the need to travel, especially by car, by providing retail opportunities within a reasonable walking and cycling distance of residential areas.

7.1.4 The proposed scheme would influence travel behaviour by incorporating facilities to encourage sustainable trip movements, including on site cycle parking and changing and locker facilities for staff. A Framework Travel Plan has been developed for the site which describes the strategy through which initiatives will be adopted in order to encourage the use of sustainable modes of transport to the site.

7.1.5 The impacts of the proposals have been assessed across an agreed study area network which includes the junctions of:

- A525 Lon Gwernydd / Site Access – priority controlled junction; and

- A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road – roundabout.

7.1.6 The report includes an assessment of the operational performance of the local highway network, with the addition of development traffic. The junction capacity assessments undertaken indicate that the proposed development would not have a material impact on the junctions concerned.

7.1.7 The results of the assessment demonstrate that the proposed development will not have a material impact on the operational performance of the junctions concerned.

7.2 Conclusions

7.2.1 This report has demonstrated how the proposed development promotes accessibility by all modes of travel, in particular public transport, cycling and walking by virtue of its sustainable location and the physical infrastructure that would be put in place. Measures include cycle parking, pedestrian connectivity, accessibility to bus stops as well as the Travel Plan which would be used to influence travel behaviour.

7.2.2 It has also been demonstrated how the development would reduce the need to travel, especially by car with regard to the element of pass-by, diverted and transferred trips – i.e. the majority of vehicular trips to the proposed development would not be new trips on the network and may well be shorter given the more convenient location of the development to the catchment.

7.2.3 The impacts of residual trips from the proposed development have been assessed and it is evident that these would not have a significant impact on the operational performance and safety of the local highway network.

7.2.4 The impact of the proposed development would not have a severe impact on the operational performance of the local highway network.

7.2.5 It is concluded that there are no overriding reasons preventing the Local Planning Authority from recognising that the proposal is acceptable with regard to the local highway network.

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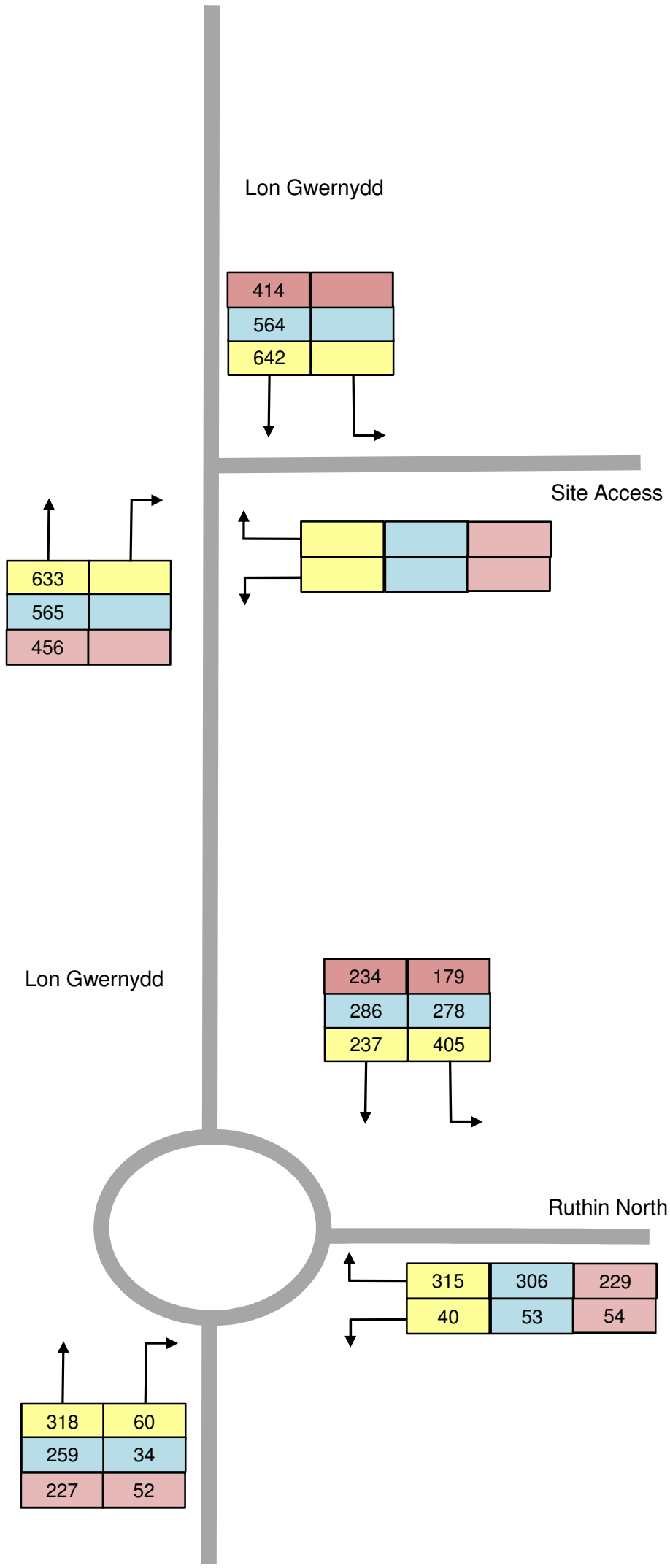
ASSOCIATES

FIGURES



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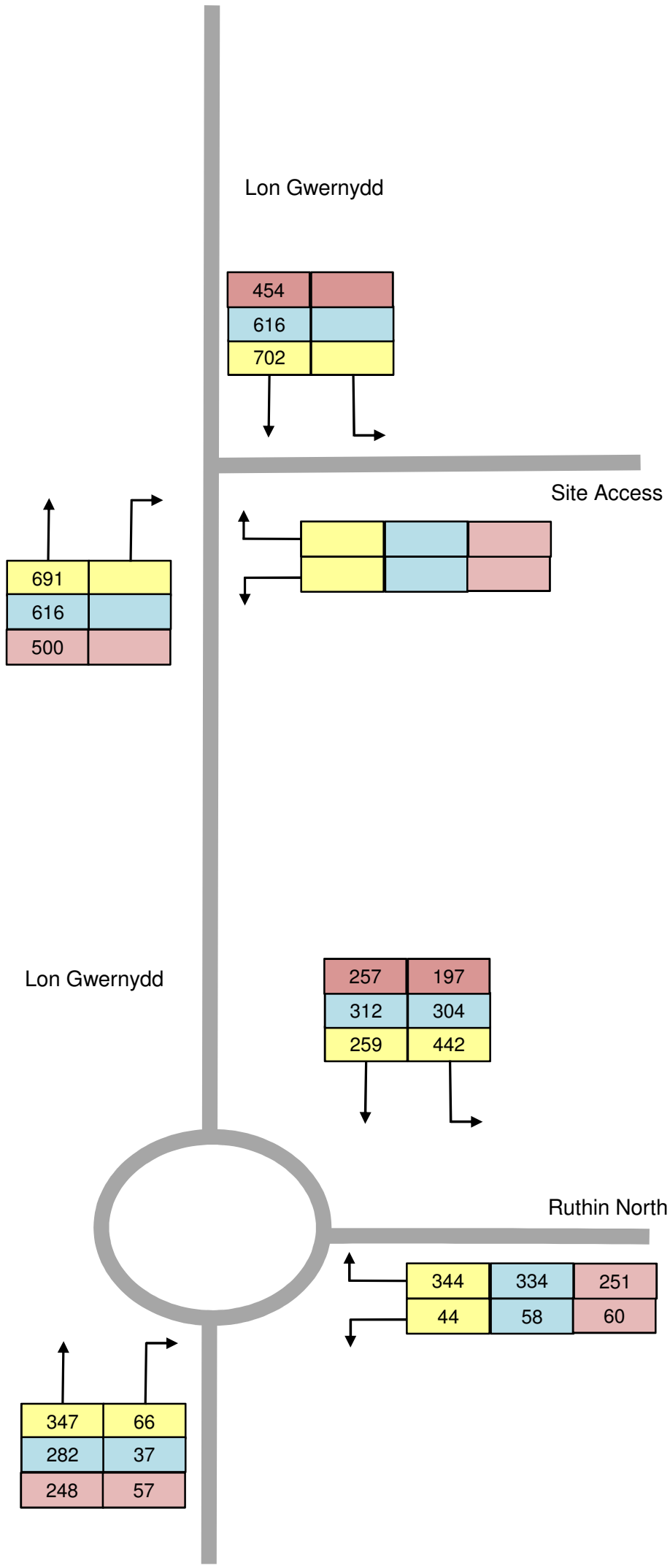
2016 Survey Traffic Flows

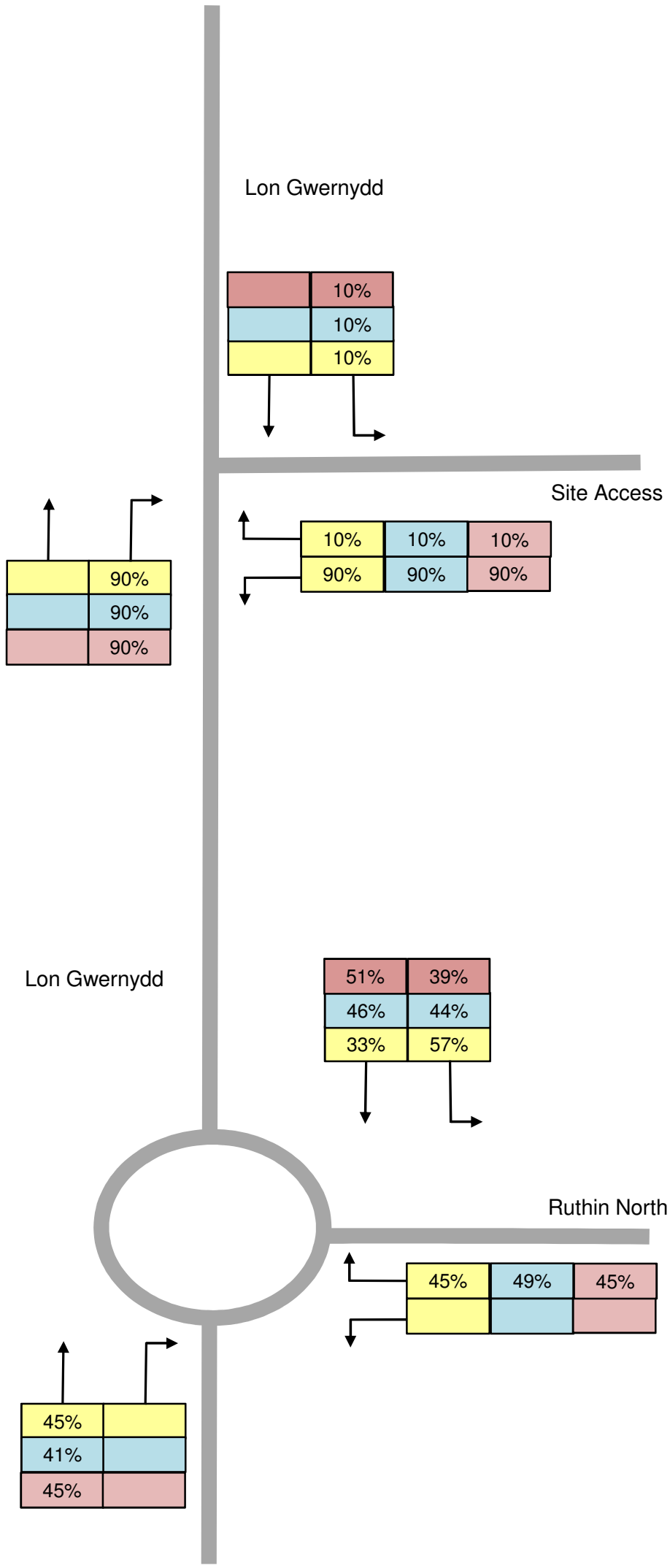
Figure 4-1



CAMERON ROSE ASSOCIATES

2024 Base Traffic Flows

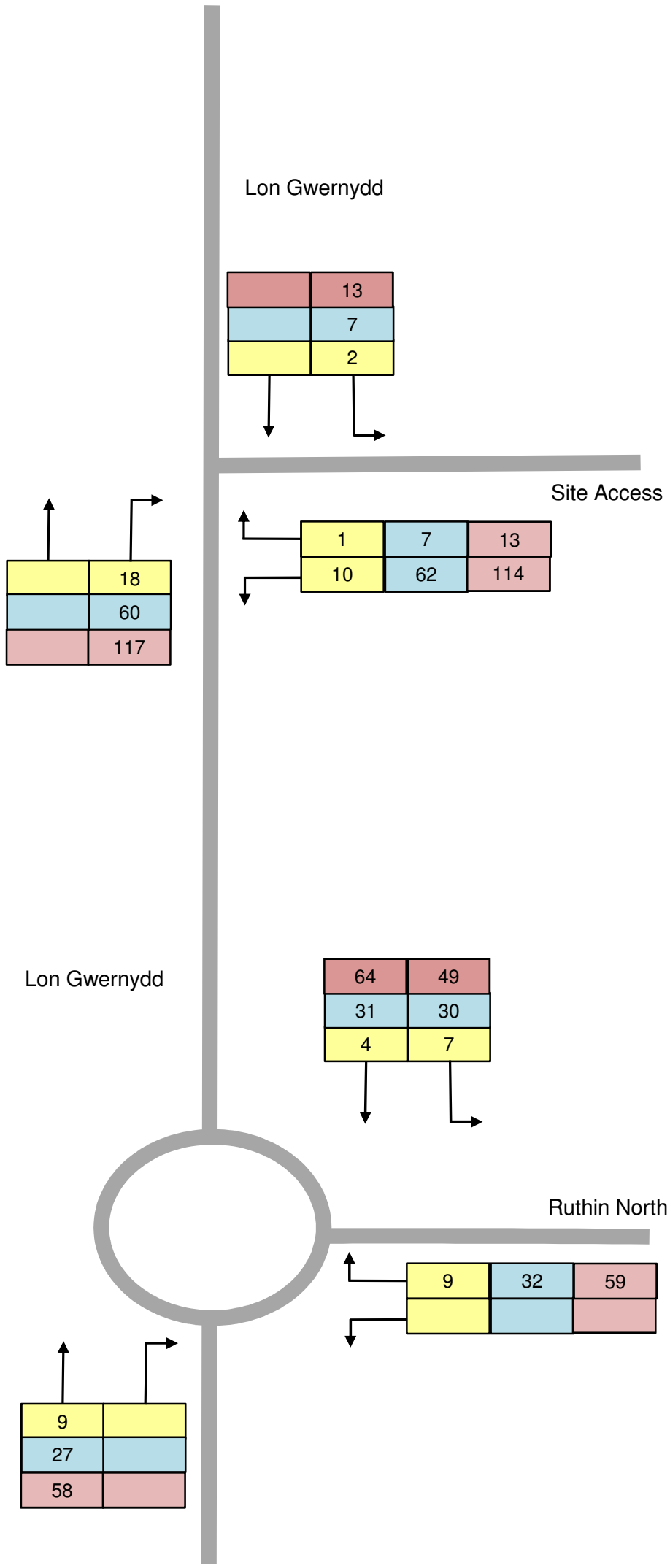
Figure 4-2



CAMERON ROSE ASSOCIATES

Aldi Development Distribution

Figure 5-1



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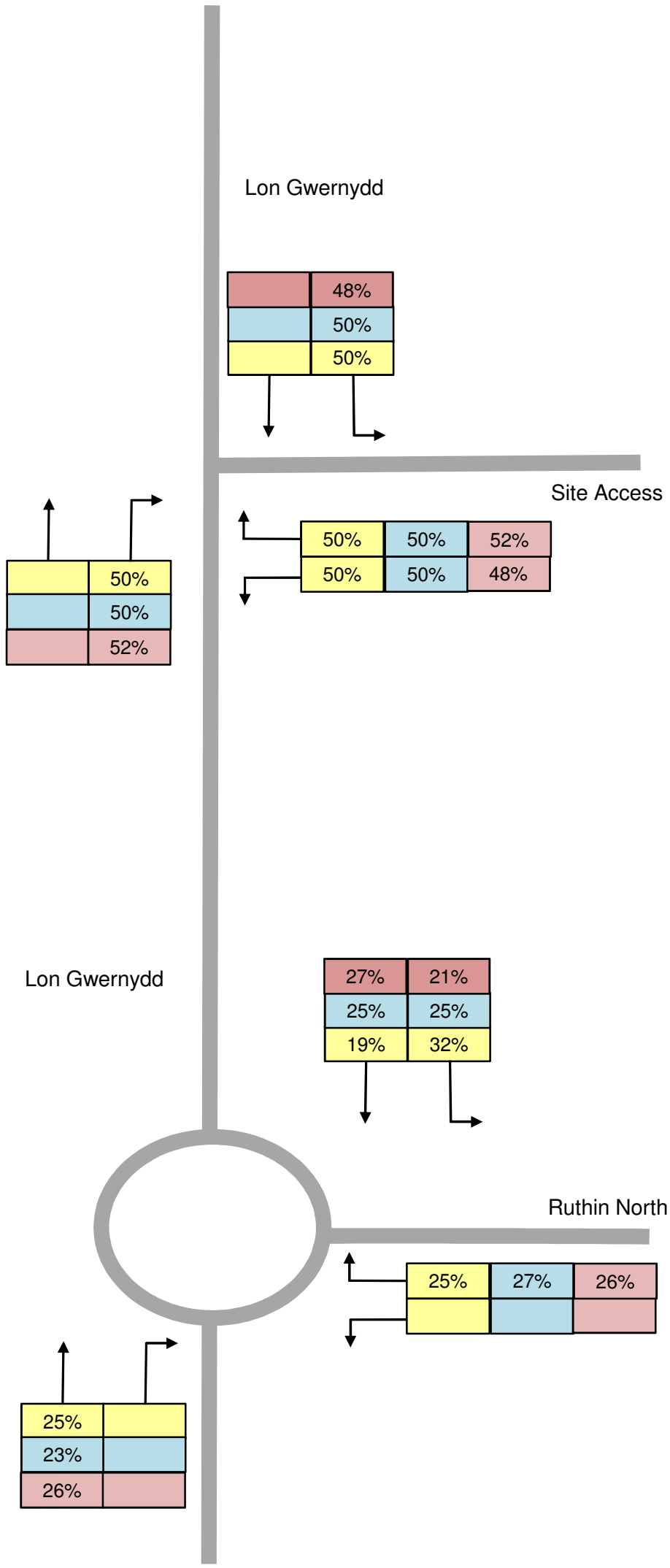
Aldi Development Traffic Assignment

Figure 5-2



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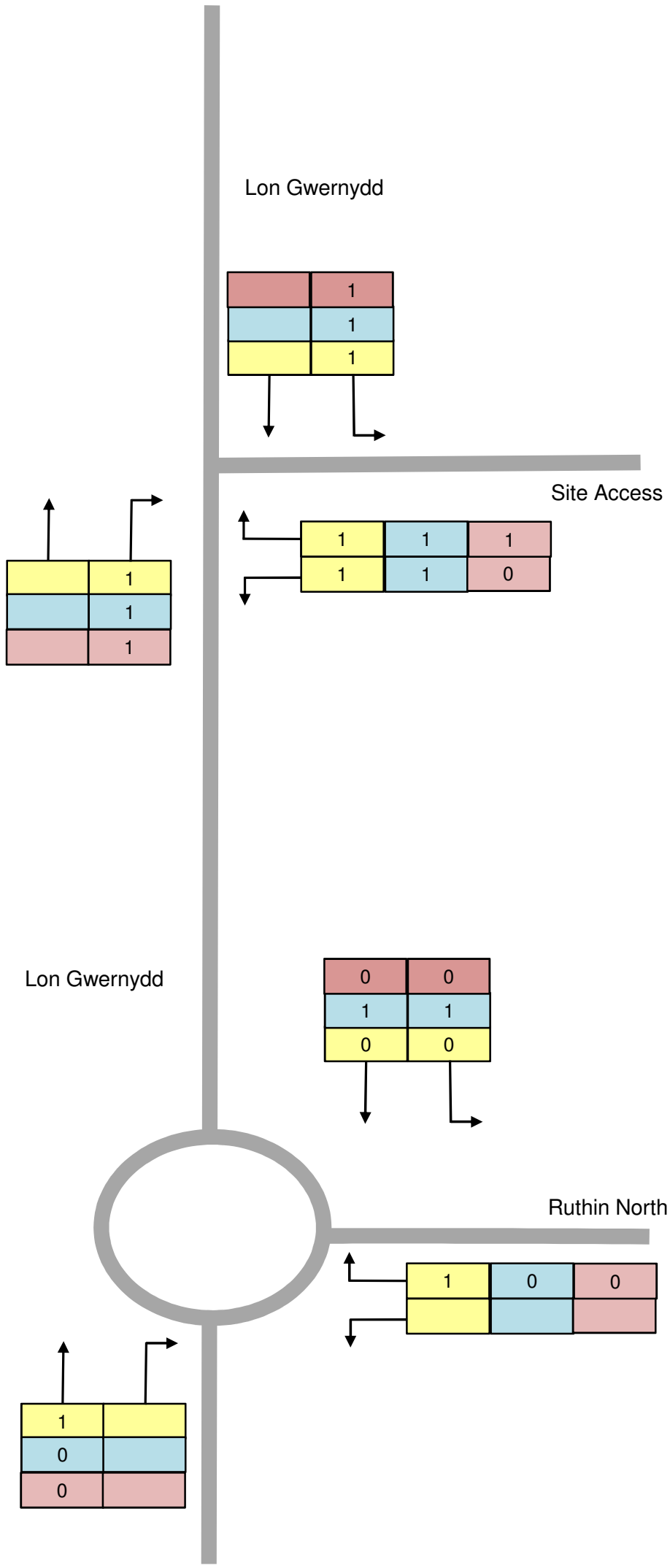
Industrial Development Distribution

