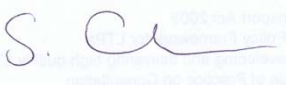


Barnsley College - Proposed Housing Developments

Transport Assessment
June 2014



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1. Introduction

1.1 Background

- 1.1.1 Capita have been commissioned by Barnsley College to prepare a Transport Assessment (TA) for proposed housing developments on land to the north of Barnsley Town Centre. The development sites form part of the current Barnsley College Estate that is being rationalised following further developments by the College in and around Barnsley.
- 1.1.2 The proposed development comprises three separate application sites that are being submitted at the same time to allow them to be considered at the same planning committee. This is because there are links between the sites in terms of the sport pitch provision. Therefore, this document will accompany the three applications separately but consider the developments as a single development.
- 1.1.3 The three application sites comprise:
- **Carrington Avenue** – 89 housing units
 - **Belle Vue** – 5 flatted and 12 housing units and 2 mini sports pitches
 - **The Fleets** – 2 mini sports pitches
- 1.1.4 A site location plan is shown in Figure 1 in Appendix A.
- 1.1.5 The application for the developments at the three sites is for outline permission with the exception of the proposed 5 flatted units at the Belle Vue site, which is for full permission.

1.2 Scope

- 1.2.1 The scope of this report was made during pre-application discussions with officers of Barnsley Metropolitan Borough Council (BMBC) via correspondence that suggested the parameters to be used in the preparation of the TA. Limited feedback as been received therefore it is assumed that the suggested parameters put forward are acceptable as the scope for assessment.
- 1.2.2 National guidance contained within the 'Guidance on Transport Assessment' published by the Department for Transport in 2007 indicates that for the proposed development at Carrington Avenue (89 housing units), which generates more than 30 two-way trips, a TA is the most appropriate form of assessment. The other 2 developments need only a Transport Statement (TS) as the trip generation falls significantly below the aforementioned threshold.
- 1.2.3 This TA, considers all 3 development sites and includes the following assessment criteria:
- Assessment of relevant transport policies;
 - Description of the existing transport characteristics of the site, including details of the study area;
 - Access by sustainable transport;
 - Highway safety review;

- Description of the proposed developments, including access provision and parking provision;
 - Trip generation and assignment for the proposed developments;
 - Operational assessment for the development; and
 - Mitigation measures, if necessary.
- 1.2.4 The approach and contents of the TA have been suggested to BMBC officers by e-mail during pre-application discussions which was only possible via correspondence. Limited feedback was received from BMBC therefore it is assumed that the parameters have been accepted.

2. Transport Policy

2.1 Introduction

- 2.1.1 This section briefly reviews relevant transport policies appropriate for the proposed development. A detailed planning policy review is contained within the Planning Statement that accompanies the application.

2.2 National Planning Policy Framework

- 2.2.1 The National Planning Policy Framework (NPPF) was published by the Government in March 2012. The NPPF sets out the Government's planning policies for England and how these are expected to be applied.
- 2.2.2 NPPF seeks to encourage authorities to develop transport policies that play an important role in facilitating sustainable development. It identifies that the transport system needs to be balanced in favour of sustainable transport modes, giving people real choice about how they travel.
- 2.2.3 NPPF goes on to state that developments generating significant amounts of movement should be supported by a Transport Statement or Transport Assessment with decisions taking into account:
- The opportunities for sustainable transport modes having been taken up, depending on the nature and location of the site, reducing the need for major transport infrastructure;
 - Safe and suitable access to the site being achieved for all people; and
 - Improvements can be undertaken within the transport network that cost effectively limits the significant impacts of the development.
- 2.2.4 NPPF identifies that development should only be prevented or refused on transport grounds where the residual cumulative impacts of the development are severe.
- 2.2.5 The site accessibility section of this report identifies that the proposed development site is well located to facilitate the use of sustainable transport by residents at the development.
- 2.2.6 The residual cumulative impacts of the proposed development are considered, as demonstrated within this report, not to result in a severe impact upon the surrounding highway network.

2.3 Barnsley Unitary Development Plan

- 2.3.1 The Council's Unitary Development Plan (UDP) was adopted in December 2000 and has been generally superseded by the Local Development Framework (LDF) Core Strategy and the emerging Local Plan. However a number of Policies within the UDP have been saved to ensure comprehensive planning policy coverage remains in place for the determination of application during the development of the LDF and the emergence of the Local Plan.

2.3.2 The saved policies relevant to transport issues are:

- Policy T3 – Strategic Highway Network designation;
- Policy T4 – Strategic Highway Proposals;
- Policy T5 – Protected Highway Alignments;
- Policy T8 – Highway Maintenance;
- Policy T10 – Bus and Rail Infrastructure Improvements;
- Policy T21 – Residents Parking

2.3.3 It is considered that the proposed development conforms to the saved policies listed above. This is because they are either not relevant to the development proposals or that there is no impact upon the policies from the development itself.

2.4 Barnsley Local Development Framework and Local Plan – Core Strategy

2.4.1 This document published in September 2011 provides a spatial strategy to help guide the future development of Barnsley until 2026. It sets out the key elements of the planning framework for Barnsley, and details the approach to the area's long term physical development to help realise the Council's vision of what Barnsley will become.

2.4.2 Following the publication of NPPF and the requirement to develop Local Plan documents, the Core Strategy document forms part of the emerging Local Plan for Barnsley.

2.4.3 The Local Development Framework (LDF) indicates that Barnsley Urban is where most development should take place and that the greatest opportunity is to make use of previously developed land with good access to public transport. It advises that this is where housing should be concentrated. These planning applications address the need for more housing stock and provide it within the Barnsley Urban area. Where sports facilities are affected these are being replaced with more relevant sports facilities in different locations.

2.4.4 In terms of transport the aim is to reduce the need to travel, as indicated in in Policy CSP 25. However, where travel is required then this should be made as easy as possible by walking, cycling, public transport and finally private vehicle. By developing within existing housing areas with established facilities the proposed developments assist with the Council's desire for reduced travel.

2.4.5 The site accessibility section reviews the access to the development sites by walking, cycling and public transport and demonstrates that the development sites are accessible by sustainable transport needs.

2.4.6 The proposed development is therefore considered to generally accord with the transport policies laid out within the Core Strategy.

2.5 Supplementary Planning Document - Parking

- 2.5.1 This supplementary planning document (SPD) sets out the parking standards. It provides guidance on a host of different land uses and the maximum parking provision for cars, cycles and disabled persons vehicles.
- 2.5.2 By setting a maximum standard the Council aims to encourage the use of other more sustainable modes of transport.
- 2.5.3 An review and assessment of the maximum car parking standards is made in a later section of this report and demonstrates that the maximum car parking standards will be adhered to.
- 2.5.4 Due to outline permission being sought, the precise location and quantum of the car parking will be determined at the reserve matters stage. Upon this submission the car parking requirements will be further assessed against this SPD or any other document that supersedes it.

2.6 South Yorkshire Local Transport Plan 3

- 2.6.1 The South Yorkshire Local Transport Plan 3 (LTP) is made up of two documents, namely the Transport Strategy 2011-2026 document, which sets of the priority for the transport systems, and Implementation Plan 2011-2015 document, which details how this will be implemented in the first five years of the plan.
- 2.6.2 The LTP has been prepared by the Sheffield City Region, in which Barnsley is located. The LTP forms the statutory document for the South Yorkshire authorities but also includes within the strategy those parts of the City Region within Derbyshire and Nottinghamshire, although these areas have separate LTP documents.
- 2.6.3 The goals of the LTP strategy are:
 - To support economic growth;
 - To reduce emissions
 - To maximise safety;
 - To enhance social inclusion and health.
- 2.6.4 The impact in transport terms from the proposed development does not impact upon these goals and accords with the strategy within the LTP.
- 2.6.5 The new development will support the economic growth of Barnsley by providing new housing close to the town centre. This proximity to the town centre also encourages the use of sustainable transport for trips to this destination, thus reducing the use of the private car and reducing emissions. The accessibility of the site by sustainable means is detailed later in the TA. Highway safety is also considered within this report.
- 2.6.6 It is therefore considered that the proposed development accords with the goals of the LTP strategy document.

- 2.6.7 The implementation document considers how the 15 year strategy will be implemented in the first five year of the plan. A review of the schemes and deliverables within the plan has been undertaken and it is considered that the proposed development will have no material impact upon the schemes or deliverables.
- 2.6.8 It is therefore considered that the proposed development broadly conforms with the South Yorkshire LTP.

3. Sustainable Transport

3.1 Introduction

- 3.1.1 Sustainable transport, be it walking, cycling or using public transport, are the modes of transport every development should strive towards promoting.
- 3.1.2 This chapter of the report considers access to these modes at the proposed development sites.

3.2 Walking

- 3.2.1 All of the sites are locate in the residential area of Honeywell, Barnsley. As a result they benefit from being well connected to the existing footway network.
- 3.2.2 Throughout the Honeywell area there are well lit and maintained footways connecting the development sites to various locations and facilities.
- 3.2.3 The footways are generally continuous and on both sides of the road with the exception of:
 - **Smithies Lane** - Between Wakefield Road and the access to the Council Depot there is a footway on the south side of the road only and from Rockingham Street westwards across the bridge over the Hallam rail line where there is a footway on the northwest side of the road only.
 - **Honeywell Lane** – Through the tunnel under the Hallam rail line where there are no footways.
 - **Cockerham Lane** – On the northwest side of the road there is no footway between A635 Huddersfield Road and Lombard Close.
- 3.2.4 On Smithies Lane and Cockerham Lane, where a footway is only present on one-side of the street, vehicle flows were observed to be low. This means that there are significant and regular gaps in the traffic to enable pedestrians to safely cross and access the footway network. However, at the end points of these footways there are no drop kerbs or tactile paving to assist those with mobility issues.
- 3.2.5 As well as footways there is also a network of Public Rights of Way in the vicinity of The Fleets site. One path runs north to south to the left of the proposed sports pitches and the other runs north to south adjacent to the reservoir. Both routes connect to Mapplewell in the north. In the south they meet when the paths run along the south of the reservoir and connect to Canal Street and Old Mill Lane.
- 3.2.6 A review of community facilities in the area found that there are a number of facilities within a reasonable walking distance of the sites. The IHT publication “Providing for Journeys on Foot” details the acceptable walking distances for various purposes. These distances are shown in Table 1.

Table 1: Walking Distances

	Town Centre	Commuting/ School	Elsewhere/ Leisure
Desirable	200m	500m	400m
Acceptable	400m	1,000m	800m
Preferred Maximum	800m	2,000m	1,200m

- 3.2.7 Table 2 shows the distances to local facilities from the residential elements of the developments. This shows that the majority of community facilities are within a reasonable walking distance of each of the proposed developments. These distances are for people walking alongside the carriageway on the footways.

Table 2: Distances to Community Facilities

	Carrington Avenue Residential	Belle Vue Residential
Buddies Children's Centre	1,450m	1,610m
Victoria Day Nursery	805m	480m
Burton Road Primary School	1,450m	1,610m
Summer Lane Primary School	1,290m	965m
Wilthorpe Primary School	1,290m	1,290m
Horizon Community College	2,575m	2,250m
Proposed Sixth Form College on Shambles Street	1,130m	1,130m
Barnsley College Church Street Campus	805m	485m
Barnsley Interchange/ Town Centre	1,130m	1,290m
Metrodome Leisure Centre	1,850m	1,170m
Post Office – Huddersfield Road	805m	805m
Asda	965m	1,130m
Newsagent/ Mini-Market – Rockingham Street	160m	645m

- 3.2.8 The mini sports pitches are well located within established residential areas and adjacent to existing sport facilities. Table 3 shows the approximate distance between the mini sport pitches and residential areas and town centre.

Table 3: Distances to Residential Areas from Mini Sports Pitches

	The Fleets - Mini Sports Pitches	Belle Vue - Mini Sports Pitches
Honeywell	485m	645m
Town Centre	1,450m	1,130m
Old Town	1,450m	1,130m
Smithies	1,610m	2,575m

- 3.2.9 If a future pedestrian and/ or cycle link is added from the Honeywell Lane Campus to Old Mill Lane then some of the distances detailed in Tables 2 and 3 will be reduced.

3.3 Cycling

- 3.3.1 Barnsley is served by the National Cycle Network Route 67 which connects the town to Long Eaton, Heanor, Blackwell, Grassmoor, Chesterfield, Leeds, Bramham, Harrogate and Ripley.
- 3.3.2 The majority of Route 67 is traffic free, although there are some sections of on-road routes, be it part of the National Cycle Network or local cycle networks.
- 3.3.3 Route 67 is accessed at the Stairfoot area of Barnsley. From the end of Route 67 cyclists can join the local cycle network which continues northwest and terminates at Kendray Street at its junction with Schwabisch Gmund Way.
- 3.3.4 The nearest point in the local cycle network is approximately 1.3km from the development sites. The location of the cycle network is available to view on BMBC's interactive map on their website.
- 3.3.5 From the end of the local cycle network to the proposed development sites cyclists would travel on-road. Most likely Honeywell Street which is a quiet road. It is to a good standard and wide enough to accommodate cyclists and motorised vehicles.
- 3.3.6 LTN 2/08 Paragraph 1.5.1 gives an indication of the distances people are likely to cycle for various purposes. It states that "many utility cycle journeys are under three miles, although, for commuter journeys, a trip distance of over five miles is not uncommon." It also indicates that "A round trip on a waymarked leisure route could easily involve distances of 20 to 30 miles. Experienced cyclists will often be prepared to cycle longer distances for whatever journey purpose."

3.4 Public Transport

Bus

- 3.4.1 The development sites are located on or close to 2 bus routes, the number 12 bus service, which circles the area via Honeywell Grove, Smithies Lane, Rockingham Street and Honeywell Street, and the number 97 bus service that operates via the A635 Huddersfield Road.
- 3.4.2 Figure 2 in Appendix A shows the bus routes and bus stops in relation to the 3 development sites.
- 3.4.3 The nearest bus stops to each of the proposed developments are:
- **Carrington Avenue** – Either on Honeywell Street to the south of Honeywell Lane (approximately 320m away) or Huddersfield Road between Victoria Crescent and Kensington Road (approximately 485m away).
 - **Belle Vue** – Huddersfield Road between Victoria Crescent and Kensington Road (approximately 100m away).
 - **The Fleets** – Smithies Lane opposite the College building and on Honeywell Grove opposite Halifax Street (approximately 90m and 320m away respectively).
- 3.4.4 All of the proposed development sites are with an acceptable walking distance of a bus stop i.e. less than 400m. Residents at the Carrington Avenue site may choose to walk a slightly longer distance to the Huddersfield Road bus stops to avoid using the tunnel on Honeywell Lane which has no footways through the tunnel.
- 3.4.5 From the bus stops in the Honeywell area i.e. Honeywell Grove, Smithies Lane, Rockingham Street and Honeywell Street, passengers can board the number 12 bus service. This service travels to New Lodge, Athersley and Barnsley Town Centre.
- 3.4.6 From the Huddersfield Road stops the number 97 bus service can be boarded. This service runs between Barnsley and Wakefield.
- 3.4.7 If a future pedestrian and/ or cycle link is added from the Honeywell Lane Campus to Old Mill Lane then further bus services would become accessible.
- 3.4.8 Table 4 provides details of the bus services and their frequencies.
- 3.4.9 Although not served by a bus service directly adjacent to the development sites, with the exception of Smithies Lane, within a reasonable walking distance there is access to at least 1 bus service.
- 3.4.10 Within a longer walking distance but still within an acceptable walking distance of the sites there is access to further services.

Table 4: Summary of Bus Services

Service No.	Operator	Route	Frequency		
			Mon-Fri	Sat	Sun
Honeywell Bus Service					
12	Stagecoach	Barnsley – Honeywell – Smithies – New Lodge – Athersley	4 per hour	4 per hour	2 per hour
Huddersfield Road Bus Service					
97	Tates Travel	Barnsley Centre – Wakefield City Centre	1 per hour	No services	No services

- 3.4.11 The bus services offer access to several employment sites. The number 12 service passes close to BMBC's Smithies Lane Depot, Polar Ford, Build Base and Bathrooms Direct. The number 97 service passes close to Barnsley Business and Innovation Centre, Redbrook Business Park, Claycliffe Industrial Estate, Claycliffe Business Park and the town centre. Therefore they offer sustainable links to employment generators as well as transporting people from the surrounding residential areas to use the mini sports pitches.

Train

- 3.4.12 Barnsley Rail Station is situated within the Transport Interchange on Eldon Street. It offers train services to Nottingham and Sheffield in the south as well as Huddersfield and Leeds to the north. From these outlying stations there are opportunities for onward National travel via other rail lines.
- 3.4.13 The station is on average approximately 1.2km from the development sites. This is within the preferred maximum walking distance for commuting of 2km for access to a train station.
- 3.4.14 This gives potential for some people to choose to use the train for longer commuter journeys to stations between Barnsley and Sheffield, Brookshole, Leeds and Dronfield which are up to a 40 minute train journey from Barnsley.

3.5 Conclusions

- 3.5.1 The development sites are well served by public footways and rights of way to enable people to walk for reasonable length journeys. There are however some historical issues on the pedestrian network, whilst not ideal, have not presented a significant safety or severance issue. We would welcome further discussions with the Local Authority on the issues identified.

- 3.5.2 There are no off-road cycle routes which run near or adjacent to the development sites. An on-road cycle of approximately 1.3km would allow people to join the local cycle route which connections with the National Cycle Network Route 67.
- 3.5.3 There are 2 bus routes within a reasonable walking distance of the development sites. There are further bus services which are accessible from Old Mill Lane and Eldon Street. All of these offer frequent bus services.
- 3.5.4 Finally although Barnsley Rail Station is approximately 1.3km from the development sites there is potential for people to travel to the station by foot, cycle or public transport to undertake longer journeys by train.
- 3.5.5 Overall the developments are well connected to sustainable modes of transport, which offer alternatives to travel over the private car.

4. Existing Highway Network

4.1 Site Locations

4.1.1 The proposed development sites are located to the north of Barnsley town centre in a predominately residential area with some Barnsley College Campuses in the vicinity.

4.1.2 The sites are bound as detailed below:

- **Carrington Avenue** - to the west by Carrington Avenue, to the north by residential properties adjacent to Smithies Lane and to the south by Honeywell Lane. It is bound to the east by the Hallam Rail Line.
- **Belle Vue** – to the west by Cockerham Lane and to the north by residential properties which front Cockerham Avenue. To the east of the site are playing fields associated with Barnsley College's Honeywell Campus. The Penistone Rail Line forms the southern boundary to the site.
- **The Fleets** – Barnsley College's Fleets Campus forms the northern boundary of the site. To the east are existing playing fields, to the south open green space and to the west the residential properties on Hartington Drive.

4.1.3 A site location plan is provided at Figure 1 in Appendix A.

4.1.4 Access to the development sites are proposed to be via priority junctions to be taken from:

- **Carrington Avenue** – A total of 65 residential units will take access from a new priority junction Honeywell Lane between the residential properties between Carrington Avenue and the Honeywell Lane rail bridge. A further 18 residential units will take direct access from driveways onto Carrington Avenue.
- **Belle Vue** – Access to the residential element will be from the existing Cockerham Lane Campus access. This is located to the north of the Cockerham Lane / A635 Huddersfield Road priority junction. Access to the proposed pitches will be via the Honeywell Campus accessed from Honeywell Lane.
- **The Fleets** – Via the existing access to Barnsley College's Fleets Campus on Smithies Lane.

4.2 Study Area and Current Traffic Flows

Following pre-application scoping with BMBC officers, the development impact on the following junctions have been assessed within the Transport Assessment (TA);

- Carrington Avenue / Honeywell Lane – 3-arm priority junction;
- Cockerham Lane / Honeywell Lane – 3-arm priority junction;
- Cockerham Lane / Cavendish Road – 3-arm priority junction;

- A635 Huddersfield Road / Cavendish Road / Bond Road – 4-arm priority junction;
- A635 Huddersfield Road / Cockerham Lane – 3-arm priority junction; and
- Carrington Avenue Proposed Access Junction.

- 4.2.1 A plan showing the study area in context of the location of the proposed developments is provided in Figure 3 in Appendix A.
- 4.2.2 Classified junction turning counts covering the AM peak period (07:00 - 09:00 hours) and PM peak period (16:00-18:00 hours) were undertaken of the junctions within the study area on Tuesday 3rd June 2014.
- 4.2.3 The survey data identifies the AM peak hour to be 08:00 – 09:00 hours and the PM peak hour to be 16:50 – 17:50 hours.
- 4.2.4 The results of the surveys are provided in Figures 4 and 5 in Appendix A. This illustrates the surveyed peak hour traffic flows at the junctions in passenger car units (PCUs).
- 4.2.5 PCUs are used as a means of translating vehicle flows into a common means of unit of measurement. Each vehicle type is allocated a passenger car unit equivalent to allow the equivalent PCUs to be calculated i.e. pedal cycles equal 0.2, motorcycles equal 0.4, cars, taxis and LGVs equal 1.0, OGV1 equals 1.5, OGV2 equals 2.3; and buses and coaches equal 2.0 PCUs.
- 4.2.6 A car park occupancy survey was also undertaken at the Belle Vue Campus to determine usage of the car park, which is used by staff accessing other Barnsley College campuses.

4.3 Existing Site Transport Characteristics

- 4.3.1 The proposed development sites are separated from each other physically and have differing transport characteristics.
- 4.3.2 The existing characteristics are:
- **Carrington Avenue** – Currently houses 2 marked full size playing fields, although it could accommodate more pitches if remarked. The site is gated and used by students at the College as part of their curriculum. The site is only used approximately 15% of the College year. There is no parking on site. There is occasional parking on Carrington Avenue, however, most users walk to the site from the nearby Honeywell Campus. Given these characteristics it is considered that there are no vehicle movements to and from this site.

- **Belle Vue** – The Belle Vue building is currently used by the College for teaching purposes. The car park is used by visitors and people using other parts of the College at Honeywell, etc. There are pedestrian footpaths on both sides of site that offer access from Cockerham Lane to the Honeywell Campus. The northern footpath is currently closed due to the development works the Honeywell Campus. The site where the proposed mini sports pitches will be located is within the Honeywell Campus site, adjacent to the boundary with the Belle Vue site. The campus site is currently undergoing redevelopment. There is a Sports Academy that is being extended and due to be handed over in late Summer 2014; the proposed pitches lie between this building and the Belle Vue site. The College Refectory is on the site and this provides catering to all of the College Campuses. A children's nursery and Think Low Carbon Centre is situated on the site. In June 2014 a Construction Building is due to begin delivered with hand over estimated in August 2015. Finally the site has planning permission for the construction of 67 residential properties around the Sports Building and a further 12 on former tennis courts near Honeywell Lane.
- **The Fleets** – This site has recently been redeveloped from a Working Mens Club to an educational facility forming part of Barnsley College. There are 2 full size sport pitches to the southeast of the buildings which are booked out to teams at the weekend. There is also space to accommodate a further pitch if required. The pitches are used occasionally in the evening, however, as the pitches are unlit the periods of use are limited. The buildings are generally used for teaching, however, there are changing rooms to the rear of the former Working Mens Club building for players using the existing pitch provision. There is open ground to the south of these buildings which will house the 2 proposed mini sports pitches.

- 4.3.3 The proposals are such that the Carrington Avenue and Belle Vue sites will be developed for housing with replacement sport pitch provision provided at The Fleets and Belle Vue sites, the latter accessed from the Honeywell Campus. College teaching operations at The Fleets and Honeywell Campuses will not be impacted upon as part of the development proposals. The use of the Belle Vue building by the College will cease.

4.4 Existing Road Network

- 4.4.1 This section of the TA describes the existing road network within the defined study area concentrating on the main links and junctions. The defined study area is shown in Figure 1 in Appendix A.
- 4.4.2 All roads within the Honeywell area are subject to a 30mph speed limit.

Honeywell Lane

- 4.4.3 Honeywell Lane is a single carriageway highway which generally runs from west to east and connects Cockerham Lane to Honeywell Street.

- 4.4.4 The carriageway is approximately 7.3m in width over most of its length. However, where it passes under the Hallam rail line, through a tunnel, it narrows to approximately 4m in width. The tunnel has a height restriction of 3.8m and is therefore unsuitable for high sided vehicles.
- 4.4.5 Where the road passes through the tunnel it narrows and is only a single lane wide traffic signals are in operation to provide safe passage. These signals have vehicle phases only, which were observed to be vehicle actuated, with no dedicated pedestrian phase.
- 4.4.6 Honeywell Lane has lit footways on both sides of the road along its length with the exception of where the road passes under the Hallam rail line. At this location there is no footway and pedestrians have to walk on the road.
- 4.4.7 This road is generally surrounded by residential properties. Some have footway crossovers to access driveways, however, there is still a degree of on-street parking along its length.
- 4.4.8 There is a small stretch of "No Waiting At Any Time" parking restrictions on the approach to the junction with Cockerham Lane.
- 4.4.9 The accesses to the Carrington Avenue and Honeywell Lane sites will take access from this road via a new priority T-junction, between Carrington Avenue and the rail line.

Cockerham Lane

- 4.4.10 Cockerham Lane runs north to south from Smithies Lane to the A635 Huddersfield Road. It is a single carriageway highway, which is residential in nature with the exception of the Belle Vue College Campus and Masonic Hall that are situated close to the junction with Huddersfield Road. There are a number of properties with footway crossovers to their driveways. Access to the car parks for the College Campus is taken from Cockerham Lane.
- 4.4.11 The carriageway width varies from approximately 6.8m in the northern section to 8.0m in the southern section.
- 4.4.12 There are lit footways on both sides of the road between Smithies Lane and just south of Lombard Close. From a point just south of Lombard Close continuing south to the junction with A635 Huddersfield Road there is a footway on the eastside of the road only.
- 4.4.13 Cockerham Lane ends where it forms a priority junction with the A635 Huddersfield Road. At this location it forms a Y shaped junction at approximately 30 degrees to Huddersfield Road.
- 4.4.14 On the approach to the junction with Huddersfield Road there are "No Waiting At Any Time" restrictions on Cockerham Lane. They are on both sides of the road from Huddersfield Road to a point approximately 10m north of the access to the Belle Vue campus. From this point the restrictions continue on the east side of the road only until approximately 10m north of Cockerham Avenue. There are further areas of the same restriction at the junctions with Honeywell Lane and Cavendish Road.
- 4.4.15 Outside these restrictions, on-street parking occurs and is most notable at the southern end of the road around the Belle Vue Campus.

Smithies Lane

- 4.4.16 Access to the 2 mini sports pitches at The Fleets Campus will be taken from Smithies Lane at the existing access to the campus utilising the existing car park.
- 4.4.17 The road generally runs from the east at the A61 Wakefield Road westward to Hall Balk Lane and is a single carriageway road. It is approximately 6.5m wide in the vicinity of the development access.
- 4.4.18 Over the majority of the road Smithies Lane is generally straight, however to the west it bends towards Cockerham Lane. To the east the road bends gently northward, it then bends eastwardly again before bending at 90 degrees south and again 90 degrees east where it joins A61 Wakefield Road.
- 4.4.19 Between Carrington Avenue and Rockingham Street the road crosses over the Hallam rail line. At this location the road narrows to approximately 4.0m. Due to this narrowing traffic signals have been introduced to provide safe passage for vehicles over this section of road. At this location there is a footway on the northwest side of the road only.
- 4.4.20 On Smithies Lane to the east of the Council Depot there is steel bridge over the road. This bridge has a height restriction of 4.19m which prevents high sided vehicles from using this section of the road.
- 4.4.21 There is a continuous footway along the south/west side of Smithies Lane between Wakefield Road and the access to the Council Depot. From this point for the remainder of its length there is a footway along both sides of the road which are lit. As described earlier, where the road narrows as it crosses over the Hallam rail line there is a footway on the northwest side of the road only.
- 4.4.22 A "No Waiting At Any Time/ No Loading Monday-Friday 8am-9.30am and 4.30pm to 6.00pm" waiting restriction is in place between Wakefield Road and a point approximately 10m northwest of the junction with The Forge, Smithies Lane.
- 4.4.23 There are no other waiting restrictions on Smithies Lane. Despite this there does not appear to be any issues with parking as many properties have off-street parking. Some properties such as the terraced housing on the street do not have off-street parking and therefore have to park on-street.
- 4.4.24 Smithies Lane is a bus route and is served by the number 12 bus service operated by Stagecoach. There are bus stops on the north side of the street which provide for services travelling eastwards. For services travelling westward there are no stops on Smithies Lane in the vicinity of the proposed development. The nearest stop for travel in this direction is on Honeywell Grove.

A635 Huddersfield Road

- 4.4.25 This road is a single carriageway A-class road which runs from west to east between Manchester and Doncaster as well as providing access to the M1 at Junction 38. It forms part of the Barnsley Strategic Road Network as defined in the Barnsley Unitary Development Plan saved policy. The section of road within the study area is approximately 7.6m wide.
- 4.4.26 There will be no direct access from any of the proposed developments to this road, however, trips joining this road would do so at Cockerham Lane or Cavendish Road. Huddersfield Road forms one of the main corridors to and from Barnsley town centre.
- 4.4.27 The road is generally straight from Old Mill Lane to Hall Balk Lane. From Hall Balk Lane to Woodstock Road the road bends gently westwards before becoming straight again.
- 4.4.28 There are continuous footways on both sides of Huddersfield Road which are tree lined and lit by street lighting columns.
- 4.4.29 There are a number of waiting restrictions on this road. On the west side for the road from the south of the Hopwood Street junction to just north of Victoria Crescent and on the east side of the road from just north of the Cockerham Lane junction continuing southwards there are "No Waiting At Any Time/ No Loading Mon-Fri 8am-9.30am and 4.30pm-6pm" waiting restrictions. From these points northwards there are "No Waiting/ No Loading Mon-Fri 8am-9.30am and 4.30pm-6pm" waiting restrictions on Huddersfield Road so there are very few vehicles parked on Huddersfield Road.
- 4.4.30 Huddersfield Road is a bus route which is served by the number 97 which is operated by Tates Travel. There are bus stops located for north and southbound travel. There is a bus stop to the south of the junction with Cockerham Road for southbound services. There is a stop in the northbound direction between Pollitt Street and Kensington Road.

Cavendish Road

- 4.4.31 Cavendish Road is a single carriageway road which is residential in nature. It runs from southwest to northeast between Huddersfield Road and Allendale Road.
- 4.4.32 The road is approximately 6.5m wide and is split by Cockerham Lane where they form a cross roads with Cockerham Lane being the priority route.
- 4.4.33 Like Huddersfield Road there will be no direct access from any of the proposed developments to this road, however, some of the trips are likely to join this road during their journey to/ from the sites.
- 4.4.34 There is continuous footway provision on both sides of the road along its length. These footways are lit by street lighting columns.

- 4.4.35 There are “No Waiting At Any Time” restrictions on the approaches to the Cockerham Lane junction and “No Waiting At Any Time/ No Loading Mon-Fri 8am-9.30am and 4.30pm-6pm” waiting restriction at the junction with Huddersfield Road. All other areas allow on-street parking, however the width of the road encourages on-street parking to be “half on half off” the carriageway / footway.

4.5 Existing Study Area Junctions

- 4.5.1 A description of the junctions within the defined study area detailed previously is provided in this section. The operational assessment of these junctions in the existing situation is provided later in the TA.

Honeywell Lane / Carrington Avenue

- 4.5.2 The junction between Honeywell Lane and Carrington Avenue is a simple 3-arm priority junction with Honeywell Lane forming the priority route.
- 4.5.3 This junction is the one closest to the Carrington Avenue and Honeywell Lane proposed development accesses.
- 4.5.4 There are dropped kerbs on the bellmouth to the junction on the Carrington Avenue approach for ease of crossing for those with mobility problems or prams.

Cockerham Lane / Honeywell Lane

- 4.5.5 The junction between Cockerham Lane and Honeywell Lane is in the form of a 3-arm priority junction where Cockerham Lane has priority.
- 4.5.6 The approach to the junction from Honeywell Lane is on a gradient meaning that drivers will have to make a hill start.
- 4.5.7 At this junction there is some junction protection in the form of “No Waiting At Any Time” waiting restrictions to prevent parking too close to the junction.
- 4.5.8 There is guardrail around the corner of the northeast side of the junction. This forces pedestrians to cross either cross immediately at the give way line or further down the hill on Honeywell Lane.

Cockerham Lane / Cavendish Road

- 4.5.9 The junction between Cockerham Lane and Cavendish Road is in the form of a 4-arm priority cross road junction with Cavendish Road giving way to Cockerham Lane.

- 4.5.10 Cockerham Lane and the western approach of Cavendish Road are reasonably flat; however, there is a gradient on the eastern approach from Cavendish Road.
- 4.5.11 There are “No Waiting At Any Time” restrictions in place around this junction which assist by improving visibility.

A635 Huddersfield Road / Cavendish Road/ Bond Road

- 4.5.12 The junction of the A635 Huddersfield Road, Cavendish Road and Bond Road is a priority 4-arm junction with Huddersfield Road having priority.
- 4.5.13 Both side roads approach Huddersfield Road on an incline. Vehicles travelling on the Cavendish Road arm approach Huddersfield Road travelling uphill. Bond Road comes downhill to the junction. Huddersfield Road itself had an incline travelling uphill from south to north.
- 4.5.14 There are “No Waiting At Any Time/ No Loading Mon-Fri 8am-9.30am and 4.30pm-6pm” waiting restriction on all approaches to this junction which offer junction protection and provide improved visibility.

A635 Huddersfield Road/ Cockerham Lane

- 4.5.15 The junction of the A635 Huddersfield Road and Cockerham Lane is a 3-arm priority junction where Huddersfield Road is the main route.
- 4.5.16 Cockerham Lane meets Huddersfield Road at an angle of approximately 30 degrees forming a Y-shape junction. The junction has a large bellmouth on the exit from Cockerham Lane.
- 4.5.17 Huddersfield Road at this location has a shallow gradient going downhill from south to north. Cockerham Lane has a steeper uphill gradient on the approach to the junction.
- 4.5.18 On Huddersfield Road there is a right turn ghost island which offers an opportunity for right turn vehicles to move out of the way of straight through traffic, thus not blocking the road.
- 4.5.19 There are “No Waiting At Any Time” waiting restrictions on Cockerham Lane and on Huddersfield Road (eastside) around the junction. There is a “No Waiting At Any Time/ No Loading Mon-Fri 8am-9.30am and 4.30pm-6pm” waiting restriction on the west side of Huddersfield Road opposite the junction. These all offer junction protection and improved visibility to those using the junction.

5. Highway Safety

- 5.1 This section of the Transport Assessment (TA) considers the highway safety within the study area. This has been undertaken through the review of recorded personal injury collision (PIC) data.
- 5.2 Barnsley Metropolitan Borough Council (BMBC) has provided PIC data for a 5 year period from January 2009 to March 2014 for the study area.
- 5.3 The number of reported PIC's are presented in Table 5. Plans of PIC locations and references were provided by BMBC. These are included in Appendix B.

Table 5: Recorded Person Injury Collisions

Location	Slight	Serious
Huddersfield Road (between Old Mill Lane and Hall Balk Lane)	10	1
Smithies Lane	5	1
Honeywell Lane	0	0
Cockerham Lane	0	0
Cavendish Lane	0	0
TOTAL	15	2

- 5.4 Over this period of time there were 17 PIC's in the study area, 15 slight and 2 serious. There were no fatal incidents. Of these 17 PIC's, 4 involved pedestrians and 3 involved cyclists. The other 12 incidents involved vehicles only.
- 5.5 Most of the PIC's were at single locations; however, there was a cluster of 2 PIC's on Smithies Lane at the junction with Hartington Drive. There was also a cluster of 3 PIC's on Huddersfield Road at its junction with Cockerham Lane.
- 5.6 An analysis of the contributory factors associated with these PIC's are presented in Table 6.

Table 6: Contributory Factors

Contributory Factors	Number of Incidents
Vehicle defect	1
Poor turn or manoeuvre	3
Failed to look properly (vehicle)	2
Failed to judge other person's path or speed	5
Loss of control	1
Failed to look properly (pedestrian)	3
Impaired by drugs (illicit or medicinal)	1
Disobeyed automatic traffic signal	1

- 5.7 The contributory factors show that all of the PIC's are caused by human error and none attributable to road conditions. Therefore no mitigation measures are proposed to address current highway safety issues.
- 5.8 During the public consultation event held prior to the submission of the planning applications, concerns were raised regarding the safety of the A635 Huddersfield Road/ Cockerham Lane junction. Analysis of the PIC data shows that there were 3 PIC's at this location between 2009 and 2013. These PIC's were all the result of human error/ judgement. All of the PICs involved vehicles on Huddersfield Road. None were a result of vehicles exiting Cockerham Lane where visibility to the right is reduced by a boundary wall.

6. Proposed Development

6.1 Overview

- 6.1.1 The planning applications which this Transport Assessment (TA) accompanies are for a mixture of outline and full applications for 3 sites in the Honeywell area of Barnsley.
- 6.1.2 The developments are as follows:
- **Carrington Avenue** – 89 housing units
 - **Belle Vue** – 5 flatted and 12 housing units and 2 mini sports pitches
 - **The Fleets** – 2 mini sports pitches
- 6.1.3 The application for the developments at the 3 sites are for outline permission with the exception of the proposed 5 flatted units at the Belle Vue site, which is for full permission.
- 6.1.4 Full details with regard to the proposals are provided elsewhere in the application. For those elements of the proposals seeking outline planning approval, the precise details relating to the design of the development are not being determined at this stage.

6.2 Parking

Car Parking

- 6.2.1 Barnsley Metropolitan Borough Council's (BMBC) current parking guidance is contained within "Supplementary Planning Document – Parking" which were adopted in March 2012. The standards relevant to the proposed development sites are presented in Table 7.

Table 7: Barnsley Metropolitan Borough Council Car Parking Standards

Use	Maximum numbers of car parking spaces allowed
Dwelling houses or flats	1 space for dwellings with 1 or 2 bedrooms 2 spaces for dwellings with 3 or more bedrooms
Sports facilities	1 space per 200 m ² generally Some facilities such as private gyms etc. may be assessed on membership/ number of participants

- 6.2.2 The outline layouts for the proposed housing development sites at Carrington Avenue and Belle Vue have taken into account the residential parking standards. The final layout will be determined at a Reserve Matters stage and will accord with the current or future parking standards.

- 6.2.3 In order to ensure parking from the residential development does not overspill “on-street” the indicative masterplan submitted with the application provisionally applies the maximum parking requirements for the residential development.
- 6.2.4 The mini sports pitches do not appear to sit easily in the sports facilities category, which appears to be more related to sports buildings. Research has found that other local authorities recommend the provision outlined in Table 8.

Table 8: Other Local Authority Car Parking Standards for Sport Pitches

Local Authority	Recommendation
Walsall Council	15 car park spaces per outdoor pitch and 15 cycle spaces as well as coach and taxi parking
Charnwood Borough Council	1 car park space per 2 persons plus parking and manoeuvring space for 1 coach per 2 pitches
Wealden District Council	1 space per 2 players at the busiest period plus 1 space per 5 spectator positions
East Sussex County Council	1 space per 2 players at the busiest period plus 1 space per 5 spectator positions

- 6.2.5 Based on this research it is recommended that the provision at these pitches be 1 space per 2 players at the busiest period plus 1 space per 5 spectator positions plus provision for 1 coach.
- 6.2.6 At the mini sports pitch car parks provision of 4% of the car parking for disabled people.
- 6.2.7 The precise number of car parking spaces will be determined at the detail design stage during subsequent applications and will accord to BMBC policy at that time. However 18 plus 5 accessible spaces are shown on the outline development layout submitted with the Belle Vue layout.
- 6.2.8 It is proposed to retain the number of spaces currently at The Fleets site.
- 6.2.9 The Belle Vue development site is currently used by the College as car parking for the Belle Vue and Honeywell Campuses as well as some staff at the town centre campuses. As a result of the proposed development at the Belle Vue site, this car parking will be unavailable for the use of the college. The marked capacity of this car park is 69 spaces.
- 6.2.10 Additional parking provision will be made available within the Honeywell Campus utilising areas that are not available due to the existing construction works. These new and reallocated spaces are not sufficient to make a complete like for like replacement, however the under provision will be managed through the Barnsley College Travel Plan and a new robust parking management policy, which is proposed to be adopted by the College in September 2014.

- 6.2.11 Given the various changes happening to the overall parking policy and the release of spaces within the Honeywell Campus through the development taking place currently it is considered an assessment of current parking would not represent an appropriate assessment of the potential impacts.
- 6.2.12 It is therefore proposed to review the parking requirements once the Honeywell Campus works have been completed and the new College Car Parking Policy and Travel Plan processes have had time to bed into the travel patterns of the current and future college staff.
- 6.2.13 Any issues arising from this will subsequently be discussed with the Highway Authority and reviewed as part of the Reserve Matters process.

Cycle Parking

- 6.2.14 As well as car parking provision will also be made for cyclists. BMBC standards for cycle parking are presented in Table 9.

Table 9: Barnsley Metropolitan Borough Council Cycle Parking Standards

Use	Minimum Cycle Parking Standards
Housing/ Flats/ Bedsits/ Houses in Multiple Occupation	To be assessed individually
Sports facilities	1 short stay space per 20 participants 1 long stay space per 20 staff

- 6.2.15 In relation to the residential cycle parking, it is likely that cycle parking could be accommodated within sheds or garages depending on the type of units proposed. As the residential elements are seeking outline permission, the precise nature of the housing will be determined at the reserve matters stage. The individual assessment of the cycle parking requirements stipulated within the BMBC cycle parking standards would be made at this stage.
- 6.2.16 The cycle parking provision for sports facilities are not appropriate for the mini sports pitches proposed as there are no staff at these facilities. It is proposed that covered cycle parking for 8 cycles be provided at the mini sports pitches to accommodate any cyclists travelling to the facilities. The precise nature and location of these stands will be determined at the reserve matters stage.

6.3 Trip Generation

- 6.3.1 The level of vehicular trip generation from the proposed development has been calculated using the TRICS database (Version 7.1.1 Update 3).

- 6.3.2 The TRICS database was interpreted using the parameters shown in Table 10 for each of the elements of the development.

Table 10: TRICS Parameters

	Houses	Flats	Mini sports pitches
Main Land Use	Residential	Residential	Leisure
Sub Land Use	Houses Privately Owned	Flats Privately Owned	Football (5-a-side)
Regions selected	East South West East Anglia East Midlands West Midlands Yorkshire & North Lincolnshire North West North South	East South West East Anglia East Midlands West Midlands Yorkshire & North Lincolnshire North West North South	East South West East Anglia East Midlands West Midlands Yorkshire & North Lincolnshire North West North South
Areas unselected	Bristol City Greater Manchester	Bristol City Greater Manchester	Bristol City Greater Manchester
Type of survey	Calculate trip rates for vehicles	Calculate trip rates for vehicles	Calculate trip rates for vehicles
Days	Weekdays	Weekdays	Weekdays
Unit numbers	Up to 200 units	Up to 140	Up to 18

- 6.3.3 The interrogation of the TRICS database for mini sports pitches found no similar facilities. In order to estimate the number of trips which could potentially use the pitches the most suitable sub land use category was "Football (5-a-side)". These trip rates will be used to proportion up to 11-a-side pitches. These trip rates are likely to be robust as it is unlikely that 11-a-side games will be played on these pitches.
- 6.3.4 The mini sports pitches are likely to be used by schools and the College and are therefore unlikely to generate any trips during the AM peak period of 08:00-09:00 hours. Therefore no trips have been added to the network during the AM peak period.
- 6.3.5 Table 11 summarises the trip rates from the developments based upon the development peak periods identified from traffic surveys of 08:00 – 09:00 and 16:50 – 17:50. The outputs from TRICS are presented in Appendix C.

Table 11: Vehicle Trip Rates by Land Use

Trip Rates	Unit	AM Peak Hour			PM Peak Hour		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Residential – Flat	Per dwelling	0.072	0.292	0.364	0.273	0.128	0.401
Residential – House	Per dwelling	0.152	0.401	0.553	0.386	0.227	0.613
Sports Pitch (5-aside pitches)	Per pitch	-	-	-	2.952	1.254	4.206
Sport Pitch (Pro-rata to 11-aside) x 2.2	Per pitch	-	-	-	6.494	2.759	9.253

6.3.6 These trips rates were used to calculate the number of trips to each of the land uses. The number of trips are presented in Table 12.

Table 12: Vehicle Trip Generation – Per Land Use

Location	Accessed From	Number of Vehicular Trips					
		AM Peak Hour			PM Peak Hour		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Residential							
Belle Vue (5 No. Flats)	Cockerham Lane	1	1	2	1	1	2
Bell Vue (12 No. Houses)		2	5	7	5	3	8
Carrington Avenue (65 No.)	Honeywell Lane	10	26	36	25	15	40
Carrington Avenue (24 No.)	Direct Access to Carrington Avenue	4	10	13	9	5	1
Sports Pitches							
Belle Vue	Honeywell Lane	-	-	-	13	6	19
The Fleets	Smithies Lane	-	-	-	13	6	19

6.3.7 The Carrington Avenue development site is the only one which generates more than 30 2-way trips, however the overall impact of the cumulative trips from all 3 development sites has been included in the operational assessment.

- 6.3.8 The Belle Vue site will have a reduced impact on the road network as it will no longer be a College campus with 68 parking spaces but instead a residential development with a total 29 space parking provision. Also the mini sports pitches will likely have their maximum use outside the AM and PM peak periods.
- 6.3.9 Table 13 highlights the total number of vehicle trips to the 3 development sites.

Table 13: Vehicle Trip Generation – Per Development Site

Trips Generated	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Belle Vue	2	6	9	19	10	28
Carrington Ave	14	35	49	34	20	55
The Fleets	-	-	-	13	6	19

6.4 Trip Distribution

- 6.4.1 The trip distribution for the proposed development traffic has been calculated using the Travel to Work data from the 2001 census data for Barnsley. This data for the 2011 Census remains unavailable at the time of the assessment but it is considered that the overall employment destinations have not changed such that it will have a significant impact upon the findings made within this assessment.
- 6.4.2 The Census data was interrogated and found that the travel to work percentage splits for Barnsley are as presented in Table 14. This table also shows the exit points from the study area that are most likely taken by trips to and from the development sites.