Figure 5-3



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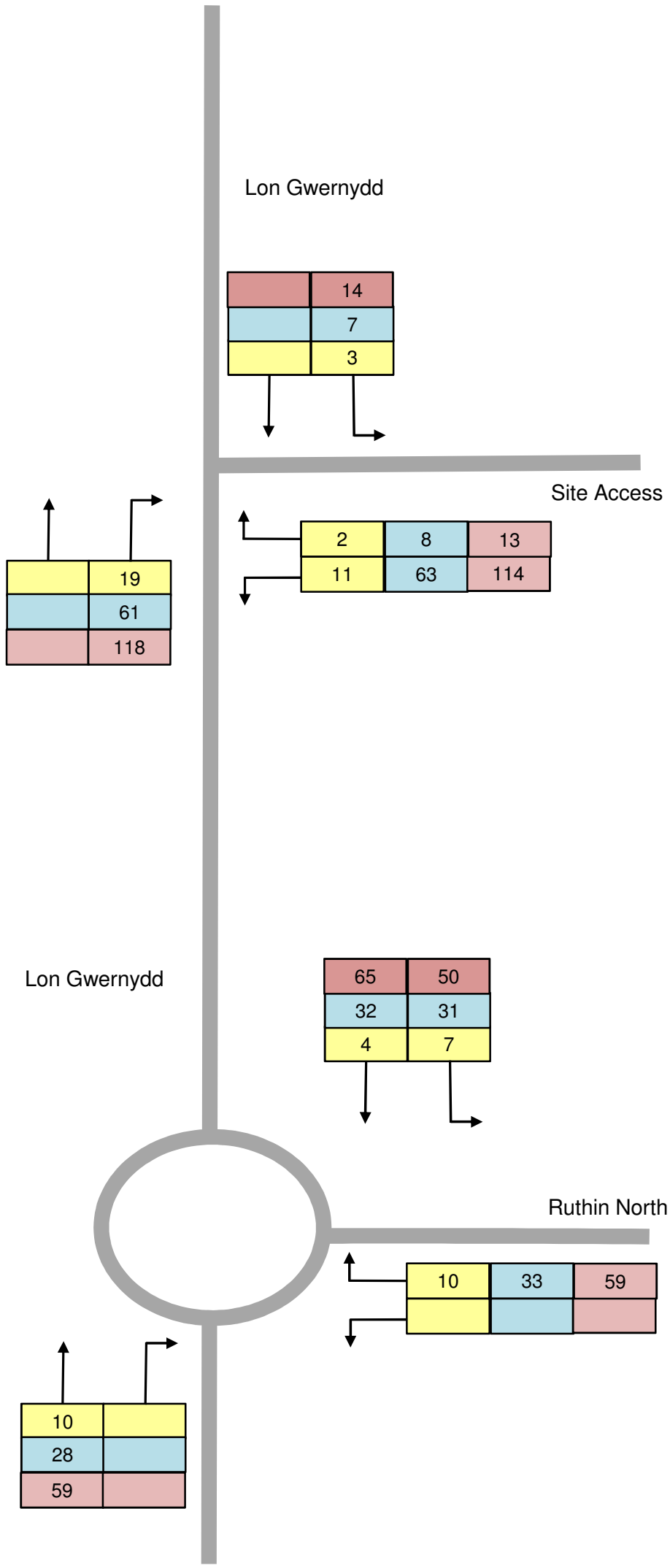
Industrial Development Traffic Assignment

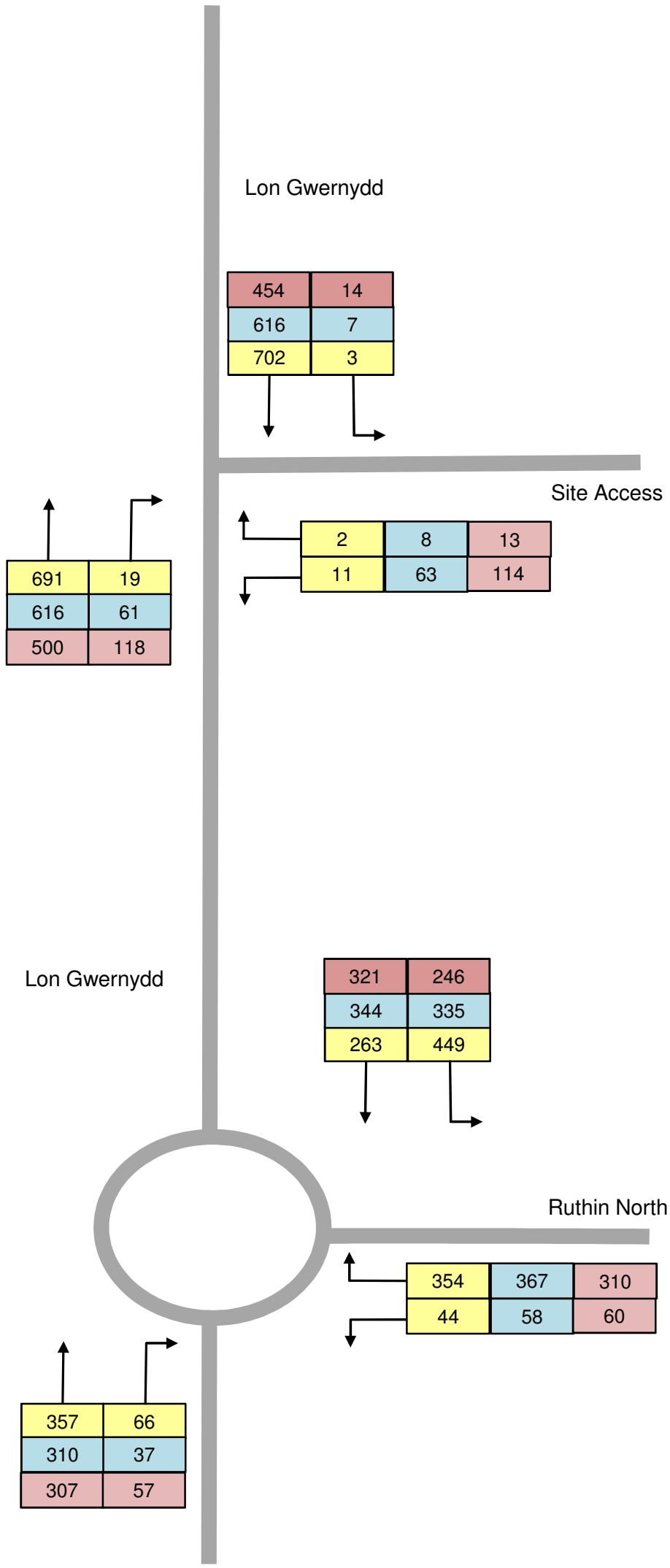
Figure 5-4



CAMERON ROSE ASSOCIATES

Total Development Traffic Assignment

Figure 5-5



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2024 Base plus Development Traffic Flows

Figure 5-6

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APPENDICES

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APPENDIX A

SITE LAYOUT

DRAWING KEY:

Total Application Area
36,291m2/ / 8.967 Acres

Full Application Area
15,396m²/ / 3.798 Acres

Outline Application Area
20,922m2/ / 5.170 Acres

4m Highway Strip
700m2/ / 0.172 Acres

Proposed Development
A525
Ruthin

Client: Aldi Stores Limited
Date: 16/04/19
Job/Dwg: 13580-V102D-Proposed Site Plan
Scale 1:1000@A3

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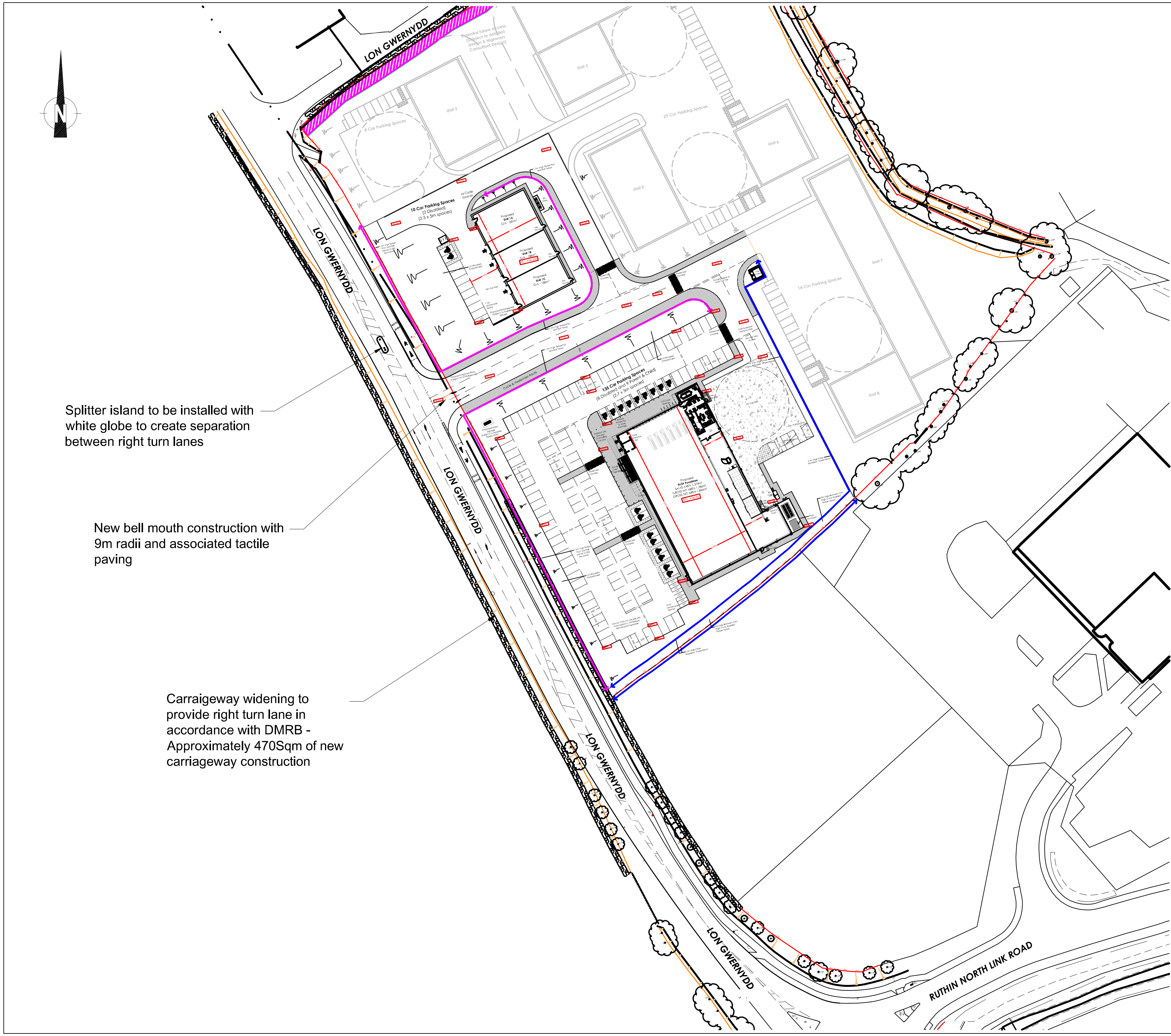
APPENDIX B

GENERAL ACCESS ARRANGEMENT AND SWEPT PATH AUTOTRACK ANALYSIS



Follow any figured dimensions - do not scale. IF IN DOUBT ASK.

This drawing has been prepared for feasibility purposes and does not represent a construction plan. All design aspects to be confirmed at the appropriate detailed design stage.

	Revision History	Date
A	Revised Site Layout	01/02/19
B	Revised Site Layout	10/04/19
C	desc	date c
D	desc	date d
E	desc	date e
F	desc	date f
G	desc	date g
H	desc	date h
I	desc	date i
J	desc	date j

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CAMERON ROSE ASSOCIATES

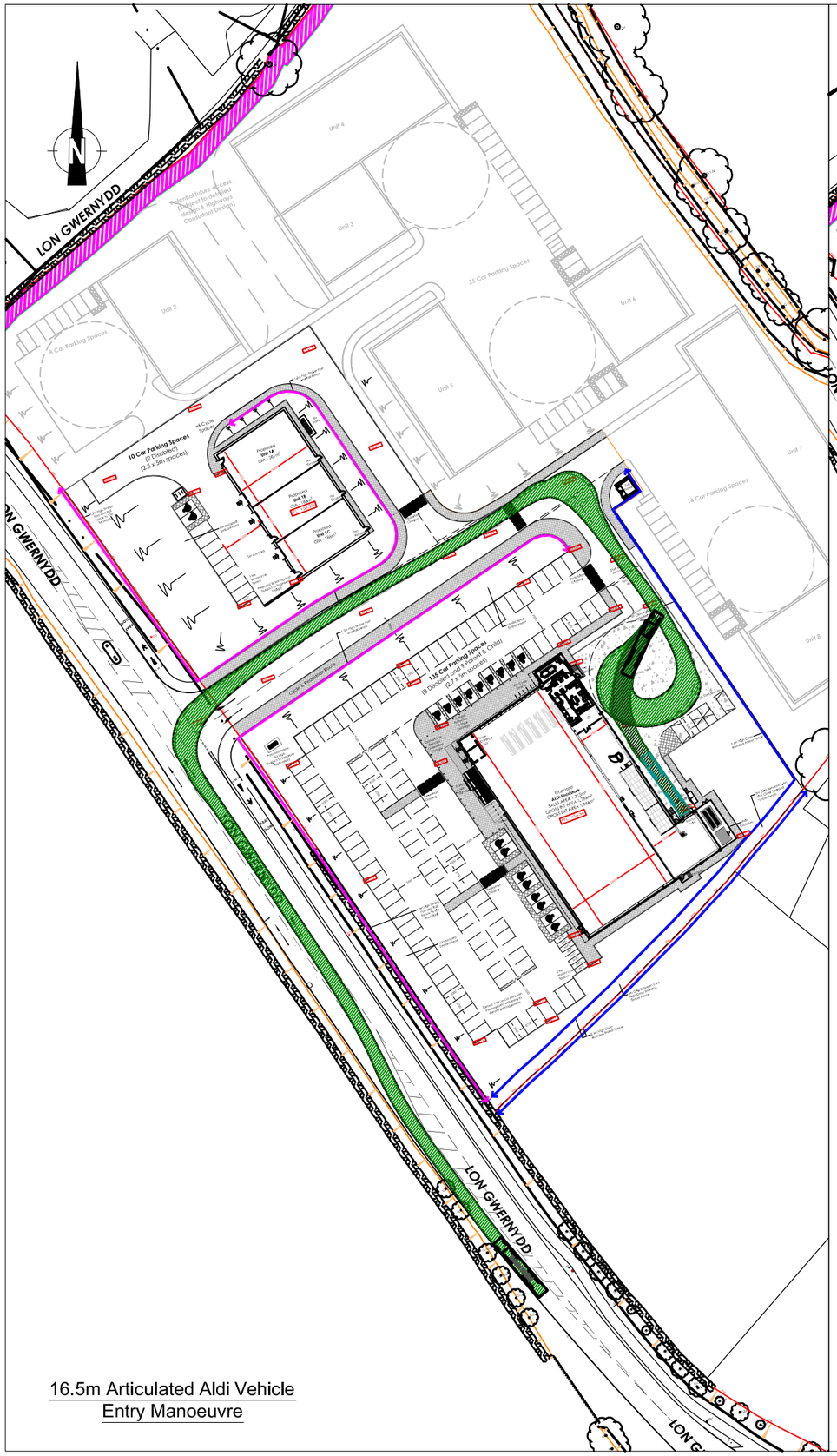
client: Aldi Stores Limited

project: Ruthin North Link Road Ruthin

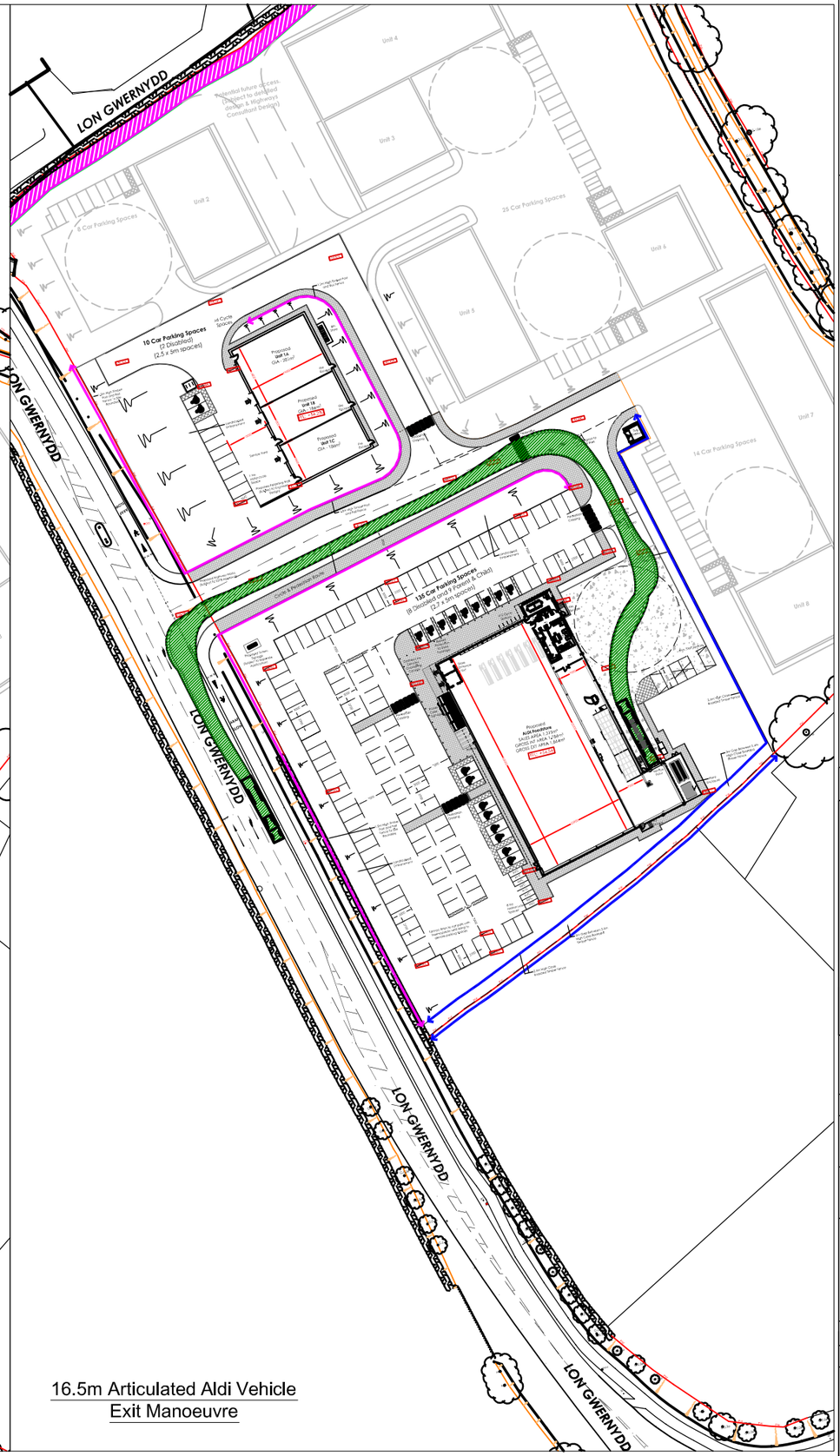
drawing title: General Access Arrangement Right Turn Lane Proposal Preliminary Design

scale(s): 1/1250	date: 10/08/17	drawn by:	checked:
drawing number: 324-01/GA-01		IJM	CAB
xrefs:		status: Information	
		rev: B	

DATE PRINTED:



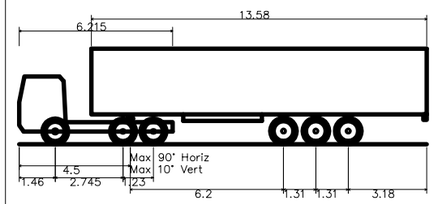
16.5m Articulated Aldi Vehicle
Entry Manoeuvre



16.5m Articulated Aldi Vehicle
Exit Manoeuvre

Follow any figured dimensions - do not scale. IF IN DOUBT ASK.

This drawing has been prepared for feasibility purposes and does not represent a construction plan. All design aspects to be confirmed at the appropriate detailed design stage.