Table 14: Percentage Trip Distribution

Area of Workplace	Percentage Trips	Route Taken Outside Study Area
Ardsley	3%	Honeywell St
Athersley	2%	Smithies Lane
Brierley	1%	Honeywell St
Central	15%	A635S
Cudworth	0%	Honeywell St
Darfield	0%	Honeywell St
Darton	5%	A635N
Dearne South	1%	Honeywell St
Dearne Thurnscoe	0%	Honeywell St
Dodworth	4%	A635N
Hoyland East	0%	A635S
Hoyland West	1%	A635S
Monk Bretton	3%	Smithies Lane
North West	12%	Smithies Lane
Park	1%	A635S
Penistone East	3%	A635S
Penistone West	2%	A635S
Royston	3%	Smithies Lane
South West	8%	A635S
Wombwell North	1%	Honeywell St
Wombwell South	1%	Honeywell St
Worsbrough	1%	A635S
Bradford	1%	A635N
Calderdale	0%	A635N
Doncaster	2%	Honeywell St
East Riding of Yorkshire	0%	A635N
Kingston upon Hull	0%	A635N
Kirklees	2%	A635N
Leeds	6%	A635N
North East Lincolnshire	0%	Honeywell St
North Lincolnshire	0%	Honeywell St
North Yorkshire	0%	A635N
Rotherham	4%	A635S
Sheffield	8%	A635S
Wakefield	9%	A635N
York	0%	A635N

6.4.3 Table 15 summarises the total percentage trip distribution for the extents of the network as previously defined.

Table 15: Percentage Trip Distribution

Destination	Percentage Trips
A635 S	42%
A635 N	27%
Smithies Lane	21%
Honeywell Street	10%

- 6.4.4 The routings of trips along the network from the proposed development sites to the destinations listed in Table 15 through the study area are derived from the “Travel to Work” data from the Census findings.
- 6.4.5 The trips have been assigned to the local road network from each development site separately to show how drivers from each will travel on the local network. On most of the network, trips have been assigned in accordance with Table 15, however, where there are junctions between the site and final destination road the split of these trips is in accordance with the turning counts at that junction. This is only relevant at the junction of Cockerham Lane/ Cavendish Road.
- 6.4.6 For the mini sports pitches there are few trips generated. For this reason and for robustness it is assumed that trips will have the same route split as the residential trips.
- 6.4.7 Individual trip distribution figures have been prepared for each element of the developments, where, the trips for a development site will be from separate locations. These trip distributions are presented in Figures 6 to 10 in Appendix A.

6.5 Trip Assignment

- 6.5.1 The level of vehicular trips associated with the proposed development sites as defined in Table 15 have been assigned to the road network in accordance with the trip distribution shown in Figures 6 and 10 in Appendix A.
- 6.5.2 The resultant vehicular trip assignment for the development is shown in Figures 11 to 18 in Appendix A.
- 6.5.3 The combined cumulative trip assignment is shown in Figures 19 and 20 in Appendix A.

7. Assessment Parameters

7.1 Introduction

- 7.1.1 The purpose of this chapter is to set out the assessment parameters used in the Operational Assessment of the impacts of the proposed development within the defined study area.
- 7.1.2 The methodologies used are based upon industry practice, the requirements of Department for Transport's "Guidance on Transport Assessment" (published March 2007).

7.2 Assessment Years

- 7.2.1 The Department for Transport's Guidance on Transport Assessment indicates that the assessment years should include the year of registration, the year of opening and ten years post registration.
- 7.2.2 Given that the majority of the development is seeking outline planning approval, a 2016 opening year has been assumed.
- 7.2.3 Therefore the assessment years are:
- 2014 – Year of Registration;
 - 2016 – Year of Opening;
 - 2024 – Year of Registration plus 10.

7.3 Traffic Growth Factors

- 7.3.1 Traffic growth factors have been used to growth the background traffic from the 2014 surveyed flows to the 2016 opening year and ten years post registration assessment flows.
- 7.3.2 TEMPRO (Trip End Model Presentation Program) was interrogated to determine the level of traffic growth for the study area. TEMPRO growth factors for urban minor roads in the Barnsley (00CC1) area of the Barnsley Local Authority Area using TEMPRO program 6.2, NATM 6.2 and NTM AF09 have been derived for the assessment.
- 7.3.3 The subsequent growth factors are shown in Table 16.

Table 16: Traffic Growth Factors

Peak Period	AM	PM
2014-2016	1.0194	1.0202
2014-2024	1.1270	1.1303

- 7.3.4 These growth factors have been applied to the 2014 survey data to produce the predicted base traffic flows in 2016 and 2024 which are shown in Figures 21 to 24 in Appendix A.

7.4 Committed Developments

7.4.1 Following pre-application discussions with BMBC officers, three committed development were identified as being required to be considered as part of this TA. They are:

- BMBC Planning reference 2009/0609 – Mixed use development of Residential, Offices and relocation of College Sports Hall and Tennis Courts (Reserved Matters) – Located at the Honeywell Lane Campus accessed from Honeywell Lane;
- BMBC Planning reference 2013/1390 – Demolition of existing shop units, parking deck and Library and erection of a Sixth Form Teaching Centre – Located on Shambles Street in Barnsley town centre.; and
- BMBC Planning reference 2014/0041 – Construction of two storey Construction Centre including teaching workshops, classrooms – Located at Honeywell Lane Campus accessed from Honeywell Lane.

7.4.2 Each of these applications were reviewed and were found to contain no trip distribution, generation information or junction analysis for the road network considered within this TA. The only information available within the TA was trip generation with arrivals and departures during the AM and PM peaks. In order to add the trips from the 2 Honeywell Lane Campus applications (2009/0609 and 2014/0041) to the network to provide a robustness analysis these trips have been distributed in accordance with the mini sport pitches which will be accessed from Honeywell Lane. The trips generated are presented in Table 17

Table 17: Vehicle Trip Generation – Committed Development

Trips Generated	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Total	Arrivals	Departures	Total
2009/0609	144	39	183	27	74	101
2014/0041	60	22	82	17	41	58
Total	204	61	265	44	115	159

7.4.3 As the new Sixth Form Teaching Centre will be located in the town centre and no information has been provided regarding trip distribution these trips have not been included on the network. The only location they are likely to affect is Huddersfield Road by which point the trips are likely to have dissipated.

7.4.4 By including the trips from the 2 Honeywell Lane Campus applications and the TEMPRO growth rates to the survey traffic the assessments will be robust.

7.4.5 The trip distribution and generation for the committed developments at the Honeywell Lane Campus are presented in Figures 25 and 27 in Appendix A.

7.5 Assessment Scenarios

7.5.1 The following assessment scenarios have been tested within this TA:

- **2014, Do Nothing** – this models the existing situation when the traffic counts were undertaken;
- **2016, Do Nothing** – this is the 2014 traffic flows growthed, where appropriate, to the 2016 assessment year using the growth factors detailed in Section 9.3;
- **2024, Do Nothing** – this is the 2014 traffic flows growthed, where appropriate, to the 2024 assessment year using the growth factors detailed in Section 9.3;
- **2014, Do Nothing + Committed Development** – this is the 2014, Do Nothing flow with the committed development traffic added;
- **2016, Do Nothing + Committed Development** – this is the 2016, Do Nothing flow with the committed development traffic added;
- **2024, Do Nothing + Committed Development** – this is the 2024, Do Nothing flow with the committed development traffic added;
- **2016, Do Nothing + Committed + Proposed** – this is the 2016, Do Nothing + Committed Development flow with the proposed development traffic added; and
- **2024, Do Nothing + Committed + Proposed** – this is the 2024, Do Nothing + Committed Development flow with the proposed development traffic added.

7.5.2 The traffic flows associated with these assessment scenarios are provided within the following figures in Appendix A:

- Figures 4 and 5 for the 2014 Do Nothing scenario, AM and PM peak;
- Figures 21 and 22 for the 2016 Do Nothing scenario, AM and PM peak;
- Figures 23 and 24 for the 2024 Do Nothing scenario, AM and PM peak;
- Figures 28 and 29 for the 2014 Do Nothing + Committed Development scenario, AM and PM peak;
- Figures 30 and 31 for the 2016 Do Nothing + Committed Development scenario, AM and PM peak;
- Figures 32 and 33 for the 2024 Do Nothing + Committed Development scenario, AM and PM peak;
- Figures 34 and 35 for the 2016 Do Nothing + Committed + Proposed scenario, AM and PM peak;
- Figure 36 and 37 for the 2024 Do Nothing + Committed + Proposed scenario, AM and PM peak.

8. Operational Assessment

8.1 Modelling Methodology

- 8.1.1 This section of the Transport Assessment (TA) considers the impact of the proposed development upon the operation of the junctions defined within the study area agreed with Barnsley Metropolitan Borough Council (BMBC) officers during pre-application discussions.
- 8.1.2 The extent of the study area is shown in Figure 3 in Appendix A of this report.
- 8.1.3 The operational assessment has been undertaken for the AM and PM peak periods using the JUNCTIONS8 modelling program and the priority intersection module.
- 8.1.4 The following junctions have been assessed using JUNCTION8:
- Carrington Avenue / Honeywell Lane – 3-arm priority junction;
 - Cockerham Lane / Honeywell Lane – 3-arm priority junction;
 - Cockerham Lane / Cavendish Road – 3-arm priority junction;
 - A635 Huddersfield Road / Cavendish Road / Bond Road – 4-arm priority junction;
 - A635 Huddersfield Road / Cockerham Lane – 3-arm priority junction; and
 - Carrington Avenue Proposed Access Junction.
- 8.1.5 In evaluating the performance of the junctions within the models, it is generally accepted that the Ratio of Flow to Capacity (RFC) for JUNCTION8 models should be interpreted as follows:
- **RFC 0.850 or below** - Junction operating within capacity and with significant spare capacity;
 - **RFC 0.850 to 1.000** - Junction operating within, but approaching, capacity with signs of queuing and delay;
 - **RFC 1.000 or above** - Junction operating above capacity, resulting in queues and delays.
- 8.1.6 The modelling also indicates the queue length, in PCUs, for the period where the maximum capacity is reached.

8.2 Results

Carrington Avenue/ Honeywell Lane

- 8.2.1 Table 18 summarises the results of the operational assessment of the Carrington Avenue/ Honeywell Lane model using JUNCTION8. Full JUNCTION8 output files are included within Appendix D of this report.

Table 18: JUNCTION8 Output – Carrington Avenue/ Honeywell Lane

2014 Do Nothing Scenario				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Carrington Ave right and left to Honeywell Lane	0.02	0.03	0.03	0.03
Honeywell Lane East right to Carrington Ave	0.01	0.01	0.02	0.02
2016 Do Nothing Scenario				
Carrington Ave right and left to Honeywell Lane East	0.03	0.03	0.03	0.03
Honeywell Lane East right to Carrington Ave	0.01	0.01	0.02	0.02
2024 Do Nothing Scenario				
Carrington Ave right and left to Honeywell Lane East	0.03	0.03	0.03	0.04
Honeywell Lane East right to Carrington Ave	0.01	0.01	0.02	0.02
2014 Do Nothing + Committed Development				
Carrington Ave right and left to Honeywell Lane East	0.11	0.12	0.05	0.05
Honeywell Lane East right to Carrington Ave	0.03	0.03	0.06	0.06
2016 + Committed Development				
Carrington Ave right and left to Honeywell Lane East	0.11	0.12	0.05	0.05
Honeywell Lane East right to Carrington Ave	0.03	0.03	0.06	0.06
2024 + Committed Development				
Carrington Ave right and left to Honeywell Lane East	0.11	0.13	0.05	0.05
Honeywell Lane East right to Carrington Ave	0.03	0.03	0.06	0.07
2016 + Committed Development + Development Traffic				
Carrington Ave right and left to Honeywell Lane East	0.13	0.15	0.07	0.08
Honeywell Lane East right to Carrington Ave	0.04	0.05	0.07	0.08
2024 + Committed Development + Development Traffic				
Carrington Ave right and left to Honeywell Lane East	0.13	0.15	0.08	0.08
Honeywell Lane East right to Carrington Ave	0.08	0.08	0.08	0.08

- 8.2.2 The junction operates well in all scenarios with the addition of committed development and proposed development trips. The maximum RFC and queue length are 0.13 and 0.15 respectively during the 2024 AM peak period with the addition of development trips. These are experienced by vehicles turning out of Carrington Avenue.
- 8.2.3 All of the design and future year assessments of this junction indicate that it will work well within capacity. Therefore, no mitigation measures are required.

Cockerham Lane/ Honeywell Lane

- 8.2.4 The Cockerham Lane/ Honeywell Lane priority junction was assessed using JUNCTION8. The findings of the assessment are presented in Table 19. Full JUNCTION8 output files for this junction are included within Appendix E of this report.

Table 19: JUNCTION8 Output – Cockerham Lane/ Honeywell Lane

2014 Do Nothing Scenario				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Honeywell Lane left to Cockerham Lane South	0.07	0.07	0.06	0.07
Honeywell Lane right to Cockerham Lane North	0.12	0.14	0.12	0.13
Cockerham Lane South right to Honeywell Lane	0.04	0.04	0.11	0.12
2016 Do Nothing Scenario				
Honeywell Lane left to Cockerham Lane South	0.07	0.08	0.06	0.07
Honeywell Lane left to Cockerham Lane South	0.13	0.14	0.12	0.14
Honeywell Lane left to Cockerham Lane South	0.04	0.04	0.11	0.12
2024 Do Nothing Scenario				
Honeywell Lane left to Cockerham Lane South	0.08	0.09	0.07	0.08
Honeywell Lane left to Cockerham Lane South	0.14	0.16	0.14	0.16
Honeywell Lane left to Cockerham Lane South	0.04	0.05	0.12	0.14

2014 Do Nothing + Committed Development				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Honeywell Lane left to Cockerham Lane South	0.12	0.14	0.15	0.18
Honeywell Lane right to Cockerham Lane North	0.18	0.22	0.20	0.24
Cockerham Lane South right to Honeywell Lane	0.19	0.23	0.11	0.12
2016 Do Nothing + Committed Development				
Honeywell Lane left to Cockerham Lane South	0.12	0.14	0.15	0.18
Honeywell Lane left to Cockerham Lane South	0.18	0.22	0.20	0.25
Honeywell Lane left to Cockerham Lane South	0.19	0.23	0.11	0.12
2024 Do Nothing + Committed Development				
Honeywell Lane left to Cockerham Lane South	0.13	0.15	0.16	0.19
Honeywell Lane left to Cockerham Lane South	0.20	0.25	0.22	0.28
Honeywell Lane left to Cockerham Lane South	0.20	0.24	0.12	0.14
2016 + Committed Development + Development Traffic				
Honeywell Lane left to Cockerham Lane South	0.15	0.18	0.17	0.21
Honeywell Lane left to Cockerham Lane South	0.20	0.26	0.22	0.28
Honeywell Lane left to Cockerham Lane South	0.19	0.23	0.11	0.12
2024 + Committed Development + Development Traffic				
Honeywell Lane left to Cockerham Lane South	0.16	0.19	0.18	0.23
Honeywell Lane left to Cockerham Lane South	0.22	0.28	0.23	0.30
Honeywell Lane left to Cockerham Lane South	0.20	0.25	0.12	0.14

- 8.2.5 With the addition of development trips the junction operates well in all scenarios. The maximum RFC and queue length are 0.23 and 0.30 respectively. These are experienced by vehicles turning left from Honeywell Lane during the 2024 PM peak period with the addition of committed development and proposed development trips.
- 8.2.6 The results show that the junction operates well within capacity in all assessment scenarios. Therefore no mitigation is required as a result of the proposed developments.

Cockerham Lane/ Cavendish Avenue

- 8.2.7 Table 20 summarises the results of the operational assessment of the Cockerham Lane/ Cavendish Avenue junction. The analysis of the junction was undertaken using JUNCTION8 and the full JUNCTION8 output files are included within Appendix F of this report.

Table 20: JUNCTION8 Output – Cockerham Lane/ Cavendish Avenue

2014 Do Nothing Scenario				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.08	0.12	0.04	0.06
Cavendish Road West	0.35	0.53	0.43	0.76
Cockerham Lane South	0.00	0.00	0.01	0.01
2016 Do Nothing Scenario				
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.08	0.12	0.04	0.06
Cavendish Road West	0.36	0.55	0.44	0.79
Cockerham Lane South	0.00	0.00	0.01	0.01
2024 Do Nothing Scenario				
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.09	0.14	0.05	0.07
Cavendish Road West	0.40	0.66	0.50	0.98
Cockerham Lane South	0.00	0.00	0.01	0.01
2014 Do Nothing + Committed Development				
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.08	0.12	0.04	0.06
Cavendish Road West	0.50	0.97	0.47	0.88
Cockerham Lane South	0.00	0.00	0.01	0.01

2016 Do Nothing + Committed Development				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.08	0.12	0.04	0.06
Cavendish Road West	0.50	1.00	0.48	0.91
Cockerham Lane South	0.01	0.01	0.01	0.01
2024 Do Nothing + Committed Development				
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.09	0.14	0.05	0.07
Cavendish Road West	0.55	1.19	0.54	1.14
Cockerham Lane South	0.00	0.00	0.01	0.01
2016 + Committed Development + Development Traffic				
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.08	0.12	0.04	0.06
Cavendish Road West	0.52	1.06	0.53	1.09
Cockerham Lane South	0.00	0.00	0.01	0.01
2024 + Committed Development + Development Traffic				
Cavendish Road East	0.02	0.02	0.01	0.01
Cockerham Lane North	0.09	0.14	0.05	0.07
Cavendish Road West	0.56	1.26	0.58	1.37
Cockerham Lane South	0.00	0.00	0.01	0.01

- 8.2.8 The junction operates well in all scenarios with the addition of development trips. The maximum RFC and queue length are 0.58 and 1.37 respectively during the 2024 PM peak period with the addition of committed development and proposed development trips. These are experienced by vehicles from Cavendish Road West.
- 8.2.9 The results show that the junction operates well within capacity in all assessment scenarios. Therefore no mitigation is required as a result of the proposed development.

A635 Huddersfield Road/ Cavendish Avenue

- 8.2.10 Table 21 summarises the results of the operational assessment of the A635 Huddersfield Road/ Cavendish Avenue junction using JUNCTION8. Full output files from JUNCTION8 are included within Appendix G of this report.

Table 21: JUNCTION8 Output – A635 Huddersfield Road/ Cavendish Avenue

2014 Do Nothing Scenario				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Cavendish Road	0.22	0.28	0.16	0.19
Huddersfield Road North	0.01	0.02	0.03	0.04
Bond Road	0.05	0.06	0.11	0.12
Huddersfield Road South	0.04	0.06	0.14	0.35
2016 Do Nothing Scenario				
Cavendish Road	0.22	0.29	0.17	0.20
Huddersfield Road North	0.01	0.02	0.03	0.04
Bond Road	0.06	0.06	0.12	0.13
Huddersfield Road South	0.04	0.06	0.14	0.37
2024 Do Nothing Scenario				
Cavendish Road	0.27	0.37	0.21	0.27
Huddersfield Road North	0.02	0.02	0.04	0.06
Bond Road	0.07	0.07	0.15	0.17
Huddersfield Road South	0.05	0.08	0.18	0.55
2014 Do Nothing + Committed Development				
Cavendish Road	0.24	0.31	0.25	0.33
Huddersfield Road North	0.01	0.02	0.08	0.16
Bond Road	0.06	0.06	0.14	0.16
Huddersfield Road South	0.04	0.06	0.21	0.78
2016 Do Nothing + Committed Development				
Cavendish Road	0.24	0.32	0.20	0.24
Huddersfield Road North	0.01	0.2	0.03	0.04
Bond Road	0.06	0.06	0.11	0.13
Huddersfield Road South	0.04	0.06	0.14	0.38
2024 Do Nothing + Committed Development				
Cavendish Road	0.29	0.41	0.17	0.20
Huddersfield Road North	0.02	0.02	0.02	0.03
Bond Road	0.06	0.06	0.08	0.09
Huddersfield Road South	0.06	0.09	0.04	0.05
2016 + Committed Development + Development Traffic				
Cavendish Road	0.25	0.34	0.22	0.07
Huddersfield Road North	0.01	0.02	0.03	0.05
Bond Road	0.06	0.06	0.12	0.13
Huddersfield Road South	0.04	0.06	0.15	0.39
2024 + Committed Development + Development Traffic				
Cavendish Road	0.31	0.44	0.27	0.36
Huddersfield Road North	0.02	0.02	0.04	0.06
Bond Road	0.07	0.07	0.13	0.15
Huddersfield Road South	0.06	0.09	0.18	0.56

- 8.2.11 With the addition of development trips the junction operates well in all scenarios. The maximum RFC and queue length are 0.31 and 0.44 respectively. These are experienced by vehicles turning out of Cavendish Road during the 2024 AM peak period with the addition of committed development and proposed development trips.
- 8.2.12 The results show that the junction operates well within capacity in all assessment scenarios. Therefore no mitigation is required as a result of the proposed development.

A635 Huddersfield Road/ Cockerham Lane

- 8.2.13 Table 22 summarises the results of the operational assessment of the A635 Huddersfield Road/ Cockerham Lane model using JUNCTION8. Full JUNCTION8 output files are included within Appendix H of this report.

Table 22: JUNCTION8 Output – A635 Huddersfield Road/ Cockerham Lane

2014 Do Nothing Scenario				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Cockerham Lane right and left to Huddersfield Road	0.46	0.85	0.39	0.63
Huddersfield Road South	0.26	0.35	0.36	0.57
2016 Do Nothing Scenario				
Cockerham Lane right and left to Huddersfield Road	0.48	0.90	0.40	0.66
Huddersfield Road South	0.27	0.37	0.37	0.57
2024 Do Nothing Scenario				
Cockerham Lane right and left to Huddersfield Road	0.55	1.19	0.46	0.84
Huddersfield Road South	0.31	0.44	0.43	0.74
2014 Do Nothing + Committed Development				
Cockerham Lane right and left to Huddersfield Road	0.53	1.10	0.51	1.04
Huddersfield Road South	0.45	0.80	0.42	0.79
2016 Do Nothing + Committed Development				
Cockerham Lane right and left to Huddersfield Road	0.53	1.13	0.51	1.03
Huddersfield Road South	0.46	0.83	0.41	0.70

2024 Do Nothing + Committed Development				
Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Cockerham Lane right and left to Huddersfield Road	0.56	1.25	0.55	1.22
Huddersfield Road South	0.50	0.99	0.45	0.82
2016 + Committed Development + Development Traffic				
Cockerham Lane right and left to Huddersfield Road	0.58	1.36	0.54	1.17
Huddersfield Road South	0.47	0.88	0.47	0.88
2024 + Committed Development + Development Traffic				
Cockerham Lane right and left to Huddersfield Road	0.66	1.85	0.61	1.51
Huddersfield Road South	0.52	1.06	0.53	1.11

- 8.2.14 The junction operates well in all scenarios with the addition of development trips. The maximum RFC and queue length are 0.66 and 1.85 respectively during the 2024 AM peak period with the addition of committed development and proposed development trips. These are experienced by vehicles from Cockerham Lane.
- 8.2.15 The results show that the junction operates well within capacity in all assessment scenarios. Therefore no mitigation is required as a result of the proposed development.

Carrington Avenue Proposed Access Junction

- 8.2.16 The proposed access priority junction was assessed using JUNCTION8. The findings of the assessment are presented in Table 23. Full JUNCTION8 output files for this junction are included within Appendix I of this report.

Table 23: JUNCTION8 Output – Carrington Avenue Proposed Access Junction

Movement	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
2016 + Committed Development + Development Traffic				
Site Access	0.07	0.07	0.04	0.04
Honeywell Lane East into site	0.00	0.00	0.01	0.01
2024 + Committed Development + Development Traffic				
Site Access	0.06	0.07	0.04	0.04
Honeywell Lane East into site	0.00	0.00	0.01	0.01

- 8.2.17 The results show that the junction operates well within capacity in all assessment scenarios and is therefore appropriate to the development being accessed. The maximum queue experienced is 0.07 PCUs from the site access onto Honeywell Lane in both assessment years.

8.3 Mitigation Measures

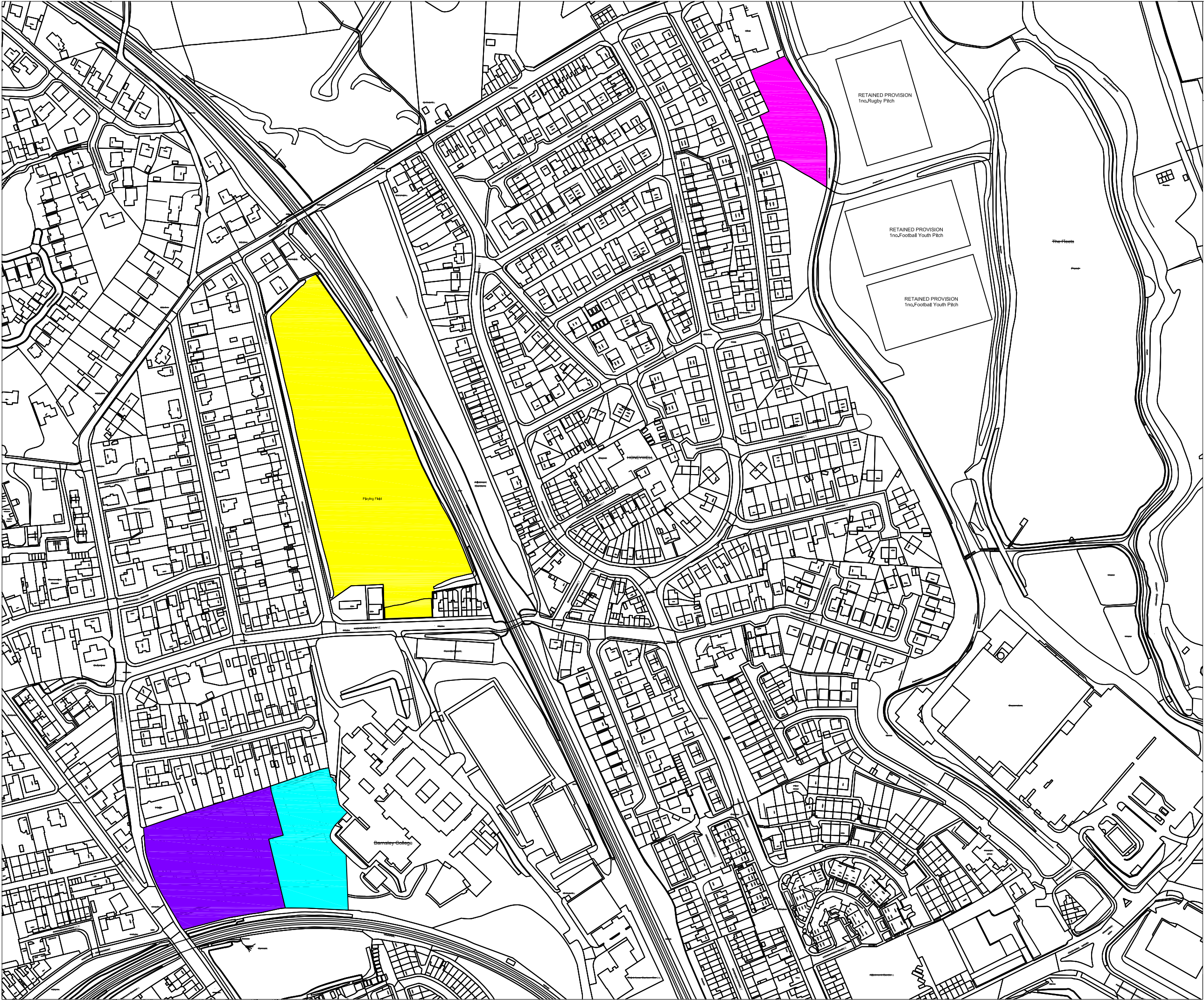
- 8.3.1 The results of the operational assessment have demonstrated that the proposed development will not have a material impact upon the operation of the junctions within the defined study area and that all junctions operates well within their operational capacity even in 2024 with background traffic growth, the committed developments and the proposed developments added.
- 8.3.2 Therefore, no mitigation is required to be implemented at these junctions as a result of the proposed development.

9. Summary

- 9.1 This Transport Assessment (TA) has been prepared by Capita on behalf of Barnsley College to accompany three planning applications for proposed housing developments on land to the north of Barnsley Town Centre. The development sites form part of the current Barnsley College Estate that is being rationalised following further developments by the College in and around Barnsley.
- 9.2 The contents and scope of the Transport Assessment have been suggested to Barnsley Metropolitan Borough Council (BMBC); however, limited response has been received. Therefore it has been assumed that the parameters suggested in the scoping correspondences have been accepted by the Council.
- 9.3 The 3 development sites considered within this report for their cumulative impact are:
- **Carrington Avenue** – 89 housing units
 - **Belle Vue** – 5 flatted and 12 housing units and 2 mini sports pitches
 - **The Fleets** – 2 mini sports pitches
- 9.4 As the proposed development is seeking an outline permission, the development masterplan provided as part of the application is indicative and has been prepared for proper assessment purposes and to demonstrate that the level of development proposed can be accommodated with the various constraints to it.
- 9.5 The study area for the assessment in the TA comprised:
- Carrington Avenue / Honeywell Lane – 3-arm priority junction;
 - Cockerham Lane / Honeywell Lane – 3-arm priority junction;
 - Cockerham Lane / Cavendish Road – 3-arm priority junction;
 - A635 Huddersfield Road / Cavendish Road / Bond Road – 4-arm priority junction;
 - A635 Huddersfield Road / Cockerham Lane – 3-arm priority junction; and
 - Carrington Avenue Proposed Access Junction.
- 9.6 A site accessibility audit undertaken as part of the TA has identified that there are a number of opportunities for future residents to consider travel by sustainable modes of transport instead of by the private car. The sites are close to two bus routes which offer services which pass close to employment generators and school. Barnsley Transport Interchange is within the prepared maximum walking distance and offers services to many outlying areas. Local services, including primary schools, are located within a reasonable walking distance from the development sites.
- 9.7 A review of highway safety data provided by BMBC was undertaken for the study area. The review of the recorded personal injury collision data indicated that there were 2 small clusters of incidents, 1 at the junction of Huddersfield Road and Cockerham Lane and the other at Smithies Brae and Hartington Drive. An assessment of the contributory factors highlighted that the incidents were all due to human error and not the result of the highway network

- 9.8 The TRICS database was interrogated to determine the trip rates and ultimately the trip generation of each of the sites.
- 9.9 The vehicular trips have been assigned to the study area using the trip distribution suggested by the travel to work data 2001 census for the Barnsley area.
- 9.10 The operational assessment of the junctions within the study area has been undertaken in accordance with Department for Transport's Guidance on Transport Assessment, for the year of registration, opening year of 2016 and year of registration plus 10 years. Traffic associated with the two committed development sites at the Honeywell Lane Campus were added to the traffic flows to provide a robust assessment.
- 9.11 The operational assessment has demonstrated that the proposed development will not have a material impact upon the operation of junctions within the study area.
- 9.12 With the addition of committed development plus the proposed development trips the operational assessment showed that no mitigation measures are required as a result of the proposed development.

Appendix A – Figures



KEY

- Carrington Avenue
- The Fleets
- Belle Vue (Residential)
- Belle Vue (Pitches)

Rev/Description	By	Checked	Approved	Date
Purpose of Issue			Status	
FOR REPORT			FINAL	

Client
BARNSELY COLLEGE

Project
PROPOSED HOUSING DEVELOPMENTS

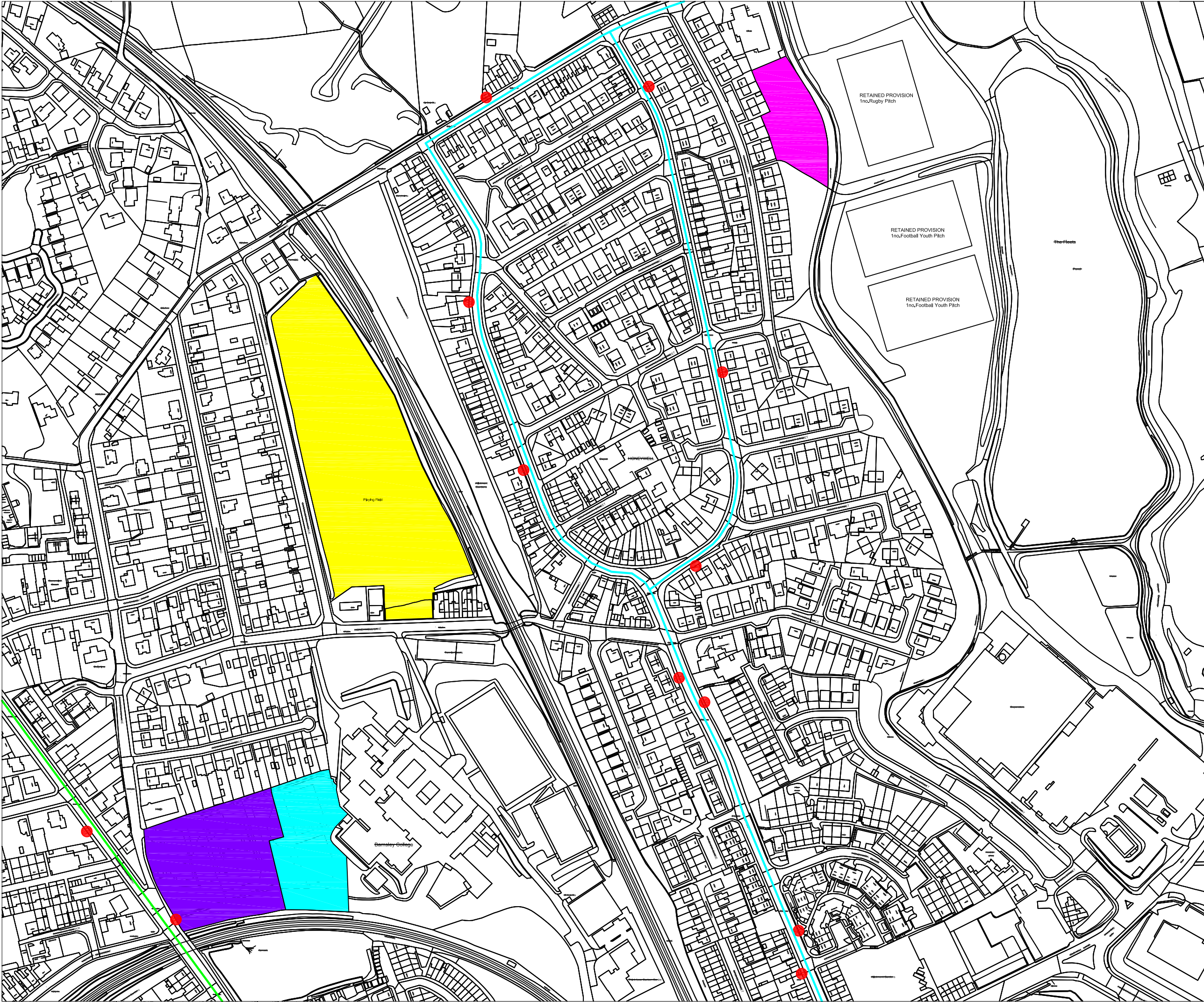
Drawing
FIGURE 1
SITE LOCATION

Scale @ A3	Drawn	Checked	Approved
1:3000	EP	MP	SC

Project No.	Date
CS/071060-08	JUNE 2014

Drawing Number
CS/071060-08-TR-001

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KEY

- Bus Stop
- Bus Service 12
- Bus Service 97
- Carrington Avenue
- The Fleets
- Belle Vue (Residential)
- Belle Vue (Pitches)

Rev/Description	By	Checked	Approved	Date
Purpose of Issue			Status	
FOR REPORT			FINAL	

Client
BARNSELY COLLEGE

Project
PROPOSED HOUSING DEVELOPMENTS

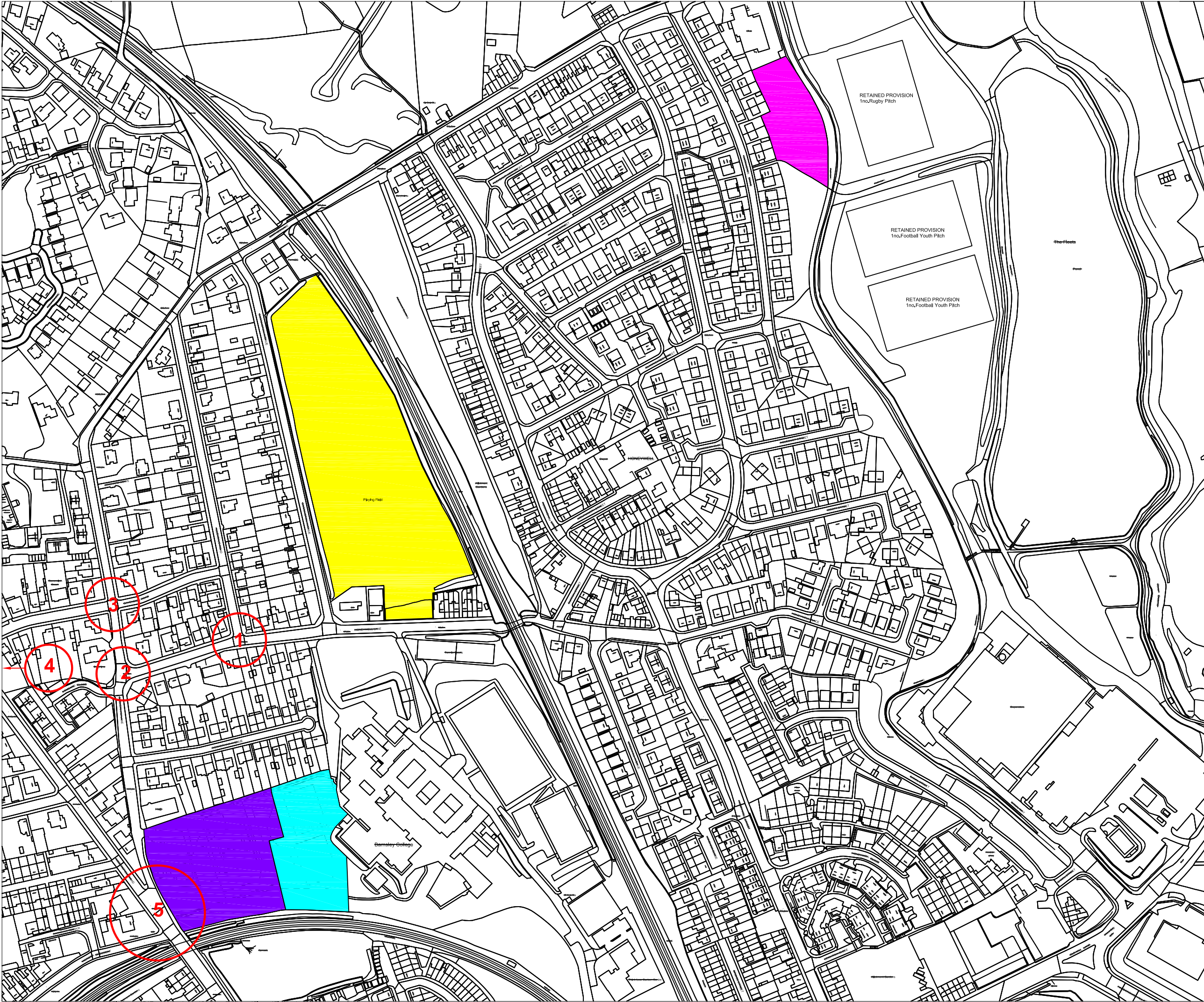
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FIGURE 2
BUS ROUTES AND BUS STOPS

Scale @ A3	Drawn	Checked	Approved
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Project No.	Date
CS/071060-08	JUNE 2014

Drawing Number
CS/071060-08-TR-002

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KEY

JUNCTIONS ASSESSED

- ① Carrington Avenue/ Honeywell Lane
- ② Cockerham Lane/ Honeywell Lane
- ③ Cockerham Lane/ Cavendish Road
- ④ A635 Huddersfield Rd/ Cavendish Rd/ Bond Rd
- ⑤ A635 Huddersfield Road/ Cockerham Lane

Legend:

- Carrington Avenue
- The Fleets
- Belle Vue (Residential)
- Belle Vue (Pitches)

Rev/Description	By	Checked	Approved	Date
Purpose of Issue			Status	
FOR REPORT			FINAL	

Client
BARNSELY COLLEGE

Project
PROPOSED HOUSING DEVELOPMENTS

Drawing
**FIGURE 3
STUDY AREA AND JUNCTIONS ASSESSED**

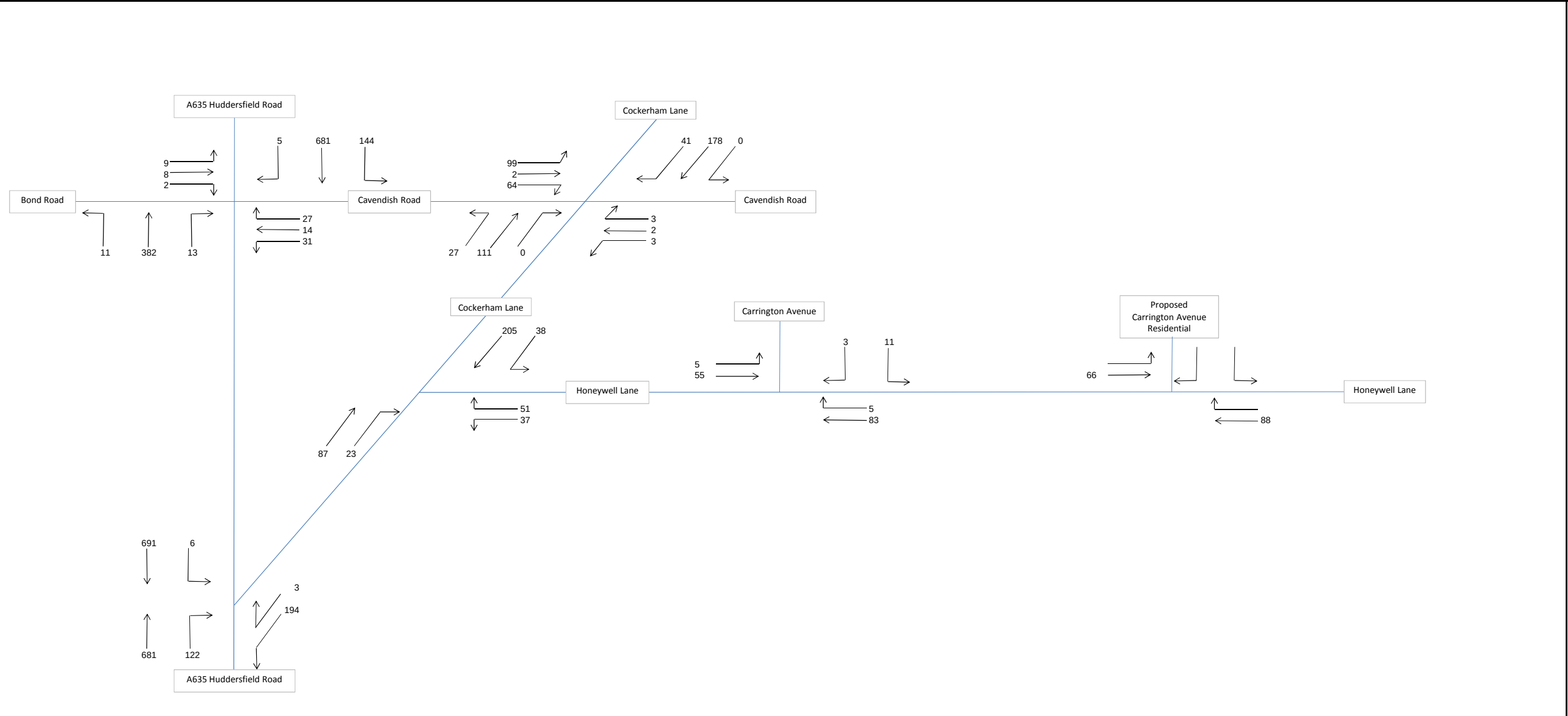
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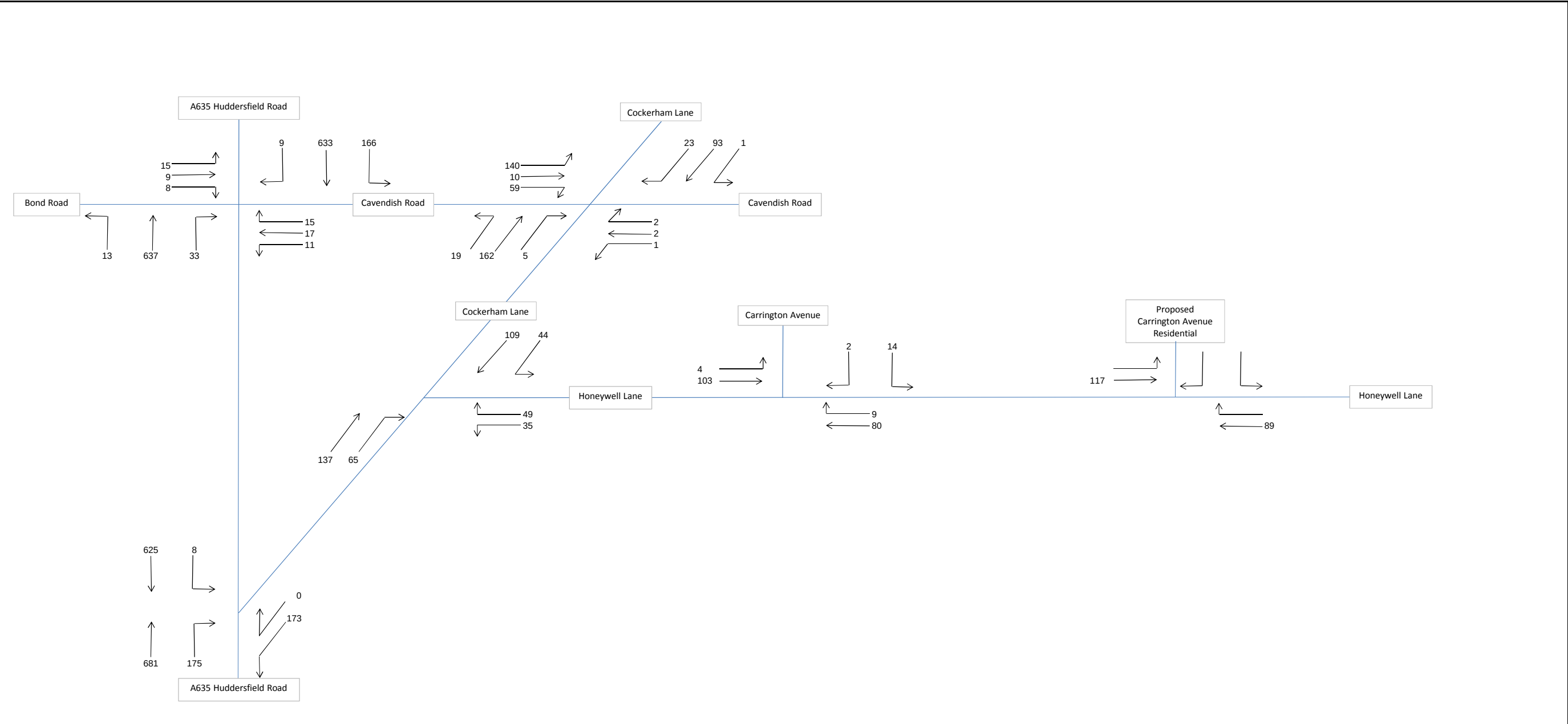
Project No.	Date
CS/071060-08	JUNE 2014

Drawing Number
CS/071060-08-TR-003

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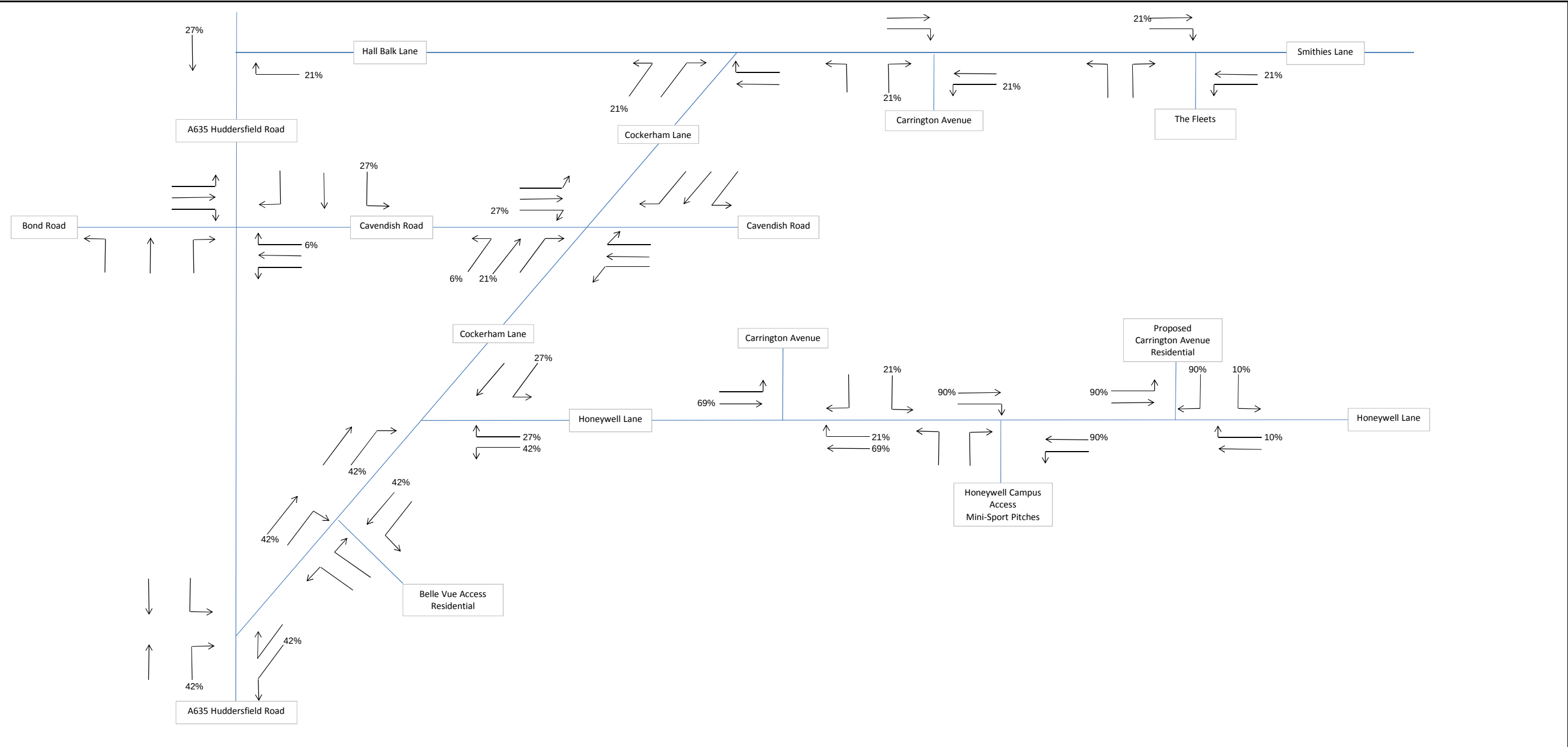


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2014 Survey Data - PM Peak

FIGURE: 5

Drawn by	Scale	Date
EP	NTS	Jun-14

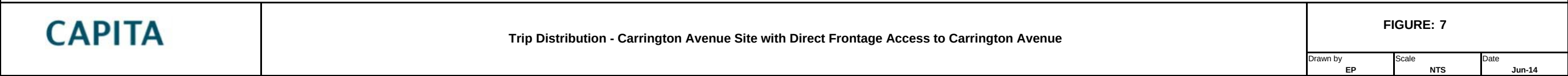


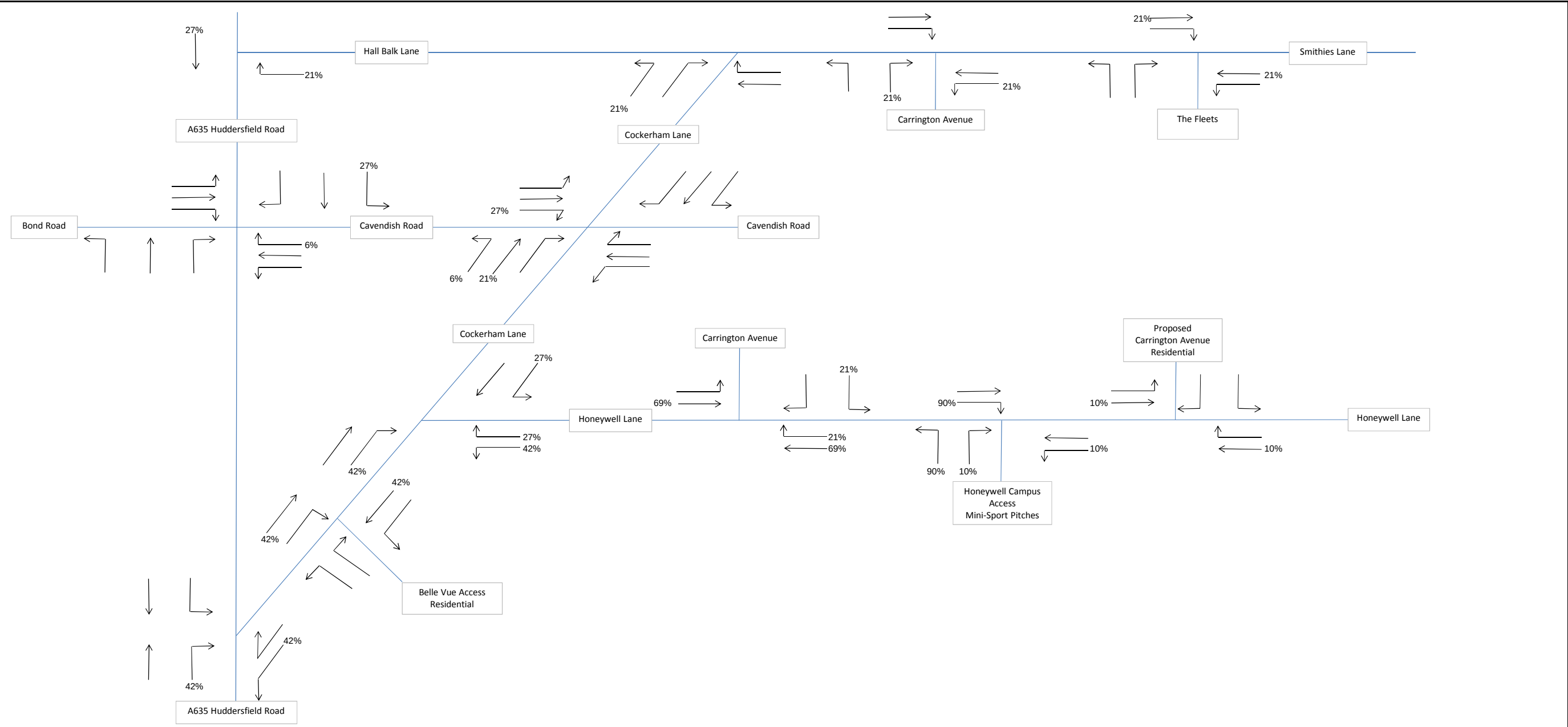
CAPITA

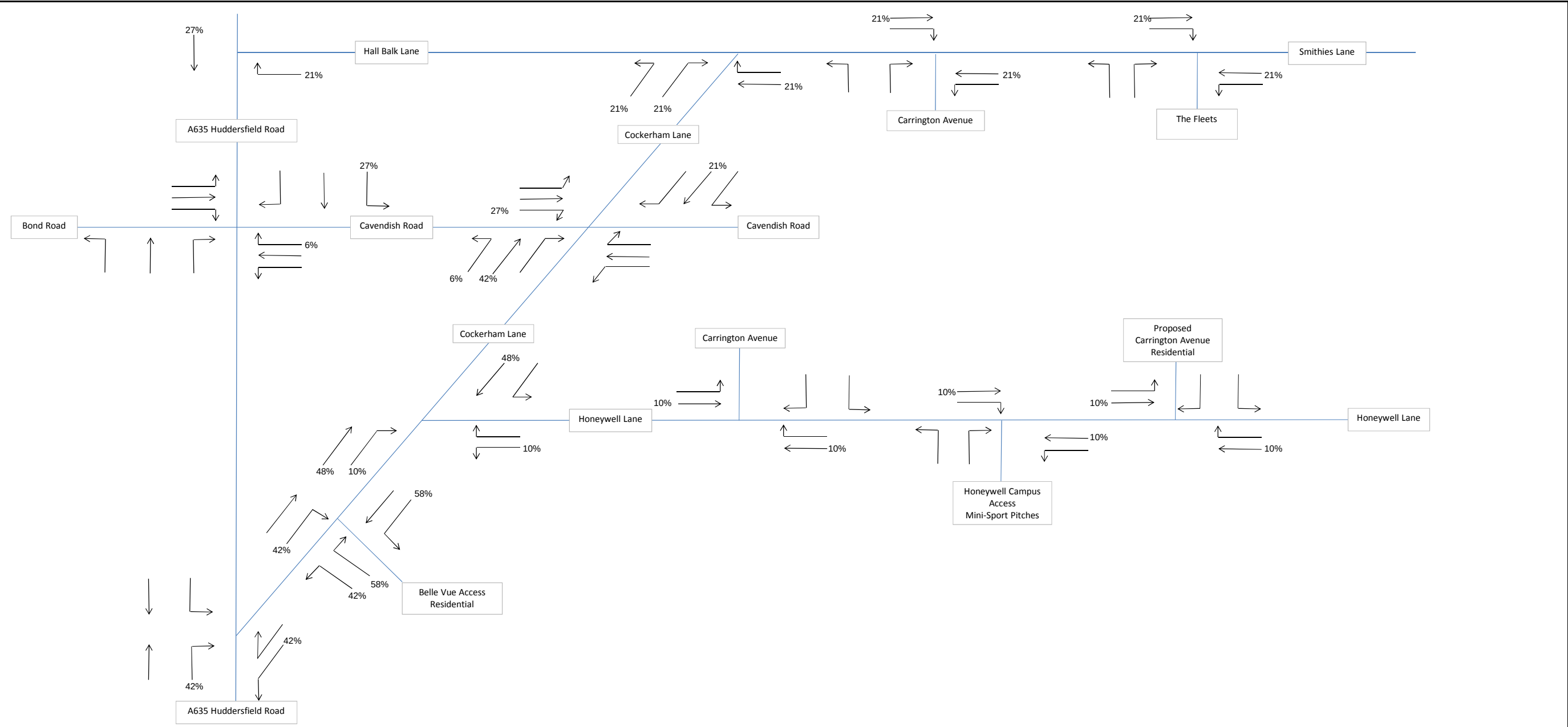
Trip Distribution - Carrington Avenue Site accessed from Honeywell Lane

FIGURE: 6

Drawn by	Scale	Date
EP	NTS	Jun-14





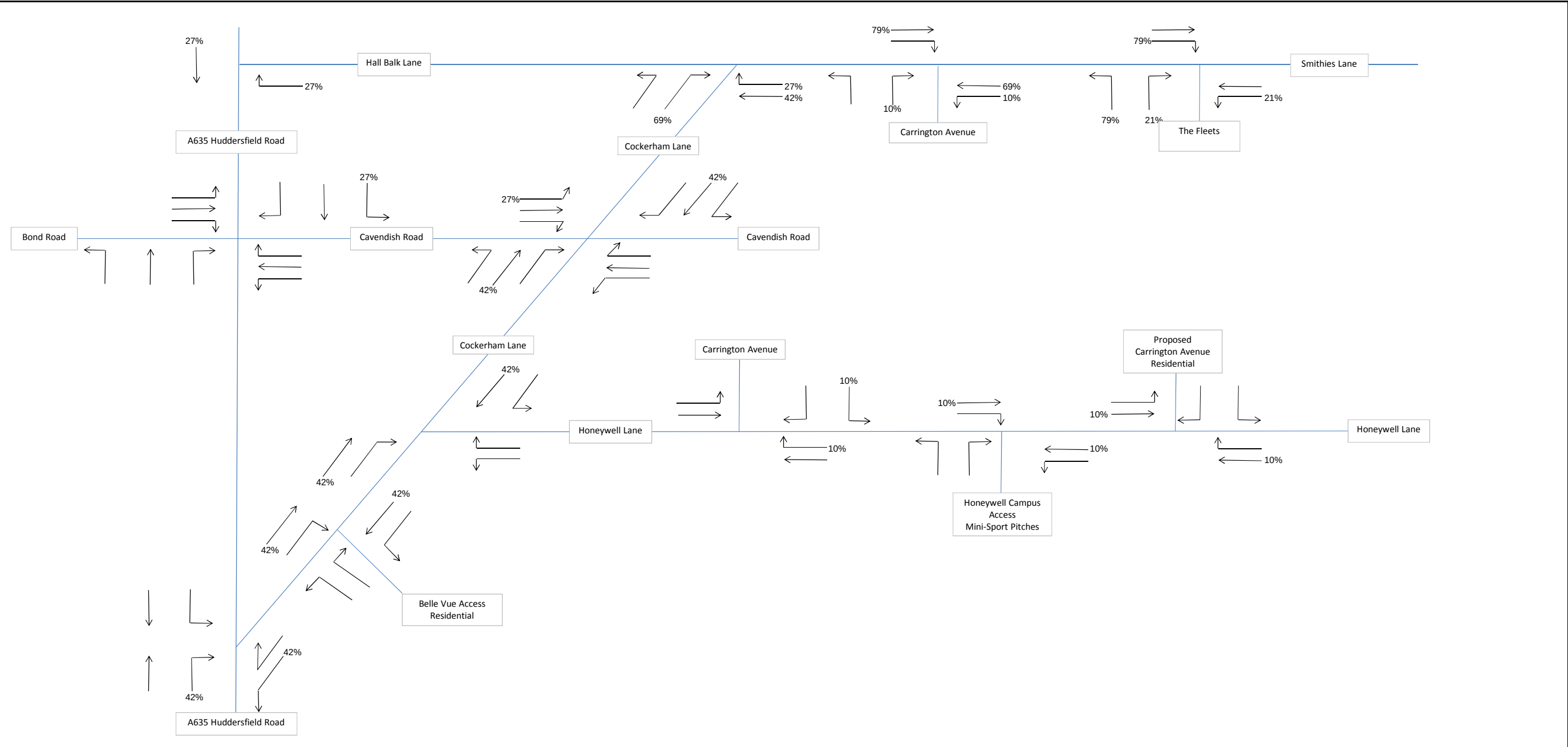


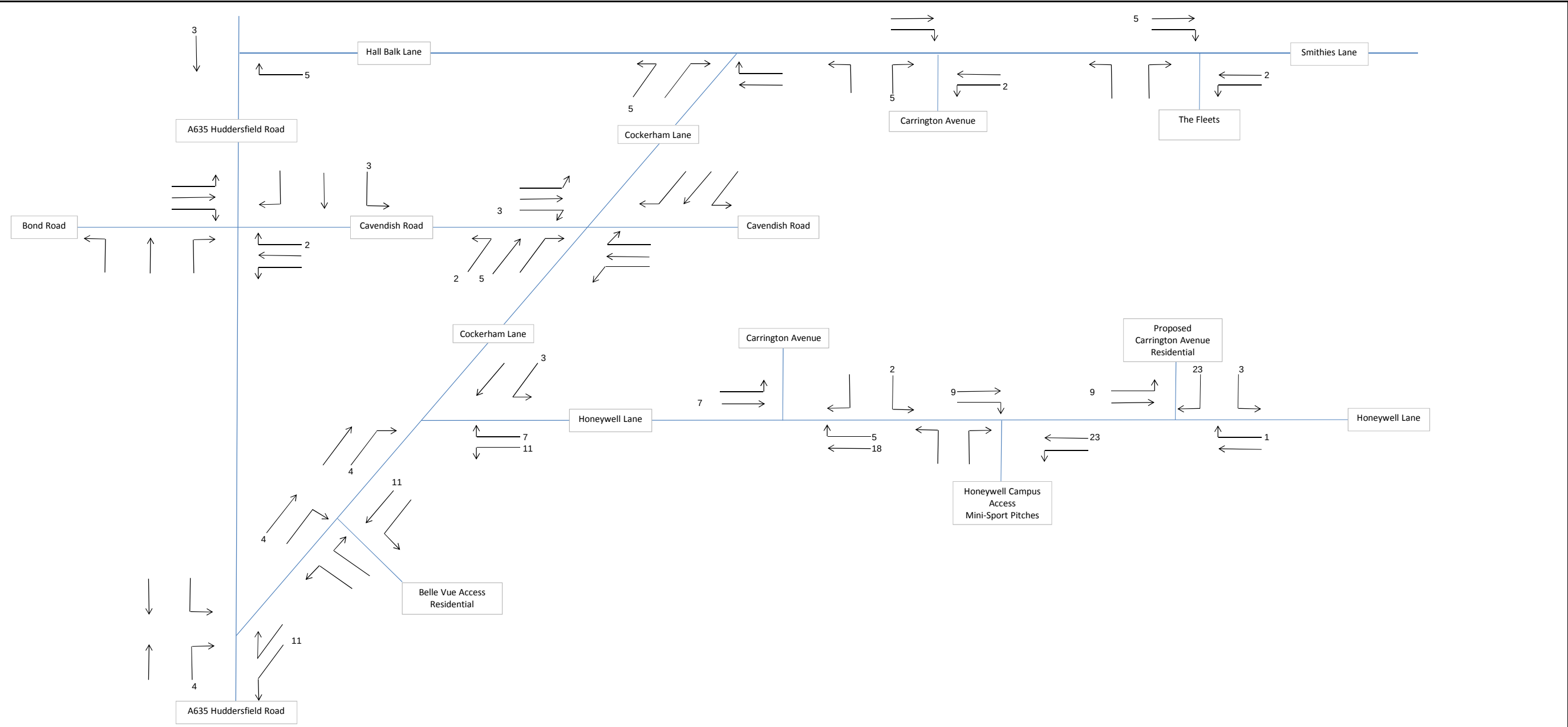
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Trip Distribution - Belle Vue Site Residential access from Cockerham Lane

FIGURE: 9

Drawn by	Scale	Date
EP	NTS	Jun-14



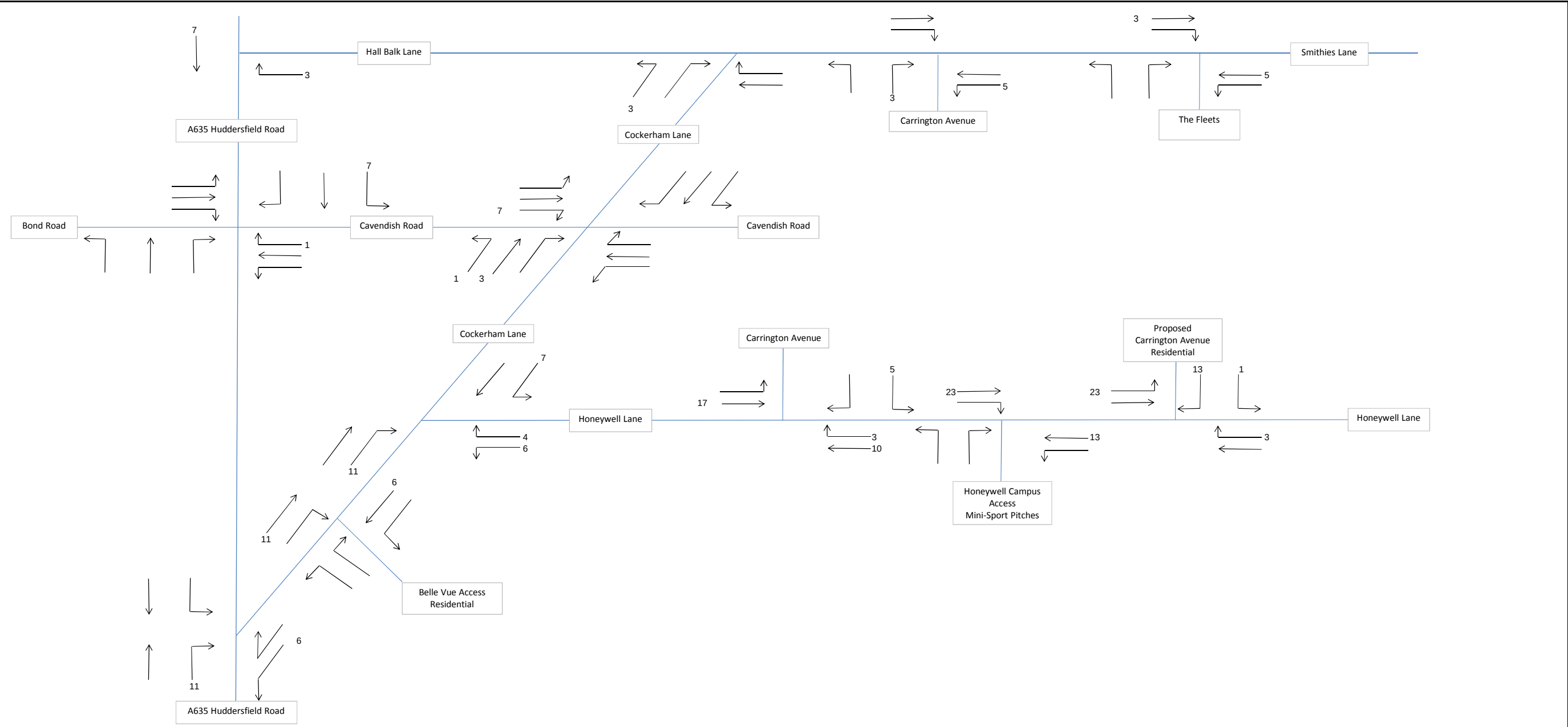


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Trip Assignment - Carrington Avenue Site accessed from Honeywell Lane - AM Peak

FIGURE: 11

Drawn by	Scale	Date
EP	NTS	Jun-14



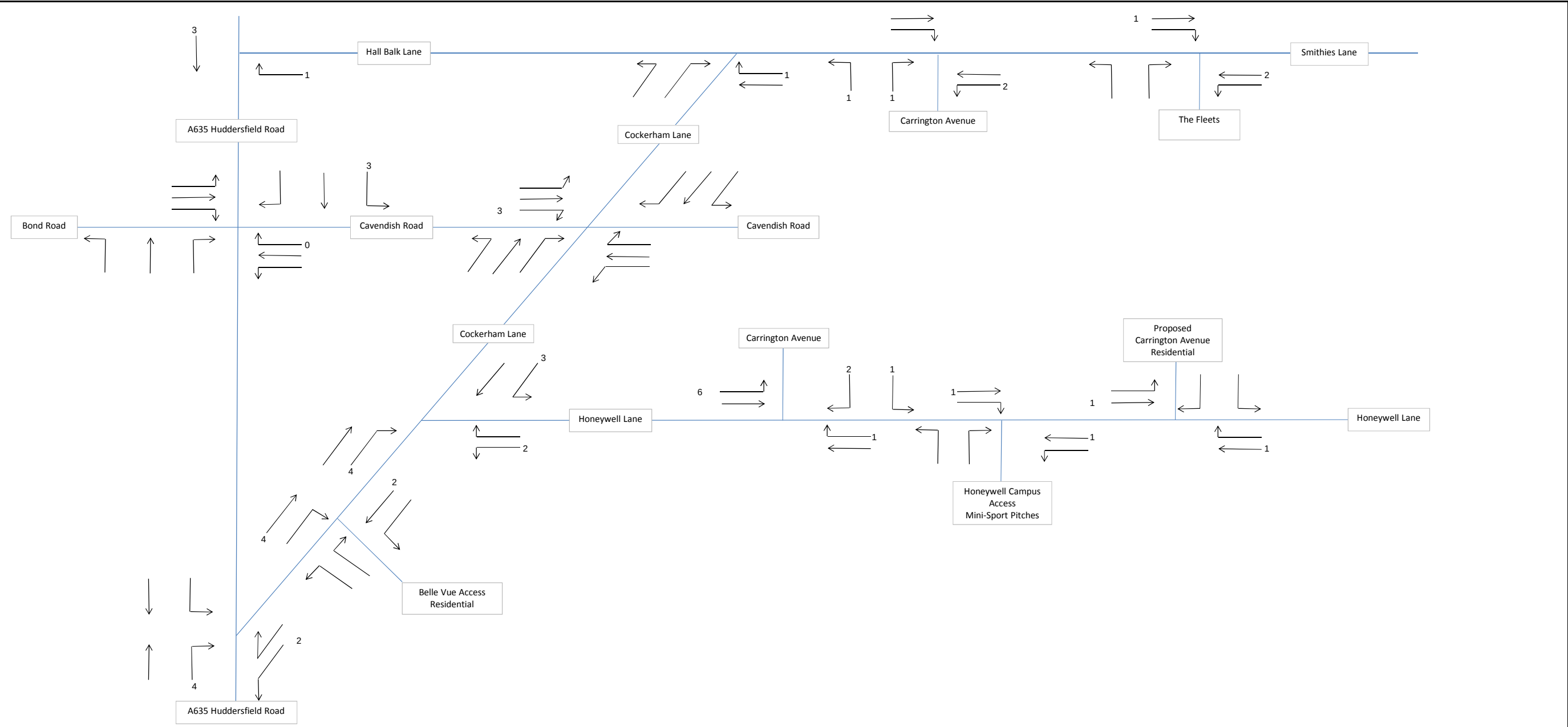
CAPITA

Trip Assignment - Carrington Avenue Site accessed from Honeywell Lane - PM Peak

FIGURE: 12

Drawn by	Scale	Date
EP	NTS	Jun-14



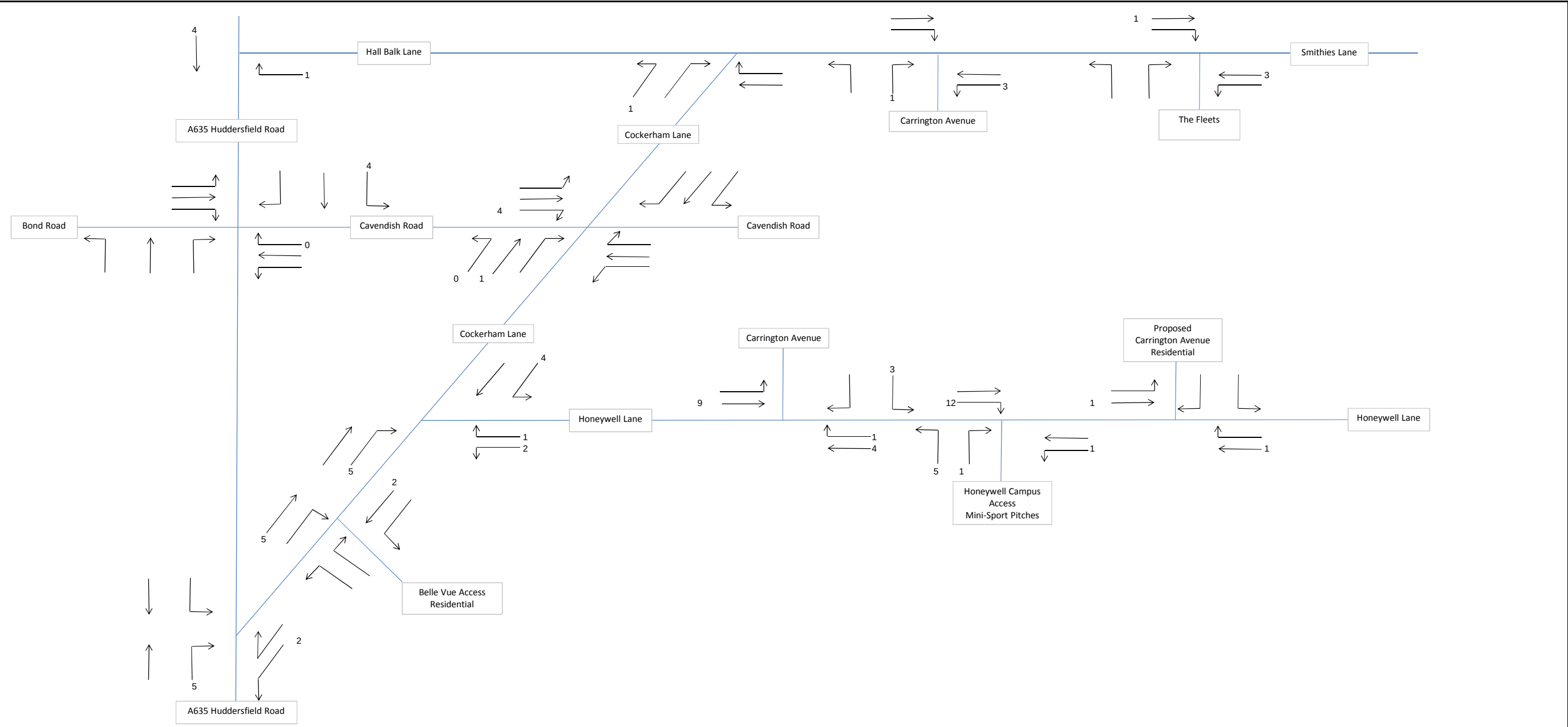


CAPITA

Trip Assignment - Carrington Avenue Site Direct Frontage Access to Carrington Avenue - PM Peak

FIGURE: 14

Drawn by	Scale	Date
EP	NTS	Jun-14

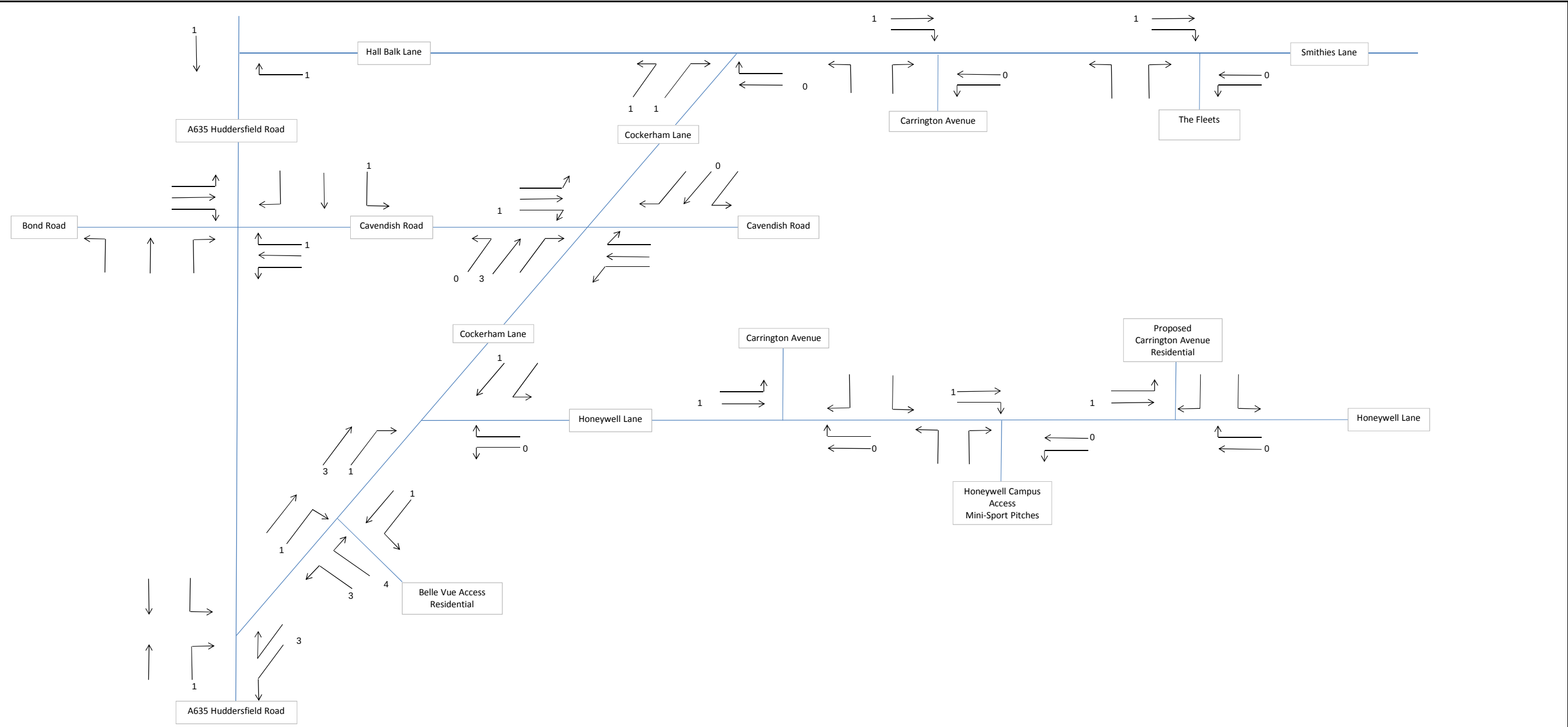


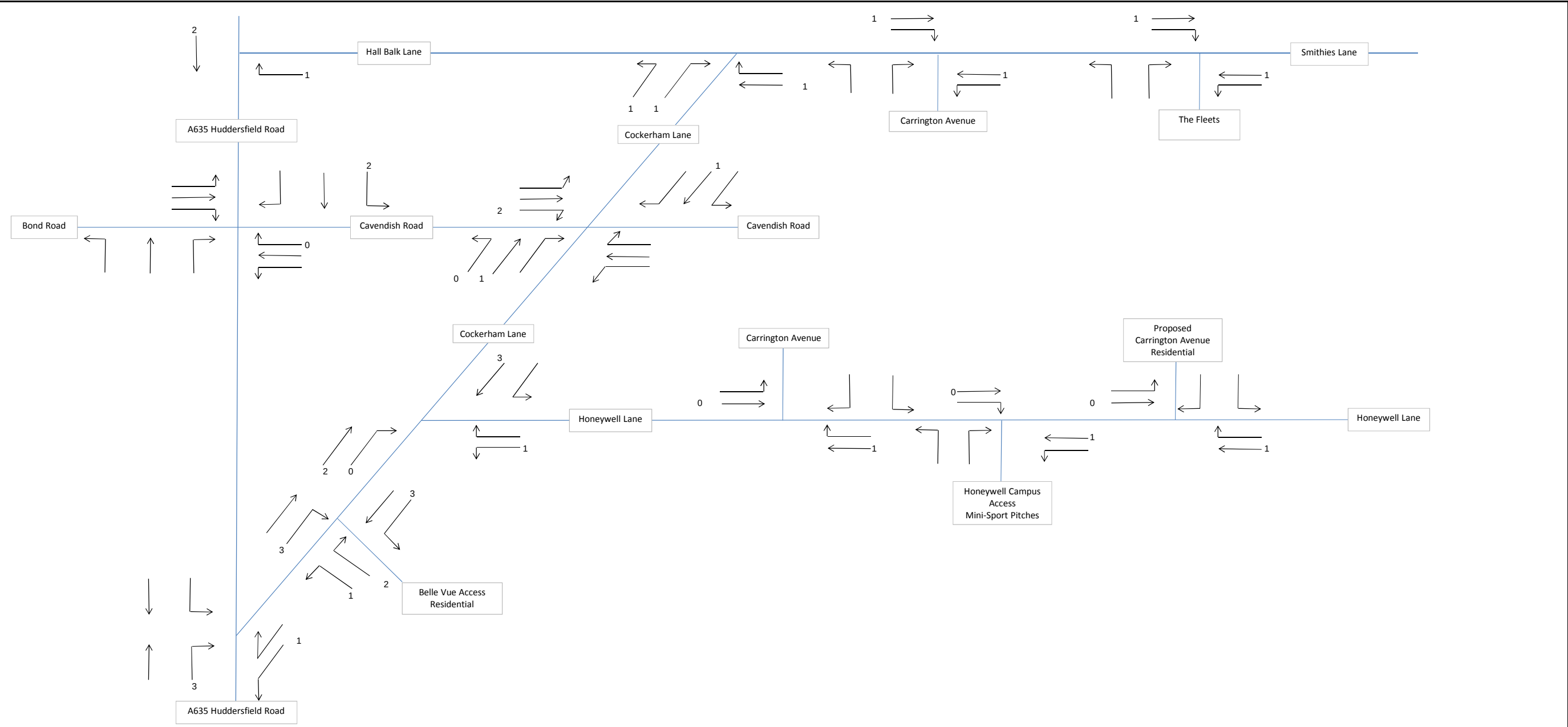
CAPITA

Trip Assignment - Belle Vue Site Sports Pitches with access from Honeywell Lane - PM Peak

FIGURE: 15

Drawn by	Scale	Date
EP	NTS	Jun-14



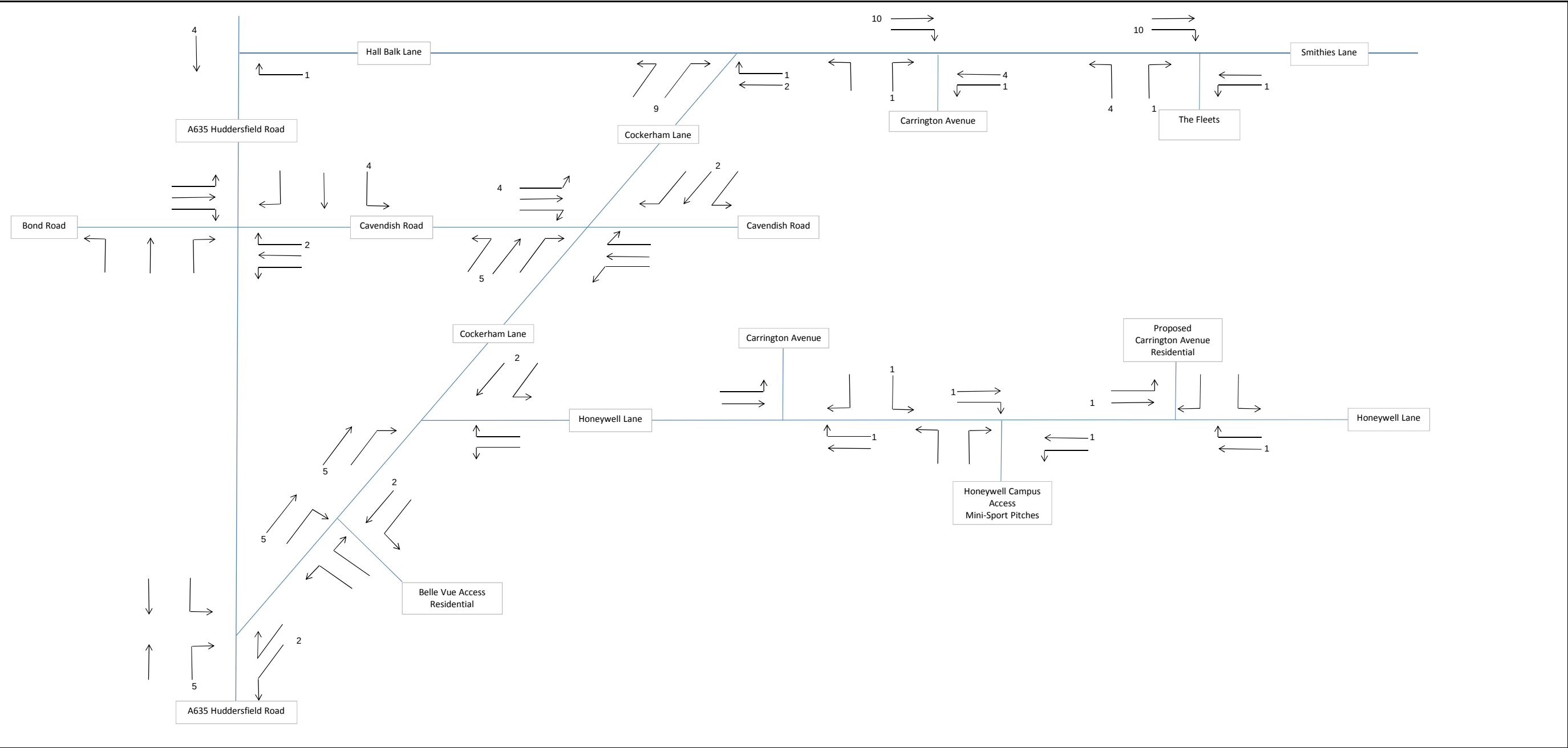


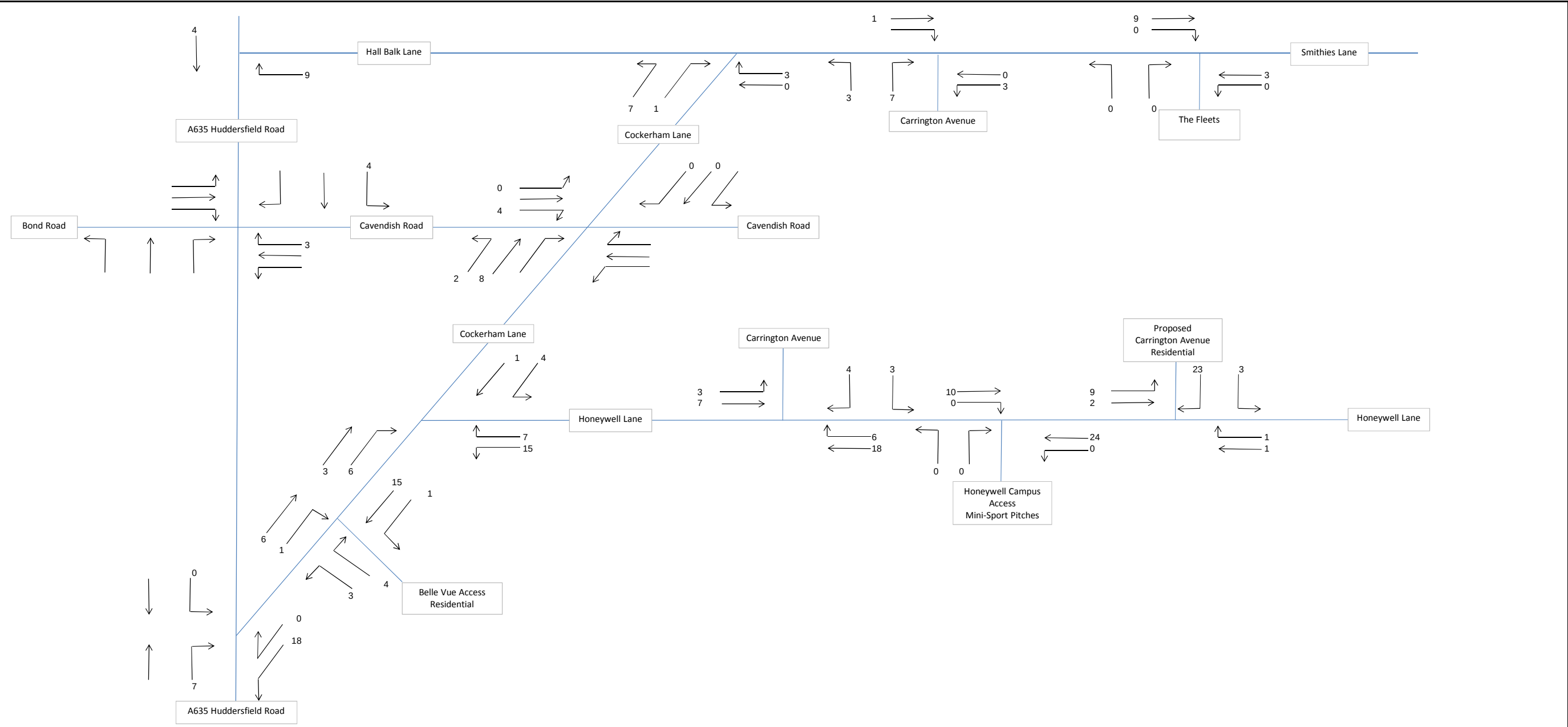
CAPITA

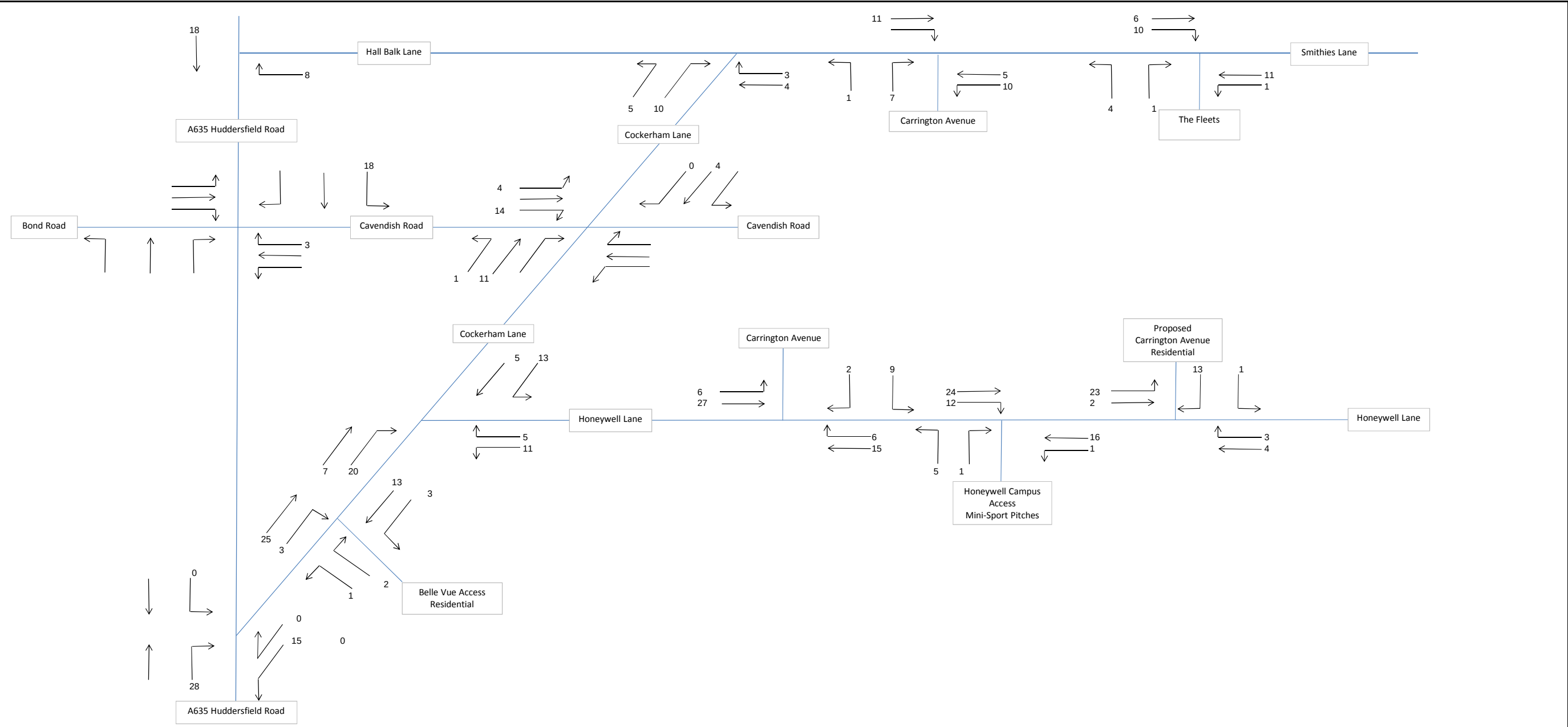
Trip Assignment - Belle Vue Site Residential access from Cockerham Lane -PM Peak