Aldi Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.600m
Overall Body Height	3.863m
Min Body Ground Clearance	0.511m
Max Track Width	2.500m
Lock to Lock Time	8.00s
Wall to Wall Turning Radius	8.250m

•	Revision History	• Date
A	Revise Site Layout	01/02/19
B	Revised Site Layout	10/04/19
C	desc	date c
D	desc	date d
E	desc	date e
F	desc	date f
G	desc	date g
H	desc	date h
I	desc	date i
J	desc	date j

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CAMERON ROSE ASSOCIATES

client: Aldi Stores Limited

project: Ruthin North Link Road
Ruthin

drawing title:
General Access Arrangement
Right Turn Lane Proposal
Track Plot Analysis

scale(s):	date:	drawn by:	checked:
1/1250	10/08/17	IJM	CAB

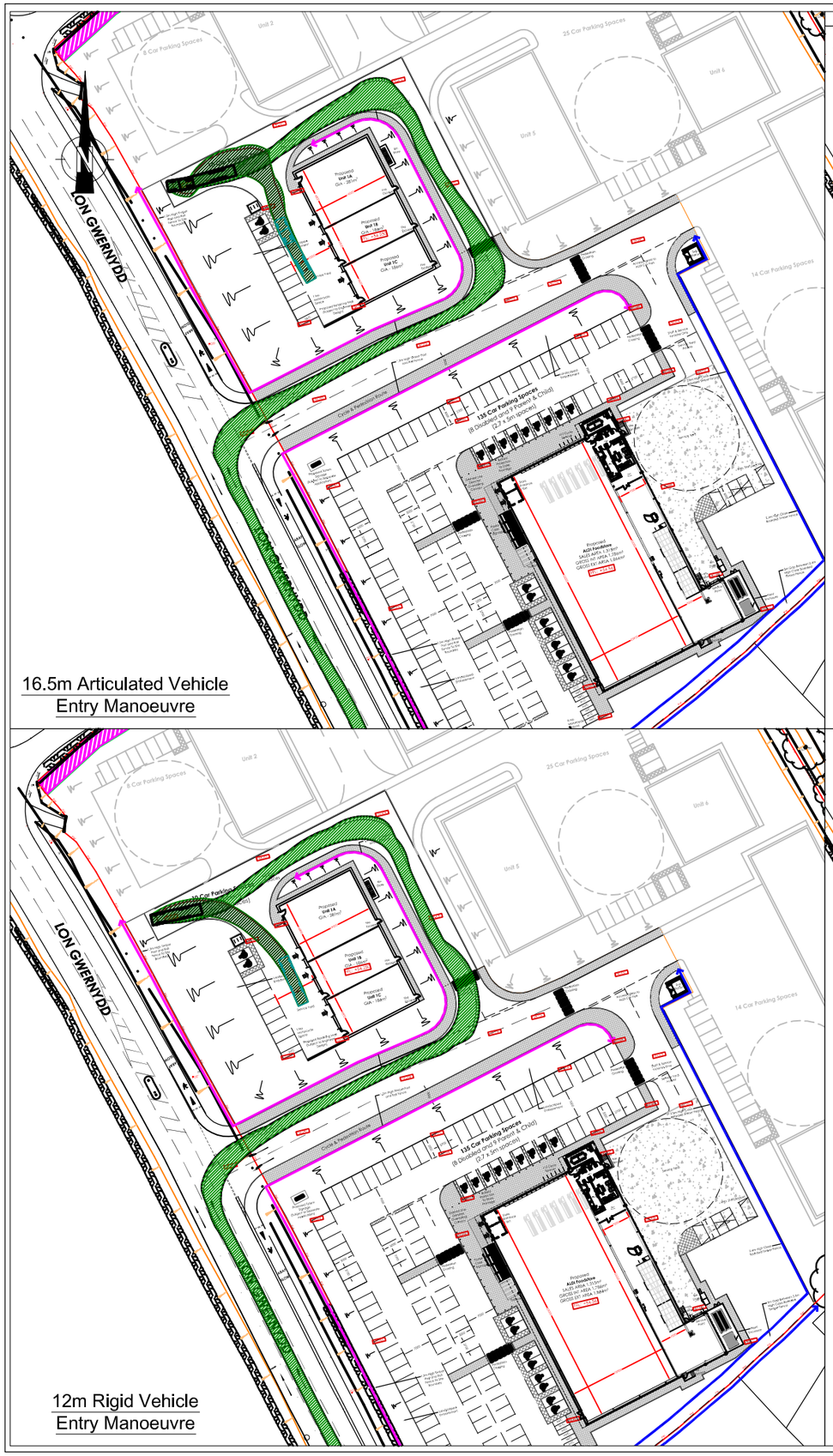
drawing number: 324-01/ATR-01

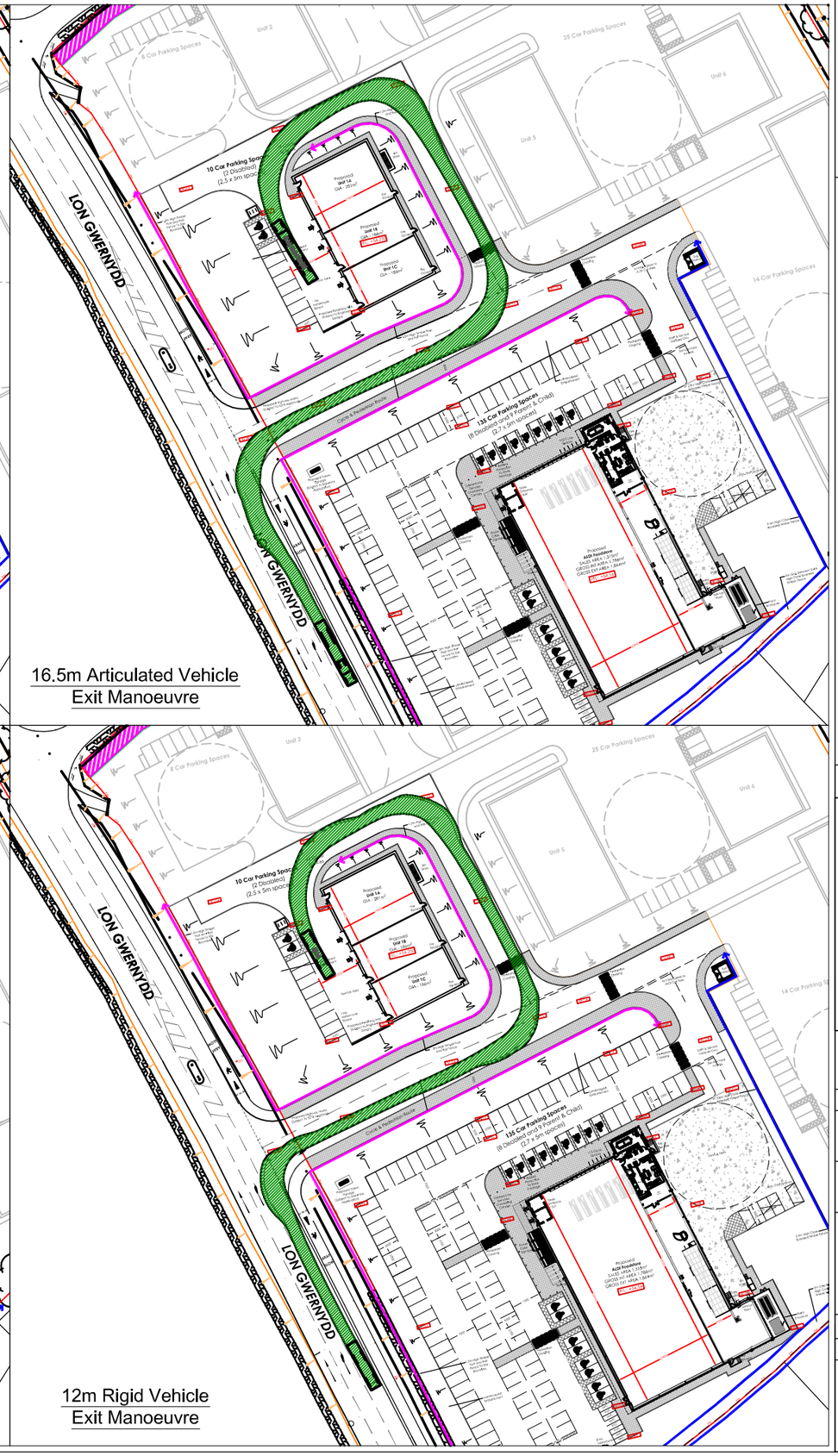
xrefs:

status: Information

rev: B

DATE PRINTED:





Follow any figured dimensions - do not scale. IF IN DOUBT ASK.

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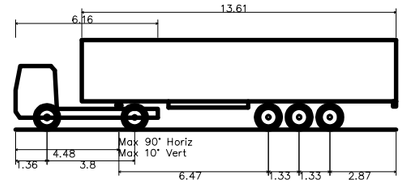
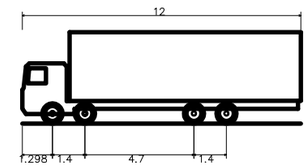


FTA Design Articulated Vehicle (1998)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m



Rigid Truck

Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.928m
Min Body Ground Clearance	0.412m
Track Width	2.471m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	11.900m

• Revision History		• Date
A	Revised Site Layout	10/04/19
B	desc	date b
C	desc	date c
D	desc	date d
E	desc	date e
F	desc	date f
G	desc	date g
H	desc	date h
I	desc	date i
J	desc	date j

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CAMERON ROSE ASSOCIATES

client: Aldi Stores Limited

project: Ruthin North Link Road
Ruthin

drawing title: General Access Arrangement
Right Turn Lane Proposal
Track Plot Analysis - Non Aldi

scale(s): 1/1250	date: 01/02/19	drawn by: IJM	checked: CAB
drawing number: 324-01/ATR-02		status: Information	
xrefs:		rev: A	

DATE PRINTED:

CAMERON ROSE
ASSOCIATES

APPENDIX C

FRAMEWORK TRAVEL PLAN

ALDI FOOD STORES

RUTHIN NORTH LINK ROAD, RUTHIN

FRAMEWORK TRAVEL PLAN

PREPARED ON BEHALF OF:

ALDI STORES LIMITED

CAMERON ROSE ASSOCIATES

10 King Street

Newcastle under Lyme

ST5 1EL

CONTENTS

1.0 INTRODUCTION

1.1.1 This Travel Plan Framework has been produced by Cameron Rose Associates on behalf of Aldi Stores Limited, in support of their application for the proposed mixed use development, on land off Ruthin North Link Road in Ruthin. The application will be a hybrid application, with detailed permission sought for an Aldi foodstore and outline permission sought for B2/ B8 Employment. This document is relevant to both staff and customers of the proposed development and will suggest initiatives to maximise the sustainable transport opportunities of the site and will, prior to trading, be developed as a stand-alone document.

1.1.2 This Framework Travel Plan sets out the overall outcomes, targets and indicators for the site. Aldi will administer the Plan centrally. The Travel Plan will be consistent with the wider targets and requirements set out in the Framework Travel Plan. The Travel Plan will be completed within six months of occupation of the site, to allow time for travel characteristic surveys to be undertaken and suitable consultation with Denbighshire County Council.

2.0 DEVELOPMENT PROPOSALS

2.1.1 The application will be a hybrid application, with detailed permission sought for an Aldi foodstore and outline permission sought for B2/ B8 Employment.

2.1.2 The proposed Aldi foodstore would be single storey with a gross external area of 1,864 sqm; and will provide 135 car parking spaces (including eight disabled and nine parent and child parking spaces), in addition to six Sheffield type stands for the provision of 12 cycle parking spaces. The B2/ B8 employment element of the development will include the provision of three units with a combined gross external area of 653 sqm; and will provide 10 car parking spaces including two disabled parking spaces, in addition to three Sheffield type stands for the provision of six cycle parking spaces.

2.1.3 The proposed site layout is included as **Appendix A** to the Transport Assessment (TA).

2.1.4 The existing highway infrastructure has been discussed in **Section 3.0** of the TA and the full details of the development proposal in **Section 4.0**. The development proposal includes provision for on-site cycle parking for staff and customers, changing and locker facilities will also be provided for staff.

2.1.5 The proposed development would provide retail opportunity within a reasonable walking and cycling distance of a large residential catchment, reducing the need for these residents to travel further for their food shopping needs. Frequent bus services to a range of local destinations can be accessed within a short walk of the site, with services operating from both the Ruthin North Link Road and Denbighshire Road.

3.0 PROPOSED TRAVEL PLAN INITIATIVES

3.1.1 The primary source of traffic generation and therefore greatest opportunity for modal shift is customers. It is clear however, that the end users cannot dictate their customers' choice of transport but can seek to influence it by provision of adequate facilities and information.

3.1.2 Features of the development proposal that would encourage non-car trips to the site include:

- Frequent bus services to a number of local destinations are available within a short walking distance of the site;
- The Aldi will provide 12 cycle parking spaces, through the provision of six Sheffield loop stands;
- The employment land use will provide six cycle parking spaces, through the provision of three Sheffield loop stands;
- Changing and locker facilities would be provided for staff; and
- Pedestrian and cycle links from the store to the local highway network.

3.2 Other Initiatives

3.2.1 Staff and customers will be encouraged to use sustainable forms of transport such as walking, cycling and bus travel to access the store by the provision of appropriate facilities and providing the relevant information on-site.

3.2.2 To further encourage travel to the site by modes other than the private car, Aldi will consider other modal initiatives including:

3.3 Cycling

3.3.1 Cycling is a key mode of sustainable transport and it is therefore important to encourage cycling as part of the site's Travel Plan; this will be achieved by implementing the initiatives detailed below;

- The provision of safe and convenient cycle parking facilities for shoppers and employees as described above;

- Provision for in-store cycle equipment storage facilities for employees; and

- Bicycles and cycling equipment are regularly available as 'special purchases' within Aldi stores. This provides a good opportunity for staff and customers alike to purchase bicycles at greatly discounted rates thus encouraging this mode of transport.

3.4 Walking

3.4.1 The pedestrian environment has to be such that it provides pedestrians with safe and convenient routes to and from their origin/ destinations. To encourage this mode of transport, Aldi will provide the following:

- Direct pedestrian links within the site by means of suitable footpaths and pedestrian crossings; and

- The provision of adequate street lighting and lighting within the site to provide pedestrians with a well-lit environment hence enhancing safety and encouraging pedestrian movements.

3.5 Car Sharing Scheme

3.5.1 The availability of car sharing schemes is limited in the case of food retail, as the stores cannot dictate car sharing among customers and employee numbers are small. Nevertheless employees from the store will be supported and encouraged to car-share if another member of staff lives close by.

3.5.2 The Travel Plan Co-ordinator will promote the use of car sharing amongst employees and will promote national car sharing schemes such as Lift Share (www.liftshare.com). These schemes will be promoted to employees upon commencement of employment and continually promoted through promotional material displayed on notice boards. This information will be provided by the Travel Plan Co-ordinator within three months of the stores opening and continually monitored to ensure the information provided is up to date.

3.6 Servicing

3.6.1 As is common practice in Aldi foodstores and in line with the current servicing arrangement of the store, service vehicles would access the store via the customer access off the A525 Lon Gwernydd, before entering the dedicated service road.

3.6.2 Aldi service deliveries are carried out in such a way as to minimise vehicle kilometres travelled. Each store receives an average of four deliveries by articulated lorry per day, in addition to a milk delivery and bin collection via rigid vehicle. This is substantially lower than the delivery pattern associated with larger food superstores.

3.6.3 The articulated vehicles operate from a central distribution centre. Each lorry delivers to a number of stores in a specific circuit and in this way minimises vehicle kilometres and therefore reduces emissions.

3.6.4 Deliveries to the store will aim to arrive outside of the established highway peak periods.

3.7 Provision of Information

3.7.1 Each new member of staff will be briefed on all aspects of the Travel Plan as part of their staff induction. In this way, each new member of staff will be aware of the advantages, accessibility and convenience of non-car modes of transport to and from the site, given its location and therefore abundance of public transport alternatives.

3.7.2 If the message is to be portrayed to staff and customers that sustainable forms of transport are preferable to the private car, then it is essential that adequate information is available; to this end:

- Bus stop location, timetable information and route plans will be provided;
- The above information will be provided to new employees as part of the staff induction process;
- Information on the beneficial effects of cycling on both health and the environment will be provided in the form of leaflets to all staff; and

- Copies of relevant cycle maps will be provided, thus encouraging sustainable forms of transport.

3.7.3 The Travel Plan Co-ordinator will be responsible for co-ordinating the Travel Plan across the site and ensuring that the information is up to date and located in the appropriate location.

4.0 IMPLEMENTATION AND REVIEW

4.1.1 In order to establish an effective Travel Plan, a coherent understanding of staff travel patterns and attitudes to travel will need to be collected. A Travel Plan Co-ordinator will be appointed who will be responsible for on-going monitoring and annual surveys. Information gathered will be submitted to Denbighshire County Council.

4.1.2 A Travel Plan Co-ordinator will be appointed prior to the opening of the store, to implement the Travel Plan and to promote the aims and objectives of the Plan amongst employees and visitors of the site. The Travel Plan Co-ordinator will play a key role in the promotion of the Plan across the site and in the delivery of the Plan measures.

4.1.3 The Final Travel Plan will set out specific details on the role of the Travel Plan Co-ordinator.

4.1.4 The Travel Plan Co-ordinator will oversee the overall operation of the Travel Plan and be responsible for monitoring the effectiveness of the Plan and liaising with Denbighshire County Council.

4.1.5 The Travel Plan Co-ordinator will be responsible for the preparation of the Final Travel Plan and will be required to develop and implement the Travel Plan and to monitor the effectiveness of the Plan.

4.1.6 Denbighshire County Council will be notified of the name of the Travel Plan Co-ordinator upon their appointment and similarly the Travel Plan Co-ordinator will be advised of the names of the relevant contact details at the various organisations with whom they will be required to consult, including Denbighshire County Council's Travel Planning officers, public transport operators and other key stakeholders.

4.1.7 It is envisaged that the Travel Plan Co-ordinators role will be fulfilled by the Store Manager. The contact details of the Store Manager will be provided to Denbighshire County Council, prior to the stores opening.

4.1.8 The Travel Plan Co-ordinator will be the first point of contact for employees, visitors and other outside organisations in all matters regarding the detailed Travel Plan that will be developed.

4.1.9 The general responsibilities of the Travel Plan Co-ordinator will include:

- Implementing Travel Plan measures across the site and for ensuring that these measures are realistic and achievable, through continued review and assessment of their success;
- Developing, managing and implementing the Travel Plan strategy so that effective sustainable transport solutions can be achieved;
- On-going review and assessment of the Travel Plan to determine if objectives are being achieved and initiating new measures when required. The Travel Plan Co-ordinator will also be expected to update the Travel Plan to ensure their success;
- Ensuring that all employees and visitors have good travel information and are made aware of all of the travel choices they have available to them, to promote sustainable travel;
- To use effective marketing and awareness-raising schemes to assist in the promotion of the Travel Plan and sustainable travel across the site; and
- To work together with the local highway authority to ensure that the management and monitoring of the Travel Plan is efficiently and effectively undertaken and that the Travel Plan measures are being delivered.

4.1.10 The Travel Plan will be implemented and monitored as set below:

- Prior to development occupation a final travel plan and staff travel survey pro-forma will be agreed;
- Three months after occupation the initial staff travel survey will be undertaken and reported to Denbighshire County Council within three months (this information will be gathered after this time to ensure representative data once staff have established themselves into their new travel routine); and

- Annually thereafter for a period of five year after occupation the staff travel survey will be undertaken and reported to Denbighshire County Council within three months of survey completion.

4.2 Summary of Framework for Implementation

4.2.1 There are a number of elements of the Travel Plan which will need to be submitted, agreed and implemented at different timescales.

4.2.2 The following table therefore summarises the key areas of implementation and sets the framework which will form the basis of the agreement between Aldi and Denbighshire County Council.

Table 4.1: Framework for Implementation

Item/Measure	Timescale
Agreement of Framework Travel Plan	Prior to issue of planning permission
Undertake staff travel surveys	Within 3 months of opening of food store. Then annually for a period of five years.
Issue Travel Plan with staff travel patterns and set targets	Within 3 months of undertaking surveys
Infrastructure measures (pedestrian/ cycle access, cycle parking) to be implemented	Prior to occupation of the development
Appointment of Travel Plan Co-ordinator	3 months prior to occupation of the development
Issue 'Employee Travel Packs' to all employees	At commencement of employment
Develop/ promote car-share scheme	Within travel packs & on notice boards.
Period of formal monitoring of Travel Plan by the Developer	5 years from Occupation of the Development

5.0 TARGETS - STAFF

5.1.1 Travel Plan targets will be formally set following the initial employee surveys and updated annually. The Travel Plan Co-ordinator will liaise with the Council to set suitable targets.

5.1.2 Travel Plans evolve over time and adapt to changing conditions. As the staff travel patterns may be liable to change over time, it will be necessary to carry out reviews of staff travel behaviour. The results from these reviews will enable the Travel Plan initiatives to be adapted as necessary.

5.1.3 It should be recognised that a genuine modal shift ultimately relates to an individual choosing an alternative means of travel to the private car rather than any apparent modal shifts caused by staff turnover (i.e. a cyclist replaced by a car driver or vice versa). Specific circumstances will be taken into account at the time of the annual reviews.

6.0 CONCLUSIONS

6.1.1 To achieve the target set out within this Travel Plan, Aldi will encourage its employees and customers alike, to take into account the benefits of sustainable forms of transport that are available to them given the highly accessible location of the site.

6.1.2 Aldi will undertake local infrastructure improvements to further enhance sustainable transport options in the vicinity of the site. This, allied with progressive management practices and the provision of adequate information, will influence and encourage staff and customers to choose sustainable transport options in preference to the private car.

6.1.3 The Travel Plan will seek to achieve significant reductions in car usage for journeys to and from the store. This will produce resultant benefits in terms of air quality and emissions and will also significantly reduce car parking demand and traffic generation associated with the development.

CAMERON ROSE
ASSOCIATES

APPENDIX D

TRAFFIC COUNT DATA

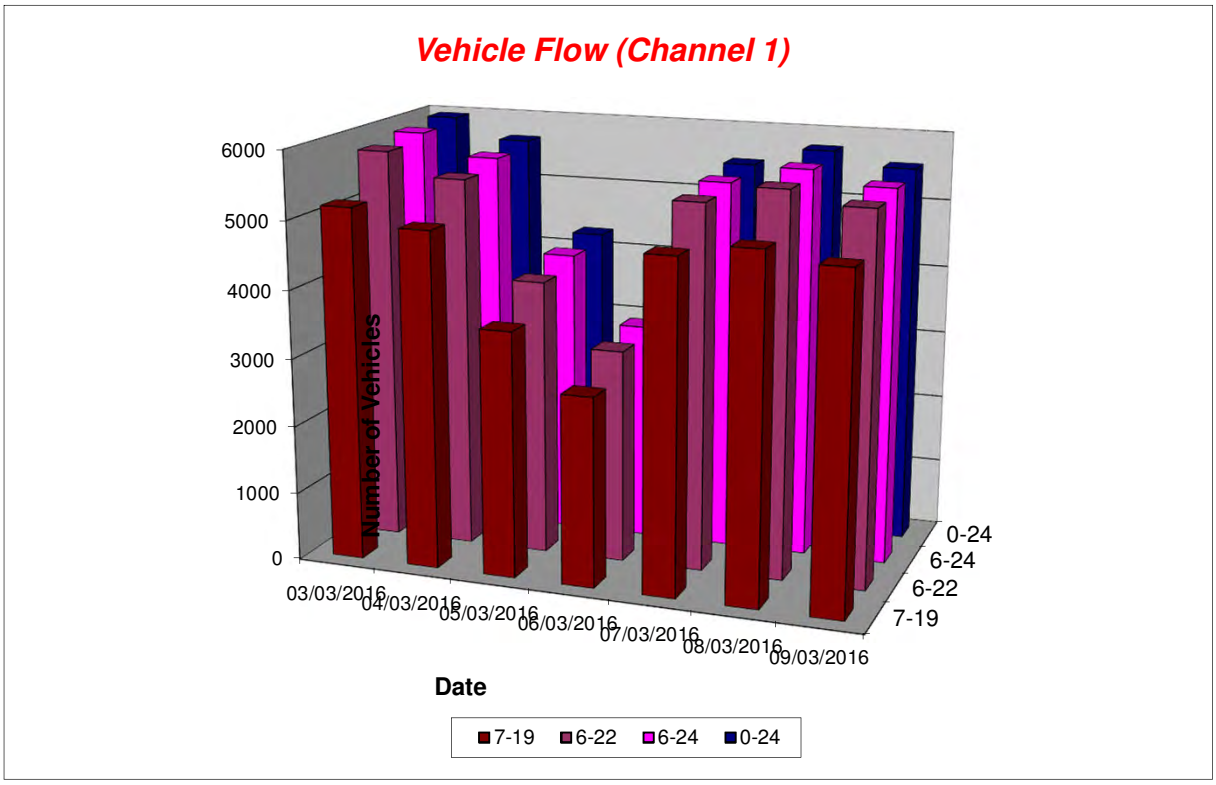
Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Northbound | **Vehicle Flow** | **Week 1**

Hr Ending	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday	5 Day Ave	7 Day Ave
1	6	13	31	52	8	13	9	10	19
2	2	4	13	20	1	3	2	2	6
3	1	3	7	10	2	3	0	2	4
4	8	6	5	10	11	10	7	8	8
5	7	12	13	14	8	6	14	9	11
6	47	48	24	13	41	45	48	46	38
7	115	112	62	31	100	120	117	113	94
8	402	373	100	54	413	412	383	397	305
9	623	586	155	77	596	606	626	607	467
10	336	359	270	141	387	357	353	358	315
11	324	340	335	230	284	323	309	316	306
12	345	362	417	311	331	347	322	341	348
13	388	389	405	378	338	343	327	357	367
14	399	380	324	308	322	387	312	360	347
15	452	377	379	299	370	373	374	389	375
16	470	467	344	287	446	483	458	465	422
17	514	506	347	264	497	492	466	495	441
18	580	476	299	233	558	575	570	552	470
19	343	316	220	192	289	311	356	323	290
20	216	191	167	149	186	241	201	207	193
21	138	117	122	99	134	132	141	132	126
22	137	93	88	71	90	94	97	102	96
23	67	79	80	56	58	57	55	63	65
24	34	45	73	20	20	23	16	28	33

7-19	5176	4931	3595	2774	4831	5009	4856	4961	4453
6-22	5782	5444	4034	3124	5341	5596	5412	5515	4962
6-24	5883	5568	4187	3200	5419	5676	5483	5606	5059
0-24	5954	5654	4280	3319	5490	5756	5563	5683	5145



Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Northbound | **Average Speed** | **Week 1**

Hr Ending	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday
1	36.8	41.1	39.7	39.8	41.1	35.7	38.0
2	31.8	36.1	38.0	39.0	33.0	44.7	31.8
3	25.5	35.5	36.9	42.0	29.2	33.8	-
4	41.1	41.3	36.5	40.8	36.2	35.2	42.3
5	43.0	37.2	38.2	38.2	40.2	41.3	40.7
6	37.7	36.3	37.5	36.5	37.8	40.8	38.7
7	37.8	37.2	41.0	39.3	38.9	37.2	38.0
8	35.7	35.9	37.4	40.3	35.7	35.5	35.6
9	34.2	34.6	38.7	38.8	35.1	34.9	35.1
10	36.1	35.9	36.3	38.0	35.5	34.5	35.0
11	34.3	34.9	36.4	37.6	35.5	34.2	34.9
12	34.6	34.5	34.8	36.2	36.2	33.2	33.4
13	35.2	34.4	35.5	36.7	35.7	34.3	35.7
14	34.4	34.4	36.0	37.4	35.7	32.8	34.7
15	33.9	35.2	36.3	37.9	35.7	33.0	34.2
16	33.8	34.3	36.6	37.2	35.6	34.1	34.2
17	35.2	34.2	37.6	37.0	36.0	35.2	35.3
18	36.2	35.6	38.8	37.5	36.4	36.1	35.6
19	36.6	36.1	37.5	38.7	37.1	37.1	36.8
20	39.0	37.6	39.6	39.1	39.2	38.1	37.5
21	38.9	39.6	38.9	40.7	39.8	39.5	38.1
22	37.6	39.3	39.2	40.0	39.3	39.3	39.3
23	38.7	38.8	40.4	40.9	39.2	39.8	39.9
24	38.5	40.4	40.6	38.0	38.5	39.6	40.2
10-12	34.4	34.7	35.5	36.8	35.9	33.7	34.2
14-16	33.9	34.7	36.4	37.6	35.7	33.6	34.2
0-24	35.4	35.4	37.1	37.8	36.2	35.2	35.5
						7 Day Ave	36.1

Channel 1 - Northbound | **85th Percentile**

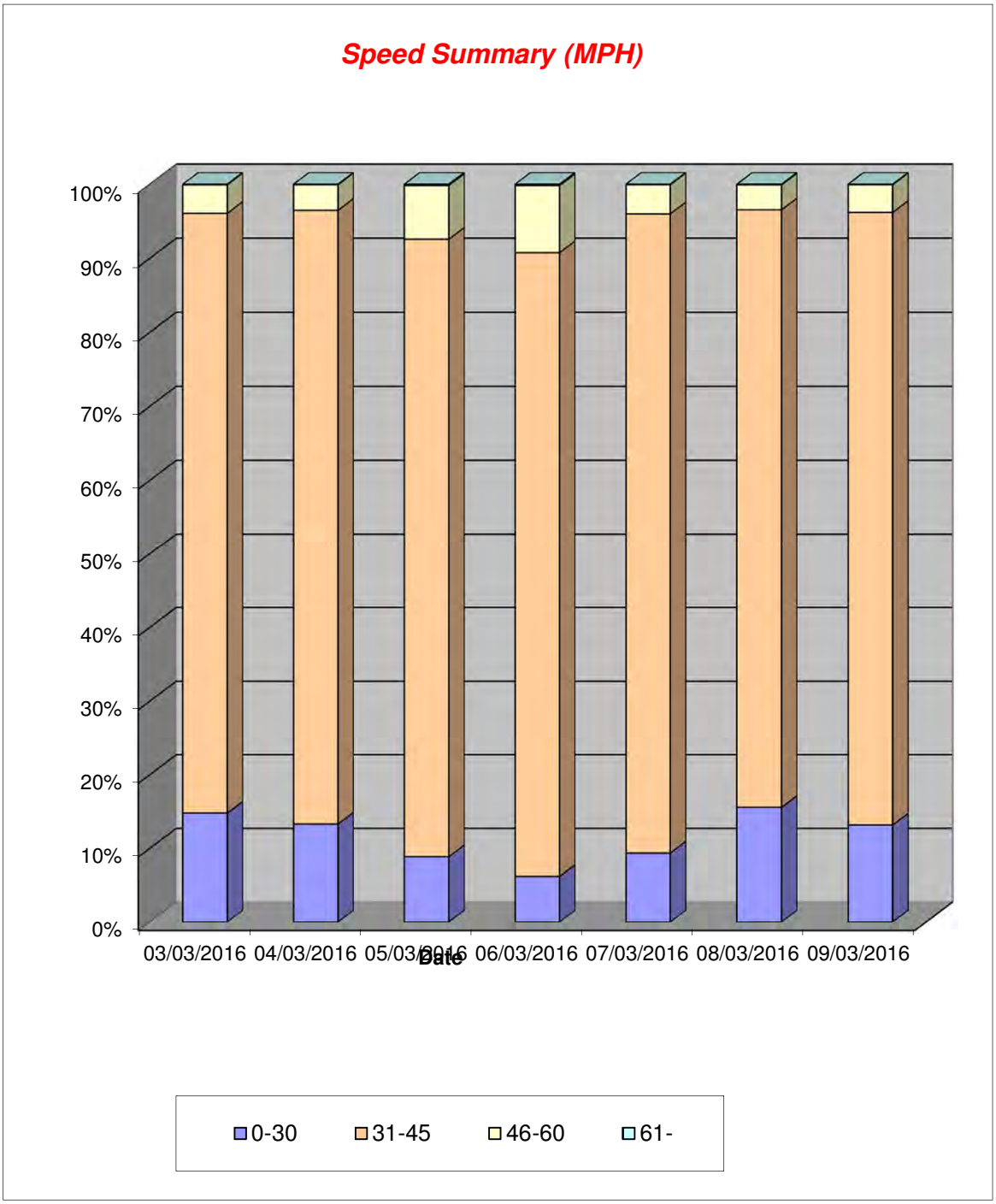
Hr Ending	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday
1	48.7	53.6	44.0	48.7	43.9	48.7	43.2
2	38.5	48.3	43.4	43.9	-	53.9	38.5
3	-	43.3	43.3	48.8	33.5	38.5	-
4	43.3	48.8	43.2	48.0	38.4	43.1	48.3
5	53.3	43.8	48.2	43.5	48.1	48.8	53.3
6	48.8	43.6	43.6	43.9	43.8	48.4	43.0
7	43.0	49.0	48.4	43.4	43.5	43.5	43.5
8	43.8	43.9	43.4	48.7	43.8	43.5	43.2
9	38.8	38.2	43.7	48.5	38.6	38.2	38.9
10	43.7	43.7	43.3	48.5	38.8	38.3	38.6
11	38.0	39.0	43.6	43.5	38.0	38.1	38.8
12	38.4	38.2	43.2	43.4	43.2	38.6	38.9
13	43.9	38.5	43.2	43.4	43.1	38.2	43.3
14	38.8	38.1	43.6	43.3	43.1	38.9	38.5
15	38.4	39.0	43.1	43.1	43.3	38.1	38.1
16	39.0	38.7	43.5	43.2	43.1	38.4	38.6
17	43.9	38.0	43.9	44.0	43.0	38.3	43.4
18	43.1	38.6	43.3	43.1	43.5	43.9	39.0
19	43.9	43.1	43.8	43.4	43.7	43.8	43.1
20	43.4	43.1	48.4	48.4	43.5	43.3	43.9
21	48.5	48.8	43.3	48.5	43.8	48.7	43.6
22	43.8	48.3	43.9	43.2	43.1	48.3	48.3
23	43.1	43.0	48.6	48.5	43.2	48.1	48.1
24	48.6	48.3	48.6	43.3	48.7	43.0	48.5
10-12	38.5	38.4	43.4	43.6	43.5	38.3	38.2
14-16	38.3	38.3	43.1	43.5	43.4	38.8	39.0
0-24	43.6	43.9	43.6	43.2	43.1	43.3	43.1
						7 Day Ave	43.4

Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Northbound | **Speed Summary** | **Week 1**

Speed (MPH)	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday
0-30	881	753	380	206	515	897	734
31-45	4840	4703	3583	2807	4757	4661	4619
46-60	230	196	311	301	216	194	208
61-	3	2	6	5	2	4	2
TOTAL	**5954**	**5654**	**4280**	**3319**	**5490**	**5756**	**5563**



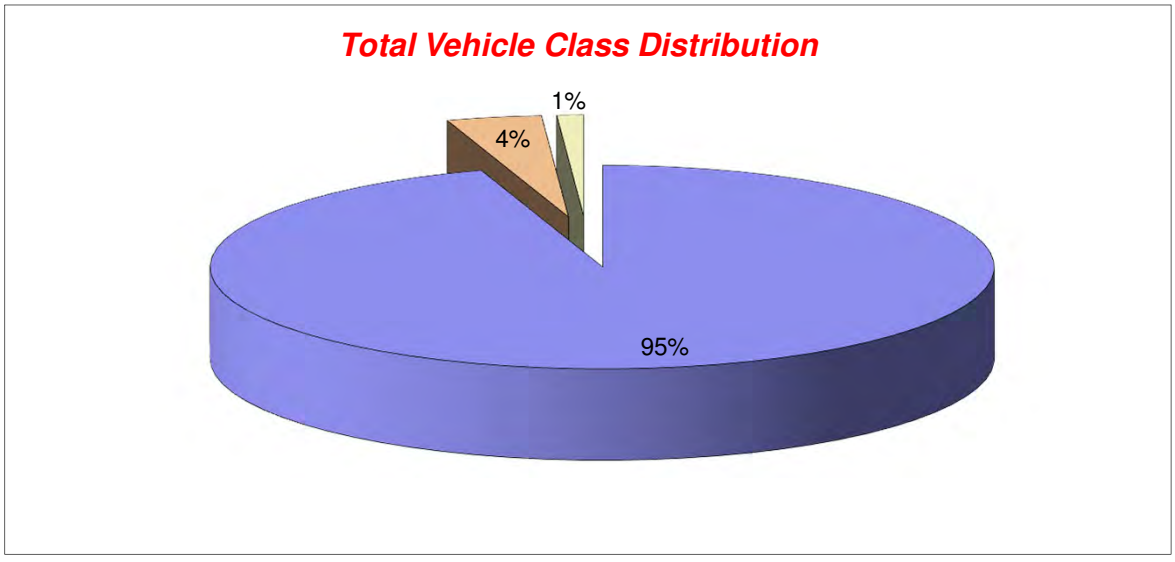
Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Northbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
03/03/2016				
7-19	4868	243	65	5176
6-22	5440	267	75	5782
6-24	5538	270	75	5883
0-24	5599	278	77	5954
04/03/2016				
7-19	4633	219	79	4931
6-22	5117	239	88	5444
6-24	5239	241	88	5568
0-24	5317	247	90	5654
05/03/2016				
7-19	3467	105	23	3595
6-22	3894	116	24	4034
6-24	4043	120	24	4187
0-24	4129	126	25	4280
06/03/2016				
7-19	2722	40	12	2774
6-22	3064	47	13	3124
6-24	3137	50	13	3200
0-24	3252	54	13	3319
07/03/2016				
7-19	4571	217	43	4831
6-22	5060	234	47	5341
6-24	5136	236	47	5419
0-24	5200	240	50	5490
08/03/2016				
7-19	4743	208	58	5009
6-22	5305	223	68	5596
6-24	5385	223	68	5676
0-24	5457	226	73	5756
09/03/2016				
7-19	4588	210	58	4856
6-22	5120	229	63	5412
6-24	5186	231	66	5483
0-24	5258	236	69	5563

Average				
7-19	4227	177	48	4453
6-22	4714	194	54	4962
6-24	4809	196	54	5059
0-24	4887	201	57	5145



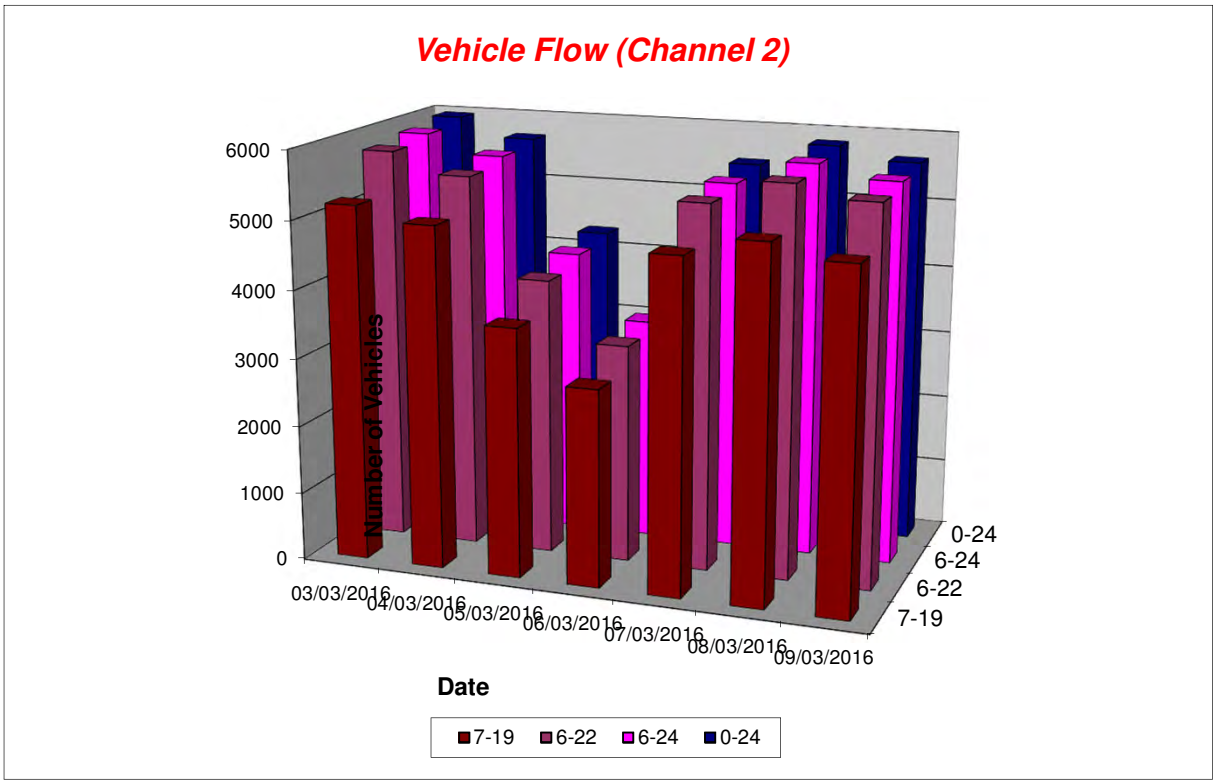
Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Southbound Vehicle Flow **Week 1**

Hr Ending	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday	5 Day Ave	7 Day Ave
1	9	8	23	41	9	7	8	8	15
2	2	7	15	25	3	4	3	4	8
3	2	4	9	8	7	1	3	3	5
4	6	7	11	13	5	5	4	5	7
5	23	15	12	5	16	11	11	15	13
6	47	44	22	15	43	46	45	45	37
7	93	92	48	22	103	125	108	104	84
8	301	267	104	48	301	315	319	301	236
9	634	602	180	111	634	623	593	617	482
10	409	438	282	160	360	421	397	405	352
11	356	327	367	228	309	312	328	326	318
12	359	339	390	311	273	369	290	326	333
13	394	413	376	320	368	387	339	380	371
14	382	390	352	286	359	362	346	368	354
15	377	395	381	305	369	399	361	380	370
16	524	506	360	333	466	451	485	486	446
17	536	549	290	307	513	510	534	528	463
18	551	478	295	263	549	608	580	553	475
19	384	296	268	211	335	349	333	339	311
20	220	171	165	129	186	222	204	201	185
21	155	127	102	94	113	123	165	137	126
22	108	98	97	74	91	101	111	102	97
23	61	65	92	52	57	53	51	57	62
24	28	44	58	20	21	27	32	30	33

7-19	5207	5000	3645	2883	4836	5106	4905	5011	4512
6-22	5783	5488	4057	3202	5329	5677	5493	5554	5004
6-24	5872	5597	4207	3274	5407	5757	5576	5642	5099
0-24	5961	5682	4299	3381	5490	5831	5650	5723	5185



Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Southbound | **Average Speed** | **Week 1**

Hr Ending	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday
1	33.8	33.6	35.0	36.8	36.6	27.6	33.9
2	33.0	32.6	38.2	35.3	30.5	29.2	33.8
3	38.0	27.4	34.1	37.1	28.7	25.5	24.7
4	33.4	31.2	38.0	37.0	29.5	36.5	39.2
5	34.8	31.5	33.8	33.5	33.8	36.2	32.8
6	36.1	31.0	36.8	38.5	35.4	34.5	37.3
7	36.0	34.2	36.8	41.1	36.0	34.5	36.2
8	34.5	34.1	38.6	38.6	33.5	33.6	34.6
9	28.3	31.7	36.9	37.2	31.5	30.9	31.6
10	32.0	32.0	34.1	35.6	32.8	30.9	31.3
11	31.9	31.5	33.7	34.6	32.4	31.7	31.0
12	31.0	32.2	33.1	34.3	32.4	30.1	32.3
13	32.6	31.3	32.4	33.0	33.2	30.6	32.8
14	30.9	31.7	32.8	33.7	33.3	30.7	32.7
15	31.7	32.0	33.4	33.2	33.2	29.0	31.7
16	30.8	31.4	33.4	32.0	34.1	30.8	31.7
17	31.9	31.9	34.6	33.6	32.7	31.9	31.8
18	32.3	31.7	35.0	33.8	32.6	32.2	31.6
19	30.8	31.0	33.3	32.5	33.1	33.0	32.2
20	32.2	32.2	34.2	33.0	33.3	33.1	32.2
21	31.8	31.8	34.0	32.7	35.2	35.4	31.5
22	31.2	31.8	35.3	36.0	34.5	32.6	35.9
23	33.5	34.5	34.9	32.6	35.4	34.9	35.7
24	34.5	35.4	35.1	33.2	37.0	35.6	36.5
10-12	31.5	31.9	33.4	34.4	32.4	30.8	31.6
14-16	31.2	31.7	33.4	32.6	33.7	30.0	31.7
0-24	31.6	31.9	34.0	33.8	33.0	31.6	32.3
						7 Day Ave	32.6