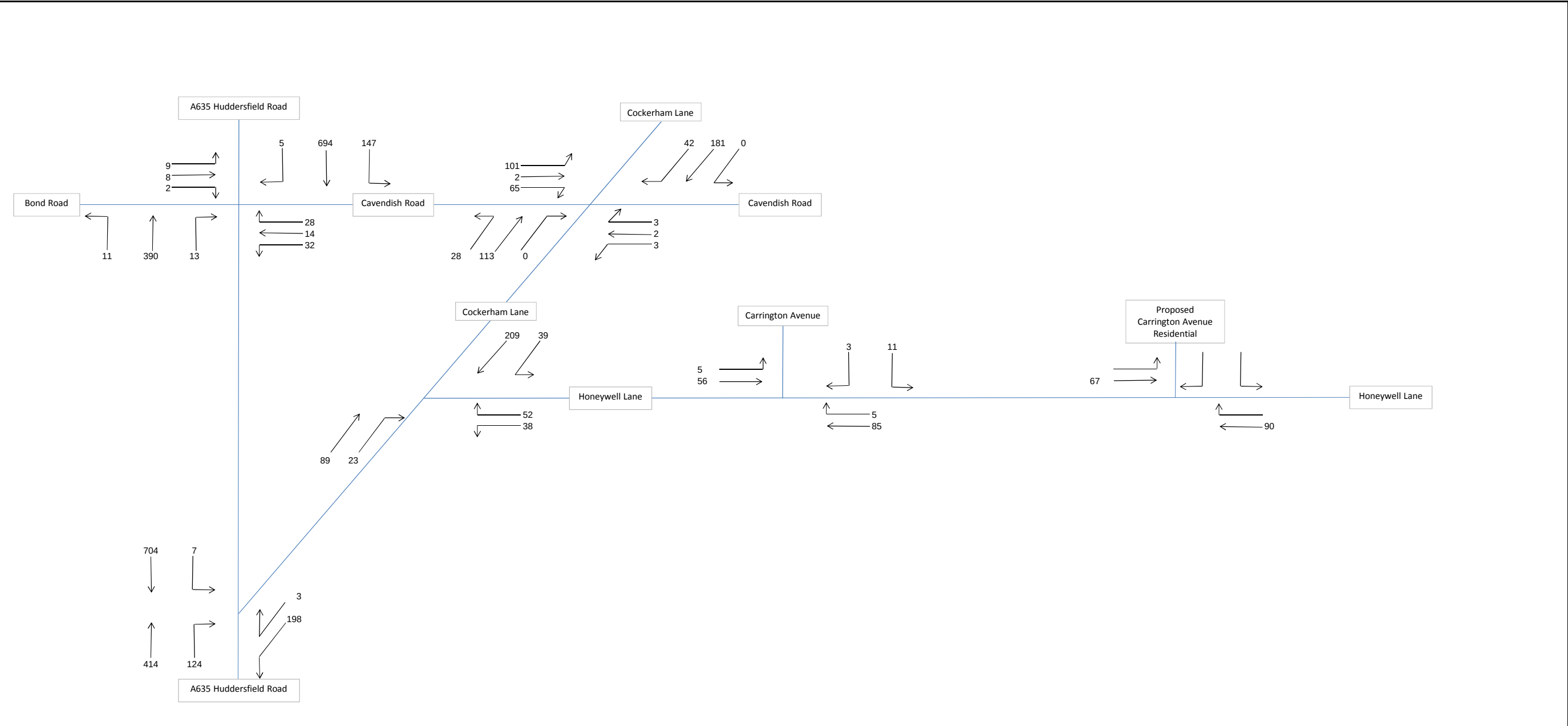
FIGURE: 17

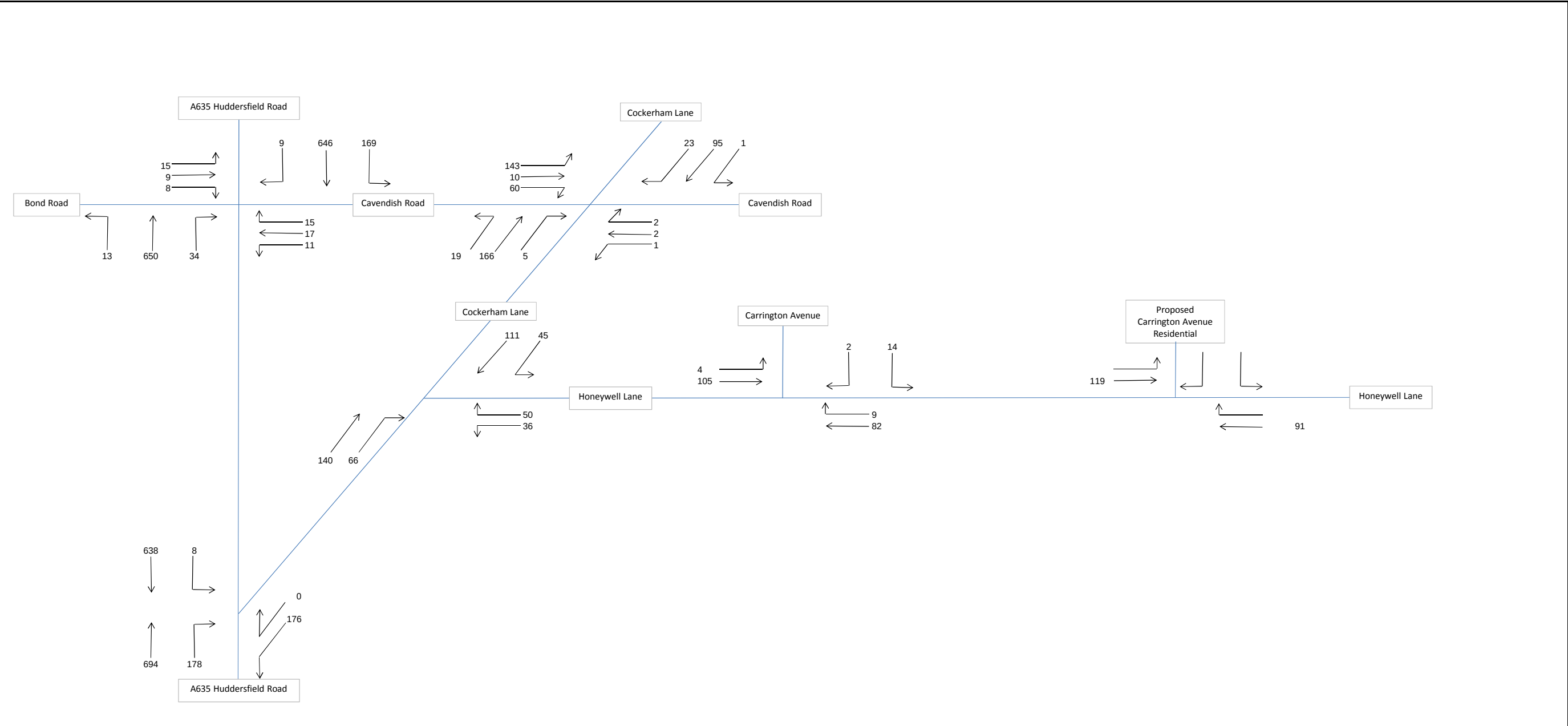
Drawn by	Scale	Date
EP	NTS	Jun-14

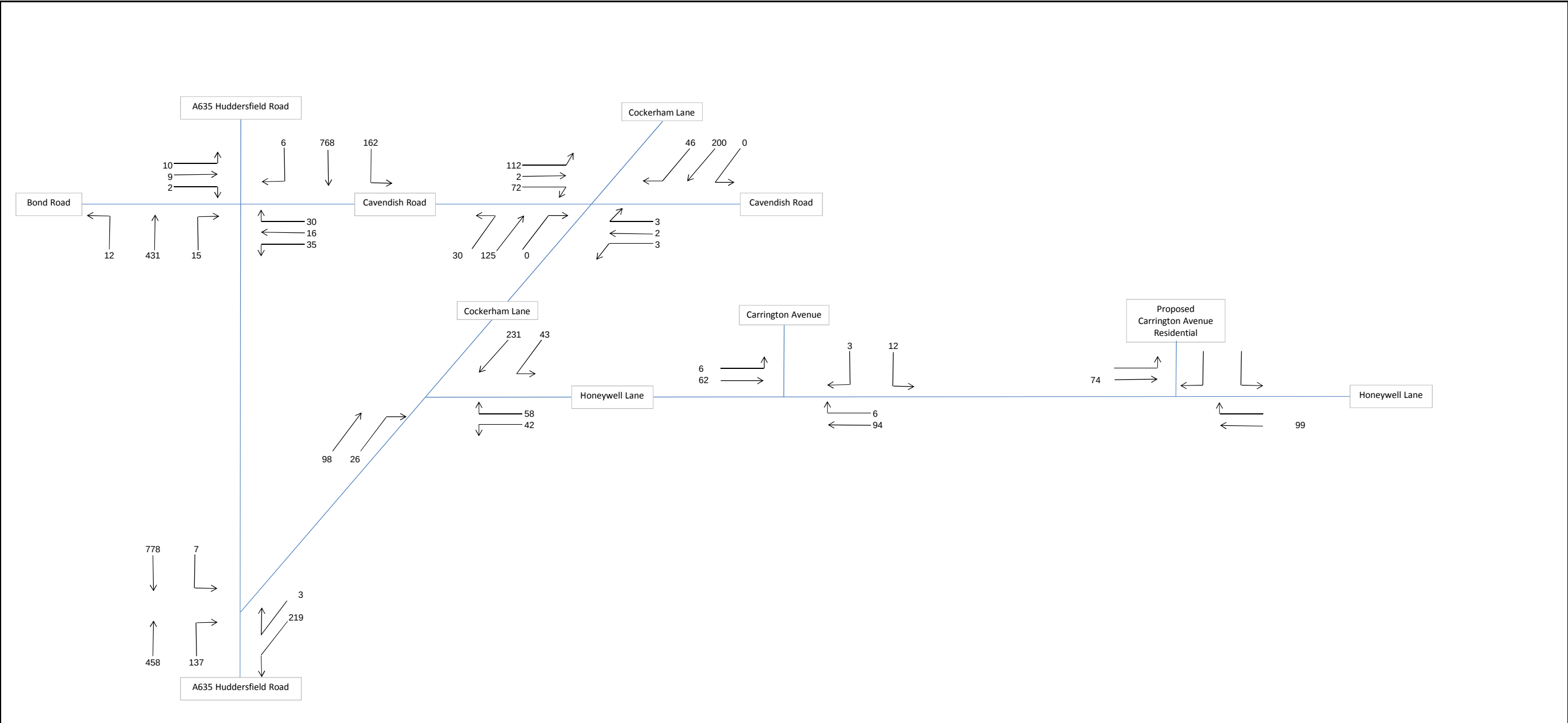


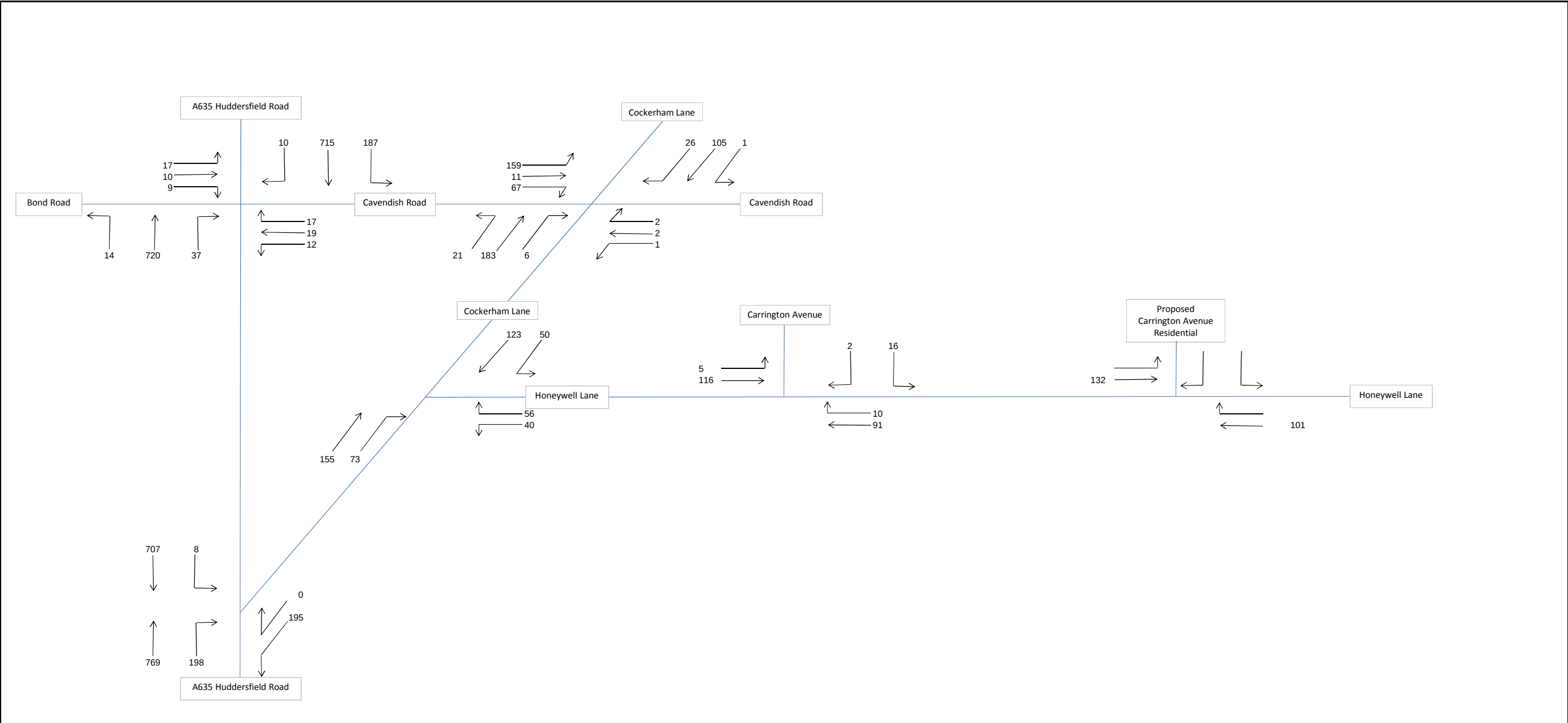


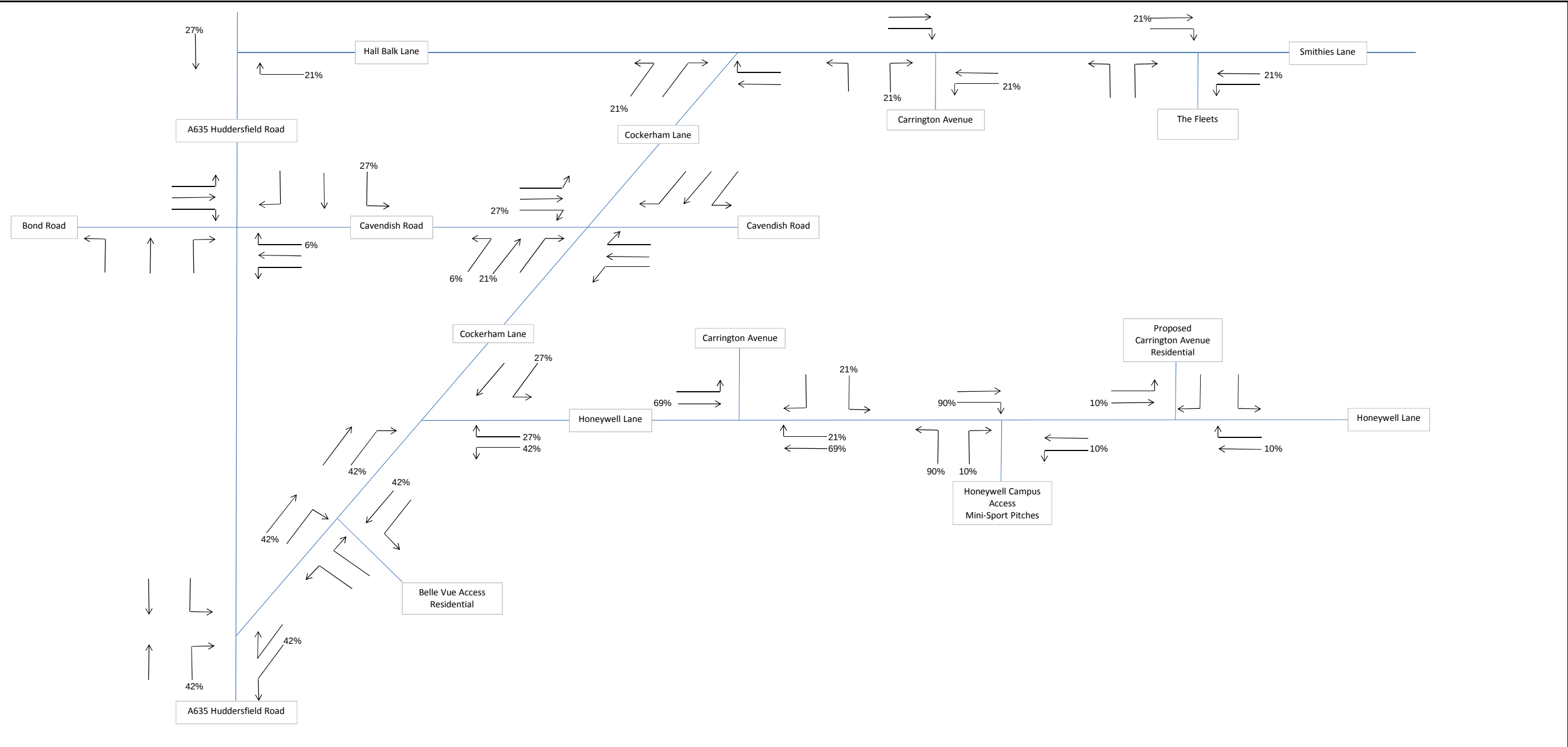


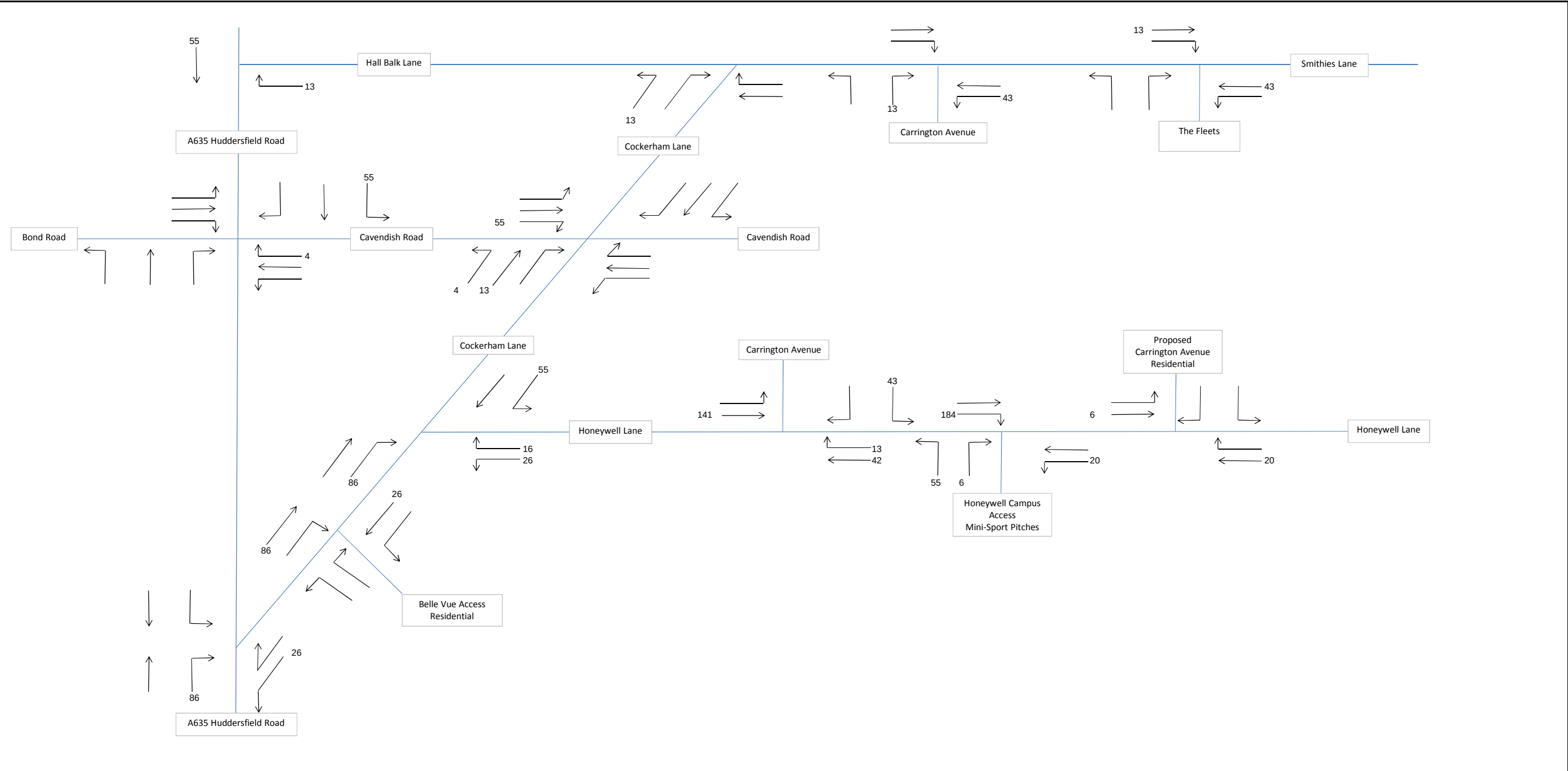


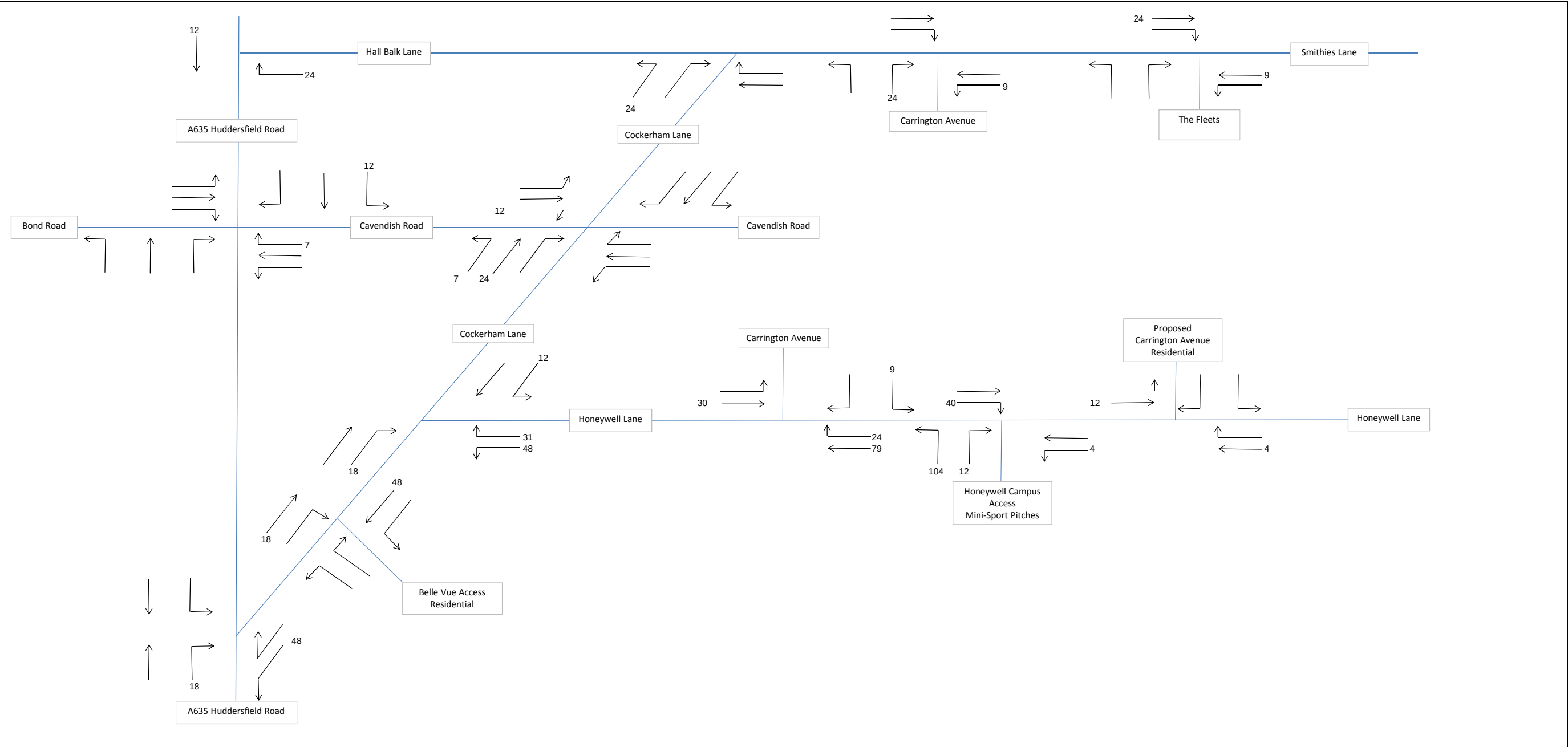


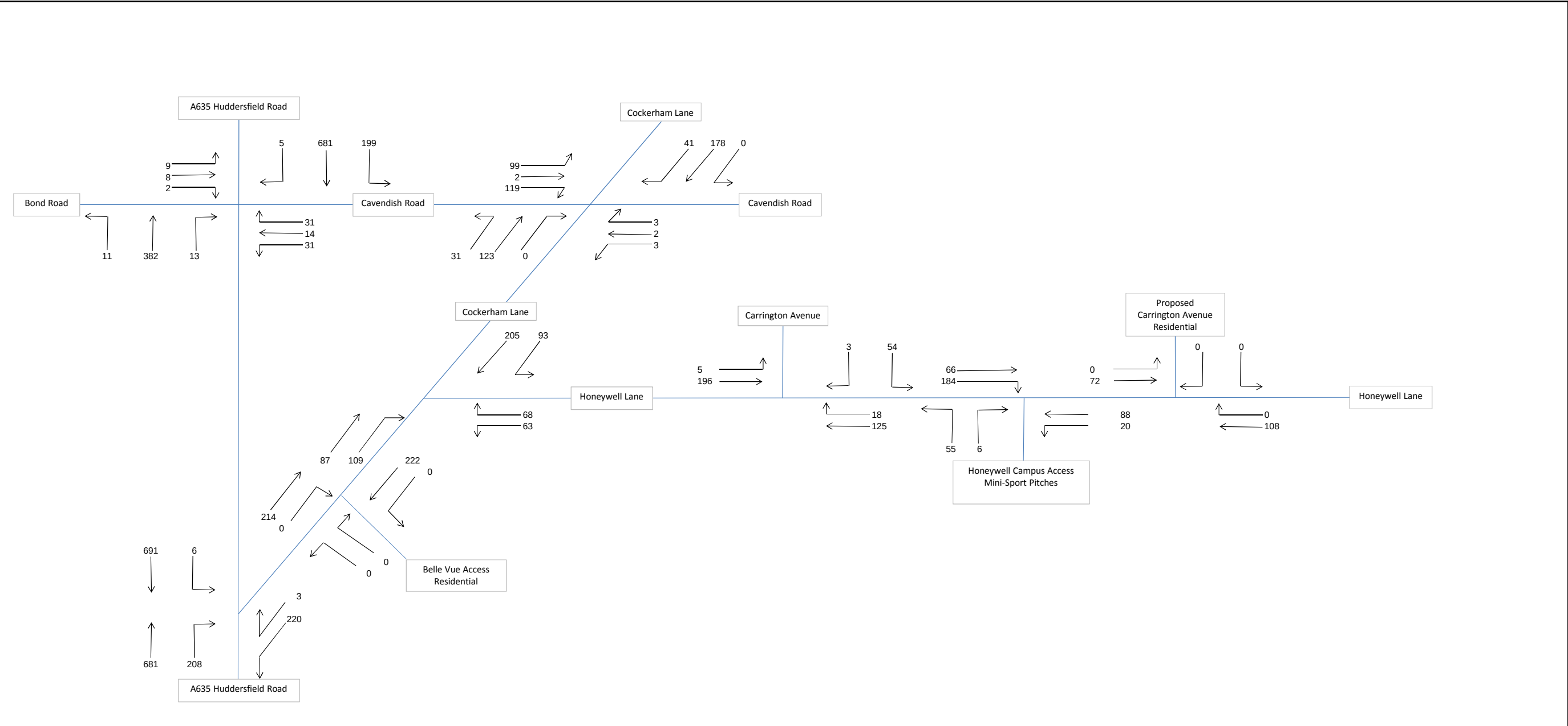










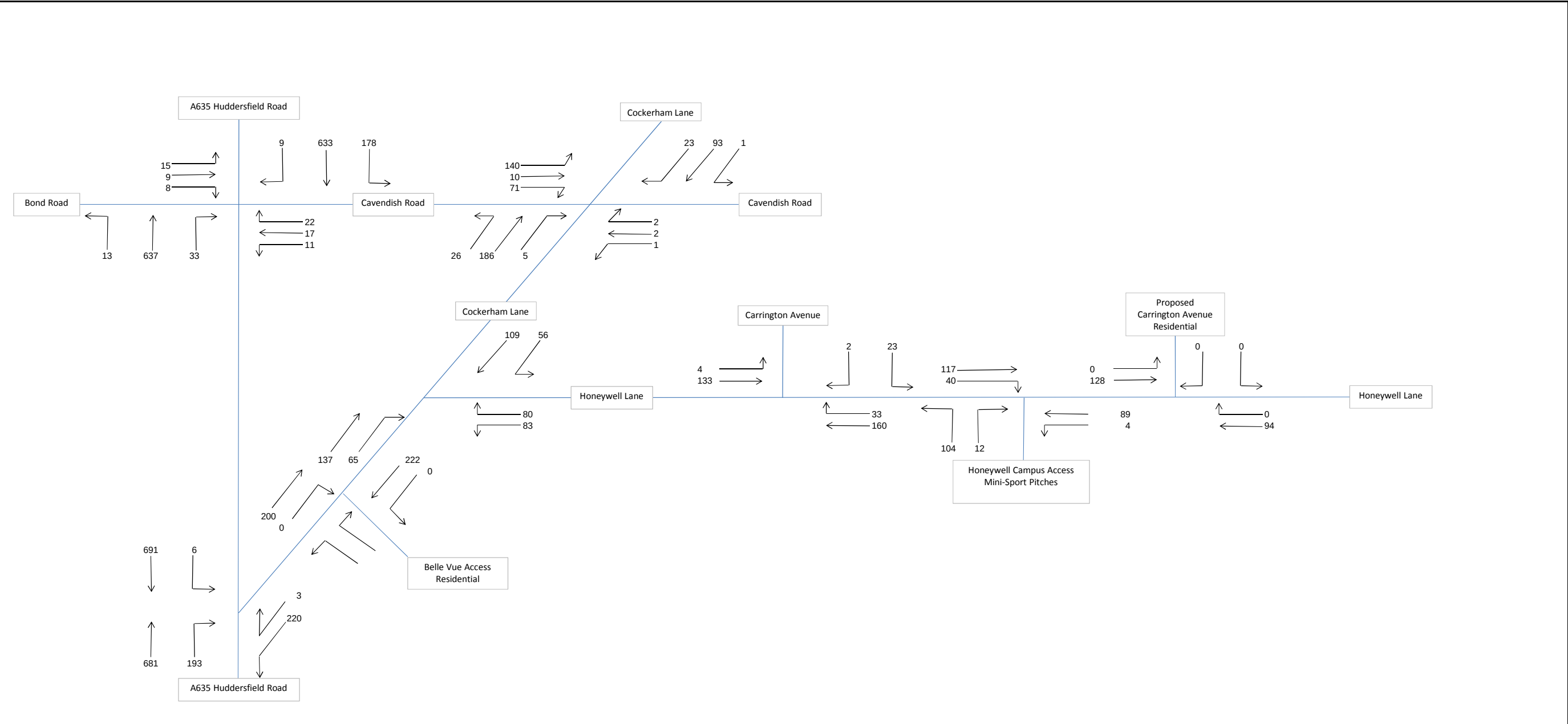


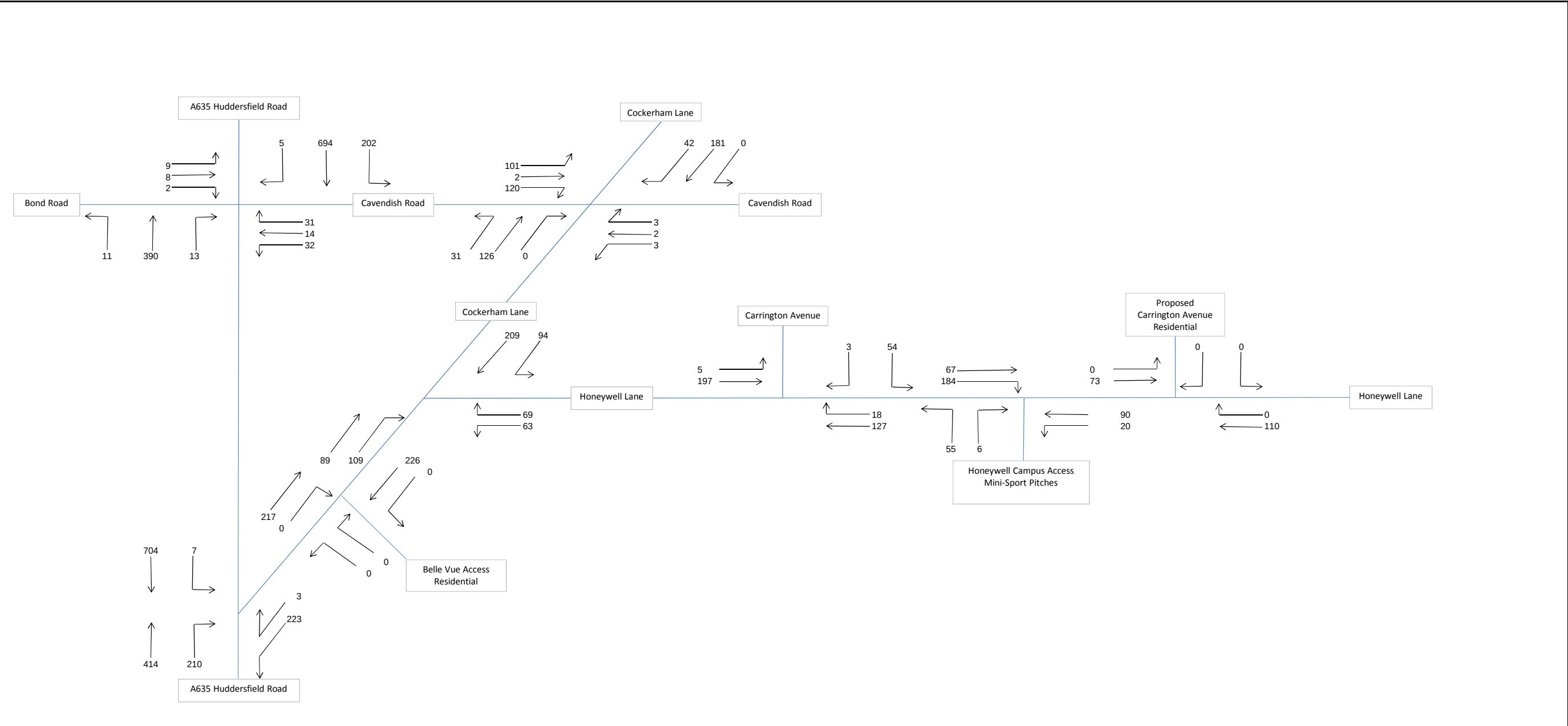
CAPITA

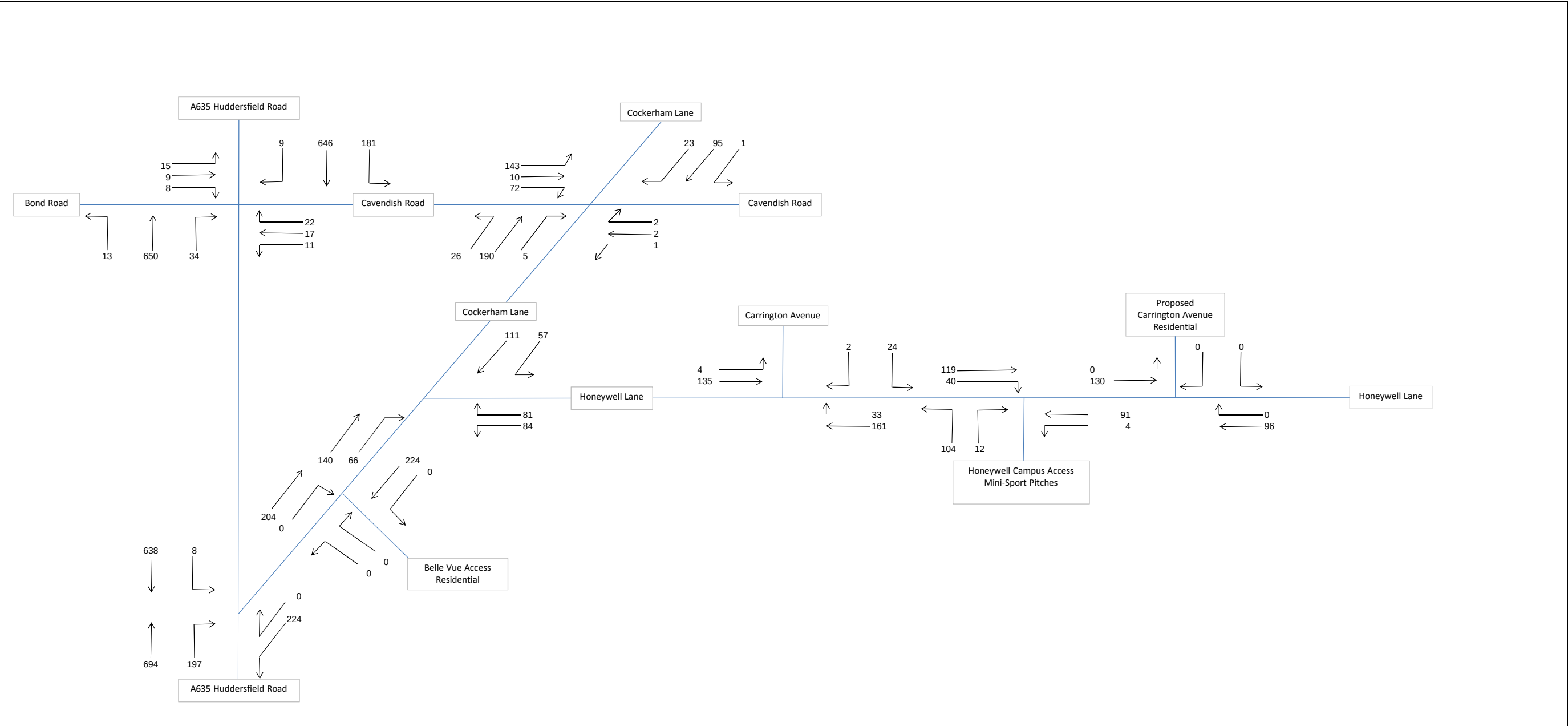
2014 Survey Data + Committed Development - AM Peak

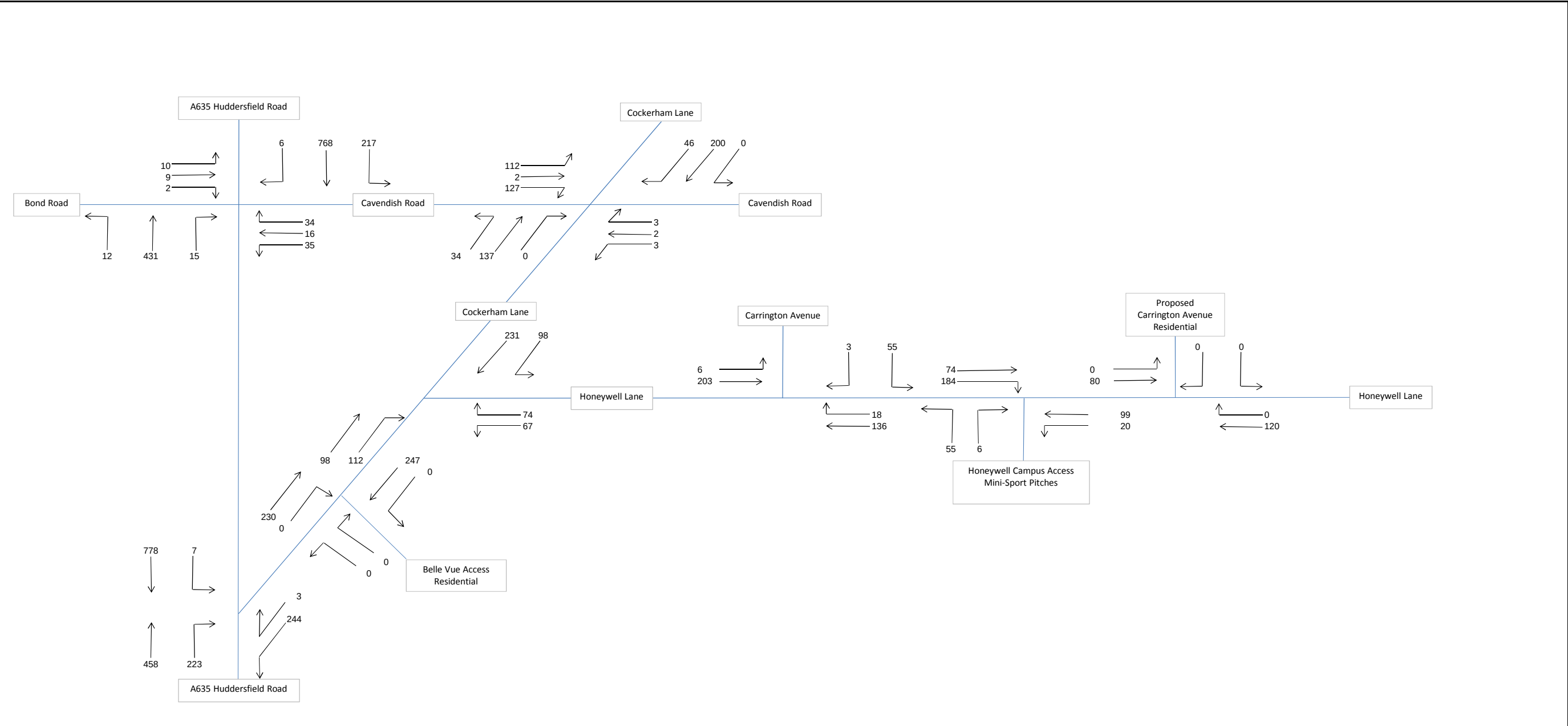
FIGURE: 28

Drawn by	Scale	Date
EP	NTS	Jun-14







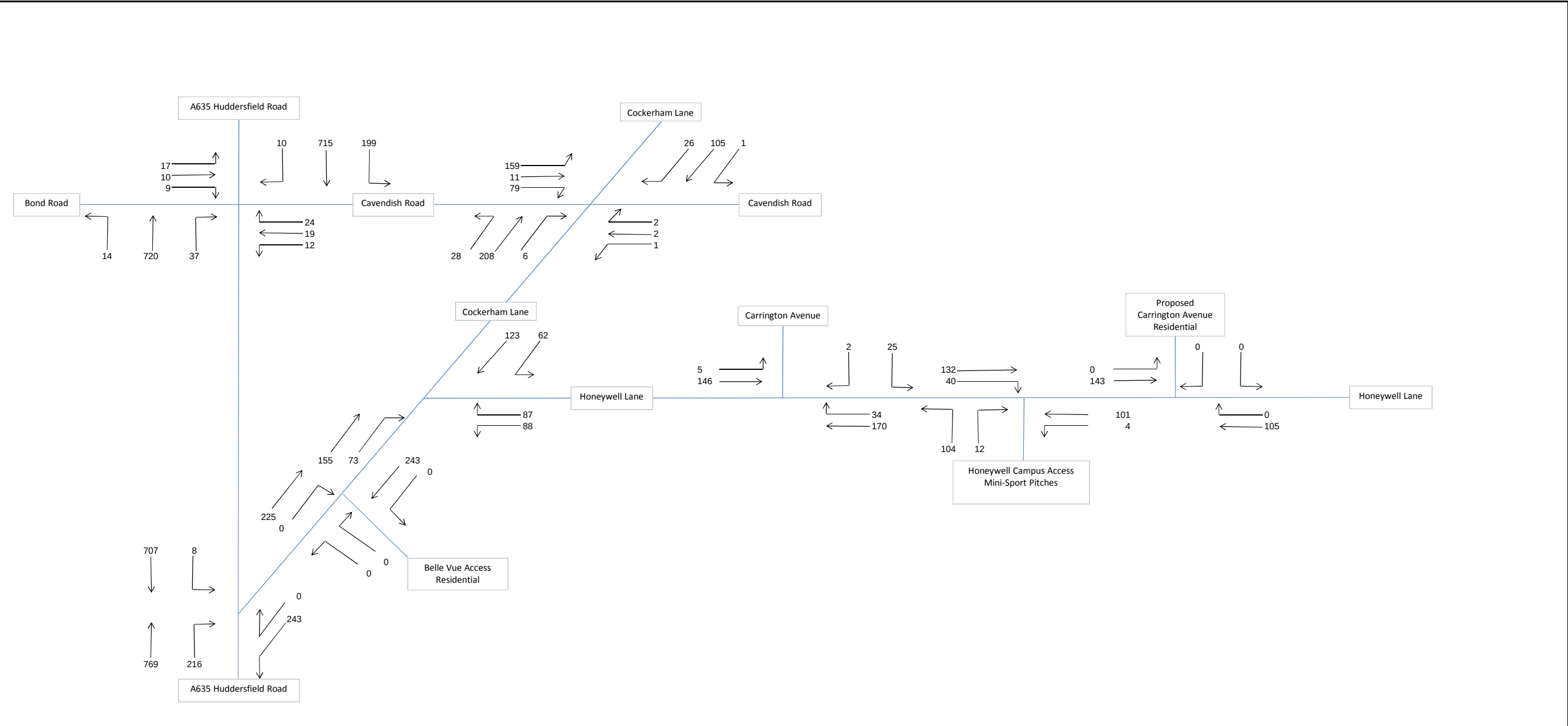


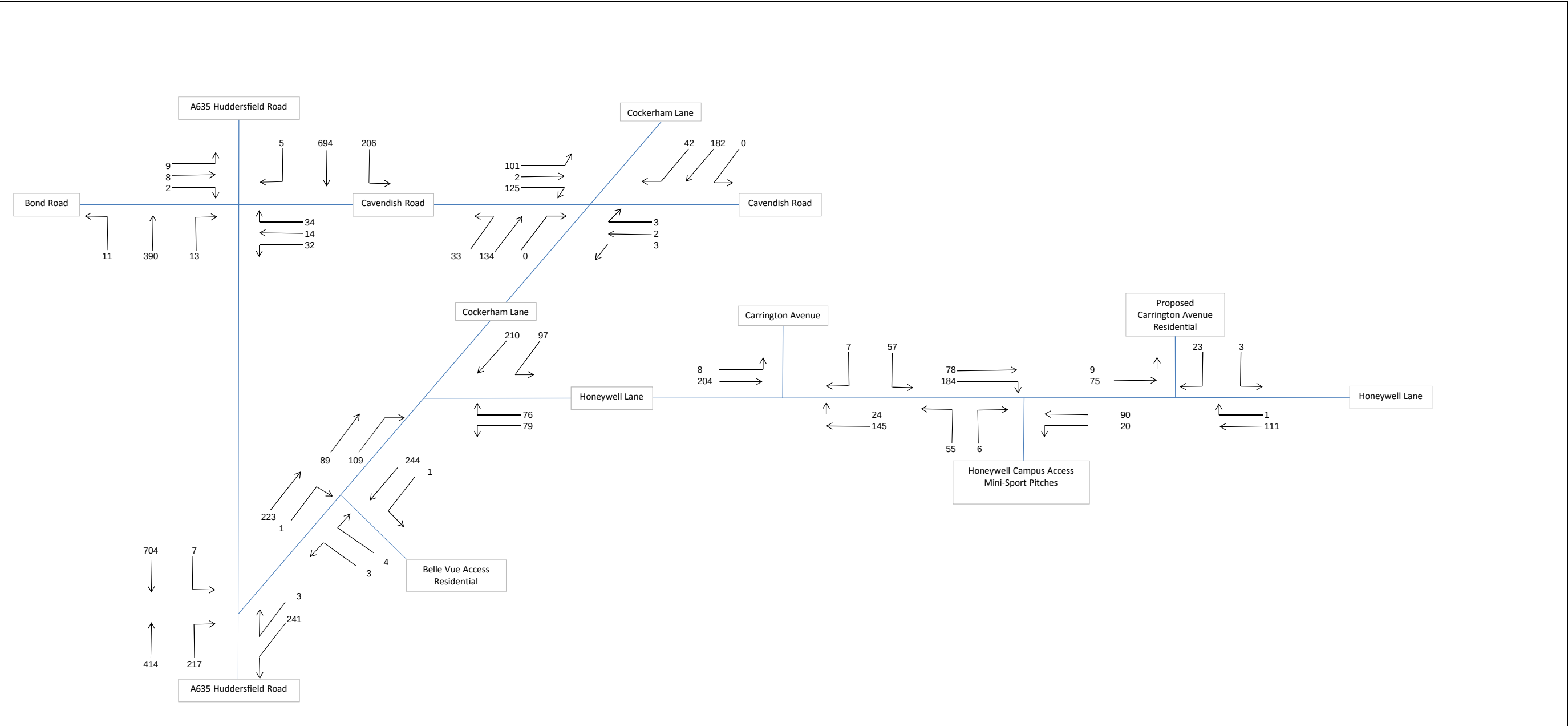
CAPITA

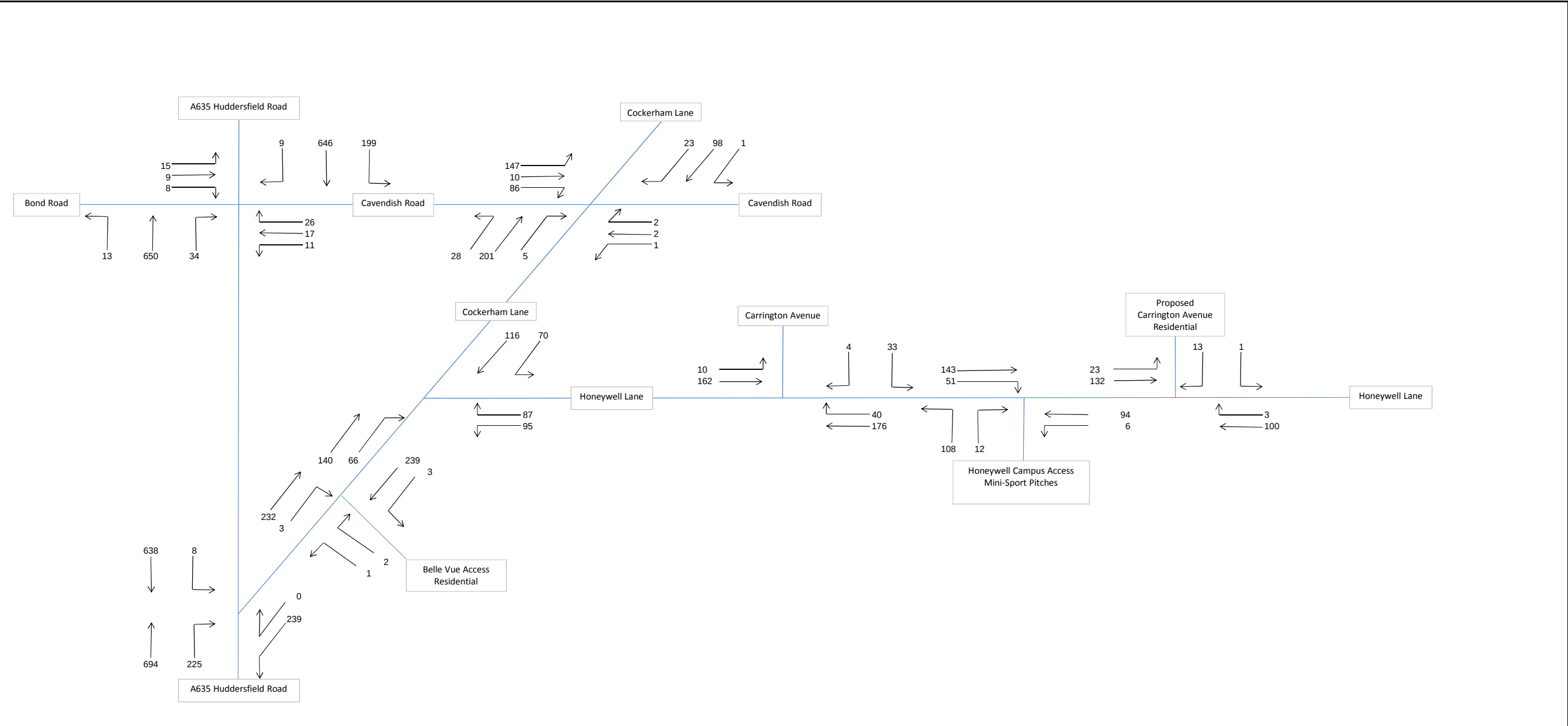
2024 Growthed Data + Committed Development - AM Peak

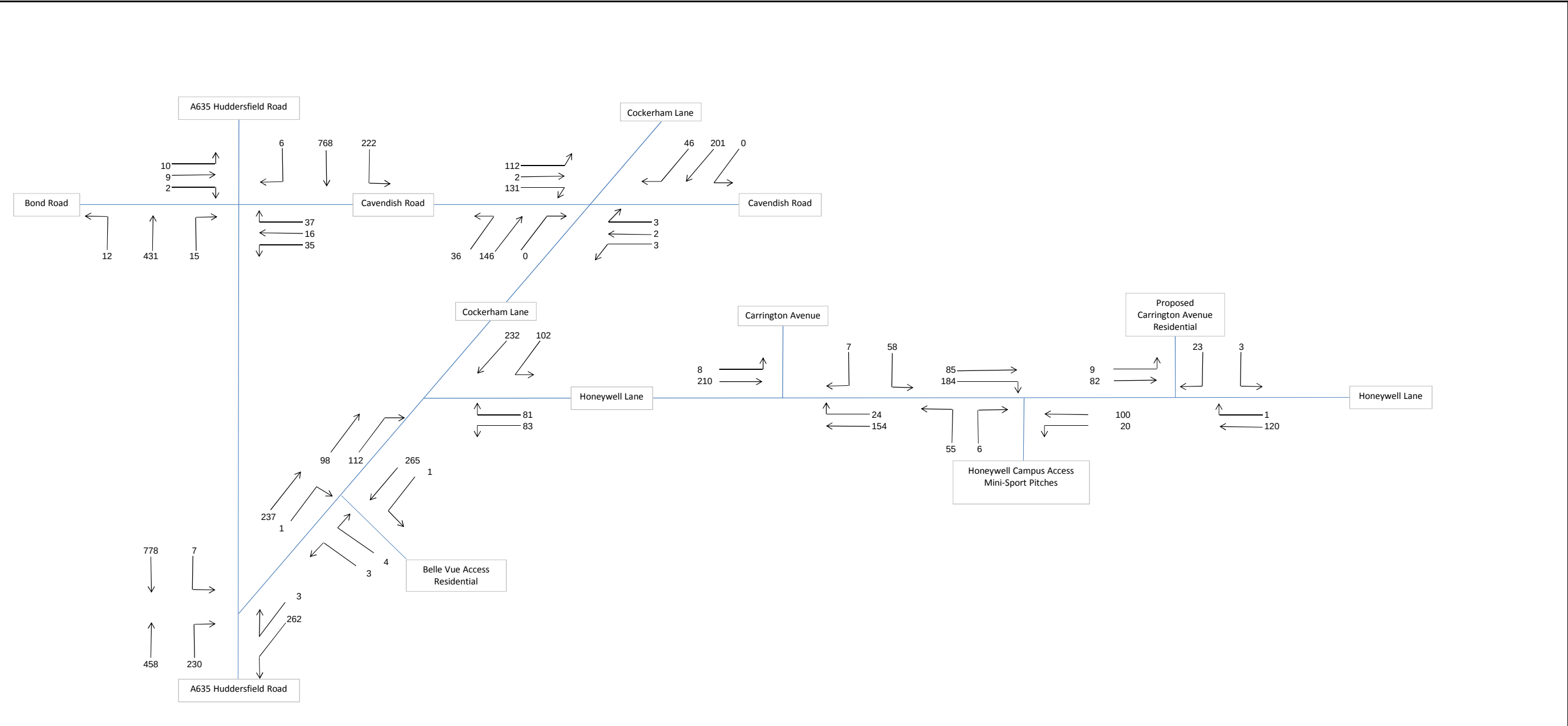
FIGURE: 32

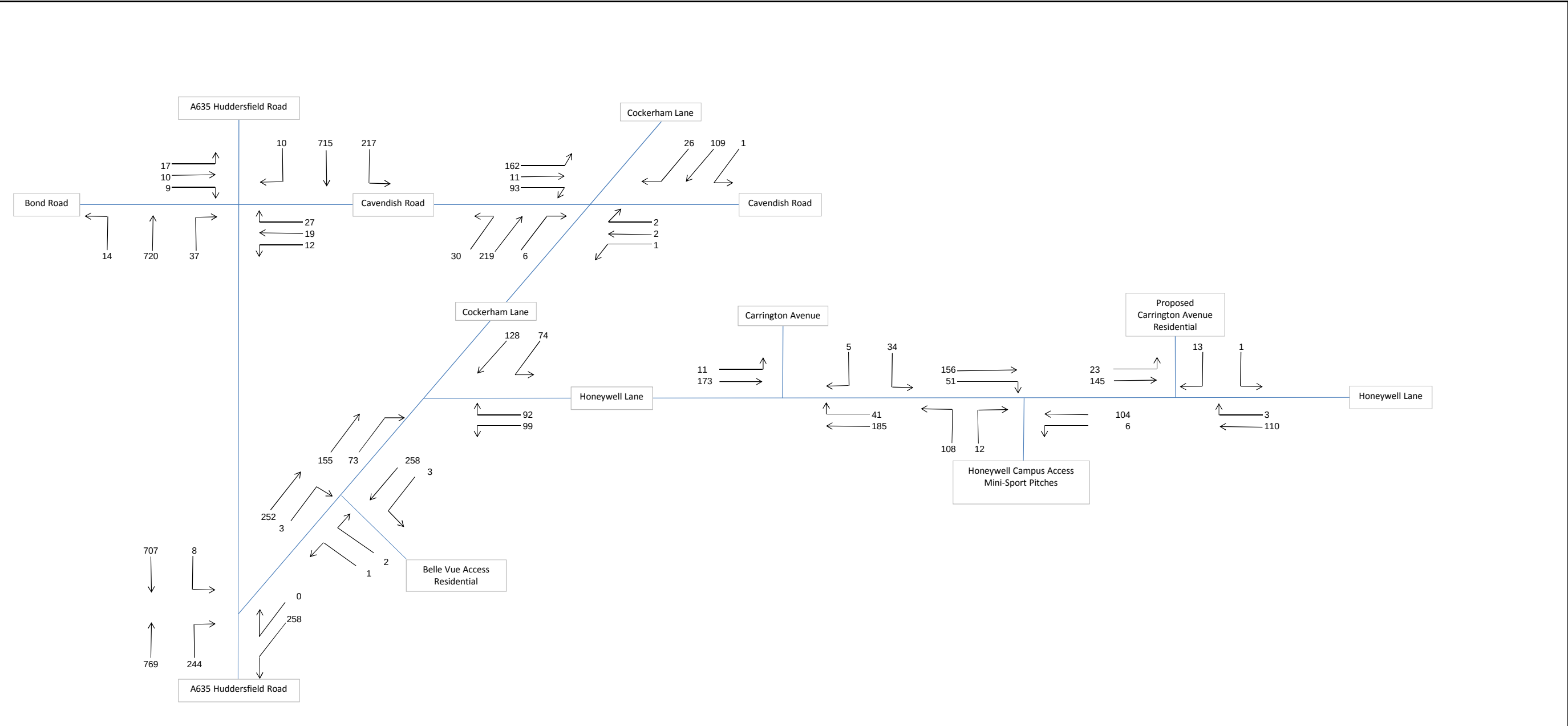
Drawn by	Scale	Date
EP	NTS	Jun-14











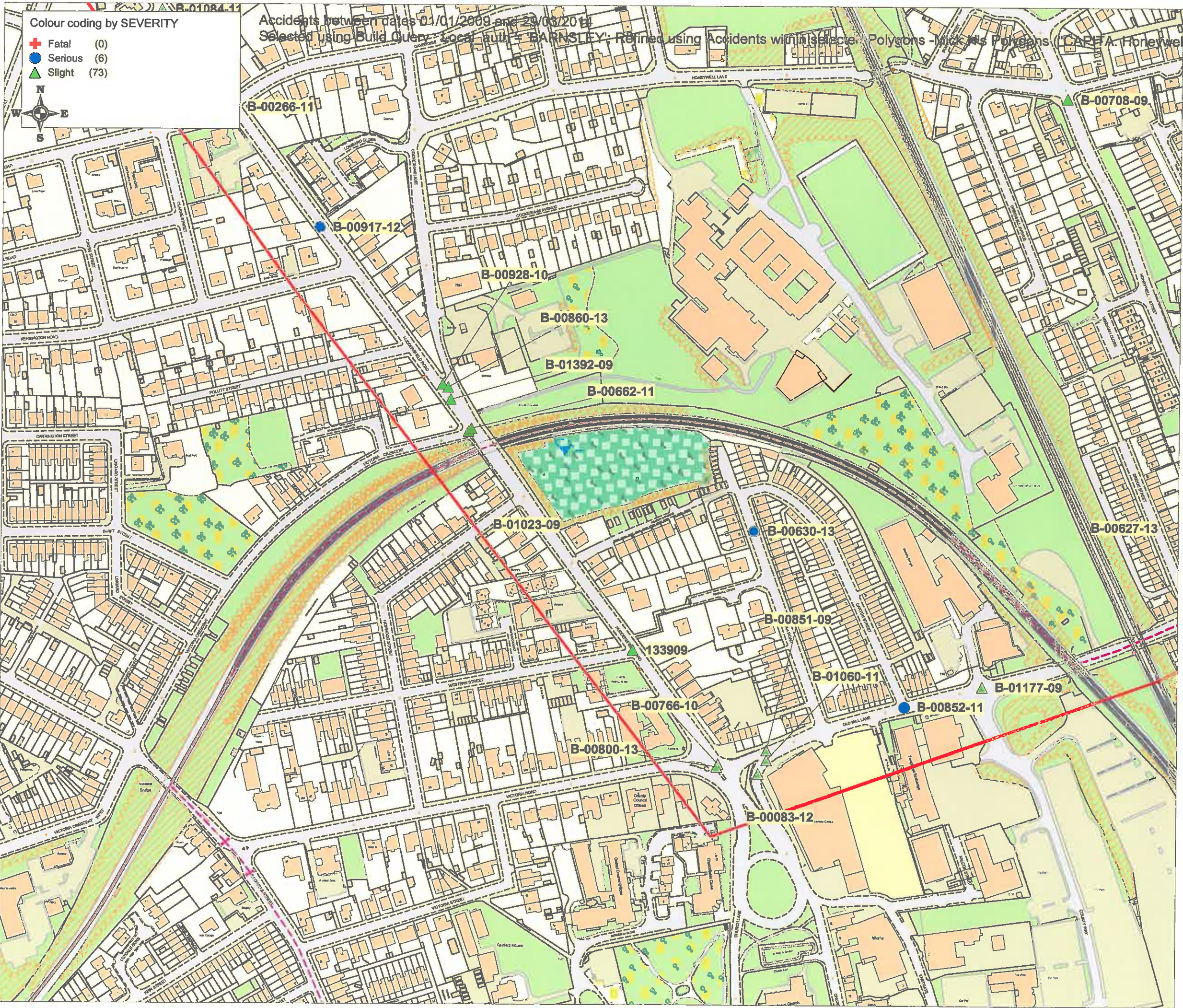
CAPITA

2024 Survey Data + Committed Development + Development Traffic - AM Peak

FIGURE: 37

Drawn by	Scale	Date
EP	NTS	Jun-14

Appendix B – Personal Injury Collision Incident Location Maps



Colour coding by SEVERITY

- Fatal (0)
- Serious (6)
- Slight (73)

Accidents between dates 01/01/2009 and 29/03/2014
Selected using Build Query: Local auth = 'BARNSELEY'; Refined using Accidents within select: Polygons - Mick / Ms Polygons ("CAPFA: Honeywell area")

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MAKING SOUTH YORKSHIRE
ROADS SAFER

DRAWING TITLE
Selected map area

SCALE 1 : 2140

DATE 27/05/2014

DWG No.

DRAWN BY



MAKING SOUTH YORKSHIRE
ROADS SAFER

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 South Yorkshire LTP Partnership
 Licence No. 100019587 2014

Selected map area

SCALE

1 : 2140

DATE

27/05/2014

DRWG No.

DRN BY

Appendix C – TRICS Output

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : L - FOOTBALL (5-a-side)
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days
09	NORTH	
	TV TEES VALLEY	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of pitches
 Actual Range: 10 to 18 (units:)
 Range Selected by User: 2 to 18 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 18/07/12

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:

Tuesday	2 days
Wednesday	3 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge 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	1
Residential Zone	1
No Sub Category	3

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

Filtering Stage 3 selection:

Use Class:

D2

5 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:

15,001 to 20,000

1 days

20,001 to 25,000

2 days

25,001 to 50,000

2 days

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

Population within 5 miles:

250,001 to 500,000

4 days

500,001 or More

1 days

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

Car ownership within 5 miles:

0.6 to 1.0

2 days

1.1 to 1.5

3 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

5 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	DV-07-L-01	GOALS		DEVON
	OUTLAND ROAD			
	CENTRAL PARK			
	PLYMOUTH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pitches:	10		
	Survey date: WEDNESDAY	18/07/12		Survey Type: MANUAL
2	HC-07-L-01	GOALS		HAMPSHIRE
	MILLBROOK POINT ROAD			
	SOUTHAMPTON			
	Edge of Town			
	Industrial Zone			
	Total Number of pitches:	11		
	Survey date: WEDNESDAY	21/11/07		Survey Type: MANUAL
3	LE-07-L-01	GOALS		LEICESTERSHIRE
	WAKERLEY ROAD			
	LEICESTER			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of pitches:	12		
	Survey date: TUESDAY	25/11/08		Survey Type: MANUAL
4	TV-07-L-02	GOALS		TEES VALLEY
	STOCKTON ROAD			
	MIDDLESBROUGH			
	Edge of Town			
	No Sub Category			
	Total Number of pitches:	12		
	Survey date: TUESDAY	18/09/07		Survey Type: MANUAL
5	WY-07-L-02	GOALS		WEST YORKSHIRE
	REDCOTE LANE			
	BURLEY			
	LEEDS			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of pitches:	18		
	Survey date: WEDNESDAY	09/06/10		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.

Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 07 - LEISURE/L - FOOTBALL (5-a-side)

VEHICLES

Calculation factor: 1 PITCH

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	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									
08:00 - 09:00	5	13	1.175	5	13	0.286	5	13	1.461
09:00 - 10:00	5	13	0.365	5	13	0.143	5	13	0.508
10:00 - 11:00	5	13	0.270	5	13	0.190	5	13	0.460
11:00 - 12:00	5	13	0.571	5	13	0.397	5	13	0.968
12:00 - 13:00	5	13	0.444	5	13	0.492	5	13	0.936
13:00 - 14:00	5	13	0.381	5	13	0.381	5	13	0.762
14:00 - 15:00	5	13	0.794	5	13	0.889	5	13	1.683
15:00 - 16:00	5	13	1.238	5	13	0.571	5	13	1.809
16:00 - 17:00	5	13	1.302	5	13	0.889	5	13	2.191
17:00 - 18:00	5	13	2.952	5	13	1.254	5	13	4.206
18:00 - 19:00	5	13	4.349	5	13	2.016	5	13	6.365
19:00 - 20:00	5	13	5.095	5	13	5.206	5	13	10.301
20:00 - 21:00	5	13	3.698	5	13	4.683	5	13	8.381
21:00 - 22:00	5	13	1.556	5	13	4.317	5	13	5.873
22:00 - 23:00	5	13	0.286	5	13	2.508	5	13	2.794
23:00 - 24:00	4	13	0.000	4	13	0.365	4	13	0.365
Total Rates:			24.476			24.587			49.063

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.

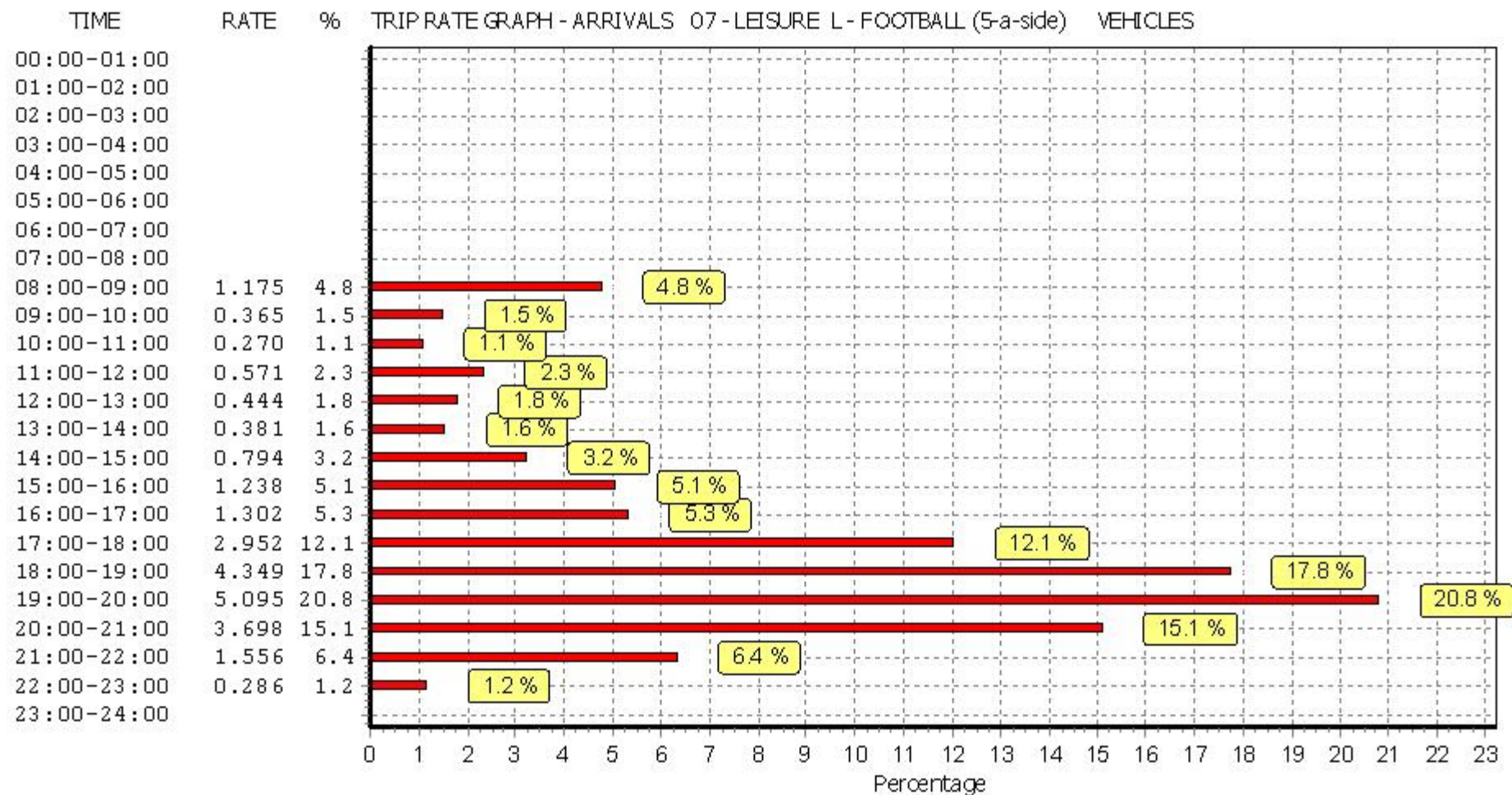
Parameter summary

Trip rate parameter range selected: 10 - 18 (units:)
 Survey date range: 01/01/05 - 18/07/12
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

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

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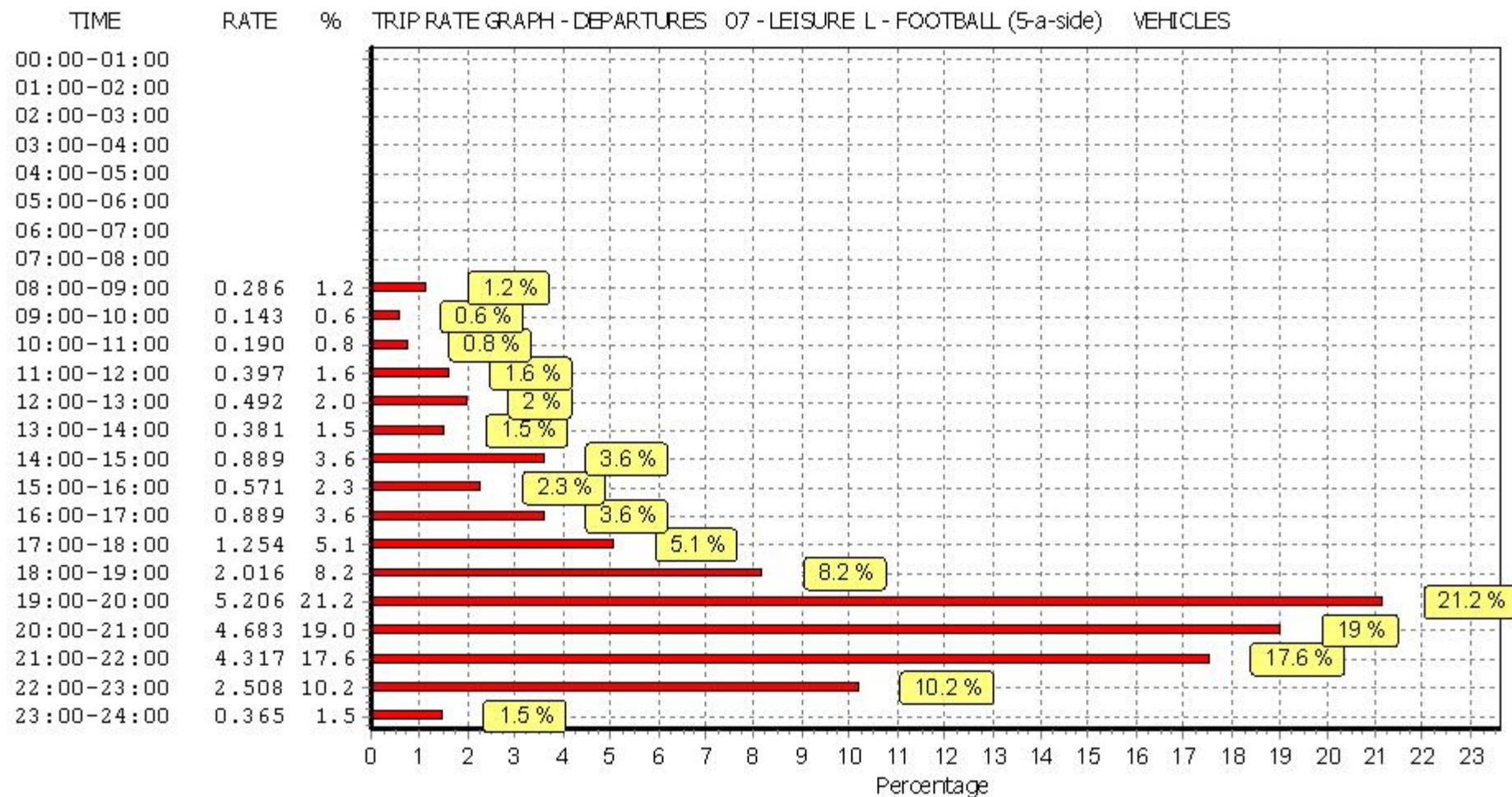
Licence No: 504507



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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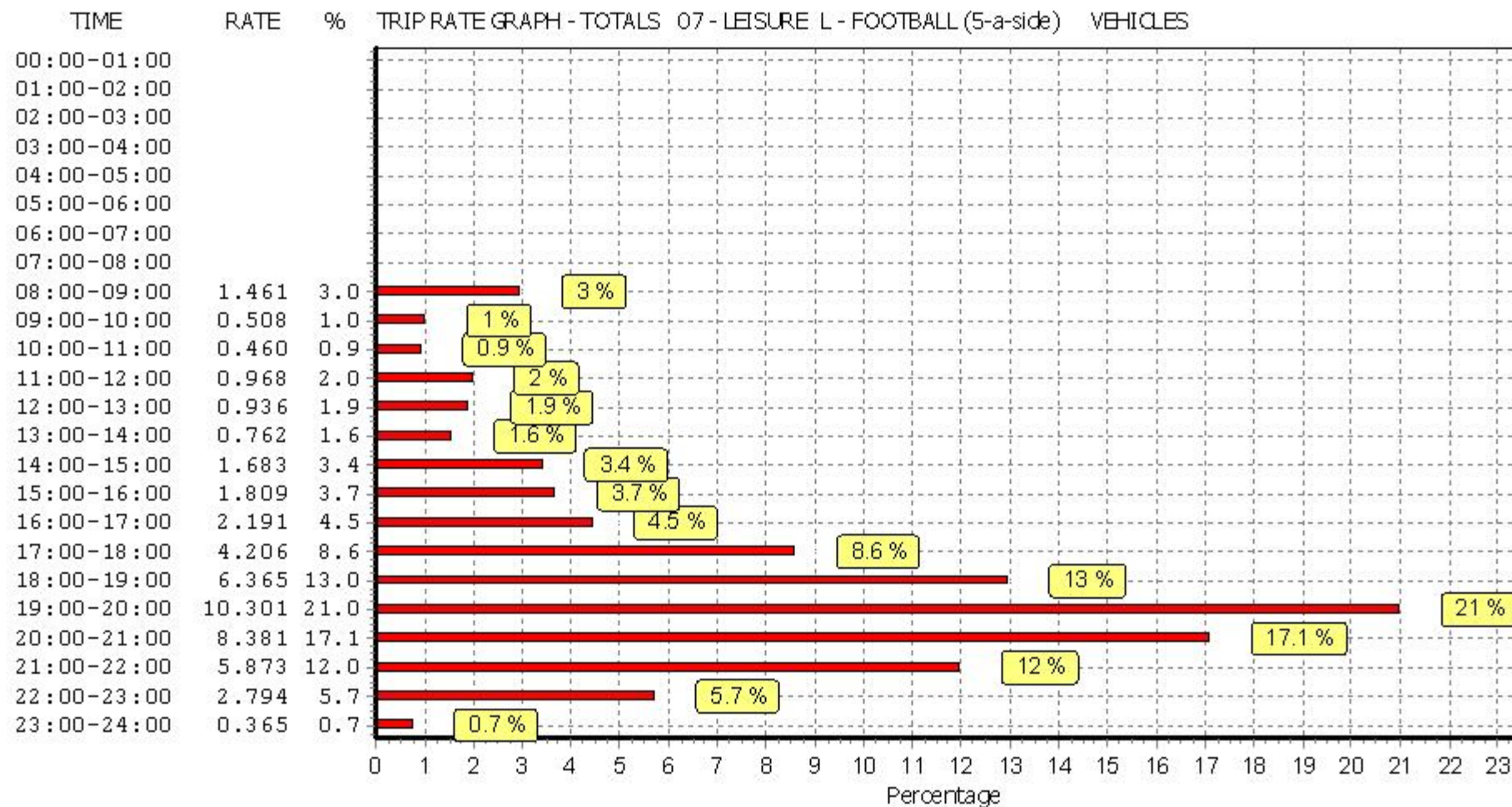
Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 07 - LEISURE/L - FOOTBALL (5-a-side)

TAXIS

Calculation factor: 1 PITCH

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	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									
08:00 - 09:00	5	13	0.000	5	13	0.000	5	13	0.000
09:00 - 10:00	5	13	0.016	5	13	0.016	5	13	0.032
10:00 - 11:00	5	13	0.032	5	13	0.032	5	13	0.064
11:00 - 12:00	5	13	0.000	5	13	0.000	5	13	0.000
12:00 - 13:00	5	13	0.032	5	13	0.032	5	13	0.064
13:00 - 14:00	5	13	0.000	5	13	0.000	5	13	0.000
14:00 - 15:00	5	13	0.000	5	13	0.000	5	13	0.000
15:00 - 16:00	5	13	0.000	5	13	0.000	5	13	0.000
16:00 - 17:00	5	13	0.016	5	13	0.016	5	13	0.032
17:00 - 18:00	5	13	0.032	5	13	0.032	5	13	0.064
18:00 - 19:00	5	13	0.048	5	13	0.048	5	13	0.096
19:00 - 20:00	5	13	0.206	5	13	0.175	5	13	0.381
20:00 - 21:00	5	13	0.079	5	13	0.111	5	13	0.190
21:00 - 22:00	5	13	0.079	5	13	0.079	5	13	0.158
22:00 - 23:00	5	13	0.143	5	13	0.127	5	13	0.270
23:00 - 24:00	4	13	0.000	4	13	0.019	4	13	0.019
Total Rates:			0.683			0.687			1.370

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

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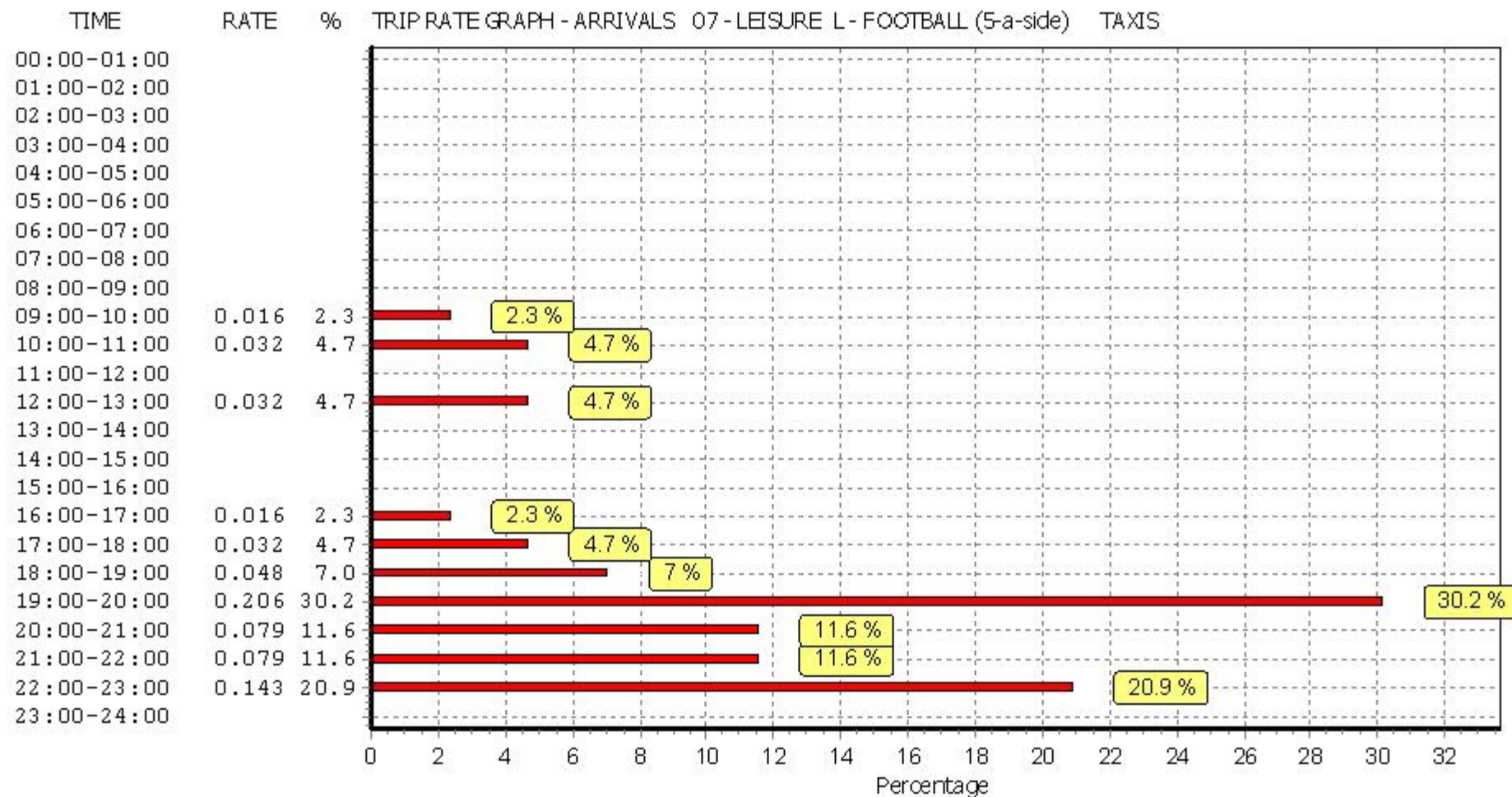
Parameter summary

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 Survey date range: 01/01/05 - 18/07/12
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

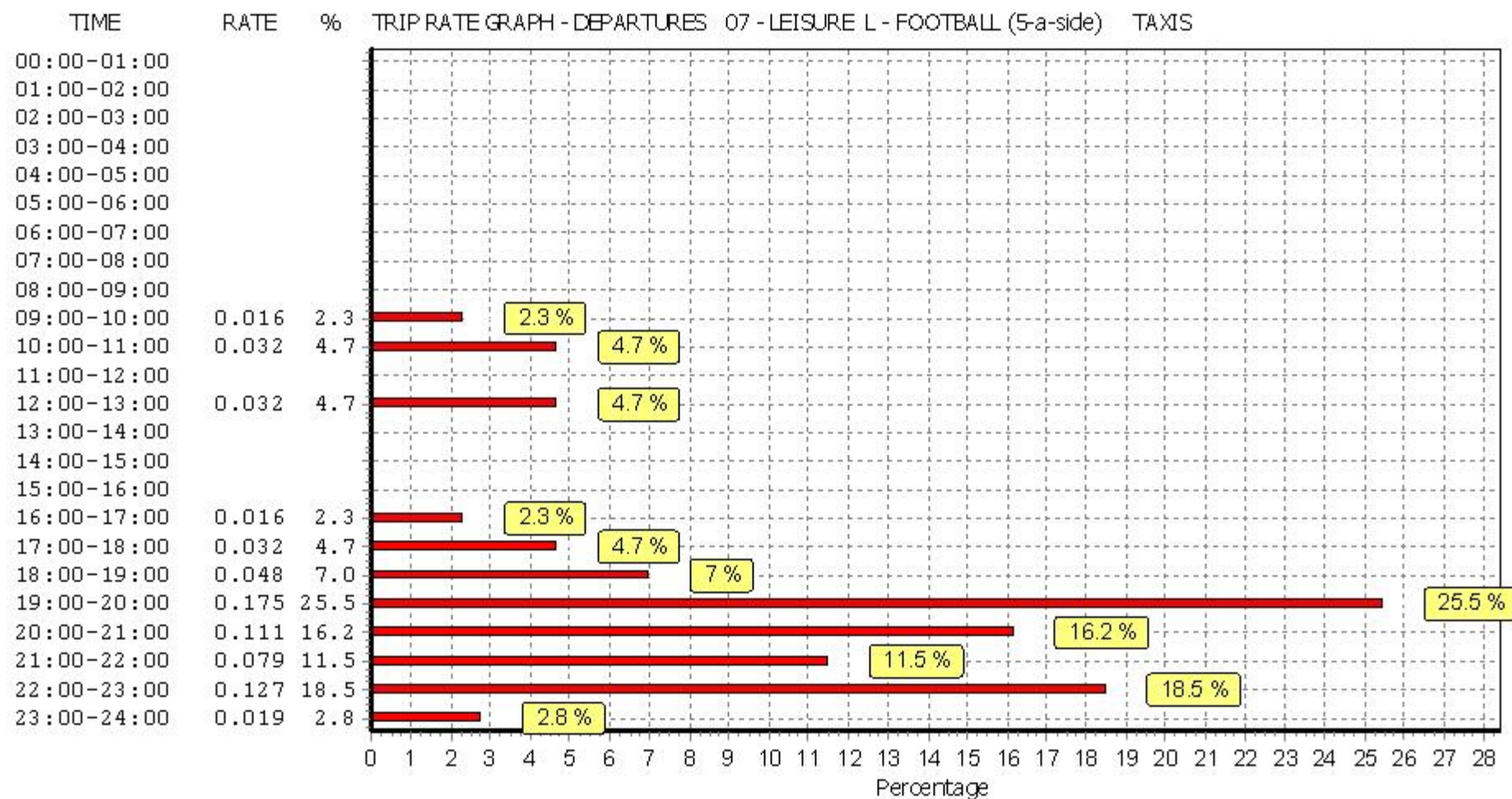
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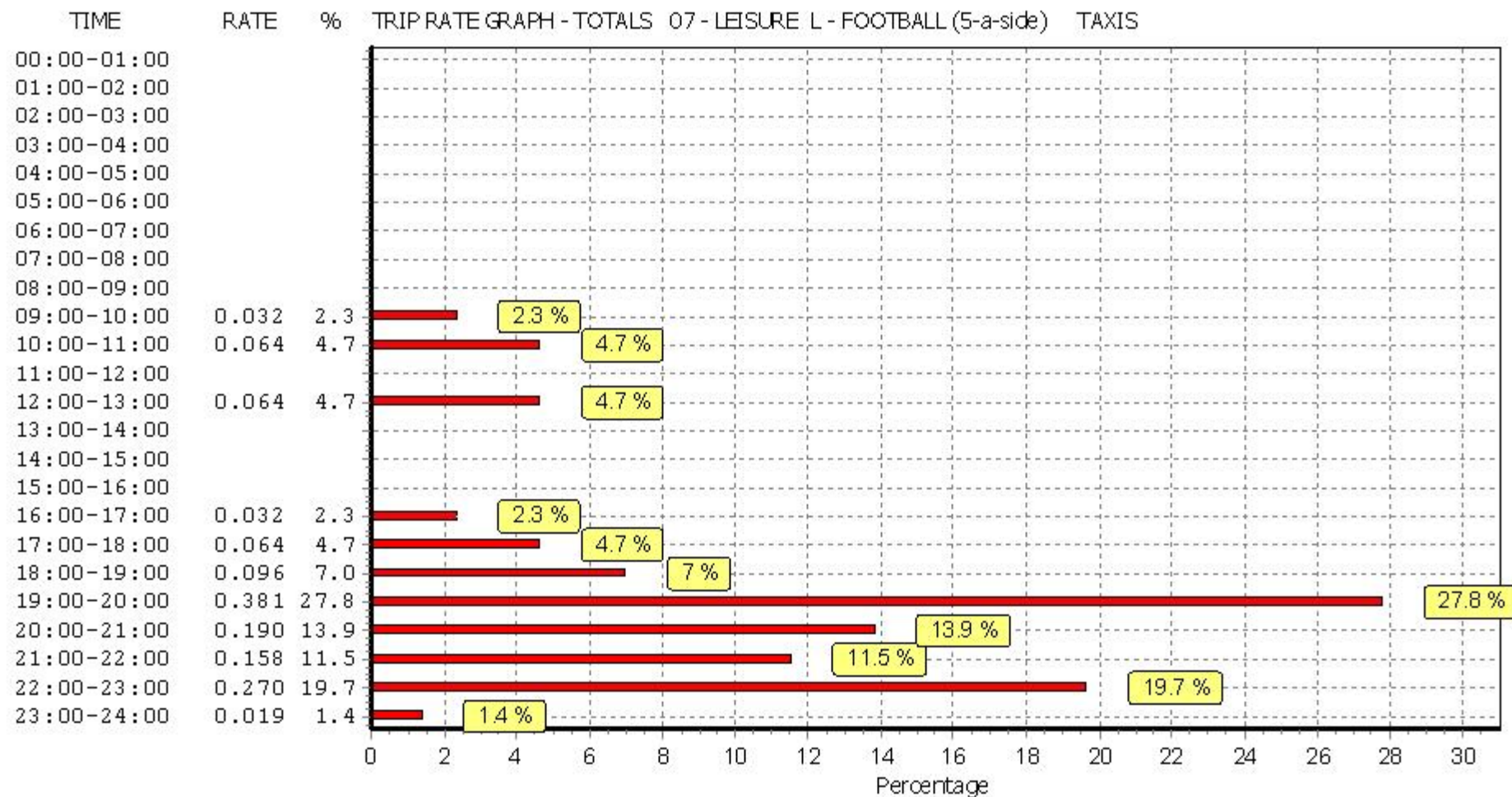
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This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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Licence No: 504507