Channel 2 - Southbound | **85th Percentile**

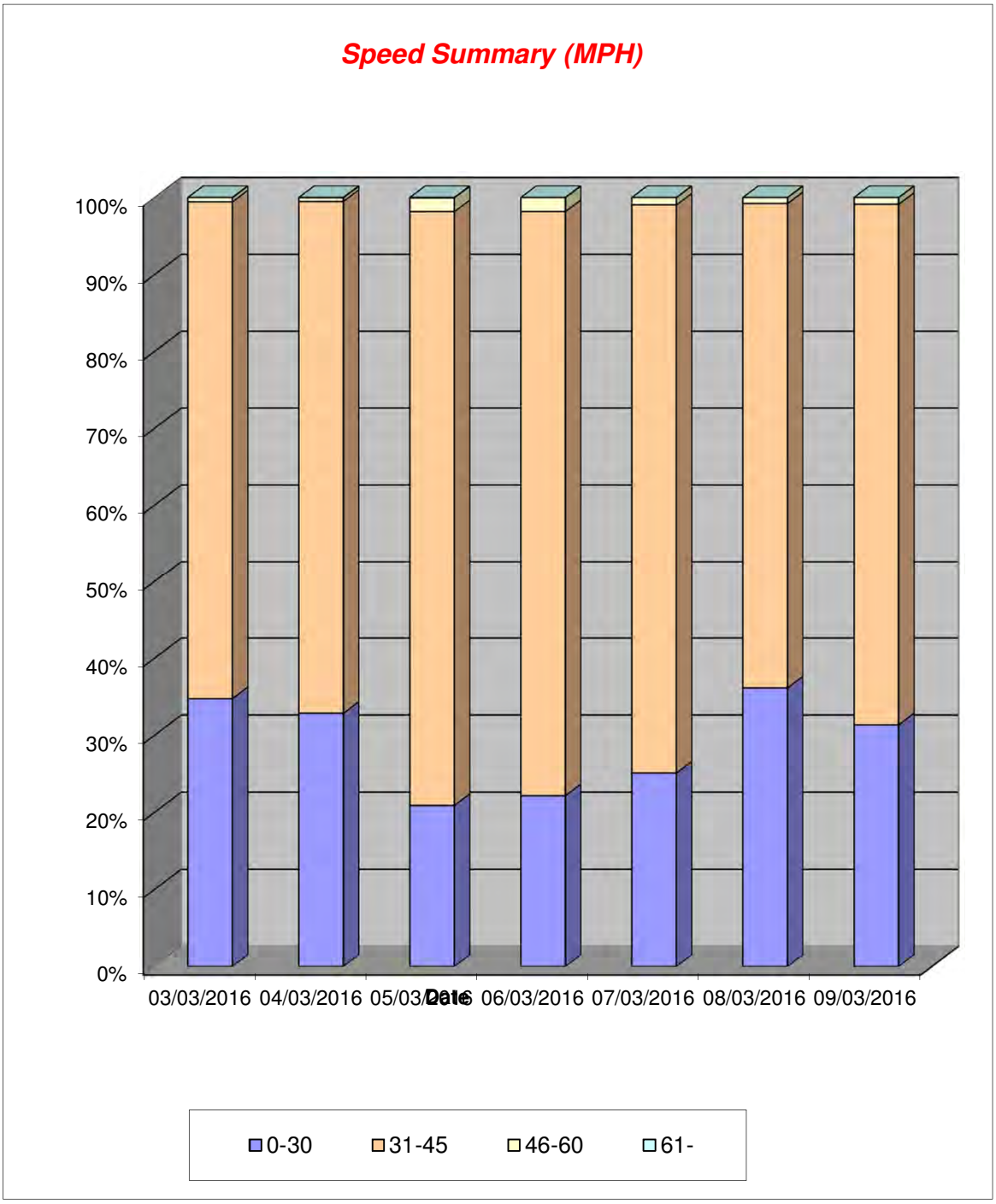
Hr Ending	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday
1	43.0	38.4	43.0	43.1	43.5	33.3	38.7
2	33.3	33.3	43.7	43.6	33.2	33.6	43.8
3	38.5	33.3	48.5	43.3	33.2	-	33.3
4	38.9	43.2	43.6	48.1	38.3	48.5	43.7
5	43.5	43.5	43.2	38.2	43.8	43.2	43.4
6	43.4	38.2	43.5	43.1	43.1	43.9	43.8
7	43.8	43.6	43.7	48.4	43.5	38.4	43.7
8	38.8	38.4	43.8	44.0	38.8	38.3	38.4
9	33.7	38.9	43.4	43.5	38.8	38.8	38.1
10	38.7	38.5	38.9	43.5	38.3	38.2	38.4
11	39.0	38.2	38.7	39.0	39.0	38.4	38.3
12	38.3	38.7	38.1	38.2	38.8	33.2	38.7
13	38.5	38.7	38.6	38.4	38.7	38.9	38.3
14	38.4	38.6	38.7	38.4	38.9	38.6	38.8
15	38.7	38.8	38.0	38.3	38.9	33.4	38.2
16	38.2	38.2	38.4	38.5	38.4	33.4	38.6
17	38.4	38.8	38.4	38.1	38.1	38.9	39.0
18	38.5	38.2	38.3	38.5	39.0	38.6	38.2
19	38.8	39.0	39.0	39.0	38.8	38.9	38.9
20	38.5	38.1	43.8	38.6	38.7	38.5	38.1
21	38.4	38.1	38.7	38.9	38.4	43.3	39.0
22	38.5	38.8	43.4	43.7	38.0	38.9	43.6
23	38.2	38.4	43.7	38.4	43.2	43.3	43.6
24	38.6	38.5	43.3	38.7	43.2	38.3	43.9
10-12	38.5	38.1	38.4	38.1	38.5	38.2	38.6
14-16	38.7	38.1	38.4	38.8	38.4	33.3	38.2
0-24	38.9	38.2	38.9	38.7	38.1	38.0	38.9
						7 Day Ave	38.5

Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Southbound | **Speed Summary** | **Week 1**

Speed (MPH)	03/03/2016 Thursday	04/03/2016 Friday	05/03/2016 Saturday	06/03/2016 Sunday	07/03/2016 Monday	08/03/2016 Tuesday	09/03/2016 Wednesday
0-30	2071	1866	898	749	1377	2107	1771
31-45	3857	3788	3323	2571	4061	3679	3830
46-60	33	27	77	61	52	45	49
61-	0	1	1	0	0	0	0
TOTAL	**5961**	**5682**	**4299**	**3381**	**5490**	**5831**	**5650**



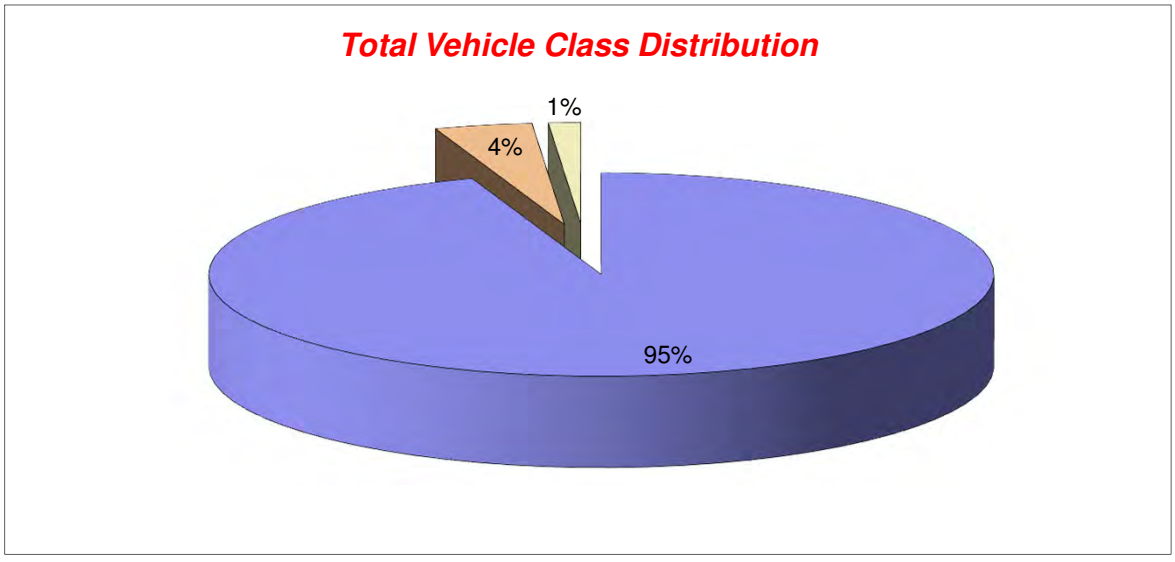
Ruthin ATC, A525

Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Southbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
03/03/2016				
7-19	4880	252	75	5207
6-22	5424	275	84	5783
6-24	5508	280	84	5872
0-24	5580	287	94	5961
04/03/2016				
7-19	4699	220	81	5000
6-22	5164	237	87	5488
6-24	5270	240	87	5597
0-24	5337	248	97	5682
05/03/2016				
7-19	3529	98	18	3645
6-22	3931	107	19	4057
6-24	4077	111	19	4207
0-24	4160	116	23	4299
06/03/2016				
7-19	2812	49	22	2883
6-22	3122	56	24	3202
6-24	3193	57	24	3274
0-24	3291	62	28	3381
07/03/2016				
7-19	4551	226	59	4836
6-22	5023	243	63	5329
6-24	5097	247	63	5407
0-24	5164	254	72	5490
08/03/2016				
7-19	4807	234	65	5106
6-22	5356	249	72	5677
6-24	5434	251	72	5757
0-24	5494	255	82	5831
09/03/2016				
7-19	4624	211	70	4905
6-22	5188	227	78	5493
6-24	5268	230	78	5576
0-24	5330	236	84	5650

Average				
7-19	4272	184	56	4512
6-22	4744	199	61	5004
6-24	4835	202	61	5099
0-24	4908	208	69	5185



Ruthin - Manual Traffic Survey, Friday 4th March 2016

Junction: (1) A525 / Denbigh Road

Approach: A525 (North)

	Left to A525 (East)								Ahead to Denbigh Road							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	1	1	30	8	1	2	0	**43**	0	0	14	3	1	0	1	**19**
0745 - 0800	0	0	55	12	0	0	1	**68**	0	0	19	7	1	0	2	**29**
Hourly Total	**1**	**1**	**85**	**20**	**1**	**2**	**1**	**111**	**0**	**0**	**33**	**10**	**2**	**0**	**3**	**48**
0800 - 0815	0	0	71	7	2	1	2	**83**	0	0	35	10	0	1	0	**46**
0815 - 0830	0	0	87	8	4	2	3	**104**	0	0	37	19	2	0	1	**59**
0830 - 0845	0	0	88	15	1	1	1	**106**	0	0	46	16	2	3	0	**67**
0845 - 0900	0	0	70	13	4	1	0	**88**	0	0	40	10	2	1	0	**53**
Hourly Total	**0**	**0**	**316**	**43**	**11**	**5**	**6**	**381**	**0**	**0**	**158**	**55**	**6**	**5**	**1**	**225**
0900 - 0915	0	0	55	14	1	1	2	**73**	0	0	45	12	2	3	1	**63**
0915 - 0930	0	0	42	9	3	1	2	**57**	0	0	42	6	1	0	0	**49**
0930 - 0945	0	0	38	7	5	2	0	**52**	0	0	31	9	1	0	1	**42**
0945 - 1000	0	0	51	12	1	1	1	**66**	0	0	36	5	1	0	0	**42**
Hourly Total	**0**	**0**	**186**	**42**	**10**	**5**	**5**	**248**	**0**	**0**	**154**	**32**	**5**	**3**	**2**	**196**
Session Total	**1**	**1**	**587**	**105**	**22**	**12**	**12**	**740**	**0**	**0**	**345**	**97**	**13**	**8**	**6**	**469**
1530 - 1545	0	0	59	4	1	1	1	**66**	0	1	54	5	2	0	0	**62**
1545 - 1600	0	0	66	8	0	2	0	**76**	0	0	52	13	0	1	0	**66**
Hourly Total	**0**	**0**	**125**	**12**	**1**	**3**	**1**	**142**	**0**	**1**	**106**	**18**	**2**	**1**	**0**	**128**
1600 - 1615	0	0	44	14	2	3	2	**65**	0	0	65	5	0	0	2	**72**
1615 - 1630	0	0	38	13	1	2	1	**55**	0	0	58	8	1	2	0	**69**
1630 - 1645	0	0	50	14	1	0	1	**66**	0	0	58	10	1	0	1	**70**
1645 - 1700	0	0	58	6	0	2	1	**67**	0	0	74	8	2	1	1	**86**
Hourly Total	**0**	**0**	**190**	**47**	**4**	**7**	**5**	**253**	**0**	**0**	**255**	**31**	**4**	**3**	**4**	**297**
1700 - 1715	0	0	63	9	0	1	1	**74**	0	1	50	11	0	0	2	**64**
1715 - 1730	0	0	48	3	1	0	0	**52**	0	0	58	10	0	0	0	**68**
1730 - 1745	0	0	53	4	0	1	2	**60**	0	0	49	7	0	0	1	**57**
1745 - 1800	0	0	46	3	0	1	1	**51**	0	0	48	5	1	1	0	**55**
Hourly Total	**0**	**0**	**210**	**19**	**1**	**3**	**4**	**237**	**0**	**1**	**205**	**33**	**1**	**1**	**3**	**244**
1800 - 1815	0	0	35	1	0	0	2	**38**	0	0	45	6	0	0	1	**52**
1815 - 1830	0	0	29	2	0	0	2	**33**	0	0	41	6	0	0	0	**47**
Hourly Total	**0**	**0**	**64**	**3**	**0**	**0**	**4**	**71**	**0**	**0**	**86**	**12**	**0**	**0**	**1**	**99**
Session Total	**0**	**0**	**589**	**81**	**6**	**13**	**14**	**703**	**0**	**2**	**652**	**94**	**7**	**5**	**8**	**768**

Ruthin - Manual Traffic Survey, Friday 4th March 2016

Junction: (1) A525 / Denbigh Road

Approach: A525 (East)

	Left to Denbigh Road								Right to A525 (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	2	2	0	0	0	**4**	0	0	46	12	1	1	3	**63**
0745 - 0800	0	0	8	5	0	0	0	**13**	0	0	42	11	3	3	2	**61**
Hourly Total	**0**	**0**	**10**	**7**	**0**	**0**	**0**	**17**	**0**	**0**	**88**	**23**	**4**	**4**	**5**	**124**
0800 - 0815	0	0	9	2	1	0	0	**12**	0	0	46	9	5	1	1	**62**
0815 - 0830	0	0	7	1	0	0	0	**8**	0	0	60	12	2	2	1	**77**
0830 - 0845	0	0	5	2	0	0	0	**7**	0	0	67	7	1	1	1	**77**
0845 - 0900	0	0	8	4	0	0	0	**12**	0	0	53	9	6	1	3	**72**
Hourly Total	**0**	**0**	**29**	**9**	**1**	**0**	**0**	**39**	**0**	**0**	**226**	**37**	**14**	**5**	**6**	**288**
0900 - 0915	0	0	7	1	0	0	0	**8**	0	0	38	8	1	2	0	**49**
0915 - 0930	0	0	6	4	0	0	0	**10**	0	0	45	14	1	1	0	**61**
0930 - 0945	0	0	3	2	0	0	0	**5**	0	0	25	8	1	0	0	**34**
0945 - 1000	0	0	5	2	0	0	0	**7**	0	1	32	7	2	2	1	**45**
Hourly Total	**0**	**0**	**21**	**9**	**0**	**0**	**0**	**30**	**0**	**1**	**140**	**37**	**5**	**5**	**1**	**189**
Session Total	**0**	**0**	**60**	**25**	**1**	**0**	**0**	**86**	**0**	**1**	**454**	**97**	**23**	**14**	**12**	**601**
1530 - 1545	0	0	10	2	1	0	1	**14**	0	0	50	10	1	2	0	**63**
1545 - 1600	0	0	19	2	0	0	0	**21**	0	0	57	10	1	3	2	**73**
Hourly Total	**0**	**0**	**29**	**4**	**1**	**0**	**1**	**35**	**0**	**0**	**107**	**20**	**2**	**5**	**2**	**136**
1600 - 1615	0	0	11	1	0	0	0	**12**	0	0	62	9	0	2	0	**73**
1615 - 1630	0	0	7	0	0	0	0	**7**	0	0	55	12	0	3	1	**71**
1630 - 1645	0	0	12	1	0	0	0	**13**	0	0	67	5	0	1	1	**74**
1645 - 1700	0	0	11	1	0	0	0	**12**	0	1	59	6	0	0	0	**66**
Hourly Total	**0**	**0**	**41**	**3**	**0**	**0**	**0**	**44**	**0**	**1**	**243**	**32**	**0**	**6**	**2**	**284**
1700 - 1715	0	1	11	3	0	0	0	**15**	0	0	89	12	0	1	3	**105**
1715 - 1730	0	0	12	1	0	0	0	**13**	0	0	54	5	1	2	1	**63**
1730 - 1745	0	0	9	0	0	0	0	**9**	0	0	53	8	0	3	0	**64**
1745 - 1800	0	0	8	1	0	0	0	**9**	0	0	39	4	0	0	0	**43**
Hourly Total	**0**	**1**	**40**	**5**	**0**	**0**	**0**	**46**	**0**	**0**	**235**	**29**	**1**	**6**	**4**	**275**
1800 - 1815	0	0	14	0	0	0	0	**14**	0	0	50	7	0	4	0	**61**
1815 - 1830	0	0	7	1	0	0	0	**8**	0	0	31	5	0	0	0	**36**
Hourly Total	**0**	**0**	**21**	**1**	**0**	**0**	**0**	**22**	**0**	**0**	**81**	**12**	**0**	**4**	**0**	**97**
Session Total	**0**	**1**	**131**	**13**	**1**	**0**	**1**	**147**	**0**	**1**	**666**	**93**	**3**	**21**	**8**	**792**

Ruthin - Manual Traffic Survey, Friday 4th March 2016

Junction: (1) A525 / Denbigh Road

Approach: Denbigh Road

	Ahead to A525 (North)								Right to A525 (East)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	41	14	0	0	0	**55**	0	0	7	1	0	0	0	**8**
0745 - 0800	0	0	61	17	0	1	3	**82**	0	0	9	3	1	0	0	**13**
Hourly Total	**0**	**0**	**102**	**31**	**0**	**1**	**3**	**137**	**0**	**0**	**16**	**4**	**1**	**0**	**0**	**21**
0800 - 0815	0	0	69	12	1	2	3	**87**	0	0	13	2	1	1	0	**17**
0815 - 0830	0	0	67	6	1	0	2	**76**	0	0	9	4	0	1	0	**14**
0830 - 0845	0	0	64	11	0	1	0	**76**	0	0	10	0	0	0	0	**10**
0845 - 0900	0	0	54	9	0	1	1	**65**	0	0	14	2	0	0	0	**16**
Hourly Total	**0**	**0**	**254**	**38**	**2**	**4**	**6**	**304**	**0**	**0**	**46**	**8**	**1**	**2**	**0**	**57**
0900 - 0915	0	0	40	4	1	3	0	**48**	0	0	14	1	2	0	0	**17**
0915 - 0930	0	0	34	9	2	1	1	**47**	0	0	6	0	0	0	0	**6**
0930 - 0945	0	0	35	7	1	0	1	**44**	0	0	4	1	1	0	0	**6**
0945 - 1000	0	0	27	6	1	1	0	**35**	0	0	9	2	0	0	0	**11**
Hourly Total	**0**	**0**	**136**	**26**	**5**	**5**	**2**	**174**	**0**	**0**	**33**	**4**	**3**	**0**	**0**	**40**
Session Total	**0**	**0**	**492**	**95**	**7**	**10**	**11**	**615**	**0**	**0**	**95**	**16**	**5**	**2**	**0**	**118**
1530 - 1545	0	1	38	3	0	1	1	**44**	0	0	8	0	0	0	1	**9**
1545 - 1600	0	0	55	10	3	2	1	**71**	0	0	6	2	0	0	1	**9**
Hourly Total	**0**	**1**	**93**	**13**	**3**	**3**	**2**	**115**	**0**	**0**	**14**	**2**	**0**	**0**	**2**	**18**
1600 - 1615	0	0	53	13	1	1	0	**68**	0	0	5	0	0	0	0	**5**
1615 - 1630	0	0	52	7	1	1	1	**62**	0	0	0	0	1	0	1	**2**
1630 - 1645	0	0	31	11	2	0	0	**44**	0	0	12	2	0	0	0	**14**
1645 - 1700	0	0	31	9	1	0	2	**43**	0	0	9	1	0	0	1	**11**
Hourly Total	**0**	**0**	**167**	**40**	**5**	**2**	**3**	**217**	**0**	**0**	**26**	**3**	**1**	**0**	**2**	**32**
1700 - 1715	0	0	46	7	0	1	2	**56**	0	1	5	1	0	0	0	**7**
1715 - 1730	0	0	46	7	1	0	2	**56**	0	0	9	2	0	0	0	**11**
1730 - 1745	0	0	43	10	1	0	0	**54**	0	0	6	1	0	0	0	**7**
1745 - 1800	0	0	33	5	1	0	1	**40**	0	0	12	1	0	0	0	**13**
Hourly Total	**0**	**0**	**168**	**29**	**3**	**1**	**5**	**206**	**0**	**1**	**32**	**5**	**0**	**0**	**0**	**38**
1800 - 1815	0	1	41	3	1	0	0	**46**	0	0	9	1	0	0	0	**10**
1815 - 1830	0	0	28	1	0	0	1	**30**	0	0	6	0	0	0	0	**6**
Hourly Total	**0**	**1**	**69**	**4**	**1**	**0**	**1**	**76**	**0**	**0**	**15**	**1**	**0**	**0**	**0**	**16**
Session Total	**0**	**2**	**497**	**86**	**12**	**6**	**11**	**614**	**0**	**1**	**87**	**11**	**1**	**0**	**4**	**104**

Ruthin - Manual Traffic Survey, Saturday 5th March 2016

Junction: (1) A525 / Denbigh Road

Approach: A525 (North)

	Left to A525 (East)								Ahead to Denbigh Road							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
1000 - 1015	0	0	35	3	0	0	0	**38**	0	0	34	6	1	0	1	**42**
1015 - 1030	0	0	38	5	1	2	0	**46**	0	2	41	5	1	0	0	**49**
1030 - 1045	0	0	39	5	1	2	0	**47**	2	0	36	4	1	0	0	**43**
1045 - 1100	0	0	39	7	1	0	0	**47**	4	0	55	4	1	0	0	**64**
Hourly Total	**0**	**0**	**151**	**20**	**3**	**4**	**0**	**178**	**6**	**2**	**166**	**19**	**4**	**0**	**1**	**198**
1100 - 1115	0	0	37	4	2	1	0	**44**	0	0	49	5	1	1	3	**59**
1115 - 1130	0	0	37	2	0	1	0	**40**	3	0	53	7	1	0	0	**64**
1130 - 1145	0	0	50	6	0	0	0	**56**	0	2	48	5	0	0	1	**56**
1145 - 1200	0	0	26	4	0	1	0	**31**	1	0	41	7	1	0	1	**51**
Hourly Total	**0**	**0**	**150**	**16**	**2**	**3**	**0**	**171**	**4**	**2**	**191**	**24**	**3**	**1**	**5**	**230**
1200 - 1215	0	1	35	6	0	2	0	**44**	0	0	50	6	1	0	1	**58**
1215 - 1230	0	0	39	3	2	0	0	**44**	0	0	53	4	2	1	1	**61**
1230 - 1245	1	0	36	2	0	1	0	**40**	0	0	49	3	0	0	0	**52**
1245 - 1300	0	0	28	5	0	0	0	**33**	0	0	42	8	1	0	2	**53**
Hourly Total	**1**	**1**	**138**	**16**	**2**	**3**	**0**	**161**	**0**	**0**	**194**	**21**	**4**	**1**	**4**	**224**
1300 - 1315	0	0	37	2	0	0	0	**39**	0	0	50	6	1	0	1	**58**
1315 - 1330	0	1	28	2	1	1	0	**33**	0	0	48	4	1	0	0	**53**
1330 - 1345	1	1	29	6	0	1	0	**38**	0	2	37	3	0	0	2	**44**
1345 - 1400	0	0	28	4	0	0	0	**32**	0	1	44	1	0	1	1	**48**
Hourly Total	**1**	**2**	**122**	**14**	**1**	**2**	**0**	**142**	**0**	**3**	**179**	**14**	**2**	**1**	**4**	**203**
1400 - 1415	0	1	41	2	0	1	1	**46**	0	0	38	7	0	0	1	**46**
1415 - 1430	0	0	38	2	1	1	0	**42**	0	0	55	4	1	0	0	**60**
1430 - 1445	0	0	35	1	1	1	0	**38**	0	0	62	2	0	0	0	**64**
1445 - 1500	0	0	29	1	0	0	0	**30**	0	0	52	7	0	0	0	**59**
Hourly Total	**0**	**1**	**143**	**6**	**2**	**3**	**1**	**156**	**0**	**0**	**207**	**20**	**1**	**0**	**1**	**229**
1500 - 1515	0	0	37	2	0	0	1	**40**	0	1	42	4	0	0	1	**48**
1515 - 1530	0	0	42	4	0	1	0	**47**	0	0	32	3	0	1	2	**38**
1530 - 1545	0	0	46	4	0	0	0	**50**	0	1	47	4	1	0	0	**53**
1545 - 1600	0	0	36	3	0	0	1	**40**	0	0	45	3	0	0	0	**48**
Hourly Total	**0**	**0**	**161**	**13**	**0**	**1**	**2**	**177**	**0**	**2**	**166**	**14**	**1**	**1**	**3**	**187**
TOTAL	**2**	**4**	**865**	**85**	**10**	**16**	**3**	**985**	**10**	**9**	**1103**	**112**	**15**	**4**	**18**	**1271**

Ruthin - Manual Traffic Survey, Saturday 5th March 2016

Junction: (1) A525 / Denbigh Road

Approach: A525 (East)

	Left to Denbigh Road								Right to A525 (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
1000 - 1015	0	0	8	0	0	0	0	**8**	0	0	20	2	1	1	0	**24**
1015 - 1030	0	0	14	1	0	0	0	**15**	0	1	29	3	0	0	0	**33**
1030 - 1045	0	0	16	2	0	0	0	**18**	2	0	37	4	0	0	0	**43**
1045 - 1100	0	0	11	1	0	0	0	**12**	0	2	36	8	0	2	0	**48**
Hourly Total	**0**	**0**	**49**	**4**	**0**	**0**	**0**	**53**	**2**	**3**	**122**	**17**	**1**	**3**	**0**	**148**
1100 - 1115	0	0	12	0	0	0	0	**12**	0	0	36	7	0	1	0	**44**
1115 - 1130	0	0	16	1	0	0	0	**17**	0	0	44	6	1	0	0	**51**
1130 - 1145	0	0	11	3	0	0	0	**14**	0	0	54	5	1	3	0	**63**
1145 - 1200	0	0	10	3	0	0	0	**13**	0	0	47	8	0	0	0	**55**
Hourly Total	**0**	**0**	**49**	**7**	**0**	**0**	**0**	**56**	**0**	**0**	**181**	**26**	**2**	**4**	**0**	**213**
1200 - 1215	0	1	12	1	0	0	0	**14**	0	0	46	6	2	0	0	**54**
1215 - 1230	0	0	13	1	0	0	0	**14**	0	0	45	4	1	0	0	**50**
1230 - 1245	0	0	13	1	0	0	0	**14**	0	0	33	5	0	1	0	**39**
1245 - 1300	0	0	14	0	0	0	0	**14**	0	0	39	8	0	3	2	**52**
Hourly Total	**0**	**1**	**52**	**3**	**0**	**0**	**0**	**56**	**0**	**0**	**163**	**23**	**3**	**4**	**2**	**195**
1300 - 1315	0	0	15	1	0	0	0	**16**	0	0	36	4	0	0	0	**40**
1315 - 1330	0	0	10	0	0	0	0	**10**	0	0	35	3	1	0	0	**39**
1330 - 1345	1	1	6	1	0	0	0	**9**	0	0	19	4	0	0	1	**24**
1345 - 1400	0	0	7	1	0	0	0	**8**	0	0	32	3	0	1	0	**36**
Hourly Total	**1**	**1**	**38**	**3**	**0**	**0**	**0**	**43**	**0**	**0**	**122**	**14**	**1**	**1**	**1**	**139**
1400 - 1415	0	0	4	1	0	0	0	**5**	0	0	35	4	0	0	0	**39**
1415 - 1430	0	0	11	0	0	0	0	**11**	0	0	47	4	0	0	0	**51**
1430 - 1445	0	0	6	0	0	0	0	**6**	0	0	34	2	2	2	0	**40**
1445 - 1500	0	1	7	0	0	0	0	**8**	0	0	39	2	0	0	0	**41**
Hourly Total	**0**	**1**	**28**	**1**	**0**	**0**	**0**	**30**	**0**	**0**	**155**	**12**	**2**	**2**	**0**	**171**
1500 - 1515	0	0	11	0	0	0	0	**11**	0	2	30	3	0	0	0	**35**
1515 - 1530	0	1	8	0	0	0	0	**9**	0	0	35	4	0	0	0	**39**
1530 - 1545	0	0	6	0	0	0	0	**6**	0	0	23	2	1	1	0	**27**
1545 - 1600	0	0	12	0	0	0	0	**12**	0	0	37	2	0	1	0	**40**
Hourly Total	**0**	**1**	**37**	**0**	**0**	**0**	**0**	**38**	**0**	**2**	**125**	**11**	**1**	**2**	**0**	**141**
TOTAL	**1**	**4**	**253**	**18**	**0**	**0**	**0**	**276**	**2**	**5**	**868**	**103**	**10**	**16**	**3**	**1007**

Ruthin - Manual Traffic Survey, Saturday 5th March 2016

Junction: (1) A525 / Denbigh Road

Approach: Denbigh Road

	Ahead to A525 (North)								Right to A525 (East)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
1000 - 1015	0	0	32	6	0	0	0	**38**	0	0	6	2	0	0	0	**8**
1015 - 1030	0	0	42	8	0	1	1	**52**	0	0	9	4	0	0	1	**14**
1030 - 1045	1	0	49	1	2	1	0	**54**	0	0	14	2	0	0	0	**16**
1045 - 1100	0	0	44	5	0	1	1	**51**	0	0	3	1	0	0	0	**4**
Hourly Total	**1**	**0**	**167**	**20**	**2**	**3**	**2**	**195**	**0**	**0**	**32**	**9**	**0**	**0**	**1**	**42**
1100 - 1115	0	0	37	3	1	0	1	**42**	0	0	10	1	0	0	0	**11**
1115 - 1130	0	0	42	3	0	1	1	**47**	0	0	12	2	0	0	1	**15**
1130 - 1145	0	2	52	8	0	0	0	**62**	0	0	16	3	0	0	0	**19**
1145 - 1200	5	1	38	6	1	0	1	**52**	5	1	14	0	0	0	0	**20**
Hourly Total	**5**	**3**	**169**	**20**	**2**	**1**	**3**	**203**	**5**	**1**	**52**	**6**	**0**	**0**	**1**	**65**
1200 - 1215	0	2	51	4	1	0	0	**58**	0	0	6	0	0	0	0	**6**
1215 - 1230	0	0	49	7	0	0	1	**57**	0	0	11	1	0	0	0	**12**
1230 - 1245	0	0	45	7	1	0	1	**54**	0	0	7	0	0	0	0	**7**
1245 - 1300	0	3	44	2	2	0	0	**51**	0	0	12	1	0	0	0	**13**
Hourly Total	**0**	**5**	**189**	**20**	**4**	**0**	**2**	**220**	**0**	**0**	**36**	**2**	**0**	**0**	**0**	**38**
1300 - 1315	0	0	41	3	0	0	0	**44**	0	0	11	2	0	0	0	**13**
1315 - 1330	0	0	43	5	0	0	1	**49**	0	0	11	1	0	0	0	**12**
1330 - 1345	0	1	43	7	2	0	1	**54**	0	0	8	1	0	0	1	**10**
1345 - 1400	5	0	37	3	0	0	0	**45**	0	0	6	0	0	0	0	**6**
Hourly Total	**5**	**1**	**164**	**18**	**2**	**0**	**2**	**192**	**0**	**0**	**36**	**4**	**0**	**0**	**1**	**41**
1400 - 1415	0	1	47	4	1	2	1	**56**	0	0	8	3	0	0	0	**11**
1415 - 1430	1	1	54	2	0	0	1	**59**	0	0	11	3	0	0	0	**14**
1430 - 1445	0	1	42	7	1	1	1	**53**	0	0	6	0	0	0	0	**6**
1445 - 1500	0	1	42	3	0	1	1	**48**	0	0	16	2	0	0	0	**18**
Hourly Total	**1**	**4**	**185**	**16**	**2**	**4**	**4**	**216**	**0**	**0**	**41**	**8**	**0**	**0**	**0**	**49**
1500 - 1515	0	1	50	12	0	0	0	**63**	0	0	10	2	0	0	0	**12**
1515 - 1530	0	3	47	2	1	1	0	**54**	0	0	7	1	0	0	0	**8**
1530 - 1545	0	0	44	5	3	0	0	**52**	0	0	10	1	0	0	0	**11**
1545 - 1600	0	2	53	6	0	0	0	**61**	0	0	6	2	0	0	0	**8**
Hourly Total	**0**	**6**	**194**	**25**	**4**	**1**	**0**	**230**	**0**	**0**	**33**	**6**	**0**	**0**	**0**	**39**
TOTAL	**12**	**19**	**1068**	**119**	**16**	**9**	**13**	**1256**	**5**	**1**	**230**	**35**	**0**	**0**	**3**	**274**

CAMERON ROSE
ASSOCIATES

APPENDIX E

TEMPRO GROWTH FACTORS

TEMPRO GROWTH FACTORS

Dataset Version:	72
NTM Dataset	AF15
Results Type:	Trip ends by time period
Base Year:	2016
Future Year:	2024
Trip Purpose Group:	All purposes
Time Period:	Weekday AM peak period (0700 - 0959)
Trip End Type:	Origin/ Destinations
Alternative Assumptions Applied:	No
Area:	Urban
Road Type:	All

Level	Area	Local Growth Factor
Authority	Denbighshire 014 (W020000055)	1.0930

Dataset Version:	72
NTM Dataset	AF15
Results Type:	Trip ends by time period
Base Year:	2016
Future Year:	2024
Trip Purpose Group:	All purposes
Time Period:	Weekday PM peak period (1600 - 1859)
Trip End Type:	Origin/ Destinations
Alternative Assumptions Applied:	No
Area:	Urban
Road Type:	All

Level	Area	Local Growth Factor
Authority	Denbighshire 014 (W020000055)	1.0915

Dataset Version:	72
NTM Dataset	AF15
Results Type:	Trip ends by time period
Base Year:	2016
Future Year:	2024
Trip Purpose Group:	All purposes
Time Period:	Saturday
Trip End Type:	Origin/ Destinations
Alternative Assumptions Applied:	No
Area:	Urban
Road Type:	All

Level	Area	Local Growth Factor
Authority	Denbighshire 014 (W020000055)	1.0966

APPENDIX F

TRICS DATA

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : C - DISCOUNT FOOD STORES
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	KC	KENT	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
05	EAST MIDLANDS		
	NR	NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	2 days
10	WALES		
	GW	GWYNEDD	1 days
	PS	POWYS	1 days

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

Filtering Stage 2 selection:

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

Parameter: Gross floor area
Actual Range: 1150 to 1900 (units: sqm)
Range Selected by User: 865 to 1900 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 27/11/12

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	4 days
Wednesday	2 days
Friday	1 days

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

Selected survey types:

Manual count	9 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 undertaking using machines.

Selected Locations:

Edge of Town Centre	4
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Industrial 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.

Filtering Stage 3 selection:

Use Class:

Not Known	1 days
A1	8 days

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

Population within 1 mile:

5,001 to 10,000	2 days
10,001 to 15,000	2 days
15,001 to 20,000	1 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:

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

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	9 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:

Yes	1 days
No	8 days

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

LIST OF SITES relevant to selection parameters

1 DC-01-C-02 LIDL DORSET
POOLE ROAD
BRANKSOME
BOURNEMOUTH
Suburban Area (PPS6 Out of Centre)
Commercial Zone
Total Gross floor area: 1334 sqm
Survey date: TUESDAY 15/07/08 Survey Type: MANUAL

2 GW-01-C-01 LIDL GWYNEDD
HIGH STREET

BANGOR
Edge of Town Centre
No Sub Category
Total Gross floor area: 1310 sqm
Survey date: FRIDAY 10/07/09 Survey Type: MANUAL

3 KC-01-C-02 ALDI KENT
WELL ROAD

MAIDSTONE
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1407 sqm
Survey date: TUESDAY 27/11/12 Survey Type: MANUAL

4 MS-01-C-02 ALDI MERSEYSIDE
SMITHDOWN ROAD
WAVERTREE
LIVERPOOL
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1200 sqm
Survey date: MONDAY 18/06/07 Survey Type: MANUAL

5 MS-01-C-03 ALDI MERSEYSIDE
LAUREL ROAD
ELM PARK
LIVERPOOL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1165 sqm
Survey date: WEDNESDAY 20/06/07 Survey Type: MANUAL

6 NR-01-C-01 ALDI NORTHAMPTONSHIRE
DALTON ROAD

CORBY
Edge of Town
Industrial Zone
Total Gross floor area: 1345 sqm
Survey date: WEDNESDAY 19/11/08 Survey Type: MANUAL

7 NY-01-C-02 LIDL NORTH YORKSHIRE
STATION ROAD

THIRSK
Edge of Town Centre
No Sub Category
Total Gross floor area: 1527 sqm
Survey date: TUESDAY 11/10/11 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	PS-01-C-01	ALDI		POWYS
	RICH WAY			
	BRECON			
	Edge of Town Centre			
	No Sub Category			
	Total Gross floor area:		1150 sqm	
	Survey date: MONDAY		15/09/08	Survey Type: MANUAL
9	SH-01-C-01	LIDL		SHROPSHIRE
	CASTLE STREET			
	HADLEY			
	TELFORD			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Gross floor area:		1900 sqm	
	Survey date: TUESDAY		16/06/09	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 01 - RETAIL/C - DISCOUNT FOOD STORES

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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									
07:00 - 08:00	5	1430	0.294	5	1430	0.084	5	1430	0.378
08:00 - 09:00	9	1371	1.062	9	1371	0.616	9	1371	1.678
09:00 - 10:00	9	1371	2.586	9	1371	1.986	9	1371	4.572
10:00 - 11:00	9	1371	3.720	9	1371	3.218	9	1371	6.938
11:00 - 12:00	9	1371	4.036	9	1371	3.769	9	1371	7.805
12:00 - 13:00	9	1371	3.858	9	1371	4.125	9	1371	7.983
13:00 - 14:00	9	1371	3.453	9	1371	3.599	9	1371	7.052
14:00 - 15:00	9	1371	4.036	9	1371	3.736	9	1371	7.772
15:00 - 16:00	9	1371	3.801	9	1371	3.842	9	1371	7.643
16:00 - 17:00	9	1371	3.566	9	1371	3.672	9	1371	7.238
17:00 - 18:00	9	1371	3.169	9	1371	3.720	9	1371	6.889
18:00 - 19:00	9	1371	2.594	9	1371	2.942	9	1371	5.536
19:00 - 20:00	9	1371	1.094	9	1371	1.653	9	1371	2.747
20:00 - 21:00	4	1395	0.484	4	1395	0.735	4	1395	1.219
21:00 - 22:00	1	1407	0.142	1	1407	0.498	1	1407	0.640
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			37.895			38.195			76.090

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

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

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/07 - 27/11/12
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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 CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : C - DISCOUNT FOOD STORES
VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	BR	BRISTOL CITY	1 days
06	WEST MIDLANDS		
	HE	HEREFORDSHIRE	1 days
09	NORTH		
	CB	CUMBRIA	1 days
10	WALES		
	SW	SWANSEA	1 days

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

Filtering Stage 2 selection:

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

Parameter: Gross floor area
Actual Range: 969 to 1219 (units: sqm)
Range Selected by User: 865 to 1900 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/02 to 27/11/12

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:
Saturday 4 days

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

Selected survey types:
Manual count 4 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 undertaking using machines.

Selected Locations:
Edge of Town Centre 1
Suburban Area (PPS6 Out of Centre) 3

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 1
Residential Zone 2
Built-Up 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.

Filtering Stage 3 selection:

Use Class:

A1	4 days

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

Population within 1 mile:

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

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

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	1 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	3 days
1.1 to 1.5	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.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	4 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	4 days

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

LIST OF SITES relevant to selection parameters

1	BR-01-C-01	LIDL		BRISTOL CITY
	LAWRENCE HILL			
	LAWRENCE HILL			
	BRISTOL			
	Suburban Area (PPS6 Out of Centre)			
	Industrial Zone			
	Total Gross floor area:		1007 sqm	
	Survey date: SATURDAY		17/05/03	Survey Type: MANUAL
2	CB-01-C-01	ALDI		CUMBRIA
	KINGSTOWN ROAD			
	KINGSTOWN			
	CARLISLE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:		1216 sqm	
	Survey date: SATURDAY		07/09/02	Survey Type: MANUAL
3	HE-01-C-01	ALDI		HEREFORDSHIRE
	EIGN STREET			
	HEREFORD			
	Edge of Town Centre			
	Built-Up Zone			
	Total Gross floor area:		1219 sqm	
	Survey date: SATURDAY		04/03/06	Survey Type: MANUAL
4	SW-01-C-01	LIDL		SWANSEA
	PENTREGETHIN ROAD			
	PEN-LAN			
	SWANSEA			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:		969 sqm	
	Survey date: SATURDAY		14/09/02	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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CP-01-C-01	KWIK SAVE
NY-01-C-01	NETTO
NY-01-C-01	NETTO

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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									
07:00 - 08:00	3	1147	0.261	3	1147	0.116	3	1147	0.377
08:00 - 09:00	4	1103	1.791	4	1103	0.839	4	1103	2.630
09:00 - 10:00	4	1103	4.942	4	1103	4.171	4	1103	9.113
10:00 - 11:00	4	1103	6.416	4	1103	5.668	4	1103	12.084
11:00 - 12:00	4	1103	6.983	4	1103	6.779	4	1103	13.762
12:00 - 13:00	4	1103	6.801	4	1103	6.642	4	1103	13.443
13:00 - 14:00	4	1103	6.642	4	1103	6.983	4	1103	13.625
14:00 - 15:00	4	1103	6.824	4	1103	6.506	4	1103	13.330
15:00 - 16:00	4	1103	5.622	4	1103	6.348	4	1103	11.970
16:00 - 17:00	4	1103	4.829	4	1103	5.214	4	1103	10.043
17:00 - 18:00	4	1103	3.174	4	1103	4.353	4	1103	7.527
18:00 - 19:00	4	1103	0.998	4	1103	1.474	4	1103	2.472
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			55.283			55.093			110.376

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

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

Parameter summary

Trip rate parameter range selected:	969 - 1219 (units: sqm)
Survey date date range:	01/01/02 - 27/11/12
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	4
Number of Sundays:	0
Surveys manually removed from selection:	2

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.