TRIP RATE for Land Use 07 - LEISURE/L - FOOTBALL (5-a-side)

OGVS

Calculation factor: 1 PITCH

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	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									
08:00 - 09:00	5	13	0.032	5	13	0.032	5	13	0.064
09:00 - 10:00	5	13	0.048	5	13	0.016	5	13	0.064
10:00 - 11:00	5	13	0.016	5	13	0.032	5	13	0.048
11:00 - 12:00	5	13	0.032	5	13	0.048	5	13	0.080
12:00 - 13:00	5	13	0.016	5	13	0.016	5	13	0.032
13:00 - 14:00	5	13	0.000	5	13	0.000	5	13	0.000
14:00 - 15:00	5	13	0.000	5	13	0.000	5	13	0.000
15:00 - 16:00	5	13	0.000	5	13	0.000	5	13	0.000
16:00 - 17:00	5	13	0.016	5	13	0.016	5	13	0.032
17:00 - 18:00	5	13	0.000	5	13	0.000	5	13	0.000
18:00 - 19:00	5	13	0.016	5	13	0.016	5	13	0.032
19:00 - 20:00	5	13	0.000	5	13	0.000	5	13	0.000
20:00 - 21:00	5	13	0.000	5	13	0.000	5	13	0.000
21:00 - 22:00	5	13	0.000	5	13	0.000	5	13	0.000
22:00 - 23:00	5	13	0.000	5	13	0.000	5	13	0.000
23:00 - 24:00	4	13	0.000	4	13	0.000	4	13	0.000
Total Rates:			0.176			0.176			0.352

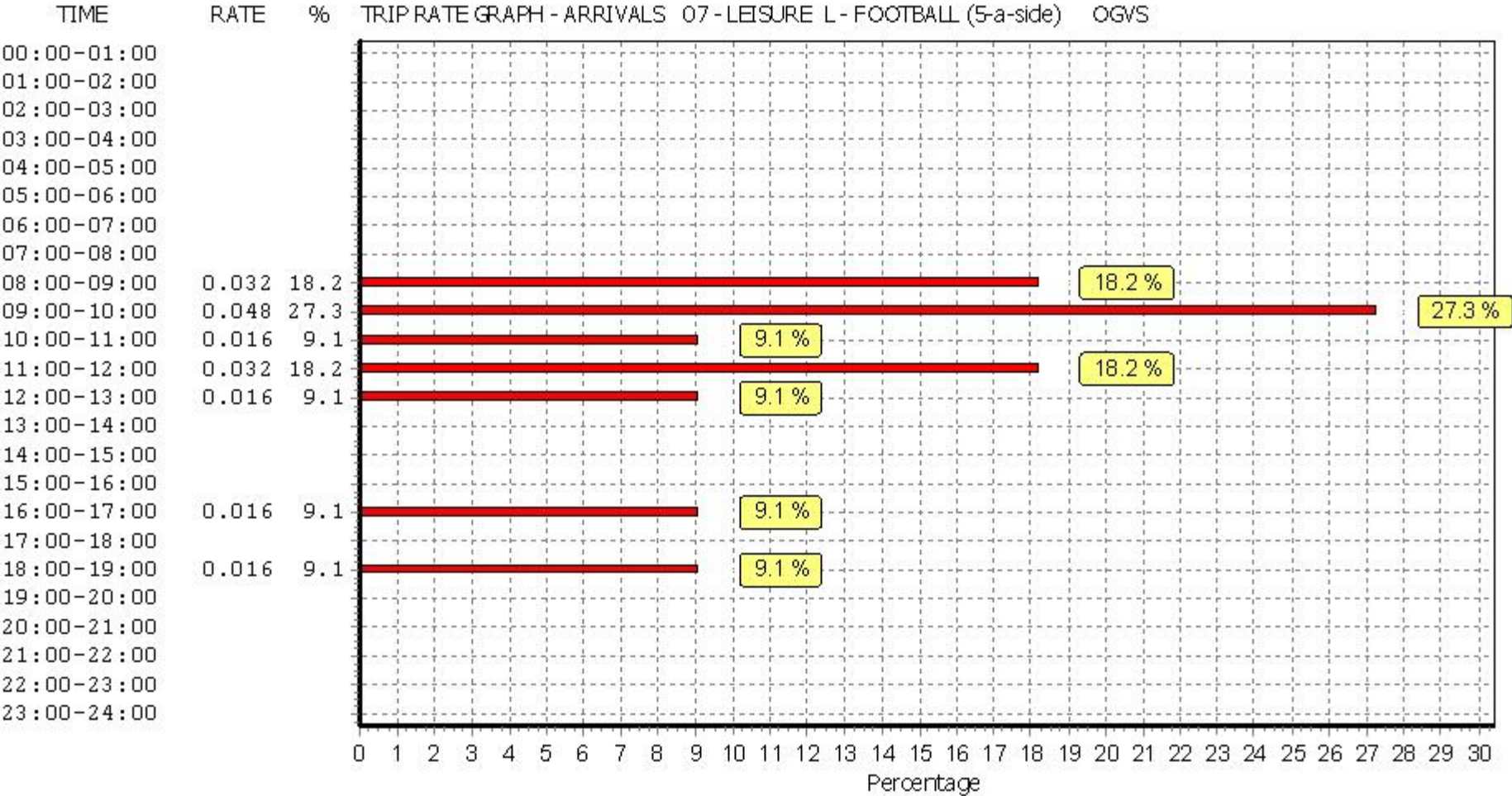
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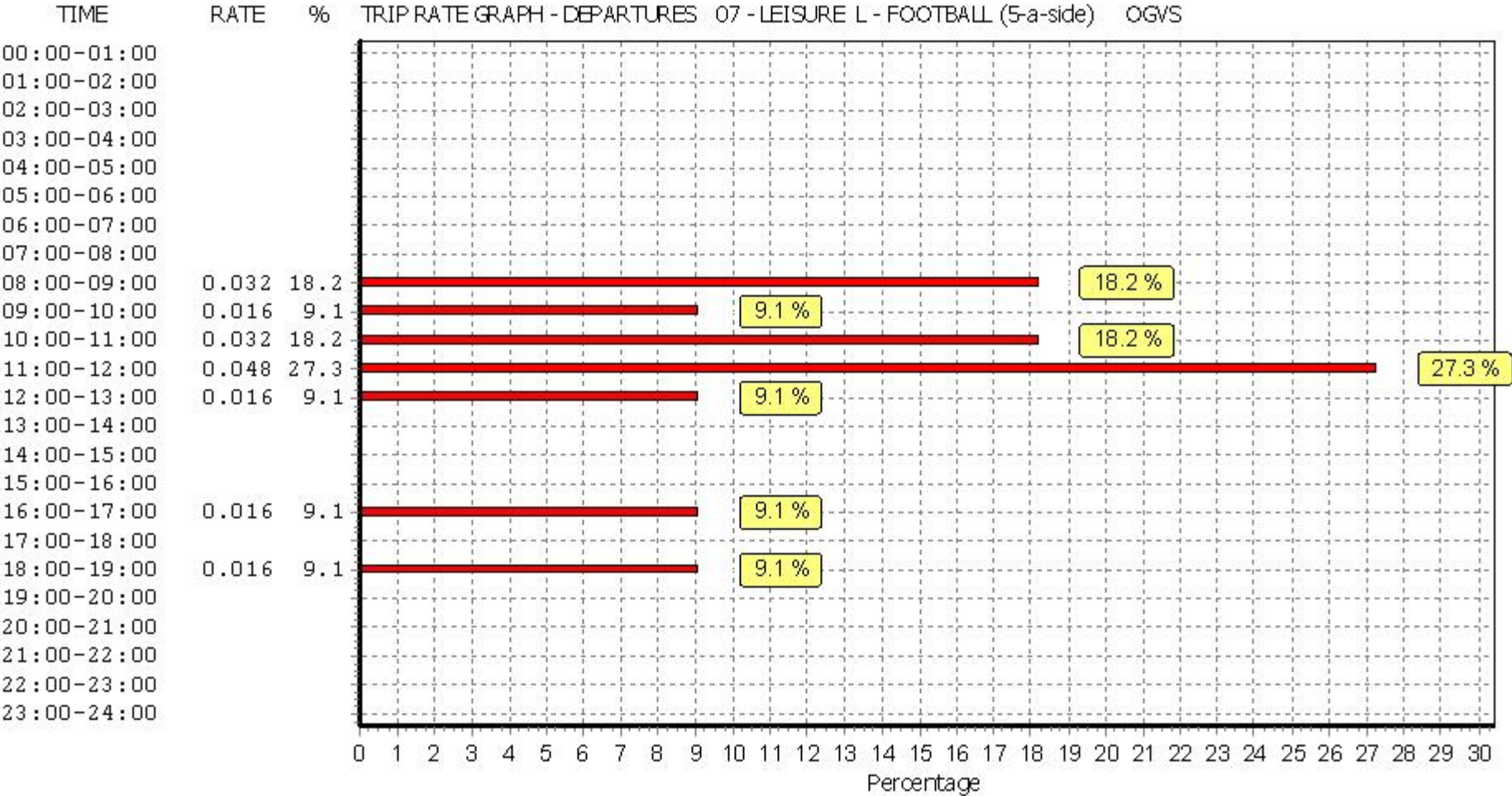
Parameter summary

Trip rate parameter range selected: 10 - 18 (units:)
 Survey date range: 01/01/05 - 18/07/12
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

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



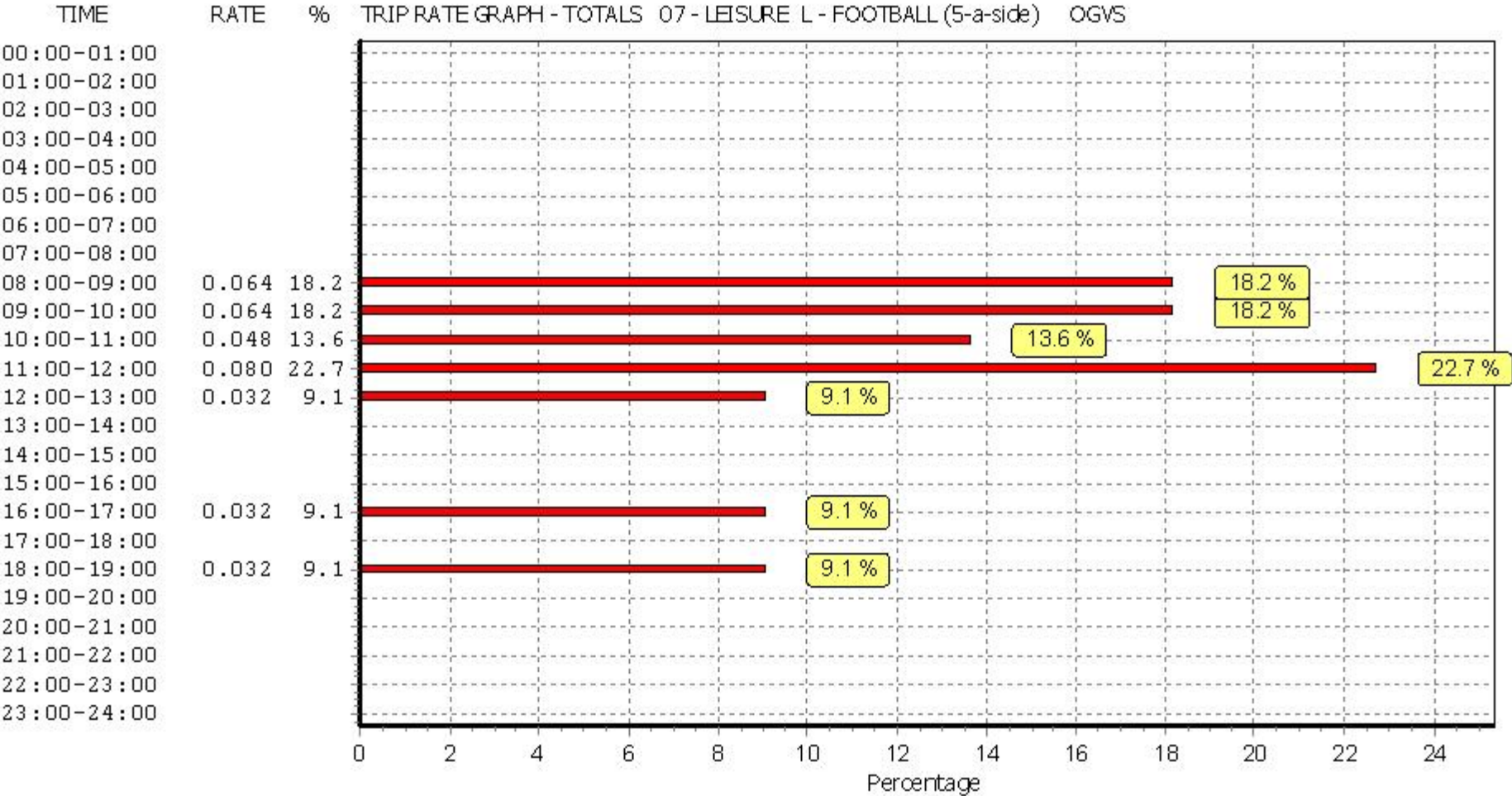
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Capita Carlol Square Newcastle upon Tyne

Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 07 - LEISURE/L - FOOTBALL (5-a-side)

PSVS

Calculation factor: 1 PITCH

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	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									
08:00 - 09:00	5	13	0.000	5	13	0.000	5	13	0.000
09:00 - 10:00	5	13	0.000	5	13	0.000	5	13	0.000
10:00 - 11:00	5	13	0.000	5	13	0.000	5	13	0.000
11:00 - 12:00	5	13	0.016	5	13	0.000	5	13	0.016
12:00 - 13:00	5	13	0.000	5	13	0.000	5	13	0.000
13:00 - 14:00	5	13	0.016	5	13	0.032	5	13	0.048
14:00 - 15:00	5	13	0.016	5	13	0.016	5	13	0.032
15:00 - 16:00	5	13	0.000	5	13	0.000	5	13	0.000
16:00 - 17:00	5	13	0.000	5	13	0.000	5	13	0.000
17:00 - 18:00	5	13	0.000	5	13	0.000	5	13	0.000
18:00 - 19:00	5	13	0.000	5	13	0.000	5	13	0.000
19:00 - 20:00	5	13	0.000	5	13	0.000	5	13	0.000
20:00 - 21:00	5	13	0.000	5	13	0.000	5	13	0.000
21:00 - 22:00	5	13	0.000	5	13	0.000	5	13	0.000
22:00 - 23:00	5	13	0.000	5	13	0.000	5	13	0.000
23:00 - 24:00	4	13	0.000	4	13	0.000	4	13	0.000
Total Rates:			0.048			0.048			0.096

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

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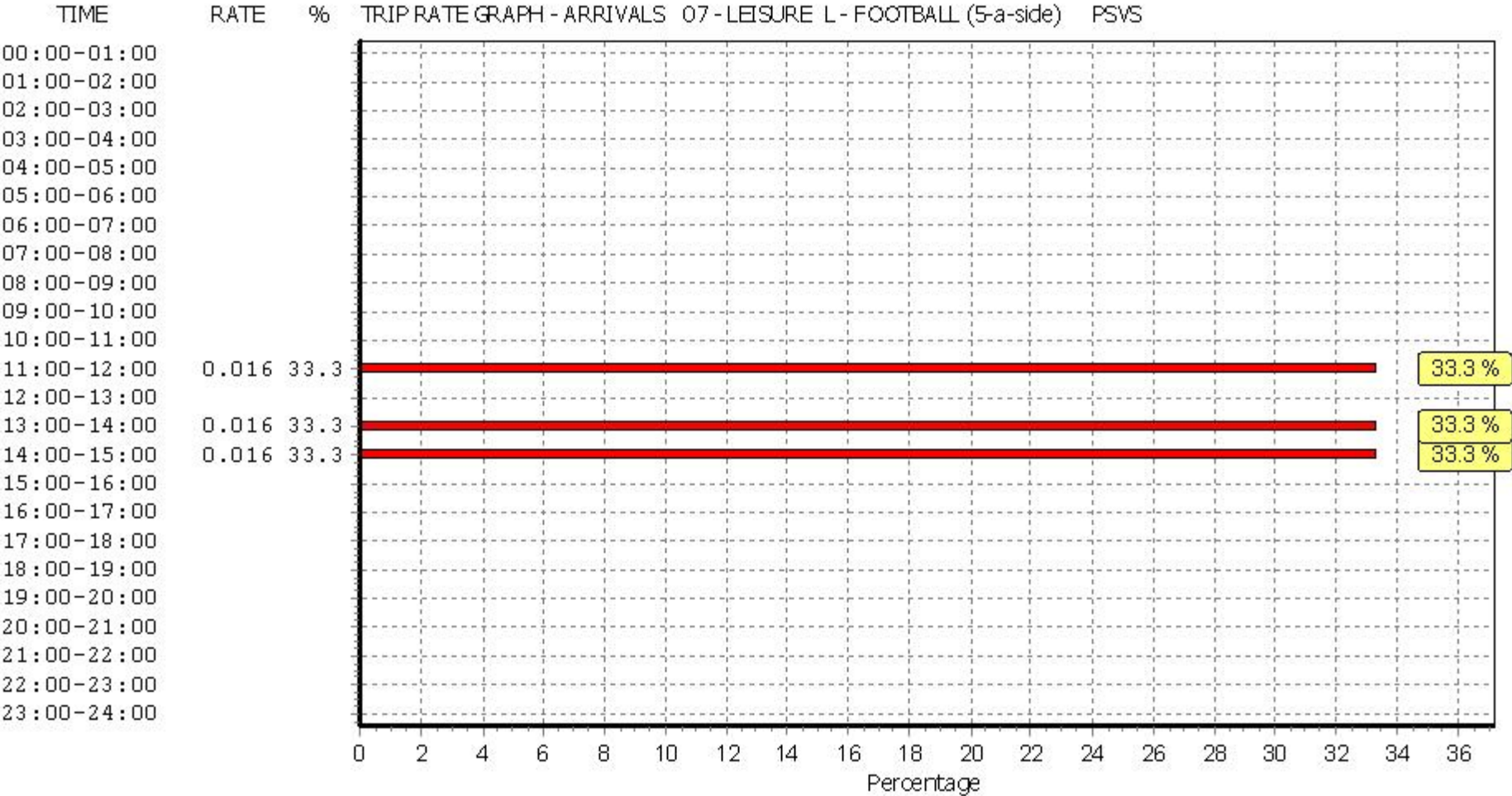
Parameter summary

Trip rate parameter range selected: 10 - 18 (units:)
 Survey date range: 01/01/05 - 18/07/12
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

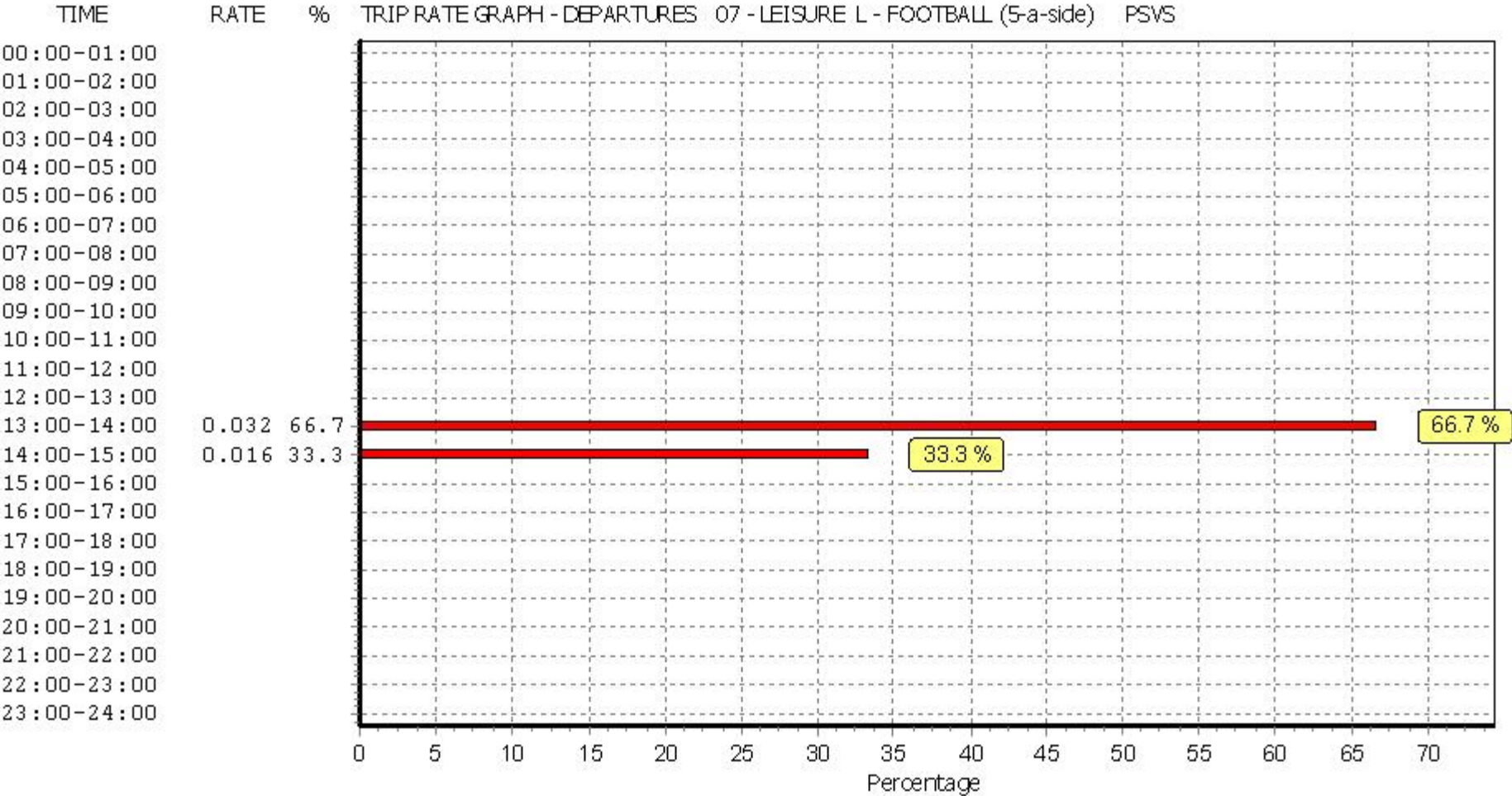
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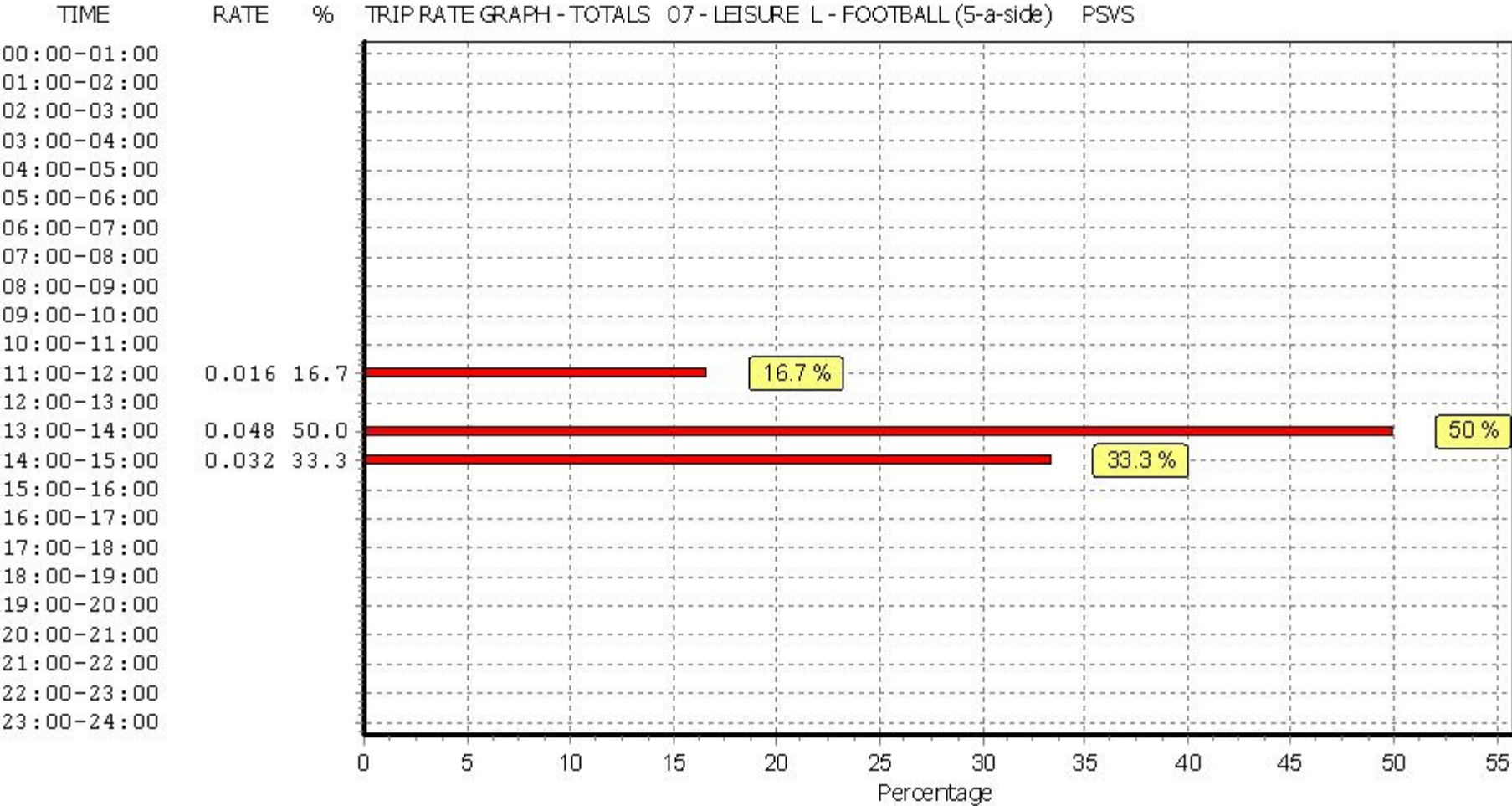
Licence No: 504507



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 07 - LEISURE/L - FOOTBALL (5-a-side)

CYCLISTS

Calculation factor: 1 PITCH

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	Trip Rate	No. Days	Ave. PITCH	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									
08:00 - 09:00	5	13	0.063	5	13	0.000	5	13	0.063
09:00 - 10:00	5	13	0.032	5	13	0.016	5	13	0.048
10:00 - 11:00	5	13	0.016	5	13	0.000	5	13	0.016
11:00 - 12:00	5	13	0.000	5	13	0.016	5	13	0.016
12:00 - 13:00	5	13	0.000	5	13	0.000	5	13	0.000
13:00 - 14:00	5	13	0.016	5	13	0.016	5	13	0.032
14:00 - 15:00	5	13	0.000	5	13	0.016	5	13	0.016
15:00 - 16:00	5	13	0.016	5	13	0.079	5	13	0.095
16:00 - 17:00	5	13	0.016	5	13	0.000	5	13	0.016
17:00 - 18:00	5	13	0.032	5	13	0.032	5	13	0.064
18:00 - 19:00	5	13	0.095	5	13	0.000	5	13	0.095
19:00 - 20:00	5	13	0.016	5	13	0.032	5	13	0.048
20:00 - 21:00	5	13	0.000	5	13	0.000	5	13	0.000
21:00 - 22:00	5	13	0.000	5	13	0.032	5	13	0.032
22:00 - 23:00	5	13	0.016	5	13	0.048	5	13	0.064
23:00 - 24:00	4	13	0.000	4	13	0.038	4	13	0.038
Total Rates:			0.318			0.325			0.643

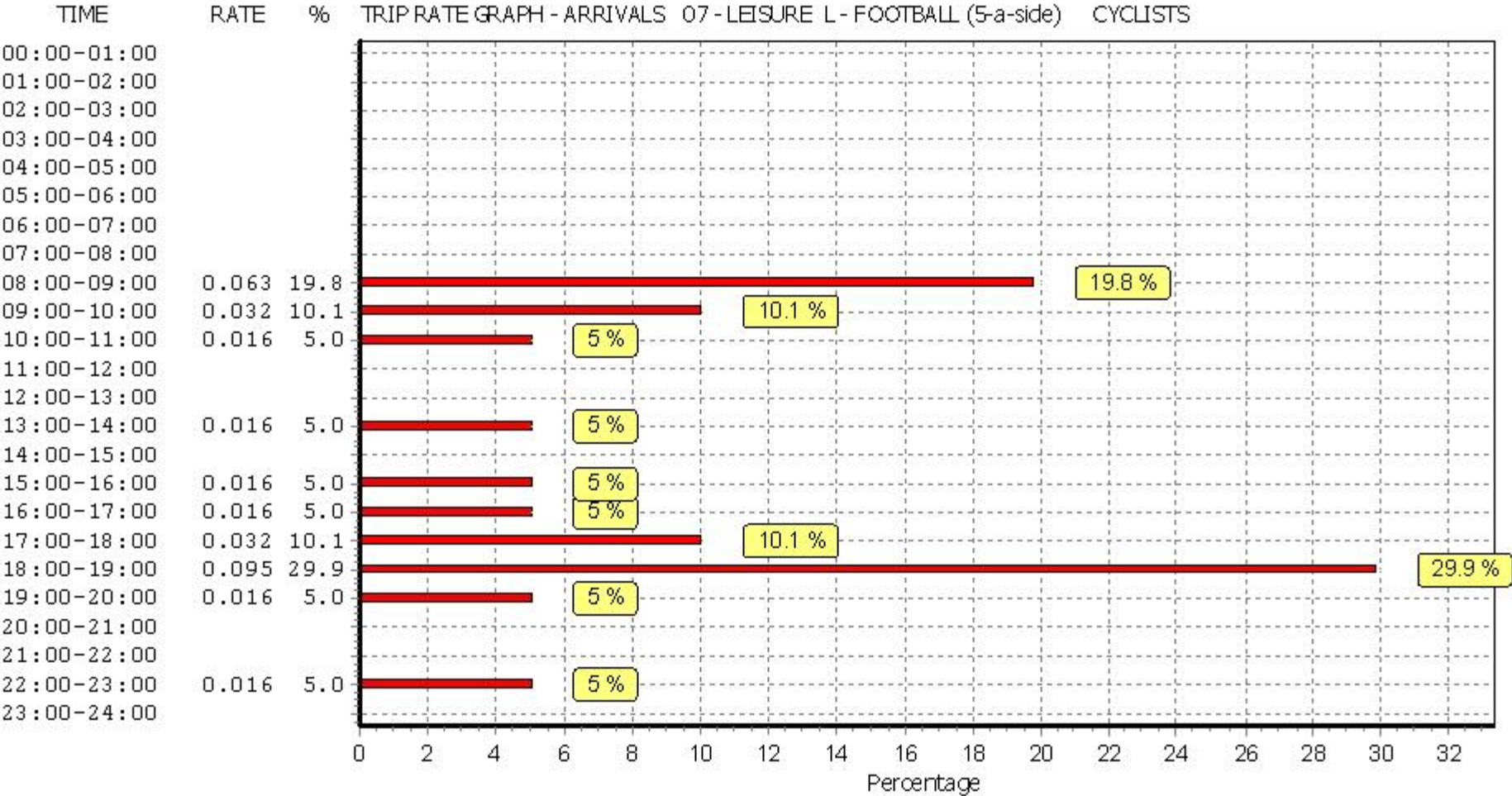
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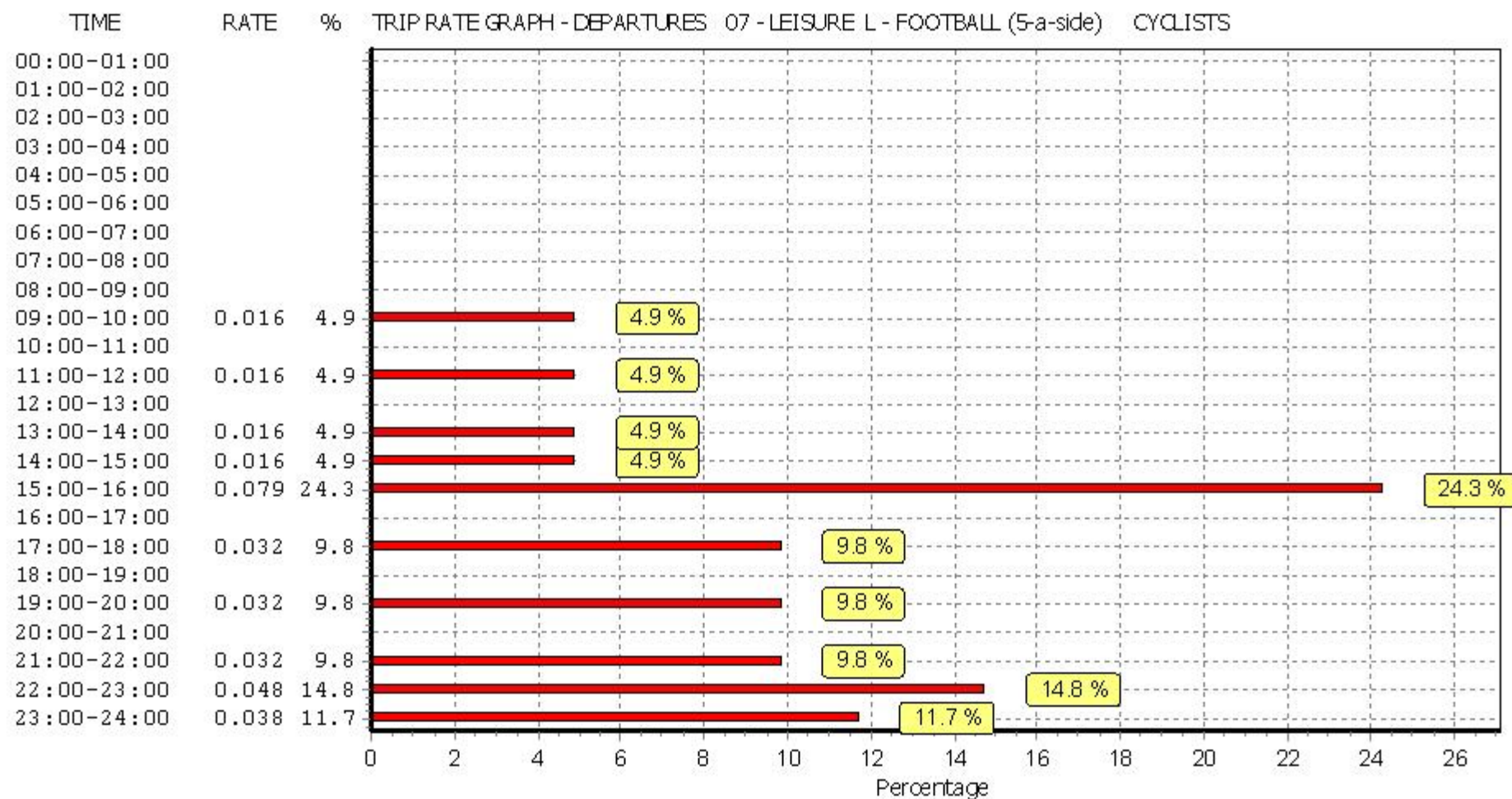
Parameter summary

Trip rate parameter range selected: 10 - 18 (units:)
 Survey date range: 01/01/05 - 18/07/12
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

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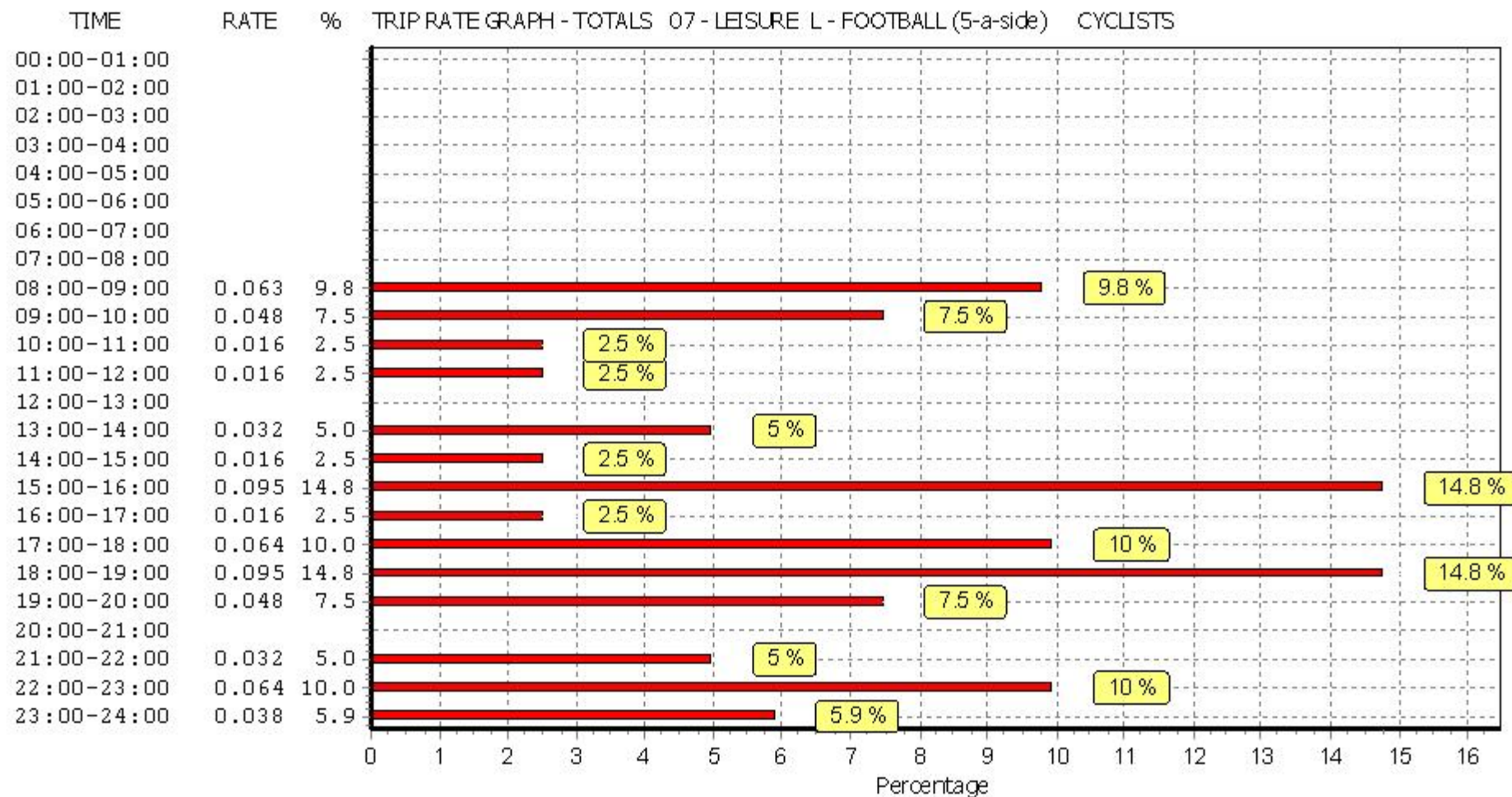
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Capita Carlisle Square Newcastle upon Tyne

Licence No: 504507



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TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	EX ESSEX	1 days
03	SOUTH WEST	
	CW CORNWALL	2 days
	DC DORSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	2 days
	SF SUFFOLK	4 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LE LEICESTERSHIRE	1 days
	LN LINCOLNSHIRE	3 days
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	1 days
	WK WARWICKSHIRE	1 days
	WM WEST MIDLANDS	3 days
	WO WORCESTERSHIRE	4 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	5 days
08	NORTH WEST	
	CH CHESHIRE	4 days
	LC LANCASHIRE	2 days
	MS MERSEYSIDE	2 days
09	NORTH	
	CB CUMBRIA	2 days
	TV TEES VALLEY	1 days
	TW TYNE & WEAR	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
 Actual Range: 6 to 372 (units:)
 Range Selected by User: 6 to 200 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 07/10/13

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	8 days
Tuesday	16 days
Wednesday	5 days
Thursday	9 days
Friday	9 days

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

Selected survey types:

Manual count	47 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	24
Edge of Town	19
Neighbourhood Centre (PPS6 Local Centre)	2

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

Selected Location Sub Categories:

Residential Zone	37
Out of Town	1
No Sub Category	9

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:

C3	46 days
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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:

1,001 to 5,000	5 days
5,001 to 10,000	10 days
10,001 to 15,000	9 days
15,001 to 20,000	12 days
20,001 to 25,000	6 days
25,001 to 50,000	5 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	5 days
25,001 to 50,000	5 days
50,001 to 75,000	2 days
75,001 to 100,000	9 days
100,001 to 125,000	8 days
125,001 to 250,000	9 days
250,001 to 500,000	9 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	19 days
1.1 to 1.5	26 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	1 days
No	46 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	CA-03-A-04	DETACHED		CAMBRIDGESHIRE
	THORPE PARK ROAD			
	PETERBOROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	9		
	Survey date: TUESDAY	18/10/11		Survey Type: MANUAL
2	CB-03-A-03	SEMI DETACHED		CUMBRIA
	HAWKSHEAD AVENUE			
	WORKINGTON			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	40		
	Survey date: THURSDAY	20/11/08		Survey Type: MANUAL
3	CB-03-A-04	SEMI DETACHED		CUMBRIA
	MOORCLOSE ROAD			
	SALTERBACK			
	WORKINGTON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	82		
	Survey date: FRIDAY	24/04/09		Survey Type: MANUAL
4	CH-03-A-02	HOUSES/FLATS		CHESHIRE
	SYDNEY ROAD			
	CREWE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	174		
	Survey date: TUESDAY	14/10/08		Survey Type: MANUAL
5	CH-03-A-05	DETACHED		CHESHIRE
	SYDNEY ROAD			
	SYDNEY			
	CREWE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	17		
	Survey date: TUESDAY	14/10/08		Survey Type: MANUAL
6	CH-03-A-06	SEMI-DET./BUNGALOWS		CHESHIRE
	CREWE ROAD			
	CREWE			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	129		
	Survey date: TUESDAY	14/10/08		Survey Type: MANUAL
7	CH-03-A-08	DETACHED		CHESHIRE
	WHITCHURCH ROAD			
	BOUGHTON HEATH			
	CHESTER			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	11		
	Survey date: TUESDAY	22/05/12		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	CW-03-A-01 ALVERTON ROAD	TERRACED		CORNWALL
	PENZANCE Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		13	
	Survey date: THURSDAY		30/06/05	Survey Type: MANUAL
9	CW-03-A-02 BOSVEAN GARDENS	SEMI D./DETACHED		CORNWALL
	TRURO Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		73	
	Survey date: TUESDAY		18/09/07	Survey Type: MANUAL
10	DC-03-A-01 ISAACS CLOSE	DETACHED		DORSET
	POOLE Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		51	
	Survey date: WEDNESDAY		16/07/08	Survey Type: MANUAL
11	DS-03-A-01 THE AVENUE HOLMESDALE DRONFIELD Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total Number of dwellings:	SEMI D./TERRACED		DERBYSHIRE
	Survey date: THURSDAY		22/06/06	Survey Type: MANUAL
12	ES-03-A-02 SOUTH COAST ROAD	PRIVATE HOUSING		EAST SUSSEX
	PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings:		37	
	Survey date: FRIDAY		18/11/11	Survey Type: MANUAL
13	EX-03-A-01 MILTON ROAD CORRINGHAM STANFORD-LE-HOPE Edge of Town Residential Zone Total Number of dwellings:	SEMI-DET.		ESSEX
	Survey date: TUESDAY		13/05/08	Survey Type: MANUAL
14	LC-03-A-22 CLIFTON DRIVE NORTH	BUNGALOWS		LANCASHIRE
	BLACKPOOL Edge of Town Residential Zone Total Number of dwellings:		98	
	Survey date: TUESDAY		18/10/05	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	LC-03-A-30 WATSON ROAD	SEMI-DETACHED		LANCASHIRE
	BLACKPOOL Edge of Town Centre Residential Zone			
	Total Number of dwellings:	24		
	Survey date: FRIDAY	14/06/13		Survey Type: MANUAL
16	LE-03-A-01 REDWOOD AVENUE	DETACHED		LEICESTERSHIRE
	MELTON MOWBRAY Edge of Town Residential Zone			
	Total Number of dwellings:	11		
	Survey date: TUESDAY	03/05/05		Survey Type: MANUAL
17	LN-03-A-01 BRANT ROAD BRACEBRIDGE LINCOLN	MIXED HOUSES		LINCOLNSHIRE
	Edge of Town Residential Zone			
	Total Number of dwellings:	150		
	Survey date: TUESDAY	15/05/07		Survey Type: MANUAL
18	LN-03-A-02 HYKEHAM ROAD	MIXED HOUSES		LINCOLNSHIRE
	LINCOLN Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total Number of dwellings:	186		
	Survey date: MONDAY	14/05/07		Survey Type: MANUAL
19	LN-03-A-03 ROOKERY LANE BOULTHAM LINCOLN	SEMI DETACHED		LINCOLNSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total Number of dwellings:	22		
	Survey date: TUESDAY	18/09/12		Survey Type: MANUAL
20	MS-03-A-01 PALACE FIELDS AVENUE	TERRACED		MERSEYSIDE
	RUNCORN Neighbourhood Centre (PPS6 Local Centre) Residential Zone			
	Total Number of dwellings:	372		
	Survey date: THURSDAY	06/10/05		Survey Type: MANUAL
21	MS-03-A-03 BEMPTON ROAD OTTERSPOOL LIVERPOOL	DETACHED		MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total Number of dwellings:	15		
	Survey date: FRIDAY	21/06/13		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

22	NF-03-A-01	SEMI DET. & BUNGALOWS		NORFOLK
	YARMOUTH ROAD			
	CAISTER-ON-SEA			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	27		
	Survey date: TUESDAY	16/10/12		Survey Type: MANUAL
23	NF-03-A-02	HOUSES & FLATS		NORFOLK
	DEREHAM ROAD			
	NORWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	98		
	Survey date: MONDAY	22/10/12		Survey Type: MANUAL
24	NT-03-A-03	SEMI DETACHED		NOTTINGHAMSHIRE
	B6018 SUTTON ROAD			
	KIRKBY-IN-ASHFIELD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	166		
	Survey date: WEDNESDAY	28/06/06		Survey Type: MANUAL
25	NY-03-A-01	MIXED HOUSES		NORTH YORKSHIRE
	GRAMMAR SCHOOL LANE			
	NORTHALLERTON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	52		
	Survey date: TUESDAY	25/09/07		Survey Type: MANUAL
26	NY-03-A-03	PRIVATE HOUSING		NORTH YORKSHIRE
	NEW ROW			
	BOROUGHBRIDGE			
	Edge of Town Centre			
	Residential Zone			
	Total Number of dwellings:	14		
	Survey date: MONDAY	15/09/08		Survey Type: MANUAL
27	NY-03-A-05	HOUSES AND FLATS		NORTH YORKSHIRE
	BOROUGHBRIDGE ROAD			
	RIPON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	71		
	Survey date: MONDAY	22/09/08		Survey Type: MANUAL
28	NY-03-A-06	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	HORSEFAIR			
	BOROUGHBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	115		
	Survey date: FRIDAY	14/10/11		Survey Type: MANUAL
29	NY-03-A-07	DETACHED & SEMI DET.		NORTH YORKSHIRE
	CRAVEN WAY			
	BOROUGHBRIDGE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	23		
	Survey date: TUESDAY	18/10/11		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

30	SF-03-A-01	SEMI DETACHED		SUFFOLK
	A1156 FELIXSTOWE ROAD			
	RACECOURSE			
	IPSWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	77		
	Survey date: WEDNESDAY	23/05/07		Survey Type: MANUAL
31	SF-03-A-02	SEMI DET./TERRACED		SUFFOLK
	STOKE PARK DRIVE			
	MAIDENHALL			
	IPSWICH			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	230		
	Survey date: THURSDAY	24/05/07		Survey Type: MANUAL
32	SF-03-A-03	MIXED HOUSES		SUFFOLK
	BARTON HILL			
	FORNHAM ST MARTIN			
	BURY ST EDMUNDS			
	Edge of Town			
	Out of Town			
	Total Number of dwellings:	101		
	Survey date: MONDAY	15/05/06		Survey Type: MANUAL
33	SF-03-A-04	DETACHED & BUNGALOWS		SUFFOLK
	NORMANSTON DRIVE			
	LOWESTOFT			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	7		
	Survey date: TUESDAY	23/10/12		Survey Type: MANUAL
34	SH-03-A-03	DETACHED		SHROPSHIRE
	SOMERBY DRIVE			
	BICTON HEATH			
	SHREWSBURY			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	10		
	Survey date: FRIDAY	26/06/09		Survey Type: MANUAL
35	SH-03-A-04	TERRACED		SHROPSHIRE
	ST MICHAEL'S STREET			
	SHREWSBURY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	108		
	Survey date: THURSDAY	11/06/09		Survey Type: MANUAL
36	ST-03-A-05	TERRACED & DETACHED		STAFFORDSHIRE
	WATERMEET GROVE			
	ETRURIA			
	STOKE-ON-TRENT			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	14		
	Survey date: WEDNESDAY	26/11/08		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

37	TV-03-A-01	HOUSES & FLATS	TEES VALLEY
	POWLETT ROAD		
	HARTLEPOOL		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of dwellings:	225	
	Survey date: THURSDAY	14/04/05	Survey Type: MANUAL
38	TW-03-A-02	SEMI-DETACHED	TYNE & WEAR
	WEST PARK ROAD		
	GATESHEAD		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	16	
	Survey date: MONDAY	07/10/13	Survey Type: MANUAL
39	WK-03-A-01	TERRACED / SEMI / DET.	WARWICKSHIRE
	ARLINGTON AVENUE		
	LEAMINGTON SPA		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	6	
	Survey date: FRIDAY	21/10/11	Survey Type: MANUAL
40	WL-03-A-01	SEMI D. / TERRACED W. BASSETT	WILTSHIRE
	MAPLE DRIVE		
	WOOTTON BASSETT		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	99	
	Survey date: MONDAY	02/10/06	Survey Type: MANUAL
41	WM-03-A-01	TERRACED	WEST MIDLANDS
	FOLESHILL ROAD		
	FOLESHILL		
	COVENTRY		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	79	
	Survey date: FRIDAY	03/02/06	Survey Type: MANUAL
42	WM-03-A-02	DETACHED & SEMI DET.	WEST MIDLANDS
	HEATH STREET		
	STOURBRIDGE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	12	
	Survey date: WEDNESDAY	26/04/06	Survey Type: MANUAL
43	WM-03-A-03	MIXED HOUSING	WEST MIDLANDS
	BASELEY WAY		
	ROWLEYS GREEN		
	COVENTRY		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	84	
	Survey date: MONDAY	24/09/07	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

44	WO-03-A-01	DETACHED		WORCESTERSHIRE
	MARLBOROUGH AVENUE			
	ASTON FIELDS			
	BROMSGROVE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	10		
	Survey date: THURSDAY	23/06/05	Survey Type: MANUAL	
45	WO-03-A-02	SEMI DETACHED		WORCESTERSHIRE
	MEADOWHILL ROAD			
	REDDITCH			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	48		
	Survey date: TUESDAY	02/05/06	Survey Type: MANUAL	
46	WO-03-A-03	DETACHED		WORCESTERSHIRE
	BLAKEBROOK			
	BLAKEBROOK			
	KIDDERMINSTER			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	138		
	Survey date: FRIDAY	05/05/06	Survey Type: MANUAL	
47	WO-03-A-06	DET./TERRACED		WORCESTERSHIRE
	ST GODWALDS ROAD			
	ASTON FIELDS			
	BROMSGROVE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	232		
	Survey date: THURSDAY	30/06/05	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.

Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	47	82	0.075	47	82	0.282	47	82	0.357
08:00 - 09:00	47	82	0.152	47	82	0.401	47	82	0.553
09:00 - 10:00	47	82	0.171	47	82	0.210	47	82	0.381
10:00 - 11:00	47	82	0.155	47	82	0.189	47	82	0.344
11:00 - 12:00	47	82	0.183	47	82	0.181	47	82	0.364
12:00 - 13:00	47	82	0.196	47	82	0.181	47	82	0.377
13:00 - 14:00	47	82	0.183	47	82	0.172	47	82	0.355
14:00 - 15:00	47	82	0.195	47	82	0.199	47	82	0.394
15:00 - 16:00	47	82	0.291	47	82	0.213	47	82	0.504
16:00 - 17:00	47	82	0.317	47	82	0.196	47	82	0.513
17:00 - 18:00	47	82	0.386	47	82	0.227	47	82	0.613
18:00 - 19:00	47	82	0.274	47	82	0.215	47	82	0.489
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.578			2.666			5.244

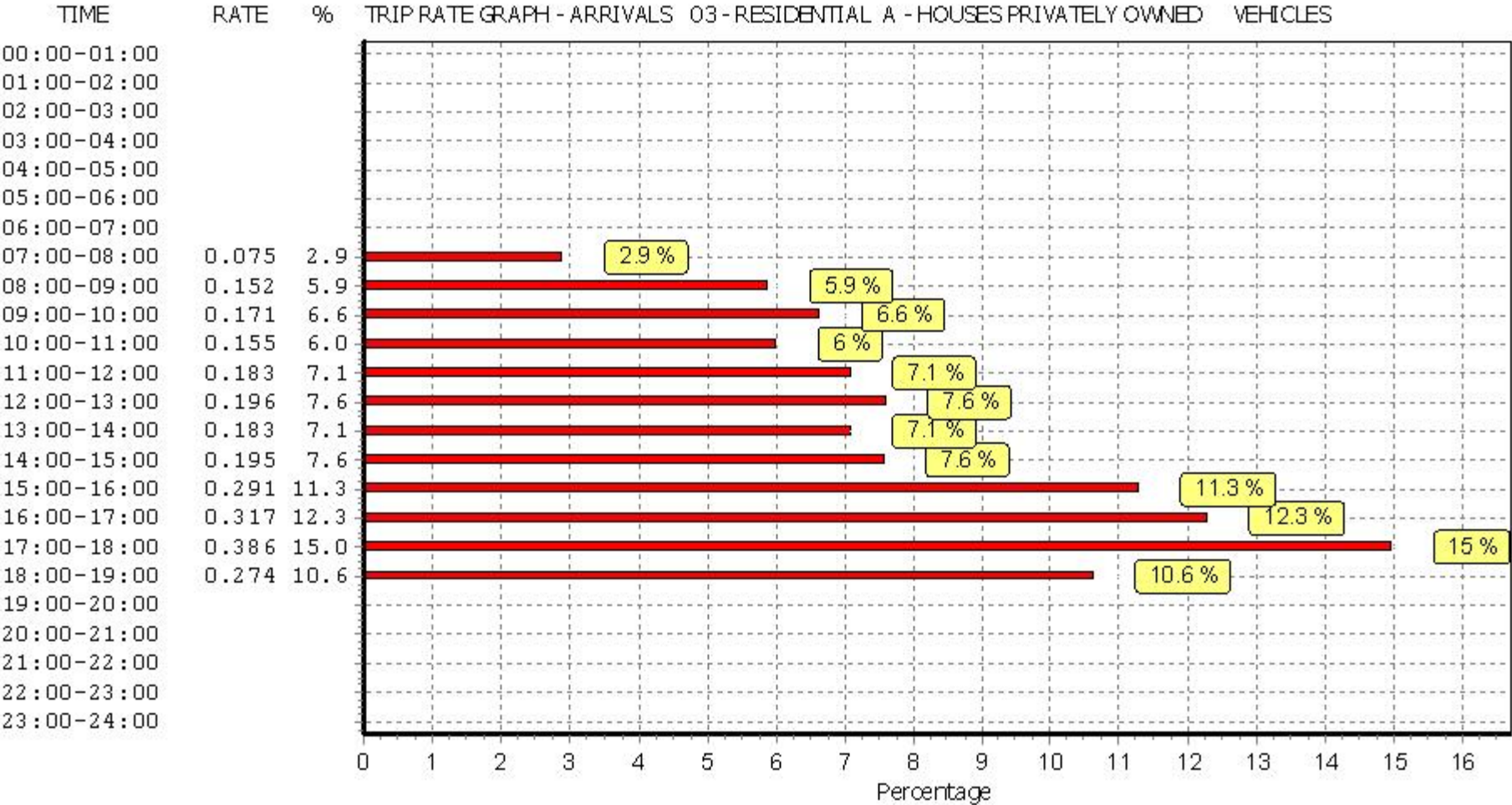
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

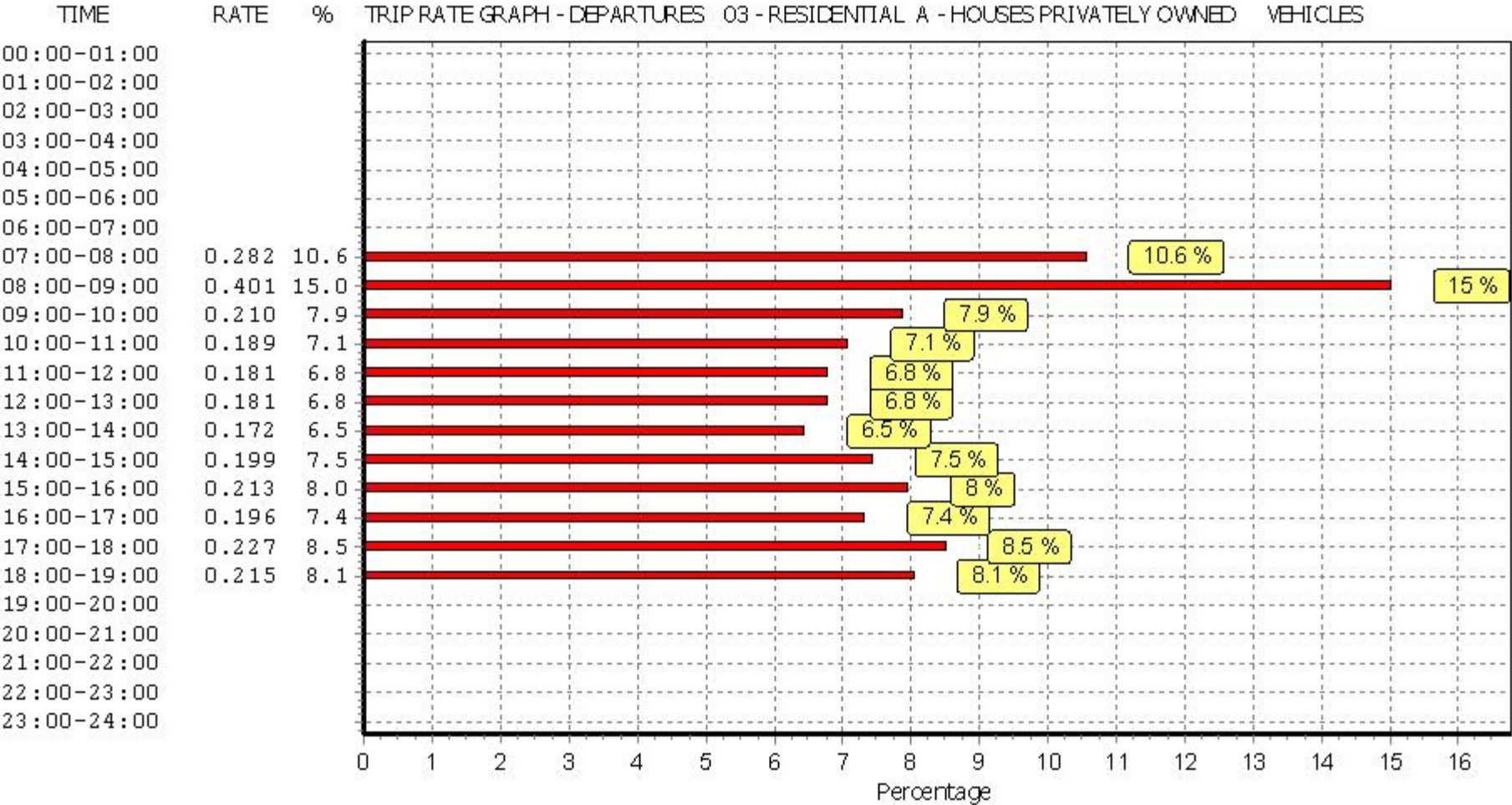
Parameter summary

Trip rate parameter range selected: 6 - 372 (units:)
 Survey date range: 01/01/05 - 07/10/13
 Number of weekdays (Monday-Friday): 47
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

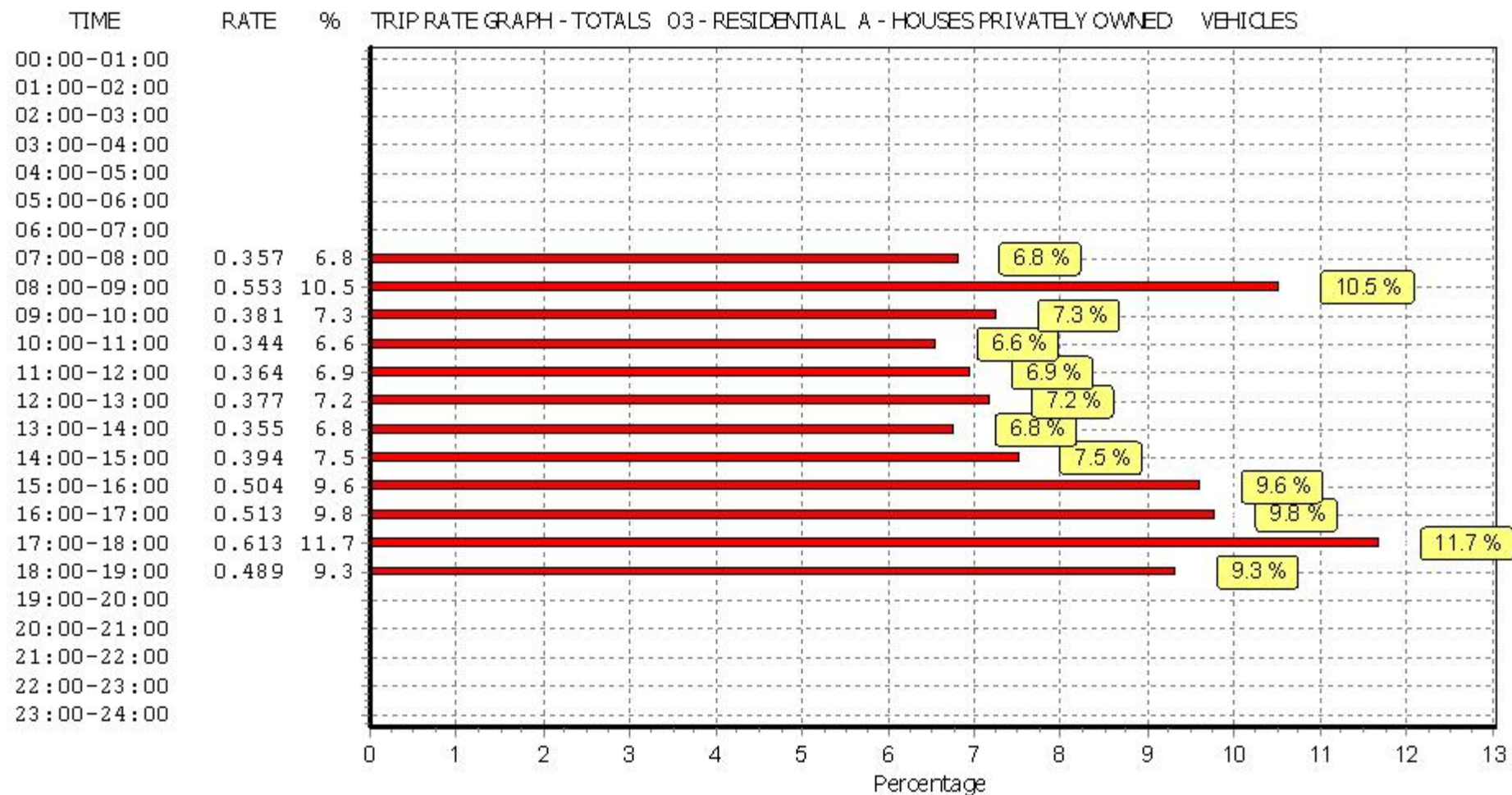
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	47	82	0.003	47	82	0.003	47	82	0.006
08:00 - 09:00	47	82	0.003	47	82	0.003	47	82	0.006
09:00 - 10:00	47	82	0.005	47	82	0.004	47	82	0.009
10:00 - 11:00	47	82	0.004	47	82	0.004	47	82	0.008
11:00 - 12:00	47	82	0.002	47	82	0.003	47	82	0.005
12:00 - 13:00	47	82	0.005	47	82	0.004	47	82	0.009
13:00 - 14:00	47	82	0.003	47	82	0.005	47	82	0.008
14:00 - 15:00	47	82	0.002	47	82	0.003	47	82	0.005
15:00 - 16:00	47	82	0.001	47	82	0.002	47	82	0.003
16:00 - 17:00	47	82	0.002	47	82	0.001	47	82	0.003
17:00 - 18:00	47	82	0.001	47	82	0.001	47	82	0.002
18:00 - 19:00	47	82	0.000	47	82	0.001	47	82	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.031			0.034			0.065

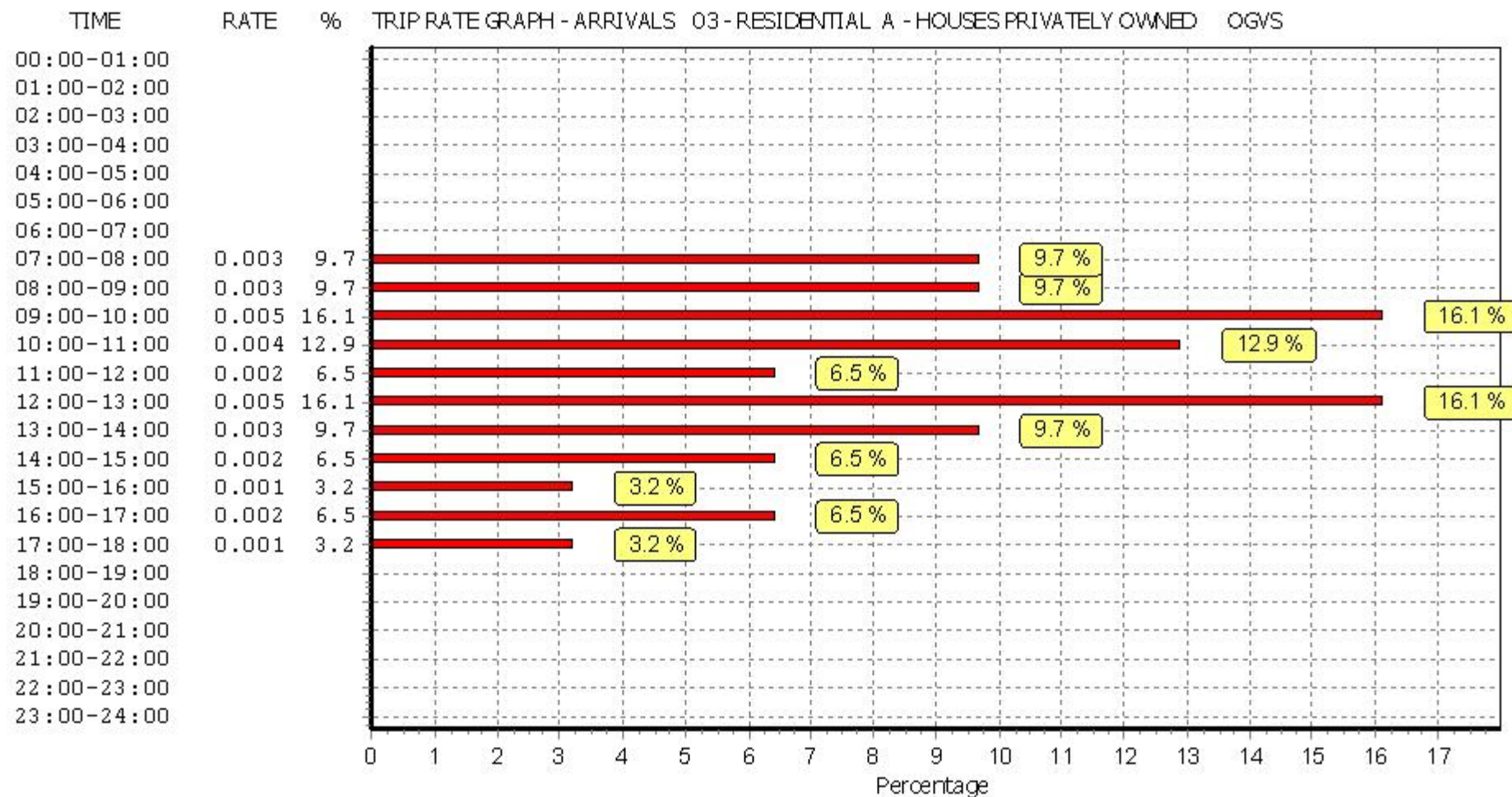
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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: 6 - 372 (units:)
 Survey date range: 01/01/05 - 07/10/13
 Number of weekdays (Monday-Friday): 47
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

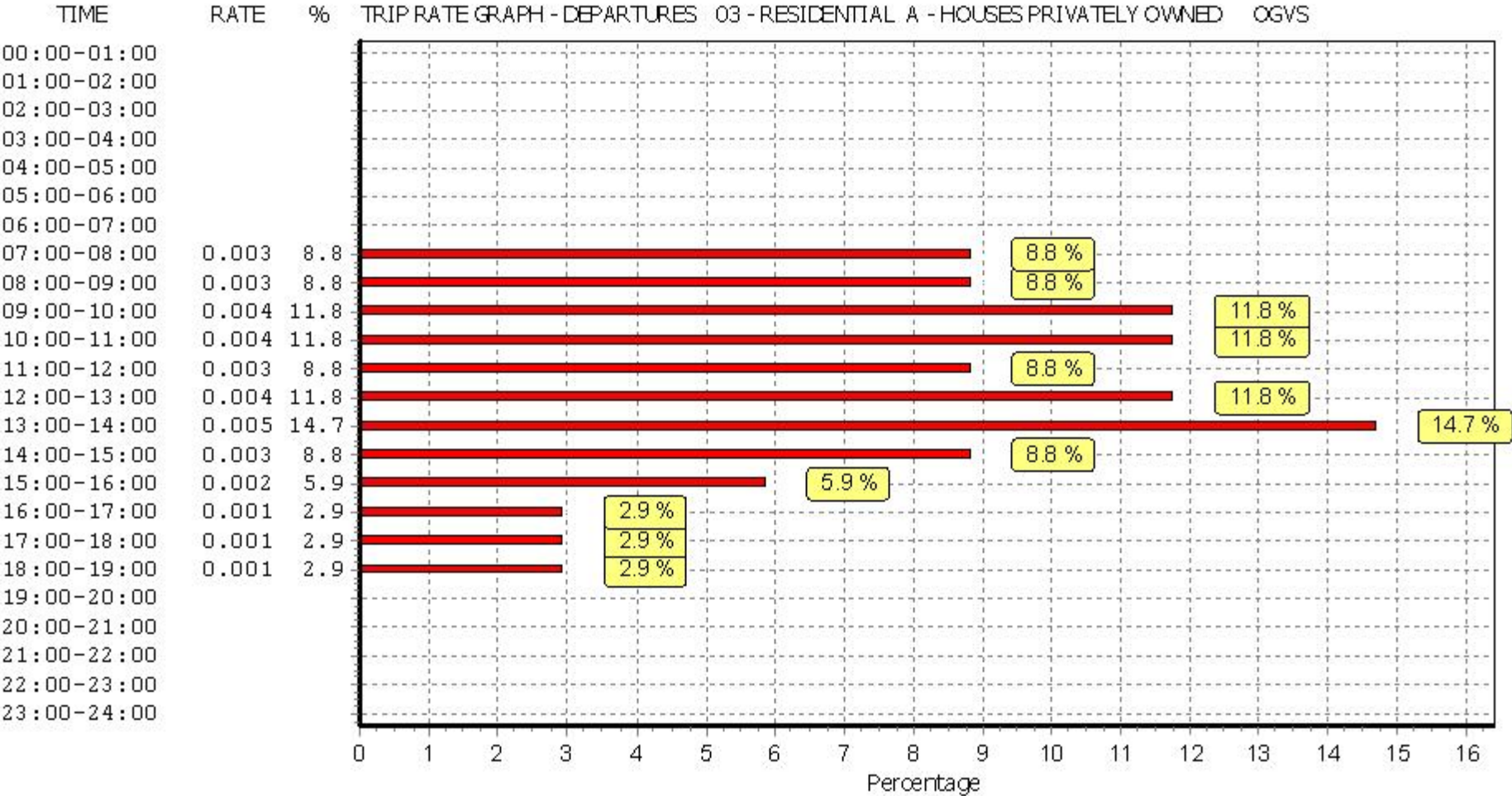
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



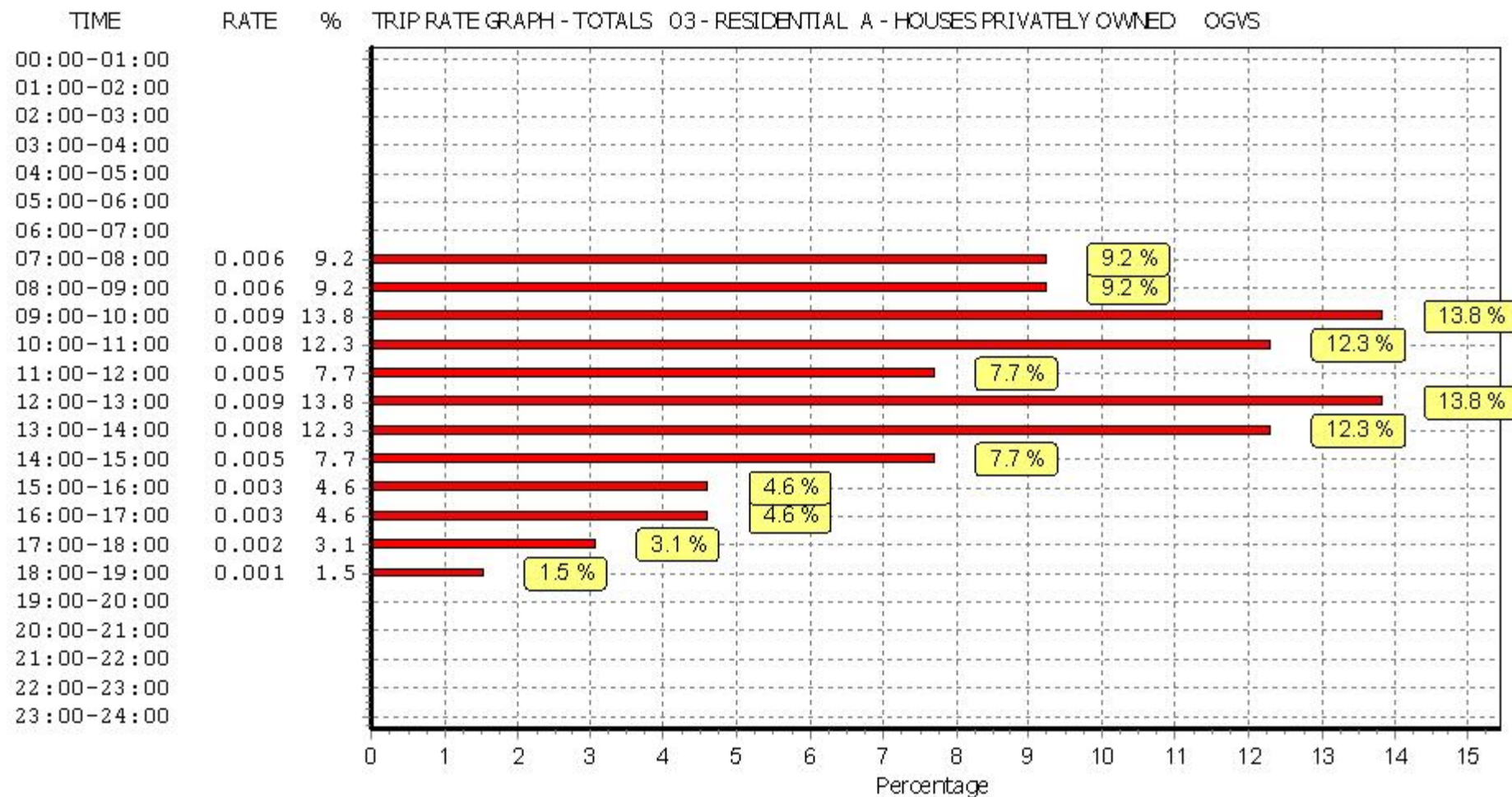
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Capita Carloli Square Newcastle upon Tyne

Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	47	82	0.000	47	82	0.000	47	82	0.000
08:00 - 09:00	47	82	0.001	47	82	0.001	47	82	0.002
09:00 - 10:00	47	82	0.001	47	82	0.000	47	82	0.001
10:00 - 11:00	47	82	0.000	47	82	0.001	47	82	0.001
11:00 - 12:00	47	82	0.000	47	82	0.000	47	82	0.000
12:00 - 13:00	47	82	0.000	47	82	0.000	47	82	0.000
13:00 - 14:00	47	82	0.000	47	82	0.000	47	82	0.000
14:00 - 15:00	47	82	0.000	47	82	0.000	47	82	0.000
15:00 - 16:00	47	82	0.001	47	82	0.001	47	82	0.002
16:00 - 17:00	47	82	0.001	47	82	0.001	47	82	0.002
17:00 - 18:00	47	82	0.000	47	82	0.000	47	82	0.000
18:00 - 19:00	47	82	0.000	47	82	0.000	47	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.004			0.004			0.008

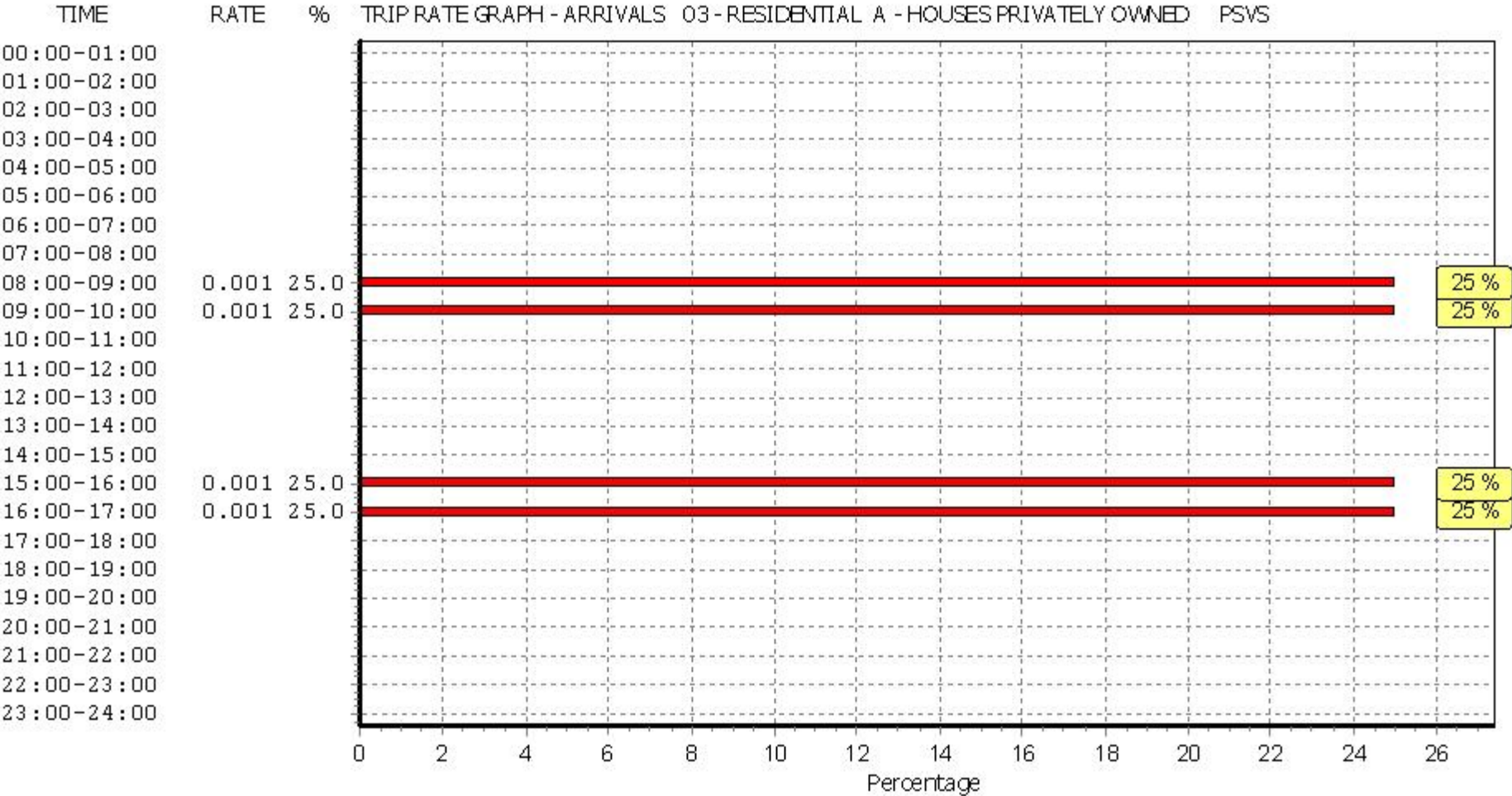
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Parameter summary

Trip rate parameter range selected: 6 - 372 (units:)
 Survey date range: 01/01/05 - 07/10/13
 Number of weekdays (Monday-Friday): 47
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

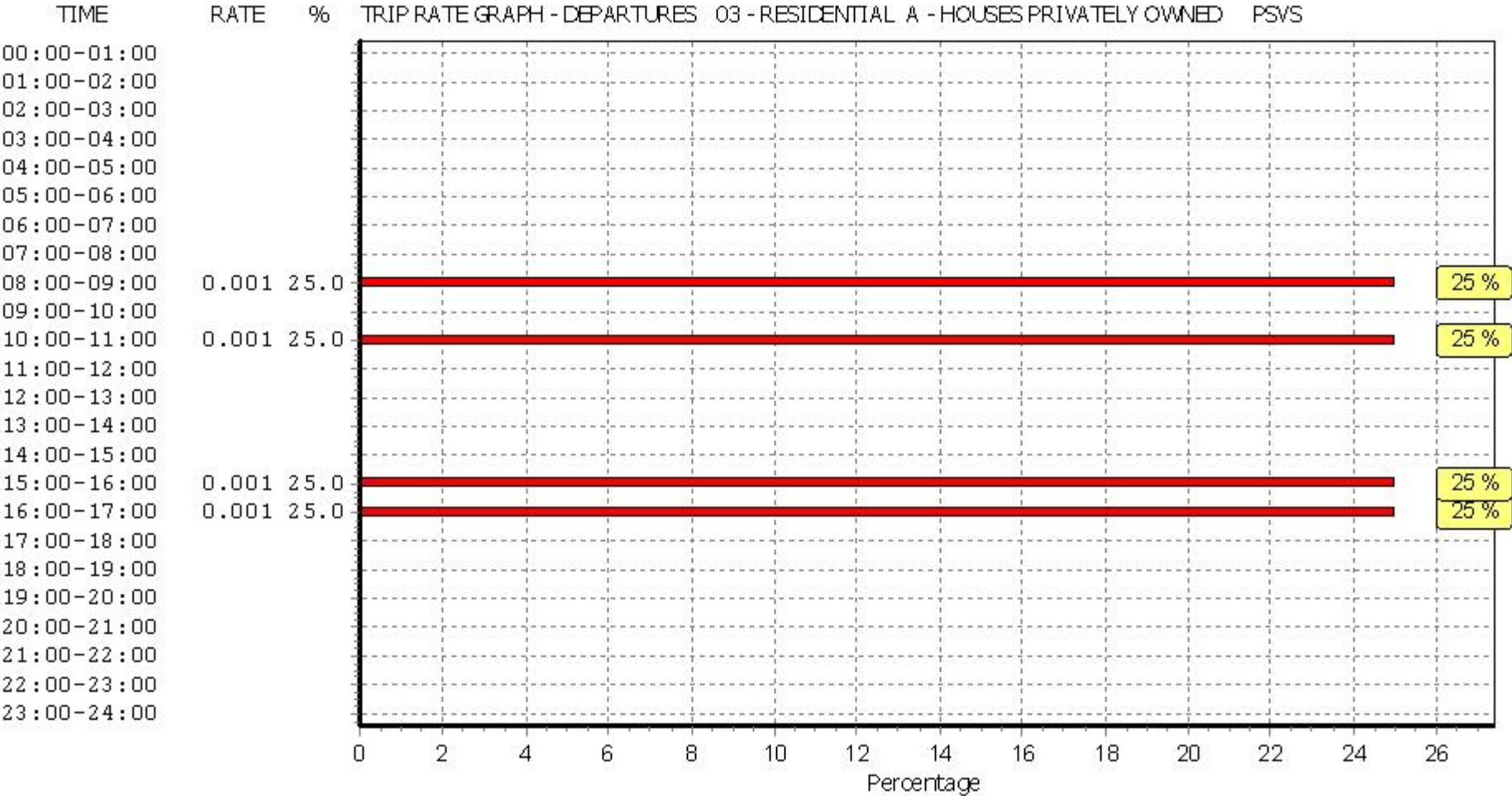
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Capita Carloli Square Newcastle upon Tyne

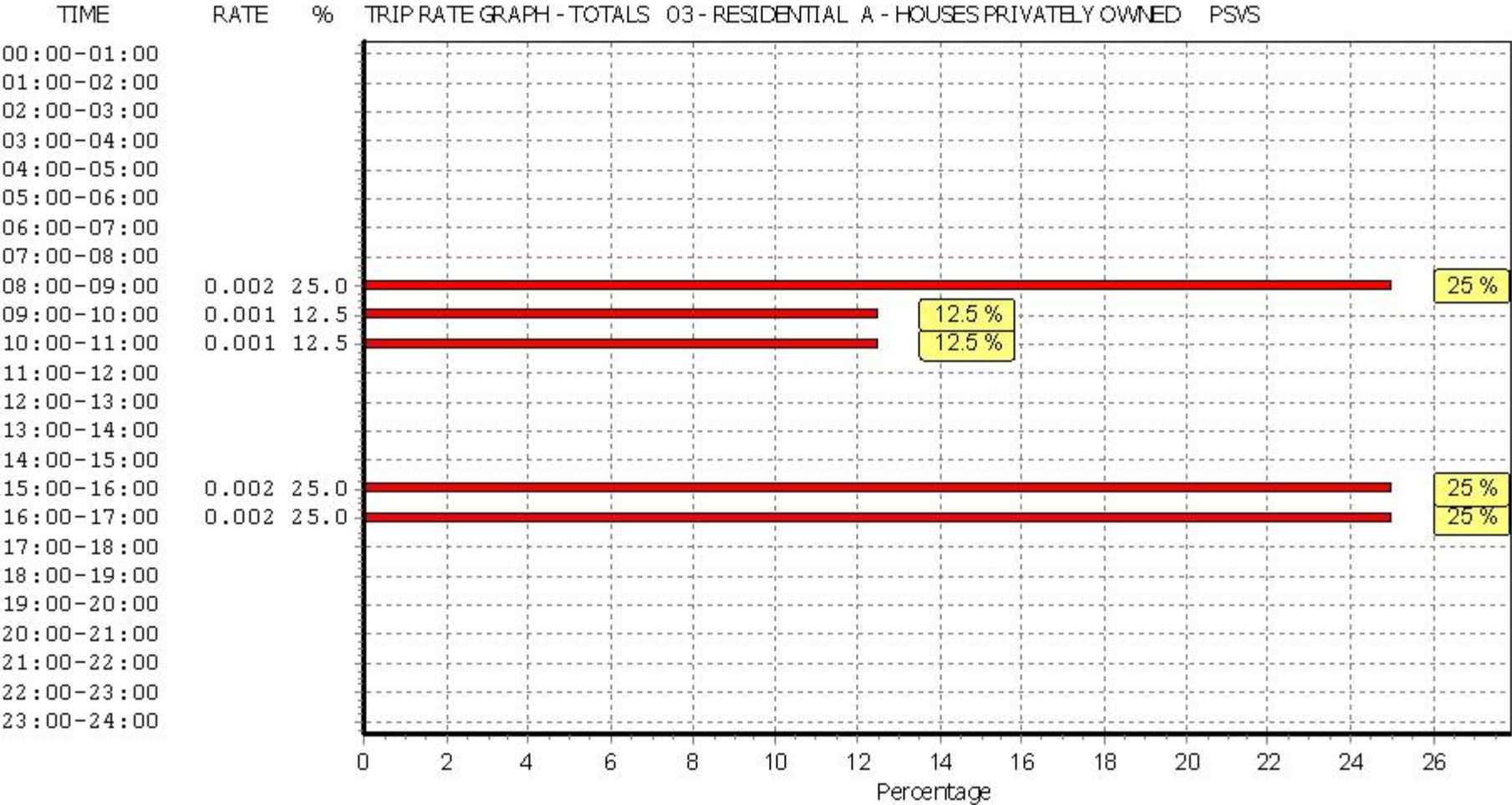
Licence No: 504507



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Capita Carloli Square Newcastle upon Tyne

Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	47	82	0.008	47	82	0.013	47	82	0.021
08:00 - 09:00	47	82	0.005	47	82	0.015	47	82	0.020
09:00 - 10:00	47	82	0.004	47	82	0.003	47	82	0.007
10:00 - 11:00	47	82	0.003	47	82	0.006	47	82	0.009
11:00 - 12:00	47	82	0.006	47	82	0.003	47	82	0.009
12:00 - 13:00	47	82	0.006	47	82	0.004	47	82	0.010
13:00 - 14:00	47	82	0.004	47	82	0.005	47	82	0.009
14:00 - 15:00	47	82	0.003	47	82	0.004	47	82	0.007
15:00 - 16:00	47	82	0.016	47	82	0.009	47	82	0.025
16:00 - 17:00	47	82	0.013	47	82	0.011	47	82	0.024
17:00 - 18:00	47	82	0.015	47	82	0.011	47	82	0.026
18:00 - 19:00	47	82	0.011	47	82	0.007	47	82	0.018
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.094			0.091			0.185