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE

VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	2 days
	EX	ESSEX	1 days
	KC	KENT	1 days
	WG	WOKINGHAM	1 days
03	SOUTH WEST		
	BR	BRISTOL CITY	2 days
	CW	CORNWALL	2 days
	DC	DORSET	1 days
	DV	DEVON	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	4 days
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NR	NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	HE	HEREFORDSHIRE	1 days
	WM	WEST MIDLANDS	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	WY	WEST YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
	MS	MERSEYSIDE	1 days
09	NORTH		
	CB	CUMBRIA	1 days
	NB	NORTHUMBERLAND	1 days
	TW	TYNE & WEAR	1 days
11	SCOTLAND		
	AG	ANGUS	1 days
	FA	FALKIRK	1 days
	FI	FIFE	1 days
	HI	HIGHLAND	1 days

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

Filtering Stage 2 selection:

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

Parameter:	Gross floor area
Actual Range:	1775 to 102000 (units: sqm)
Range Selected by User:	552 to 234115 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 21/05/15

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	6 days
Tuesday	7 days
Wednesday	3 days
Thursday	7 days
Friday	9 days

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

Selected survey types:

Manual count	32 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 undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	11
Edge of Town	16
Neighbourhood Centre (PPS6 Local Centre)	3
Free Standing (PPS6 Out of Town)	2

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

Selected Location Sub Categories:

Industrial Zone	14
Commercial Zone	1
Residential Zone	8
Built-Up Zone	1
Village	2
Out of Town	2
No Sub Category	4

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

Filtering Stage 3 selection:

Use Class:

B1	10 days
B2	17 days
B8	2 days

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

Filtering Stage 3 selection (Cont.):

Population within 1 mile:

1,000 or Less	4 days
1,001 to 5,000	2 days
5,001 to 10,000	5 days
10,001 to 15,000	2 days
15,001 to 20,000	5 days
20,001 to 25,000	4 days
25,001 to 50,000	9 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:

5,001 to 25,000	3 days
25,001 to 50,000	4 days
50,001 to 75,000	3 days
75,001 to 100,000	2 days
100,001 to 125,000	2 days
125,001 to 250,000	10 days
250,001 to 500,000	5 days
500,001 or More	3 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	12 days
1.1 to 1.5	17 days
1.6 to 2.0	2 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	32 days

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

LIST OF SITES relevant to selection parameters

1 AG-02-D-01 INDUSTRIAL EST. ANGUS
WESTWAY

ARBROATH
Edge of Town
Residential Zone
Total Gross floor area: 64889 sqm
Survey date: FRIDAY 25/05/12 Survey Type: MANUAL

2 BR-02-D-04 INDUSTRIAL ESTATE BRISTOL CITY
CROFTS END ROAD
SPEEDWELL
BRISTOL
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 18018 sqm
Survey date: FRIDAY 29/11/13 Survey Type: MANUAL

3 BR-02-D-05 INDUSTRIAL ESTATE BRISTOL CITY
NOVERS HILL
BEDMINSTER
BRISTOL
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 18128 sqm
Survey date: FRIDAY 29/11/13 Survey Type: MANUAL

4 CA-02-D-01 IND. ESTATE CAMBRIDGESHIRE
STURROCK WAY
BRETTON
PETERBOROUGH
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 4300 sqm
Survey date: TUESDAY 13/05/08 Survey Type: MANUAL

5 CA-02-D-02 IND. ESTATE CAMBRIDGESHIRE
COLDHAM'S ROAD
COLDHAM'S COMMON
CAMBRIDGE
Edge of Town
Industrial Zone
Total Gross floor area: 2063 sqm
Survey date: MONDAY 19/10/09 Survey Type: MANUAL

6 CA-02-D-03 IND. ESTATE CAMBRIDGESHIRE
SAVILLE ROAD
WESTWOOD
PETERBOROUGH
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 4425 sqm
Survey date: THURSDAY 22/10/09 Survey Type: MANUAL

7 CA-02-D-04 INDUSTRIAL ESTATE CAMBRIDGESHIRE
LINCOLN ROAD

PETERBOROUGH
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 4133 sqm
Survey date: TUESDAY 02/12/14 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 CB-02-D-04 INDUSTRIAL ESTATE CUMBRIA
CARLISLE ROAD

BRAMPTON
Edge of Town
No Sub Category
Total Gross floor area: 17708 sqm
Survey date: WEDNESDAY 16/12/09 Survey Type: MANUAL

9 CH-02-D-02 INDUSTRIAL EST. CHESHIRE
MANCHESTER ROAD
WINCHAM
NORTHWICH
Edge of Town
Industrial Zone
Total Gross floor area: 22000 sqm
Survey date: FRIDAY 15/06/07 Survey Type: MANUAL

10 CW-02-D-02 INDUSTRIAL ESTATE CORNWALL
DRUIDS ROAD

CAMBORNE
Edge of Town
Industrial Zone
Total Gross floor area: 6515 sqm
Survey date: FRIDAY 21/09/07 Survey Type: MANUAL

11 CW-02-D-03 IND. ESTATE CORNWALL
LONG ROCK ROAD
LONG ROCK
NEAR PENZANCE
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 36500 sqm
Survey date: MONDAY 03/10/11 Survey Type: MANUAL

12 DC-02-D-20 INDUSTRIAL ESTATE DORSET
OLD BARN FARM ROAD
THREE LEGGED CROSS
NEAR BOURNEMOUTH
Free Standing (PPS6 Out of Town)
Out of Town
Total Gross floor area: 70000 sqm
Survey date: MONDAY 24/03/14 Survey Type: MANUAL

13 DV-02-D-06 INDUSTRIAL ESTATE DEVON
ST MODWEN ROAD

PLYMOUTH
Edge of Town
Industrial Zone
Total Gross floor area: 1775 sqm
Survey date: TUESDAY 17/07/12 Survey Type: MANUAL

14 ES-02-D-06 INDUSTRIAL ESTATE EAST SUSSEX
COURTLANDS ROAD

EASTBOURNE
Edge of Town
Residential Zone
Total Gross floor area: 7525 sqm
Survey date: MONDAY 21/10/13 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15 ES-02-D-07 INDUSTRIAL ESTATE EAST SUSSEX
HUGHES ROAD

BRIGHTON
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 6625 sqm
Survey date: THURSDAY 16/10/14 Survey Type: MANUAL

16 EX-02-D-01 INDUSTRIAL ESTATE ESSEX
OAKWOOD HILL

LOUGHTON
Edge of Town
Industrial Zone
Total Gross floor area: 27687 sqm
Survey date: THURSDAY 22/11/07 Survey Type: MANUAL

17 FA-02-D-02 INDUSTRIAL ESTATE FALKIRK
MAIN STREET
GRAHAMSTON
FALKIRK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 21250 sqm
Survey date: THURSDAY 30/05/13 Survey Type: MANUAL

18 FI-02-D-01 INDUSTRIAL ESTATE FIFE
DICKSON STREET

DUNFERMLINE
Edge of Town
Residential Zone
Total Gross floor area: 7850 sqm
Survey date: THURSDAY 21/05/15 Survey Type: MANUAL

19 HE-02-D-02 BUSINESS PARK HEREFORDSHIRE
BURCOTT ROAD

HEREFORD
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 5214 sqm
Survey date: TUESDAY 22/10/13 Survey Type: MANUAL

20 HI-02-D-03 IND. ESTATE & BUS. PARK HIGHLAND
NORTH ROAD
INVERLOCHY
FORT WILLIAM
Edge of Town
No Sub Category
Total Gross floor area: 35000 sqm
Survey date: MONDAY 18/05/09 Survey Type: MANUAL

21 KC-02-D-02 INDUSTRIAL ESTATE KENT
SOUTHWELL ROAD

DEAL
Edge of Town
Residential Zone
Total Gross floor area: 10715 sqm
Survey date: WEDNESDAY 28/11/12 Survey Type: MANUAL

22 LN-02-D-02 INDUSTRIAL ESTATE LINCOLNSHIRE
STATION ROAD
SWINESHEAD
NEAR BOSTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 4600 sqm
Survey date: TUESDAY 11/12/12 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

23 MS-02-D-06 INDUSTRIAL EST. MERSEYSIDE
BOALER STREET

LIVERPOOL
Neighbourhood Centre (PPS6 Local Centre)
Industrial Zone
Total Gross floor area: 4800 sqm
Survey date: THURSDAY 09/09/10 Survey Type: MANUAL

24 NB-02-D-02 INDUSTRIAL ESTATE NORTHUMBERLAND
OLDSTONE ROAD
EAST CRAMLINGTON
NEAR CRAMLINGTON
Free Standing (PPS6 Out of Town)
Out of Town
Total Gross floor area: 5500 sqm
Survey date: FRIDAY 16/11/12 Survey Type: MANUAL

25 NF-02-D-03 INDUSTRIAL ESTATE NORFOLK
BIDEWELL CLOSE

NORWICH
Edge of Town
Residential Zone
Total Gross floor area: 6000 sqm
Survey date: MONDAY 08/10/12 Survey Type: MANUAL

26 NR-02-D-01 INDUSTRIAL ESTATE NORTHAMPTONSHIRE
ROBINSON WAY

KETTERING
Edge of Town
Industrial Zone
Total Gross floor area: 12900 sqm
Survey date: THURSDAY 23/10/14 Survey Type: MANUAL

27 SF-02-D-02 INDUSTRIAL ESTATE SUFFOLK
HADLEIGH ROAD
WESTBOURNE
IPSWICH
Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Gross floor area: 102000 sqm
Survey date: TUESDAY 22/05/07 Survey Type: MANUAL

28 TW-02-D-07 INDUSTRIAL ESTATE TYNE & WEAR
SWALWELL BANK
WHICKHAM
GATESHEAD
Edge of Town
Residential Zone
Total Gross floor area: 6800 sqm
Survey date: FRIDAY 04/10/13 Survey Type: MANUAL

29 WG-02-D-01 INDUSTRIAL ESTATE WOKINGHAM
FISHPONDS ROAD

WOKINGHAM
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 3800 sqm
Survey date: TUESDAY 20/11/12 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

30 WM-02-D-02 INDUSTRIAL ESTATE WEST MIDLANDS
DUNLOP WAY

BIRMINGHAM
Edge of Town
Residential Zone
Total Gross floor area: 23480 sqm
Survey date: WEDNESDAY 07/11/12 Survey Type: MANUAL

31 WO-02-D-01 INDUSTRIAL ESTATE WORCESTERSHIRE
SANDY LANE

STOURPORT-ON-SEVERN
Edge of Town
Commercial Zone
Total Gross floor area: 2758 sqm
Survey date: FRIDAY 23/05/14 Survey Type: MANUAL

32 WY-02-D-03 INDUSTRIAL ESTATE WEST YORKSHIRE
ARMLEY ROAD

LEEDS
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 24980 sqm
Survey date: FRIDAY 20/09/13 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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	32	18436	0.122	32	18436	0.039	32	18436	0.161
07:30 - 08:00	32	18436	0.240	32	18436	0.069	32	18436	0.309
08:00 - 08:30	32	18436	0.226	32	18436	0.105	32	18436	0.331
08:30 - 09:00	32	18436	0.212	32	18436	0.111	32	18436	0.323
09:00 - 09:30	32	18436	0.166	32	18436	0.121	32	18436	0.287
09:30 - 10:00	32	18436	0.142	32	18436	0.116	32	18436	0.258
10:00 - 10:30	32	18436	0.131	32	18436	0.127	32	18436	0.258
10:30 - 11:00	32	18436	0.123	32	18436	0.114	32	18436	0.237
11:00 - 11:30	32	18436	0.122	32	18436	0.122	32	18436	0.244
11:30 - 12:00	32	18436	0.127	32	18436	0.140	32	18436	0.267
12:00 - 12:30	32	18436	0.130	32	18436	0.142	32	18436	0.272
12:30 - 13:00	32	18436	0.138	32	18436	0.145	32	18436	0.283
13:00 - 13:30	32	18436	0.136	32	18436	0.155	32	18436	0.291
13:30 - 14:00	32	18436	0.148	32	18436	0.126	32	18436	0.274
14:00 - 14:30	32	18436	0.129	32	18436	0.126	32	18436	0.255
14:30 - 15:00	32	18436	0.119	32	18436	0.123	32	18436	0.242
15:00 - 15:30	32	18436	0.119	32	18436	0.141	32	18436	0.260
15:30 - 16:00	32	18436	0.106	32	18436	0.147	32	18436	0.253
16:00 - 16:30	32	18436	0.113	32	18436	0.181	32	18436	0.294
16:30 - 17:00	32	18436	0.117	32	18436	0.198	32	18436	0.315
17:00 - 17:30	32	18436	0.062	32	18436	0.236	32	18436	0.298
17:30 - 18:00	32	18436	0.042	32	18436	0.154	32	18436	0.196
18:00 - 18:30	32	18436	0.035	32	18436	0.084	32	18436	0.119
18:30 - 19:00	32	18436	0.027	32	18436	0.052	32	18436	0.079
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			3.032			3.074			6.106

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

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

Parameter summary

Trip rate parameter range selected:	1775 - 102000 (units: sqm)
Survey date date range:	01/01/07 - 21/05/15
Number of weekdays (Monday-Friday):	32
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	4

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.

APPENDIX G

A525 LON GWERNYDD/ SITE ACCESS – MODEL OUTPUTS

Junctions 8

PICADY 8 - Priority Intersection Module

Filename: Ruthin N Link Rd_Site Access.arc8
Path: D:\Cameron Rose Associates\Projects\324_Ruthin N Link Rd, Ruthin\ANALYSIS\PICADY
Report generation date: 31/01/2019 09:36:38

File summary

File Description

Title	Ruthin N Link Road/ Site Access
Location	Ruthin
Site Number	
Date	03/03/2016
Version	
Status	
Identifier	
Client	Aldi Food Stores
Jobnumber	324
Enumerator	Cameron Rose Associates
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

- 2024 Base plus Development, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base plus Development, AM	2024 Base plus Development	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
(untitled)	T-Junction	Two-way	A,B,C	7.83	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm Type
A	Ruthin N Link Road (n)		Major
B	Site Access		Minor
C	Ruthin N Link Road (s)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	10.00		0.00	✓	3.00	70.00	✓	2.00

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

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	3.00										70	70

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	535.214	0.081	0.204	0.128	0.291
1	B-C	668.004	0.085	0.214	-	-
1	C-B	668.004	0.214	0.214	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	705.00	100.000
B	ONE HOUR	✓	13.00	100.000
C	ONE HOUR	✓	710.66	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	3.000	702.000
	B	2.000	0.000	11.000
	C	691.432	19.229	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.15	0.00	0.85
	C	0.97	0.03	0.00

Vehicle Mix

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

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.03	8.35	0.03	A
C-AB	0.04	7.47	0.04	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	9.79	9.71	0.00	511.12	0.019	0.02	7.179	A
C-AB	14.49	14.38	0.00	554.78	0.026	0.03	6.659	A
C-A	520.54	520.54	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	528.50	528.50	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	11.69	11.67	0.00	484.06	0.024	0.02	7.620	A
C-AB	17.31	17.28	0.00	532.98	0.032	0.03	6.980	A
C-A	621.56	621.56	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	631.08	631.08	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	14.31	14.28	0.00	445.35	0.032	0.03	8.351	A
C-AB	21.23	21.19	0.00	503.04	0.042	0.04	7.470	A
C-A	761.22	761.22	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	772.92	772.92	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	14.31	14.31	0.00	445.34	0.032	0.03	8.351	A
C-AB	21.23	21.23	0.00	503.04	0.042	0.04	7.470	A
C-A	761.22	761.22	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	772.92	772.92	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS

B-AC	11.69	11.72	0.00	484.06	0.024	0.02	7.621	A
C-AB	17.31	17.35	0.00	532.98	0.032	0.03	6.981	A
C-A	621.56	621.56	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	631.08	631.08	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	9.79	9.81	0.00	511.11	0.019	0.02	7.180	A
C-AB	14.49	14.51	0.00	554.78	0.026	0.03	6.662	A
C-A	520.54	520.54	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	528.50	528.50	0.00	-	-	-	-	-

- 2024 Base plus Development, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base plus Development, PM	2024 Base plus Development	PM		ONE HOUR	15:30	17:00	90	15		

Junction Network

Junctions

Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
(untitled)	T-Junction	Two-way	A,B,C	8.44	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm Type
A	Ruthin N Link Road (n)		Major
B	Site Access		Minor
C	Ruthin N Link Road (s)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	10.00		0.00	✓	3.00	70.00	✓	2.00

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

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	3.00										70	70

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	535.214	0.081	0.204	0.128	0.291
1	B-C	668.004	0.085	0.214	-	-
1	C-B	668.004	0.214	0.214	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	623.00	100.000
B	ONE HOUR	✓	71.00	100.000
C	ONE HOUR	✓	677.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
From		A	B	C

	A	0.000	7.000	616.000
	B	8.000	0.000	63.000
	C	616.000	61.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.01	0.99
	B	0.11	0.00	0.89
	C	0.91	0.09	0.00

Vehicle Mix

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

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.16	8.98	0.19	A
C-AB	0.13	7.81	0.15	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (15:30-15:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	53.45	53.01	0.00	535.48	0.100	0.11	7.455	A
C-AB	46.17	45.82	0.00	569.81	0.081	0.09	6.866	A
C-A	463.51	463.51	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	463.76	463.76	0.00	-	-	-	-	-

Main results: (15:45-16:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	63.83	63.70	0.00	512.22	0.125	0.14	8.025	A
C-AB	55.39	55.30	0.00	552.11	0.100	0.11	7.246	A
C-A	553.22	553.22	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	553.77	553.77	0.00	-	-	-	-	-

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	78.17	77.97	0.00	479.13	0.163	0.19	8.969	A
C-AB	68.61	68.46	0.00	529.31	0.130	0.15	7.809	A
C-A	676.78	676.78	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	678.23	678.23	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	78.17	78.17	0.00	479.11	0.163	0.19	8.978	A
C-AB	68.61	68.61	0.00	529.31	0.130	0.15	7.814	A
C-A	676.78	676.78	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	678.23	678.23	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	63.83	64.03	0.00	512.20	0.125	0.14	8.037	A
C-AB	55.39	55.54	0.00	552.11	0.100	0.11	7.251	A
C-A	553.22	553.22	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	553.77	553.77	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	53.45	53.58	0.00	535.44	0.100	0.11	7.472	A
C-AB	46.17	46.27	0.00	569.81	0.081	0.09	6.876	A
C-A	463.51	463.51	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	463.76	463.76	0.00	-	-	-	-	-

- 2024 Base plus Development, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base plus Development, Saturday	2024 Base plus Development	Saturday		ONE HOUR	11:15	12:45	90	15		

Junction Network

Junctions

Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
(untitled)	T-Junction	Two-way	A,B,C	8.82	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm Type
A	Ruthin N Link Road (n)		Major
B	Site Access		Minor
C	Ruthin N Link Road (s)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	10.00		0.00	✓	3.00	70.00	✓	2.00

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

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	3.00										70	70

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	535.214	0.081	0.204	0.128	0.291
1	B-C	668.004	0.085	0.214	-	-
1	C-B	668.004	0.214	0.214	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	468.00	100.000
B	ONE HOUR	✓	127.00	100.000
C	ONE HOUR	✓	618.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	14.000	454.000
	B	13.000	0.000	114.000
	C	500.000	118.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.03	0.97
	B	0.10	0.00	0.90
	C	0.81	0.19	0.00

Vehicle Mix

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

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
From		A	B	C

	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.27	9.45	0.36	A
C-AB	0.24	8.16	0.32	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (11:15-11:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	95.61	94.80	0.00	564.01	0.170	0.20	7.659	A
C-AB	90.10	89.40	0.00	598.33	0.151	0.18	7.066	A
C-A	375.16	375.16	0.00	-	-	-	-	-
A-B	10.54	10.54	0.00	-	-	-	-	-
A-C	341.80	341.80	0.00	-	-	-	-	-

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	114.17	113.93	0.00	546.20	0.209	0.26	8.324	A
C-AB	108.86	108.65	0.00	588.25	0.185	0.23	7.502	A
C-A	446.71	446.71	0.00	-	-	-	-	-
A-B	12.59	12.59	0.00	-	-	-	-	-
A-C	408.14	408.14	0.00	-	-	-	-	-

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	139.83	139.43	0.00	520.95	0.268	0.36	9.425	A
C-AB	136.87	136.53	0.00	578.12	0.237	0.32	8.147	A
C-A	543.56	543.56	0.00	-	-	-	-	-
A-B	15.41	15.41	0.00	-	-	-	-	-
A-C	499.86	499.86	0.00	-	-	-	-	-

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	139.83	139.82	0.00	520.92	0.268	0.36	9.446	A
C-AB	136.87	136.87	0.00	578.12	0.237	0.32	8.159	A
C-A	543.56	543.56	0.00	-	-	-	-	-
A-B	15.41	15.41	0.00	-	-	-	-	-
A-C	499.86	499.86	0.00	-	-	-	-	-

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	114.17	114.56	0.00	546.16	0.209	0.27	8.349	A
C-AB	108.86	109.20	0.00	588.25	0.185	0.23	7.522	A
C-A	446.71	446.71	0.00	-	-	-	-	-
A-B	12.59	12.59	0.00	-	-	-	-	-
A-C	408.14	408.14	0.00	-	-	-	-	-

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	95.61	95.86	0.00	563.96	0.170	0.21	7.694	A
C-AB	90.10	90.31	0.00	598.33	0.151	0.18	7.088	A
C-A	375.16	375.16	0.00	-	-	-	-	-
A-B	10.54	10.54	0.00	-	-	-	-	-
A-C	341.80	341.80	0.00	-	-	-	-	-

APPENDIX H

A525 LON GWERNYDD/ RUTHIN NORTH LINK ROAD/ DENBIGH ROAD – MODEL OUTPUTS

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

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

Filename: A525 Lon Gwernydd_Ruthin North Link Road_Denbigh Road.arc8
Path: D:\Cameron Rose Associates\Projects\324_Ruthin N Link Rd, Ruthin\ANALYSIS\ARCADY
Report generation date: 31/01/2019 11:17:42

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2016 Survey			
Arm 1	0.59	3.01	0.37	A
Arm 2	0.35	3.19	0.26	A
Arm 3	0.39	3.41	0.28	A

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

"D1 - 2016 Survey, AM " model duration: 07:45 - 09:15
"D2 - 2016 Survey, PM" model duration: 15:30 - 17:00
"D3 - 2016 Survey, Saturday" model duration: 11:15 - 12:45
"D4 - 2024 Base, AM" model duration: 07:45 - 09:15
"D5 - 2024 Base, PM" model duration: 15:30 - 17:00
"D6 - 2024 Base, Saturday" model duration: 11:15 - 12:45
"D7 - 2024 Base plus Development, AM" model duration: 07:45 - 09:15
"D8 - 2024 Base plus Development, PM" model duration: 15:30 - 17:00
"D9 - 2024 Base plus Development, Saturday" model duration: 11:15 - 12:45

Run using Junctions 8.0.2.316 at 31/01/2019 11:17:05

File summary

File Description

Title	A525 Lon Gwernydd/ Ruthin North Link Road/ Denbigh Road
Location	
Site Number	
Date	31/01/2019
Version	
Status	
Identifier	
Client	Aldi Food Stores
Jobnumber	324
Enumerator	Cameron Rose Associates
Description	

Analysis Options

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

Units

Distance	Speed	Traffic Units	Traffic Units	Flow	Average Delay	Total Delay	Rate Of Delay
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2016 Survey, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Survey, AM	2016 Survey	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.17	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	642.00	100.000
2	ONE HOUR	✓	355.00	100.000
3	ONE HOUR	✓	378.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	405.000	237.000
	2	315.000	0.000	40.000
	3	318.000	60.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.63	0.37
	2	0.89	0.00	0.11
	3	0.84	0.16	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	3.01	0.59	A
2	0.26	3.19	0.35	A
3	0.28	3.41	0.39	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	483.33	481.99	45.03	0.00	1915.72	0.252	0.34	2.508	A
2	267.26	266.45	177.93	0.00	1573.69	0.170	0.20	2.752	A
3	284.58	283.68	236.43	0.00	1541.26	0.185	0.23	2.861	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	577.14	576.76	53.90	0.00	1909.33	0.302	0.43	2.701	A
2	319.14	318.92	212.92	0.00	1551.22	0.206	0.26	2.921	A
3	339.81	339.56	282.99	0.00	1511.27	0.225	0.29	3.072	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	706.86	706.22	66.00	0.00	1900.62	0.372	0.59	3.012	A
2	390.86	390.52	260.71	0.00	1520.52	0.257	0.34	3.186	A
3	416.19	415.77	346.51	0.00	1470.35	0.283	0.39	3.411	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	706.86	706.85	66.06	0.00	1900.57	0.372	0.59	3.015	A
2	390.86	390.86	260.94	0.00	1520.37	0.257	0.35	3.186	A
3	416.19	416.18	346.82	0.00	1470.16	0.283	0.39	3.414	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	577.14	577.77	54.00	0.00	1909.25	0.302	0.44	2.704	A

2	319.14	319.48	213.29	0.00	1550.98	0.206	0.26	2.923	A
3	339.81	340.22	283.48	0.00	1510.95	0.225	0.29	3.075	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	483.33	483.72	45.21	0.00	1915.59	0.252	0.34	2.516	A
2	267.26	267.48	178.57	0.00	1573.28	0.170	0.21	2.758	A
3	284.58	284.83	237.34	0.00	1540.67	0.185	0.23	2.866	A

(Default Analysis Set) - 2016 Survey, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Survey, PM	2016 Survey	PM		ONE HOUR	15:30	17:00	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.01	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	564.00	100.000
2	ONE HOUR	✓	359.00	100.000
3	ONE HOUR	✓	293.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	278.000	286.000
	2	306.000	0.000	53.000
	3	259.000	34.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.49	0.51
	2	0.85	0.00	0.15
	3	0.88	0.12	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.32	2.77	0.48	A
2	0.27	3.30	0.36	A
3	0.22	3.12	0.28	A

Main Results for each time segment

Main results: (15:30-15:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	424.61	423.48	25.52	0.00	1929.77	0.220	0.28	2.389	A
2	270.27	269.43	214.75	0.00	1550.04	0.174	0.21	2.810	A
3	220.59	219.92	229.66	0.00	1545.62	0.143	0.17	2.714	A

Main results: (15:45-16:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	507.02	506.73	30.55	0.00	1926.15	0.263	0.36	2.536	A
2	322.73	322.50	256.96	0.00	1522.93	0.212	0.27	2.998	A
3	263.40	263.23	274.89	0.00	1516.49	0.174	0.21	2.872	A

Main results: (16:00-16:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	620.98	620.50	37.40	0.00	1921.21	0.323	0.48	2.768	A
2	395.27	394.89	314.65	0.00	1485.87	0.266	0.36	3.300	A
3	322.60	322.32	336.60	0.00	1476.74	0.218	0.28	3.118	A

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	620.98	620.97	37.43	0.00	1921.19	0.323	0.48	2.768	A
2	395.27	395.26	314.89	0.00	1485.72	0.266	0.36	3.300	A
3	322.60	322.60	336.91	0.00	1476.54	0.218	0.28	3.119	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	507.02	507.50	30.60	0.00	1926.11	0.263	0.36	2.540	A
2	322.73	323.10	257.35	0.00	1522.68	0.212	0.27	3.001	A
3	263.40	263.67	275.40	0.00	1516.16	0.174	0.21	2.874	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	424.61	424.91	25.62	0.00	1929.69	0.220	0.28	2.394	A
2	270.27	270.51	215.47	0.00	1549.58	0.174	0.21	2.816	A
3	220.59	220.76	230.57	0.00	1545.03	0.143	0.17	2.718	A

(Default Analysis Set) - 2016 Survey, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Survey, Saturday	2016 Survey	Saturday		ONE HOUR	11:15	12:45	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			2.75	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	413.00	100.000
2	ONE HOUR	✓	283.00	100.000
3	ONE HOUR	✓	279.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	179.000	234.000
	2	229.000	0.000	54.000
	3	227.000	52.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.43	0.57
	2	0.81	0.00	0.19
	3	0.81	0.19	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.24	2.48	0.31	A
2	0.20	2.97	0.26	A
3	0.20	2.94	0.25	A

Main Results for each time segment

Main results: (11:15-11:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	310.93	310.16	39.03	0.00	1920.03	0.162	0.19	2.235	A
2	213.06	212.43	175.73	0.00	1575.11	0.135	0.16	2.640	A
3	210.05	209.44	171.90	0.00	1582.82	0.133	0.15	2.619	A

Main results: (11:30-11:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	371.28	371.09	46.72	0.00	1914.50	0.194	0.24	2.332	A
2	254.41	254.25	210.25	0.00	1552.93	0.164	0.20	2.771	A
3	250.82	250.66	205.74	0.00	1561.03	0.161	0.19	2.747	A

Main results: (11:45-12:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	454.72	454.43	57.21	0.00	1906.95	0.238	0.31	2.478	A
2	311.59	311.34	257.48	0.00	1522.60	0.205	0.26	2.972	A

3	307.18	306.95	251.94	0.00	1531.27	0.201	0.25	2.940	A

Main results: (12:00-12:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	454.72	454.72	57.25	0.00	1906.92	0.238	0.31	2.478	A
2	311.59	311.59	257.64	0.00	1522.49	0.205	0.26	2.972	A
3	307.18	307.18	252.13	0.00	1531.15	0.201	0.25	2.940	A

Main results: (12:15-12:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	371.28	371.56	46.79	0.00	1914.45	0.194	0.24	2.335	A
2	254.41	254.65	210.52	0.00	1552.76	0.164	0.20	2.773	A
3	250.82	251.05	206.06	0.00	1560.82	0.161	0.19	2.750	A

Main results: (12:30-12:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	310.93	311.12	39.18	0.00	1919.93	0.162	0.19	2.237	A
2	213.06	213.22	176.28	0.00	1574.76	0.135	0.16	2.643	A
3	210.05	210.20	172.53	0.00	1582.42	0.133	0.15	2.623	A

(Default Analysis Set) - 2024 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base, AM	2024 Base	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.35	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	701.00	100.000
2	ONE HOUR	✓	388.00	100.000
3	ONE HOUR	✓	413.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

From	To			
		1	2	3
	1	0.000	442.000	259.000

	2	344.000	0.000	44.000
	3	347.000	66.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.63	0.37
	2	0.89	0.00	0.11
	3	0.84	0.16	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	3.20	0.68	A
2	0.28	3.34	0.40	A
3	0.31	3.62	0.46	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	527.75	526.23	49.53	0.00	1912.48	0.276	0.38	2.595	A
2	292.11	291.19	194.43	0.00	1563.10	0.187	0.23	2.829	A
3	310.93	309.91	258.17	0.00	1527.26	0.204	0.25	2.954	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	630.18	629.74	59.29	0.00	1905.45	0.331	0.49	2.822	A
2	348.80	348.55	232.67	0.00	1538.53	0.227	0.29	3.025	A
3	371.28	370.98	309.03	0.00	1494.50	0.248	0.33	3.204	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	771.82	771.05	72.59	0.00	1895.87	0.407	0.68	3.199	A
2	427.20	426.79	284.88	0.00	1504.99	0.284	0.39	3.339	A
3	454.72	454.22	378.39	0.00	1449.82	0.314	0.45	3.613	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	771.82	771.81	72.67	0.00	1895.82	0.407	0.68	3.202	A
2	427.20	427.19	285.16	0.00	1504.81	0.284	0.40	3.339	A
3	454.72	454.72	378.75	0.00	1449.59	0.314	0.46	3.617	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	630.18	630.94	59.41	0.00	1905.36	0.331	0.50	2.825	A
2	348.80	349.21	233.11	0.00	1538.25	0.227	0.29	3.028	A
3	371.28	371.77	309.61	0.00	1494.13	0.248	0.33	3.208	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	527.75	528.20	49.74	0.00	1912.33	0.276	0.38	2.601	A
2	292.11	292.36	195.16	0.00	1562.63	0.187	0.23	2.834	A
3	310.93	311.23	259.21	0.00	1526.59	0.204	0.26	2.962	A

(Default Analysis Set) - 2024 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base, PM	2024 Base	PM		ONE HOUR	15:30	17:00	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.16	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	616.00	100.000
2	ONE HOUR	✓	392.00	100.000
3	ONE HOUR	✓	319.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	304.000	312.000
	2	334.000	0.000	58.000
	3	282.000	37.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.49	0.51
	2	0.85	0.00	0.15
	3	0.88	0.12	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.35	2.90	0.55	A
2	0.29	3.47	0.42	A
3	0.24	3.26	0.32	A

Main Results for each time segment

Main results: (15:30-15:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	463.76	462.49	27.77	0.00	1928.15	0.241	0.32	2.454	A
2	295.12	294.17	234.25	0.00	1537.52	0.192	0.24	2.894	A

3	240.16	239.42	250.65	0.00	1532.10	0.157	0.19	2.783	A

Main results: (15:45-16:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	553.77	553.42	33.24	0.00	1924.21	0.288	0.40	2.626	A
2	352.40	352.13	280.31	0.00	1507.93	0.234	0.30	3.114	A
3	286.77	286.57	300.03	0.00	1500.29	0.191	0.24	2.965	A

Main results: (16:00-16:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	678.23	677.66	40.70	0.00	1918.83	0.353	0.54	2.898	A
2	431.60	431.16	343.23	0.00	1467.51	0.294	0.41	3.471	A
3	351.23	350.90	367.36	0.00	1456.93	0.241	0.32	3.255	A

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	678.23	678.22	40.74	0.00	1918.81	0.353	0.55	2.901	A
2	431.60	431.60	343.52	0.00	1467.33	0.294	0.42	3.474	A
3	351.23	351.22	367.74	0.00	1456.68	0.241	0.32	3.255	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	553.77	554.33	33.30	0.00	1924.16	0.288	0.41	2.630	A
2	352.40	352.84	280.76	0.00	1507.64	0.234	0.31	3.117	A
3	286.77	287.09	300.63	0.00	1499.91	0.191	0.24	2.968	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	463.76	464.11	27.88	0.00	1928.07	0.241	0.32	2.461	A
2	295.12	295.39	235.07	0.00	1536.99	0.192	0.24	2.899	A
3	240.16	240.36	251.68	0.00	1531.43	0.157	0.19	2.790	A

(Default Analysis Set) - 2024 Base, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base, Saturday	2024 Base	Saturday		ONE HOUR	11:15	12:45	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			2.86	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	454.00	100.000
2	ONE HOUR	✓	311.00	100.000
3	ONE HOUR	✓	305.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	197.000	257.000
	2	251.000	0.000	60.000
	3	248.000	57.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.43	0.57
	2	0.81	0.00	0.19
	3	0.81	0.19	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.26	2.56	0.36	A
2	0.23	3.09	0.29	A
3	0.22	3.05	0.28	A

Main Results for each time segment

Main results: (11:15-11:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	341.80	340.93	42.79	0.00	1917.33	0.178	0.22	2.282	A
2	234.14	233.44	192.99	0.00	1564.02	0.150	0.18	2.704	A
3	229.62	228.94	188.40	0.00	1572.20	0.146	0.17	2.678	A

Main results: (11:30-11:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	408.14	407.92	51.21	0.00	1911.27	0.214	0.27	2.394	A
2	279.58	279.40	230.91	0.00	1539.66	0.182	0.22	2.856	A
3	274.19	274.01	225.50	0.00	1548.30	0.177	0.21	2.824	A

Main results: (11:45-12:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	499.86	499.53	62.71	0.00	1902.99	0.263	0.35	2.565	A
2	342.42	342.13	282.77	0.00	1506.35	0.227	0.29	3.092	A
3	335.81	335.54	276.12	0.00	1515.69	0.222	0.28	3.050	A

Main results: (12:00-12:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	499.86	499.86	62.76	0.00	1902.95	0.263	0.36	2.565	A
2	342.42	342.41	282.96	0.00	1506.23	0.227	0.29	3.092	A
3	335.81	335.81	276.35	0.00	1515.54	0.222	0.28	3.050	A

Main results: (12:15-12:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	408.14	408.47	51.29	0.00	1911.21	0.214	0.27	2.397	A
2	279.58	279.87	231.23	0.00	1539.46	0.182	0.22	2.860	A
3	274.19	274.46	225.87	0.00	1548.06	0.177	0.22	2.826	A

Main results: (12:30-12:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	341.80	342.01	42.95	0.00	1917.22	0.178	0.22	2.287	A
2	234.14	234.32	193.61	0.00	1563.62	0.150	0.18	2.708	A
3	229.62	229.80	189.11	0.00	1571.74	0.146	0.17	2.684	A

(Default Analysis Set) - 2024 Base plus Development, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time	Model Time Period	Time Segment Length	Single Time Segment	Locked

						(HH:mm)	Length (min)	(min)	Only	
2024 Base plus Development, AM	2024 Base plus Development	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.40	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	712.00	100.000
2	ONE HOUR	✓	398.00	100.000
3	ONE HOUR	✓	423.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	449.000	263.000
	2	354.000	0.000	44.000
	3	357.000	66.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.63	0.37
	2	0.89	0.00	0.11
	3	0.84	0.16	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	3.24	0.70	A

2	0.29	3.38	0.41	A
3	0.32	3.68	0.48	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	536.03	534.48	49.52	0.00	1912.48	0.280	0.39	2.610	A
2	299.64	298.69	197.43	0.00	1561.17	0.192	0.24	2.850	A
3	318.46	317.40	265.67	0.00	1522.43	0.209	0.26	2.984	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	640.07	639.61	59.28	0.00	1905.45	0.336	0.50	2.844	A
2	357.79	357.53	236.26	0.00	1536.22	0.233	0.30	3.054	A
3	380.27	379.96	318.00	0.00	1488.72	0.255	0.34	3.247	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	783.93	783.14	72.58	0.00	1895.88	0.413	0.70	3.234	A
2	438.21	437.78	289.28	0.00	1502.17	0.292	0.41	3.380	A
3	465.73	465.20	389.38	0.00	1442.74	0.323	0.47	3.680	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	783.93	783.92	72.67	0.00	1895.82	0.414	0.70	3.236	A
2	438.21	438.20	289.57	0.00	1501.98	0.292	0.41	3.383	A
3	465.73	465.73	389.76	0.00	1442.50	0.323	0.48	3.684	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	640.07	640.85	59.41	0.00	1905.36	0.336	0.51	2.850	A
2	357.79	358.22	236.72	0.00	1535.93	0.233	0.31	3.057	A
3	380.27	380.79	318.62	0.00	1488.32	0.256	0.34	3.251	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	536.03	536.50	49.74	0.00	1912.33	0.280	0.39	2.616	A
2	299.64	299.90	198.17	0.00	1560.69	0.192	0.24	2.855	A
3	318.46	318.77	266.75	0.00	1521.73	0.209	0.27	2.995	A

(Default Analysis Set) - 2024 Base plus Development, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base plus Development, PM	2024 Base plus Development	PM		ONE HOUR	15:30	17:00	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.34	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	679.00	100.000
2	ONE HOUR	✓	425.00	100.000
3	ONE HOUR	✓	347.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	335.000	344.000
	2	367.000	0.000	58.000
	3	310.000	37.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.49	0.51
	2	0.86	0.00	0.14
	3	0.89	0.11	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.39	3.07	0.64	A
2	0.32	3.68	0.48	A
3	0.27	3.42	0.36	A

Main Results for each time segment

Main results: (15:30-15:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	511.19	509.75	27.77	0.00	1928.15	0.265	0.36	2.536	A
2	319.96	318.90	258.25	0.00	1522.10	0.210	0.27	2.989	A
3	261.24	260.41	275.38	0.00	1516.17	0.172	0.21	2.865	A

Main results: (15:45-16:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	610.41	609.99	33.24	0.00	1924.21	0.317	0.46	2.739	A
2	382.07	381.75	309.04	0.00	1489.47	0.257	0.34	3.250	A
3	311.95	311.71	329.65	0.00	1481.21	0.211	0.27	3.078	A

Main results: (16:00-16:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	747.59	746.90	40.70	0.00	1918.84	0.390	0.63	3.070	A
2	467.93	467.40	378.40	0.00	1444.92	0.324	0.48	3.681	A
3	382.05	381.67	403.62	0.00	1433.57	0.267	0.36	3.422	A

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	747.59	747.59	40.74	0.00	1918.81	0.390	0.64	3.073	A
2	467.93	467.93	378.75	0.00	1444.69	0.324	0.48	3.684	A
3	382.05	382.05	404.07	0.00	1433.28	0.267	0.36	3.423	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	610.41	611.09	33.30	0.00	1924.16	0.317	0.47	2.744	A
2	382.07	382.59	309.59	0.00	1489.12	0.257	0.35	3.254	A
3	311.95	312.32	330.38	0.00	1480.75	0.211	0.27	3.083	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	511.19	511.60	27.88	0.00	1928.07	0.265	0.36	2.541	A

2	319.96	320.28	259.19	0.00	1521.49	0.210	0.27	2.997	A
3	261.24	261.48	276.57	0.00	1515.40	0.172	0.21	2.870	A

(Default Analysis Set) - 2024 Base plus Development, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base plus Development, Saturday	2024 Base plus Development	Saturday		ONE HOUR	11:15	12:45	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3			3.14	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Lon Gwernydd	
2	Ruthin North Link Road	
3	Denbigh Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.60	7.25	22.80	39.00	36.59	17.00	
2	3.60	6.99	16.00	18.00	37.35	31.00	
3	3.60	7.24	15.00	10.79	36.75	21.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.720	1948.141
2		(calculated)	(calculated)	0.642	1687.991
3		(calculated)	(calculated)	0.644	1693.544

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	567.00	100.000
2	ONE HOUR	✓	370.00	100.000
3	ONE HOUR	✓	364.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	246.000	321.000
	2	310.000	0.000	60.000
	3	307.000	57.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.43	0.57
	2	0.84	0.00	0.16
	3	0.84	0.16	0.00

Vehicle Mix

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

		To		
From		1	2	3

	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	0.000	0.000
	2	0.000	0.000	0.000
	3	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.33	2.81	0.49	A
2	0.28	3.42	0.39	A
3	0.27	3.35	0.37	A

Main Results for each time segment

Main results: (11:15-11:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	426.87	425.73	42.78	0.00	1917.34	0.223	0.29	2.413	A
2	278.56	277.67	241.02	0.00	1533.17	0.182	0.22	2.866	A
3	274.04	273.18	232.64	0.00	1543.70	0.178	0.22	2.832	A

Main results: (11:30-11:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	509.72	509.41	51.20	0.00	1911.27	0.267	0.36	2.568	A
2	332.62	332.37	288.40	0.00	1502.73	0.221	0.28	3.075	A
3	327.23	326.99	278.48	0.00	1514.18	0.216	0.27	3.032	A

Main results: (11:45-12:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	624.28	623.78	62.70	0.00	1902.99	0.328	0.49	2.814	A
2	407.38	406.97	353.15	0.00	1461.14	0.279	0.38	3.415	A
3	400.77	400.38	340.98	0.00	1473.92	0.272	0.37	3.353	A

Main results: (12:00-12:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	624.28	624.27	62.76	0.00	1902.95	0.328	0.49	2.814	A
2	407.38	407.37	353.43	0.00	1460.96	0.279	0.39	3.416	A
3	400.77	400.77	341.31	0.00	1473.70	0.272	0.37	3.354	A

Main results: (12:15-12:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	509.72	510.21	51.30	0.00	1911.20	0.267	0.37	2.570	A
2	332.62	333.02	288.85	0.00	1502.44	0.221	0.29	3.078	A
3	327.23	327.61	279.02	0.00	1513.83	0.216	0.28	3.037	A

Main results: (12:30-12:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	426.87	427.18	42.95	0.00	1917.21	0.223	0.29	2.418	A
2	278.56	278.81	241.84	0.00	1532.64	0.182	0.22	2.871	A
3	274.04	274.28	233.59	0.00	1543.09	0.178	0.22	2.837	A