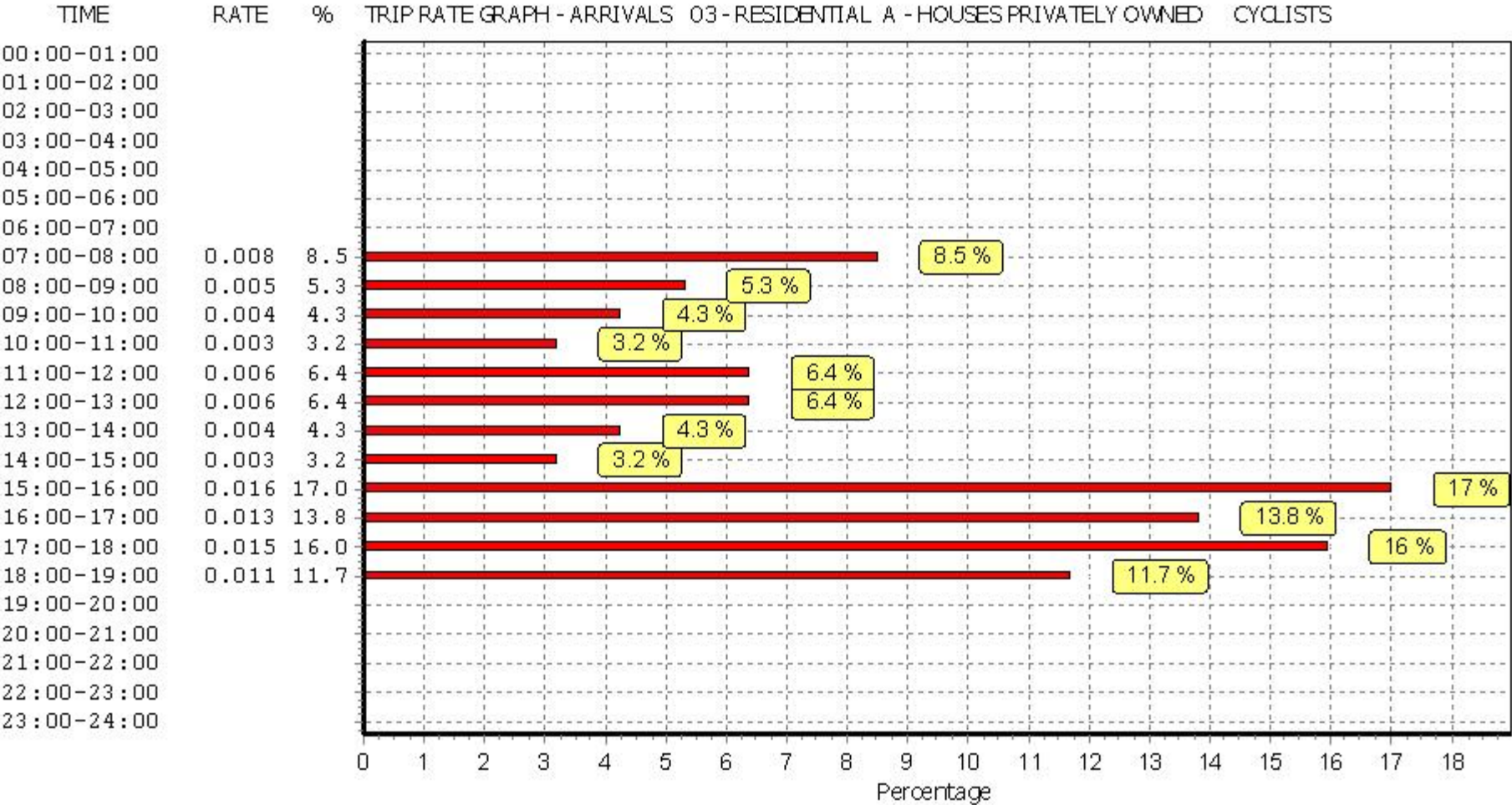
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

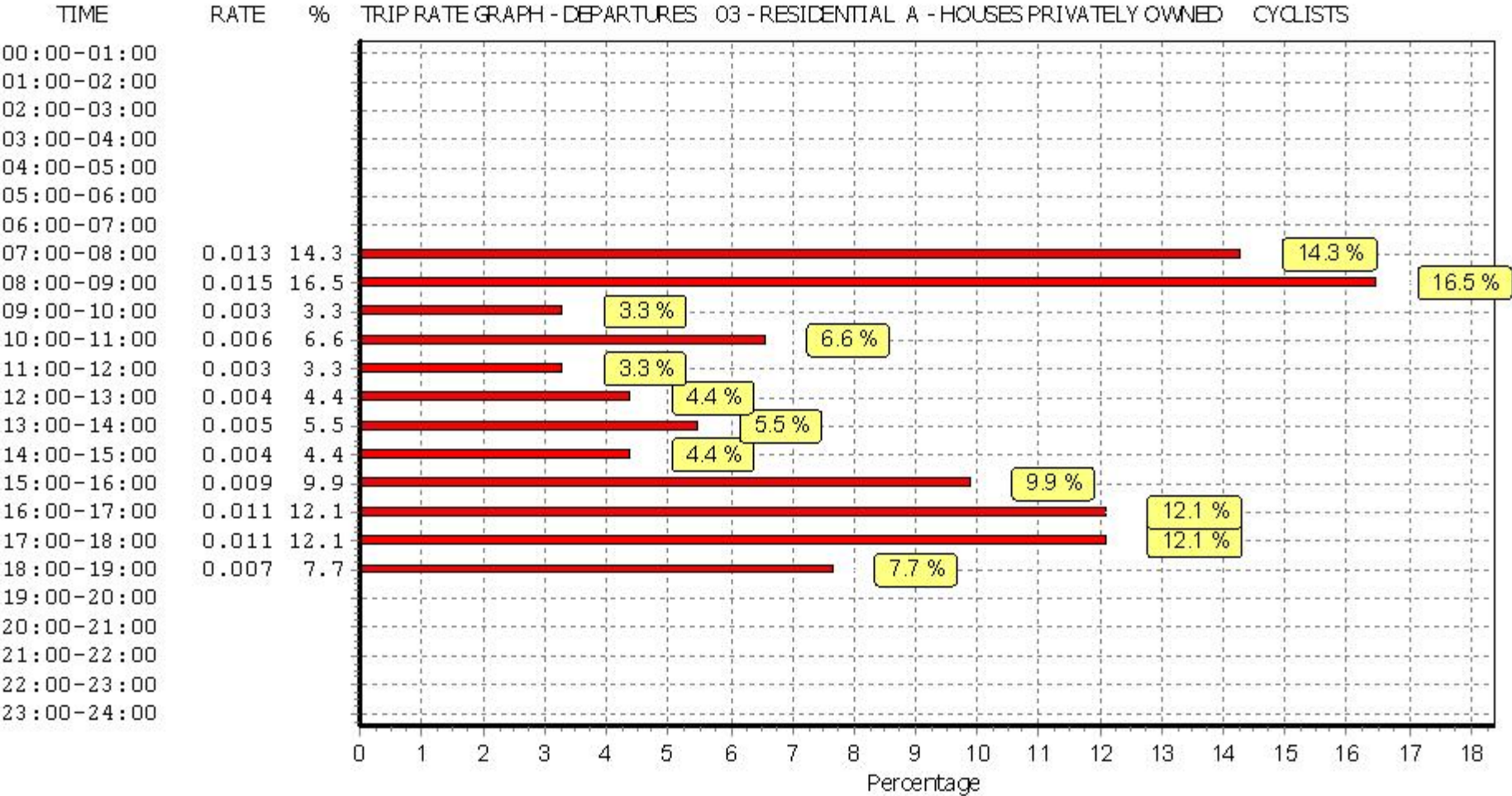
Parameter summary

Trip rate parameter range selected: 6 - 372 (units:)
 Survey date range: 01/01/05 - 07/10/13
 Number of weekdays (Monday-Friday): 47
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

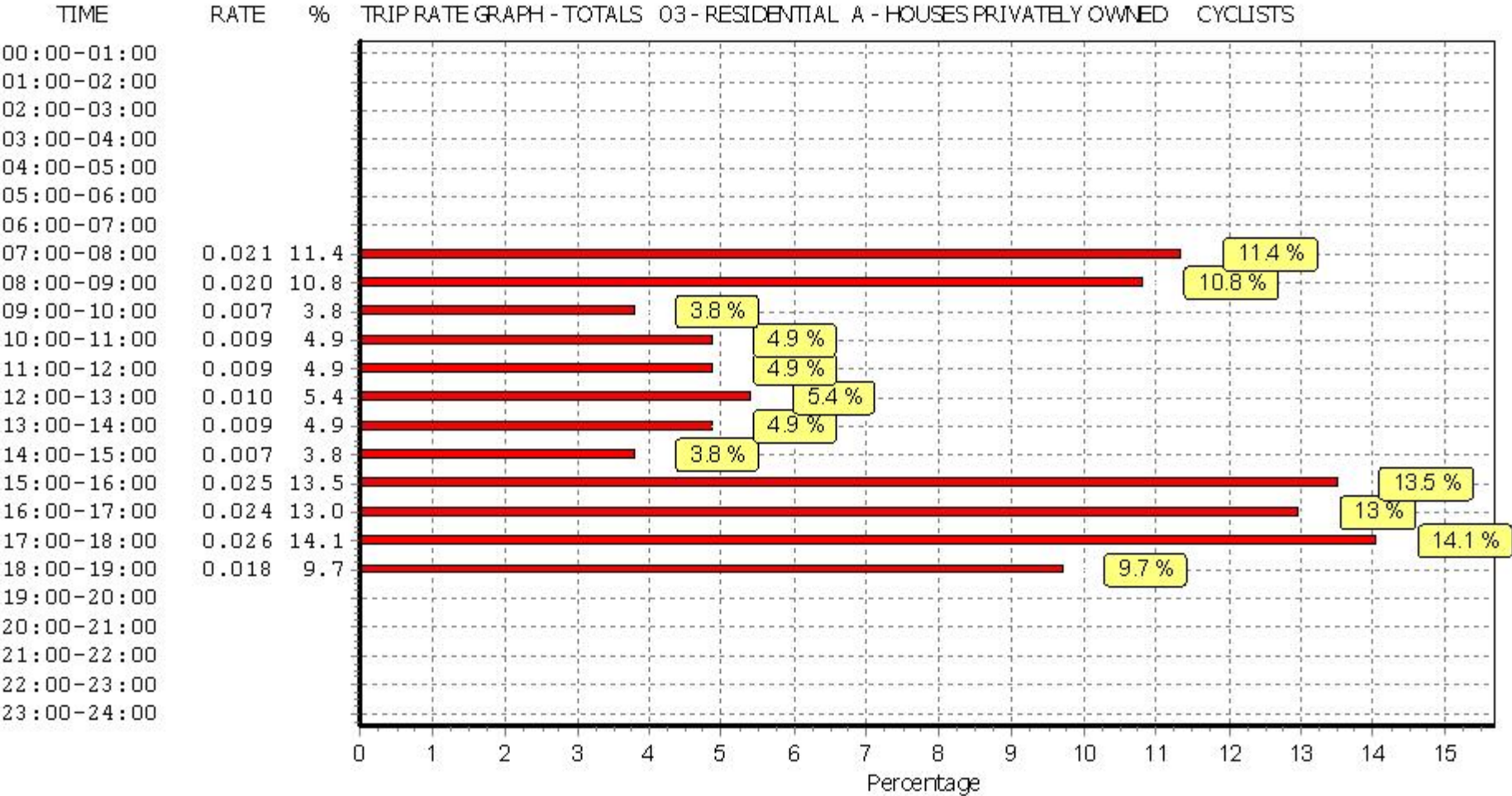
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
	OX OXFORDSHIRE	1 days
	SC SURREY	2 days
03	SOUTH WEST	
	DC DORSET	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	NR NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS	
	ST STAFFORDSHIRE	1 days
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	TV TEES VALLEY	2 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
 Actual Range: 8 to 140 (units:)
 Range Selected by User: 8 to 140 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 18/10/11

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

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	6 days
Thursday	2 days
Friday	3 days

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

Selected survey types:

Manual count	15 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	5
Suburban Area (PPS6 Out of Centre)	10

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and

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:

C3

15 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:

1,001 to 5,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	4 days
25,001 to 50,000	4 days

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

Population within 5 miles:

50,001 to 75,000	2 days
100,001 to 125,000	1 days
125,001 to 250,000	7 days
250,001 to 500,000	5 days

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

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	13 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

15 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	CA-03-C-02	BLOCK OF FLATS		CAMBRIDGESHIRE
	WESTFIELD ROAD			
	NETHERTON			
	PETERBOROUGH			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	44		
	Survey date: TUESDAY	18/10/11		Survey Type: MANUAL
2	CH-03-C-01	BLOCKS OF FLATS		CHESHIRE
	NEW CRANE STREET			
	CHESTER			
	Edge of Town Centre			
	Residential Zone			
	Total Number of dwellings:	60		
	Survey date: FRIDAY	17/10/08		Survey Type: MANUAL
3	DC-03-C-01	BLOCKS OF FLATS		DORSET
	ABBOTSBURY ROAD			
	WEYMOUTH			
	Edge of Town Centre			
	Residential Zone			
	Total Number of dwellings:	27		
	Survey date: TUESDAY	08/07/08		Survey Type: MANUAL
4	DS-03-C-01	BLOCK OF FLATS		DERBYSHIRE
	DRAGE STREET			
	LITTLE CHESTER			
	DERBY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	8		
	Survey date: THURSDAY	25/06/09		Survey Type: MANUAL
5	HC-03-C-02	FLATS		HAMPSHIRE
	WORTING ROAD			
	BASINGSTOKE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	16		
	Survey date: THURSDAY	21/10/10		Survey Type: MANUAL
6	HF-03-C-02	FLATS		HERTFORDSHIRE
	BRIDGE ROAD EAST			
	WELWYN GARDEN CITY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	86		
	Survey date: WEDNESDAY	16/07/08		Survey Type: MANUAL
7	NR-03-C-01	BLOCK OF FLATS		NORTHAMPTONSHIRE
	ROCKINGHAM ROAD			
	CORBY			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	20		
	Survey date: FRIDAY	21/11/08		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	OX-03-C-01	BLOCK OF FLATS		OXFORDSHIRE
	OXFORD ROAD			
	COWLEY			
	OXFORD			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	14		
	Survey date: WEDNESDAY	20/10/10		Survey Type: MANUAL
9	SC-03-C-01	FLATS		SURREY
	HEATHCOTE ROAD			
	CAMBERLEY			
	Edge of Town Centre			
	Residential Zone			
	Total Number of dwellings:	140		
	Survey date: MONDAY	21/07/08		Survey Type: MANUAL
10	SC-03-C-02	FLATS		SURREY
	CONSTITUTION HILL			
	WOKING			
	Suburban Area (PPS6 Out of Centre)			
	Built-Up Zone			
	Total Number of dwellings:	36		
	Survey date: WEDNESDAY	23/07/08		Survey Type: MANUAL
11	ST-03-C-01	BLOCKS OF FLATS		STAFFORDSHIRE
	ETRURIA COURT			
	HUMBERT ROAD			
	STOKE-ON-TRENT			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	33		
	Survey date: WEDNESDAY	26/11/08		Survey Type: MANUAL
12	TV-03-C-01	APARTMENTS BLOCKS		TEES VALLEY
	OXFORD ROAD			
	LINTHORPE			
	MIDDLESBROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	85		
	Survey date: MONDAY	06/10/08		Survey Type: MANUAL
13	TV-03-C-02	FLATS		TEES VALLEY
	ACKLAM ROAD			
	LINTHORPE			
	MIDDLESBROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	85		
	Survey date: WEDNESDAY	29/06/11		Survey Type: MANUAL
14	WM-03-C-03	FLATS		WEST MIDLANDS
	LODE LANE			
	SOLIHULL			
	Edge of Town Centre			
	No Sub Category			
	Total Number of dwellings:	60		
	Survey date: FRIDAY	21/09/07		Survey Type: MANUAL
15	WY-03-C-02	BLOCK OF FLATS		WEST YORKSHIRE
	KINGS MILL LANE			
	ASPLEY			
	HUDDERSFIELD			
	Edge of Town Centre			
	Built-Up Zone			
	Total Number of dwellings:	12		
	Survey date: WEDNESDAY	13/09/06		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.

Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	48	0.033	15	48	0.164	15	48	0.197
08:00 - 09:00	15	48	0.072	15	48	0.292	15	48	0.364
09:00 - 10:00	15	48	0.062	15	48	0.098	15	48	0.160
10:00 - 11:00	15	48	0.084	15	48	0.079	15	48	0.163
11:00 - 12:00	15	48	0.074	15	48	0.077	15	48	0.151
12:00 - 13:00	15	48	0.090	15	48	0.103	15	48	0.193
13:00 - 14:00	15	48	0.085	15	48	0.096	15	48	0.181
14:00 - 15:00	15	48	0.091	15	48	0.087	15	48	0.178
15:00 - 16:00	15	48	0.124	15	48	0.087	15	48	0.211
16:00 - 17:00	15	48	0.134	15	48	0.109	15	48	0.243
17:00 - 18:00	15	48	0.273	15	48	0.128	15	48	0.401
18:00 - 19:00	15	48	0.185	15	48	0.121	15	48	0.306
19:00 - 20:00	2	15	0.333	2	15	0.200	2	15	0.533
20:00 - 21:00	2	15	0.100	2	15	0.033	2	15	0.133
21:00 - 22:00	2	15	0.133	2	15	0.100	2	15	0.233
22:00 - 23:00									
23:00 - 24:00									
Total Rates:		1.873			1.774			3.647	

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

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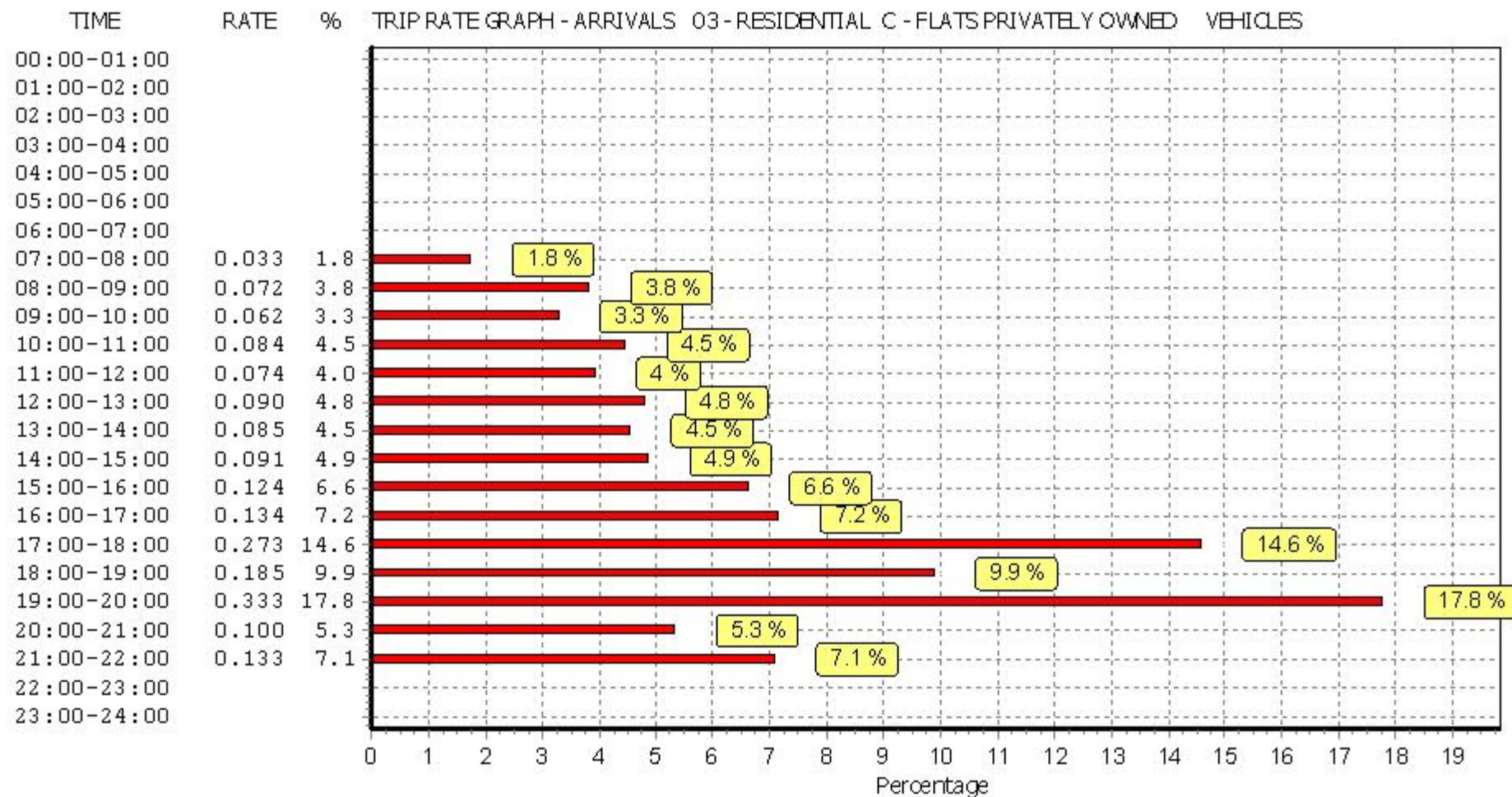
Parameter summary

Trip rate parameter range selected: 8 - 140 (units:)
 Survey date range: 01/01/05 - 18/10/11
 Number of weekdays (Monday-Friday): 15
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

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

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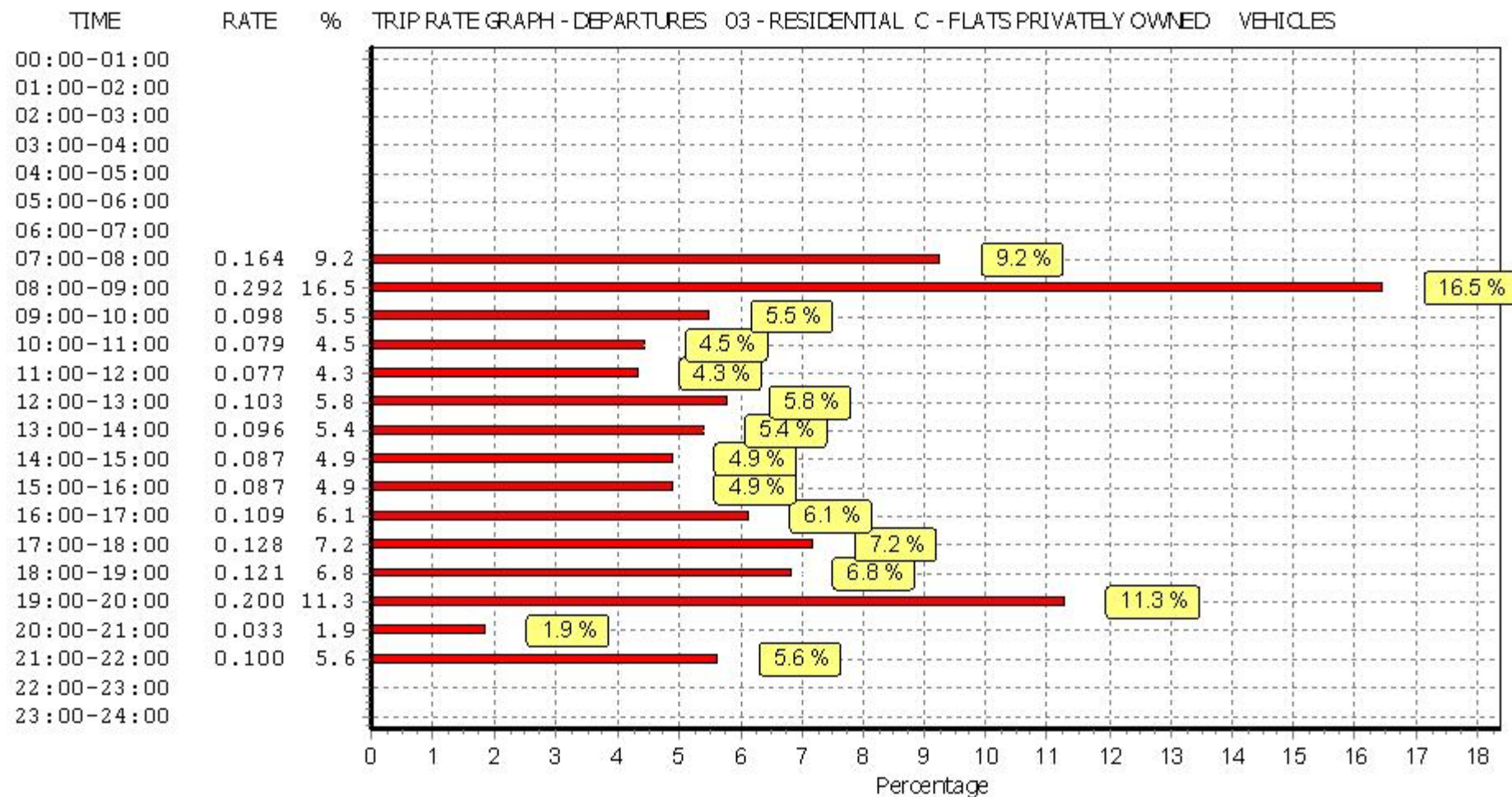
Licence No: 504507



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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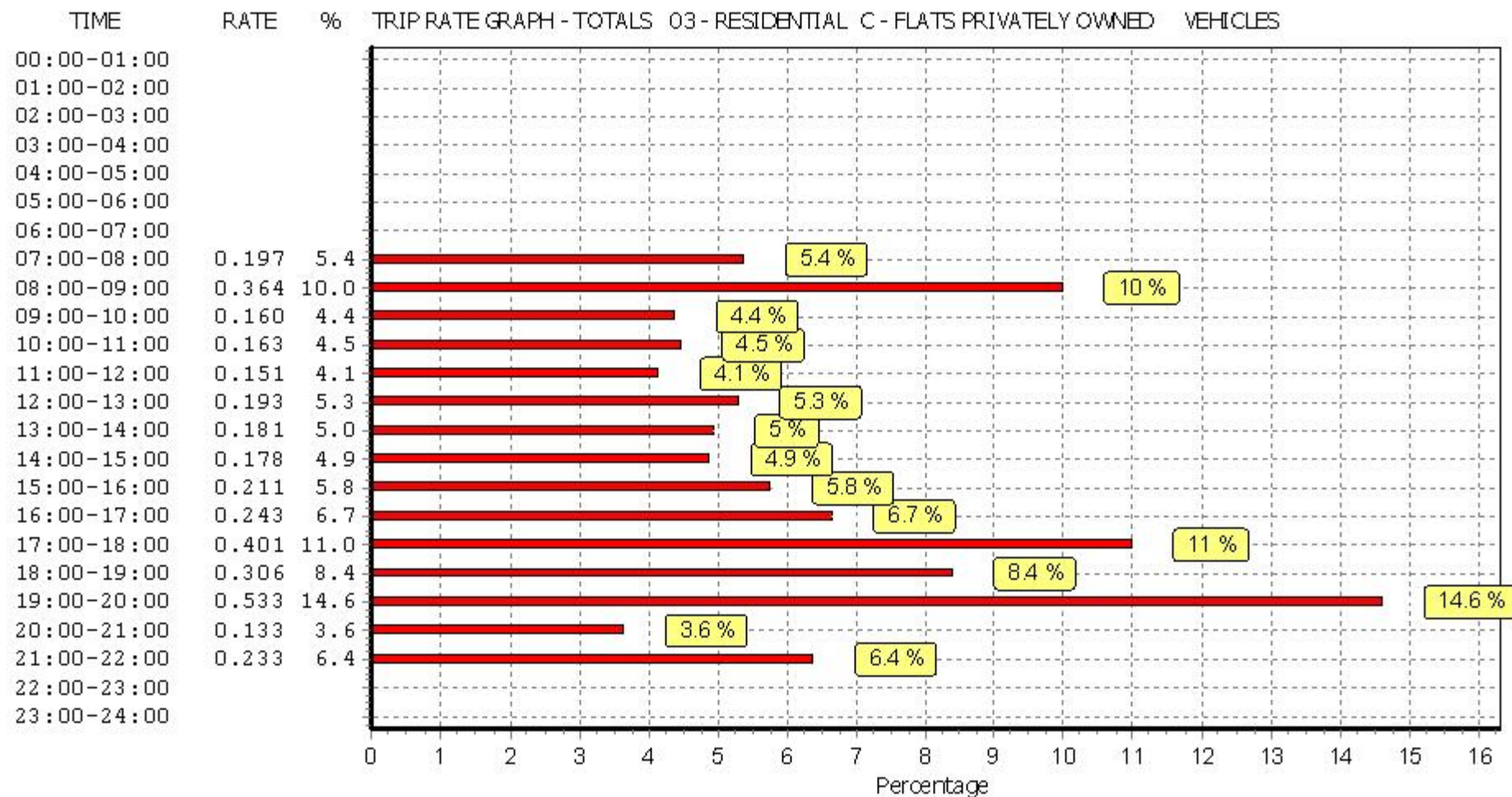
Licence No: 504507



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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	48	0.006	15	48	0.006	15	48	0.012
08:00 - 09:00	15	48	0.006	15	48	0.006	15	48	0.012
09:00 - 10:00	15	48	0.003	15	48	0.003	15	48	0.006
10:00 - 11:00	15	48	0.000	15	48	0.000	15	48	0.000
11:00 - 12:00	15	48	0.000	15	48	0.000	15	48	0.000
12:00 - 13:00	15	48	0.001	15	48	0.001	15	48	0.002
13:00 - 14:00	15	48	0.003	15	48	0.003	15	48	0.006
14:00 - 15:00	15	48	0.008	15	48	0.007	15	48	0.015
15:00 - 16:00	15	48	0.001	15	48	0.003	15	48	0.004
16:00 - 17:00	15	48	0.000	15	48	0.001	15	48	0.001
17:00 - 18:00	15	48	0.004	15	48	0.004	15	48	0.008
18:00 - 19:00	15	48	0.006	15	48	0.006	15	48	0.012
19:00 - 20:00	2	15	0.000	2	15	0.000	2	15	0.000
20:00 - 21:00	2	15	0.000	2	15	0.000	2	15	0.000
21:00 - 22:00	2	15	0.000	2	15	0.000	2	15	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.038			0.040			0.078

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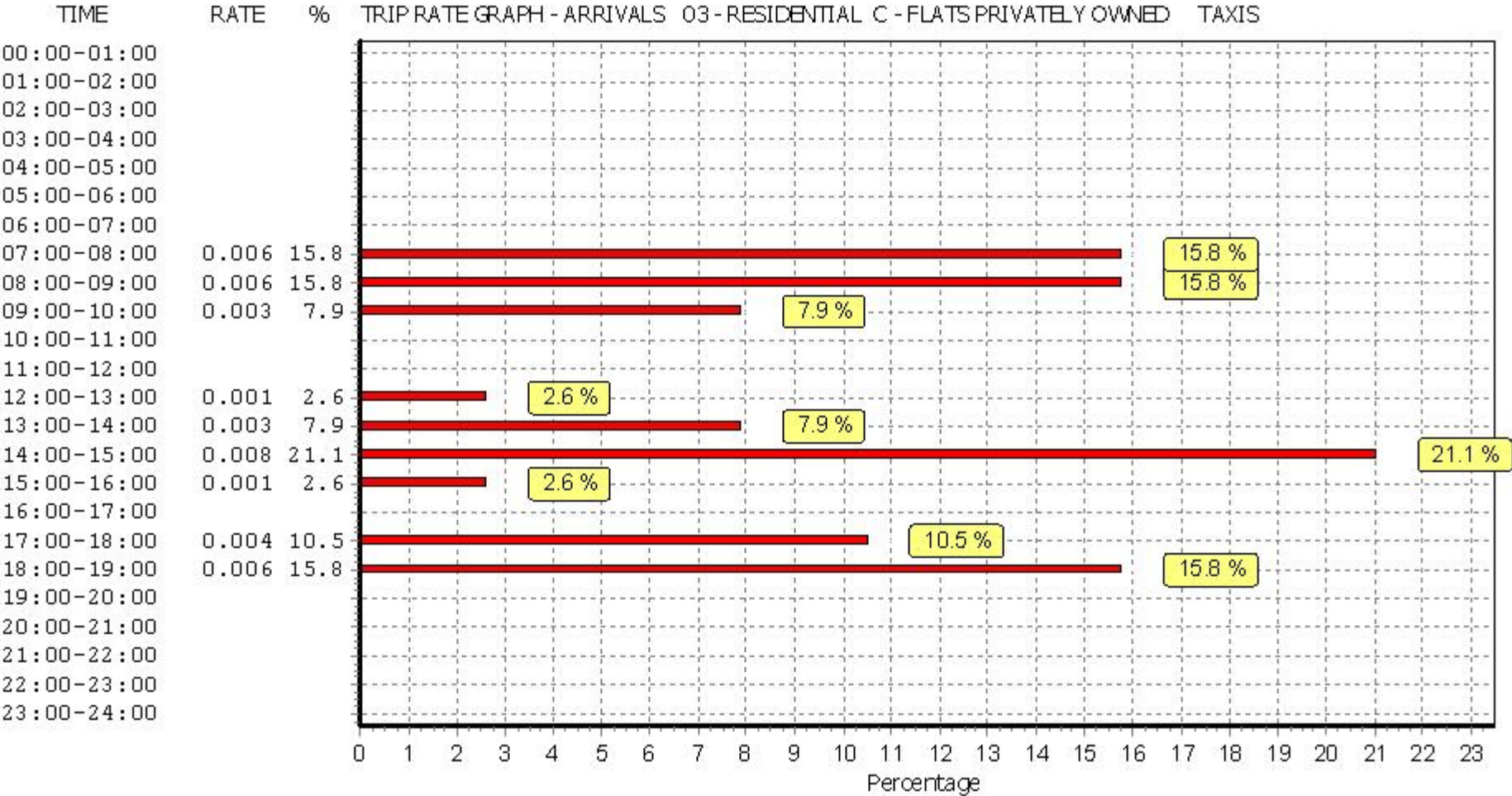
Parameter summary

Trip rate parameter range selected: 8 - 140 (units:)
 Survey date range: 01/01/05 - 18/10/11
 Number of weekdays (Monday-Friday): 15
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

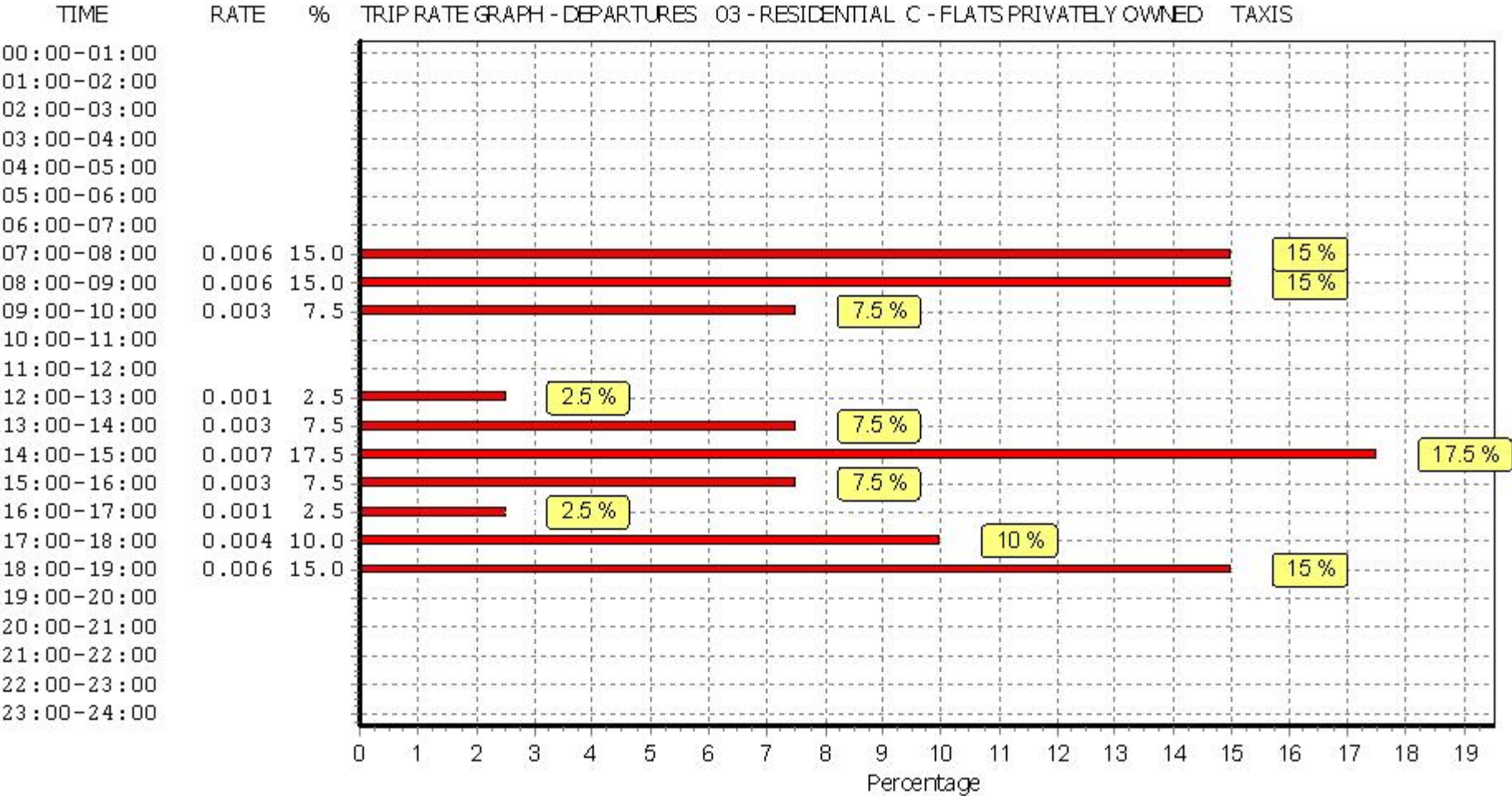
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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

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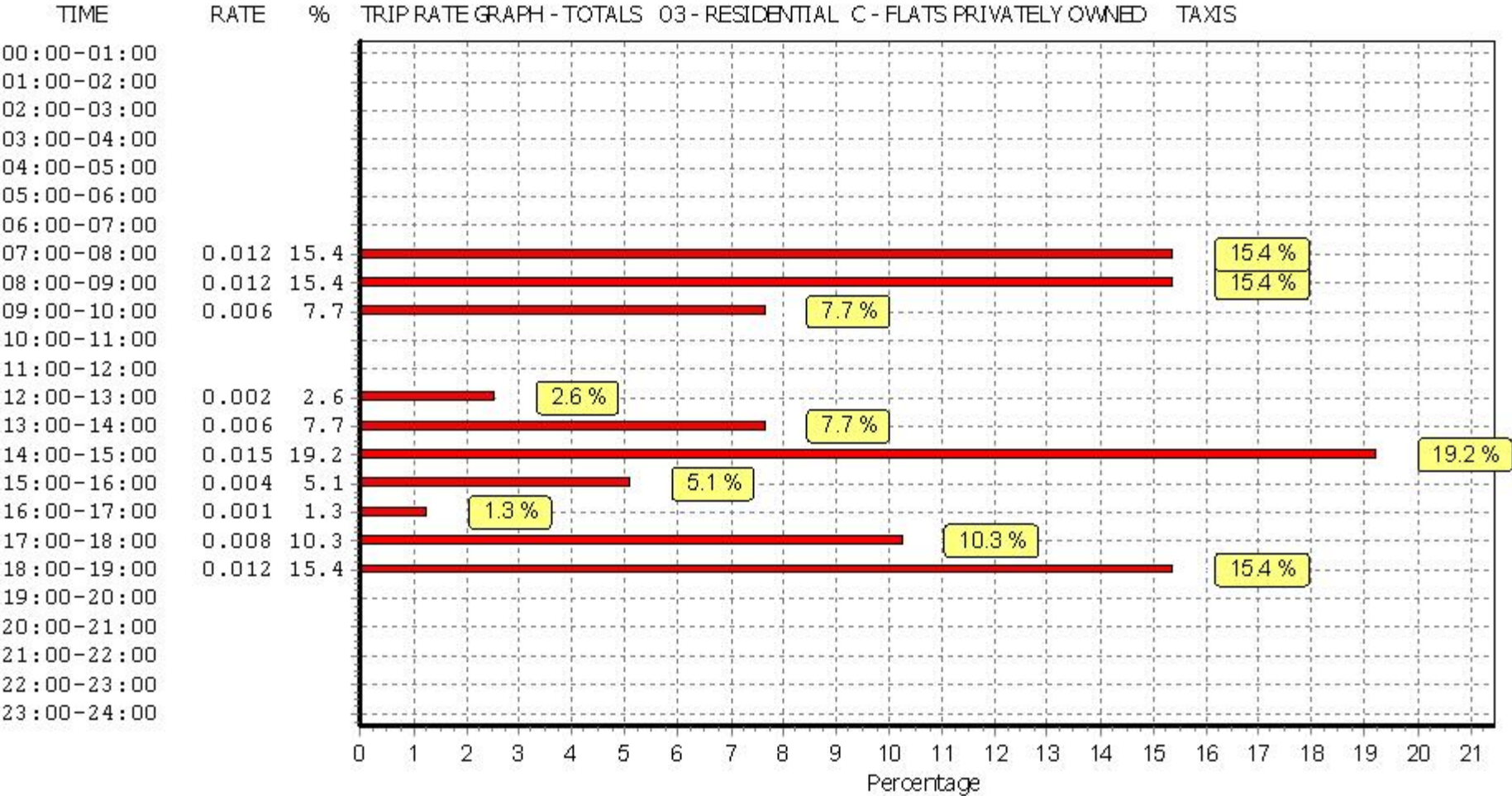
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	48	0.000	15	48	0.000	15	48	0.000
08:00 - 09:00	15	48	0.001	15	48	0.001	15	48	0.002
09:00 - 10:00	15	48	0.000	15	48	0.000	15	48	0.000
10:00 - 11:00	15	48	0.003	15	48	0.003	15	48	0.006
11:00 - 12:00	15	48	0.004	15	48	0.003	15	48	0.007
12:00 - 13:00	15	48	0.003	15	48	0.004	15	48	0.007
13:00 - 14:00	15	48	0.001	15	48	0.001	15	48	0.002
14:00 - 15:00	15	48	0.003	15	48	0.000	15	48	0.003
15:00 - 16:00	15	48	0.001	15	48	0.003	15	48	0.004
16:00 - 17:00	15	48	0.003	15	48	0.003	15	48	0.006
17:00 - 18:00	15	48	0.000	15	48	0.000	15	48	0.000
18:00 - 19:00	15	48	0.001	15	48	0.000	15	48	0.001
19:00 - 20:00	2	15	0.000	2	15	0.000	2	15	0.000
20:00 - 21:00	2	15	0.000	2	15	0.000	2	15	0.000
21:00 - 22:00	2	15	0.000	2	15	0.000	2	15	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.020			0.018			0.038

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

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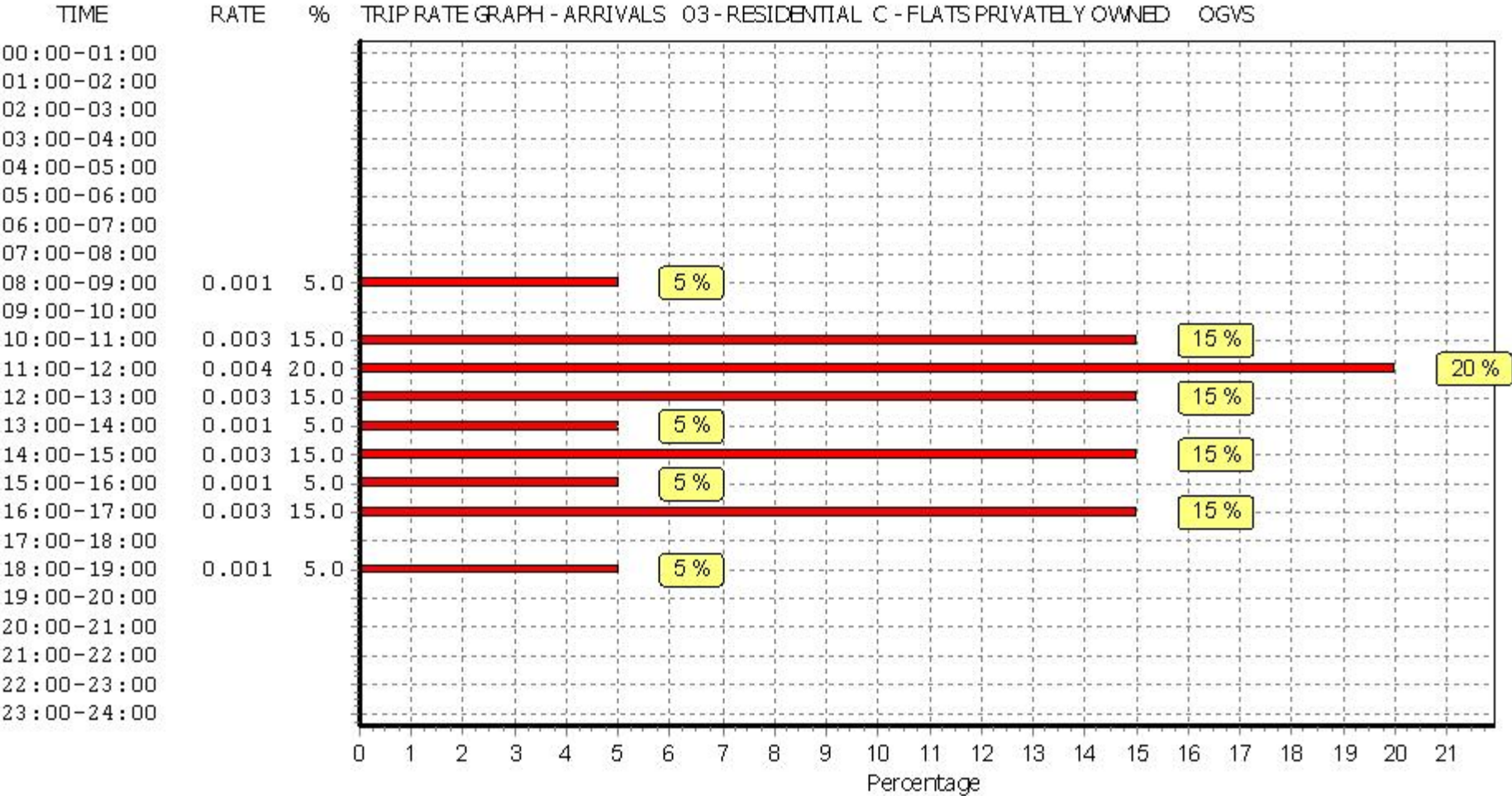
Parameter summary

Trip rate parameter range selected: 8 - 140 (units:)
 Survey date range: 01/01/05 - 18/10/11
 Number of weekdays (Monday-Friday): 15
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

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

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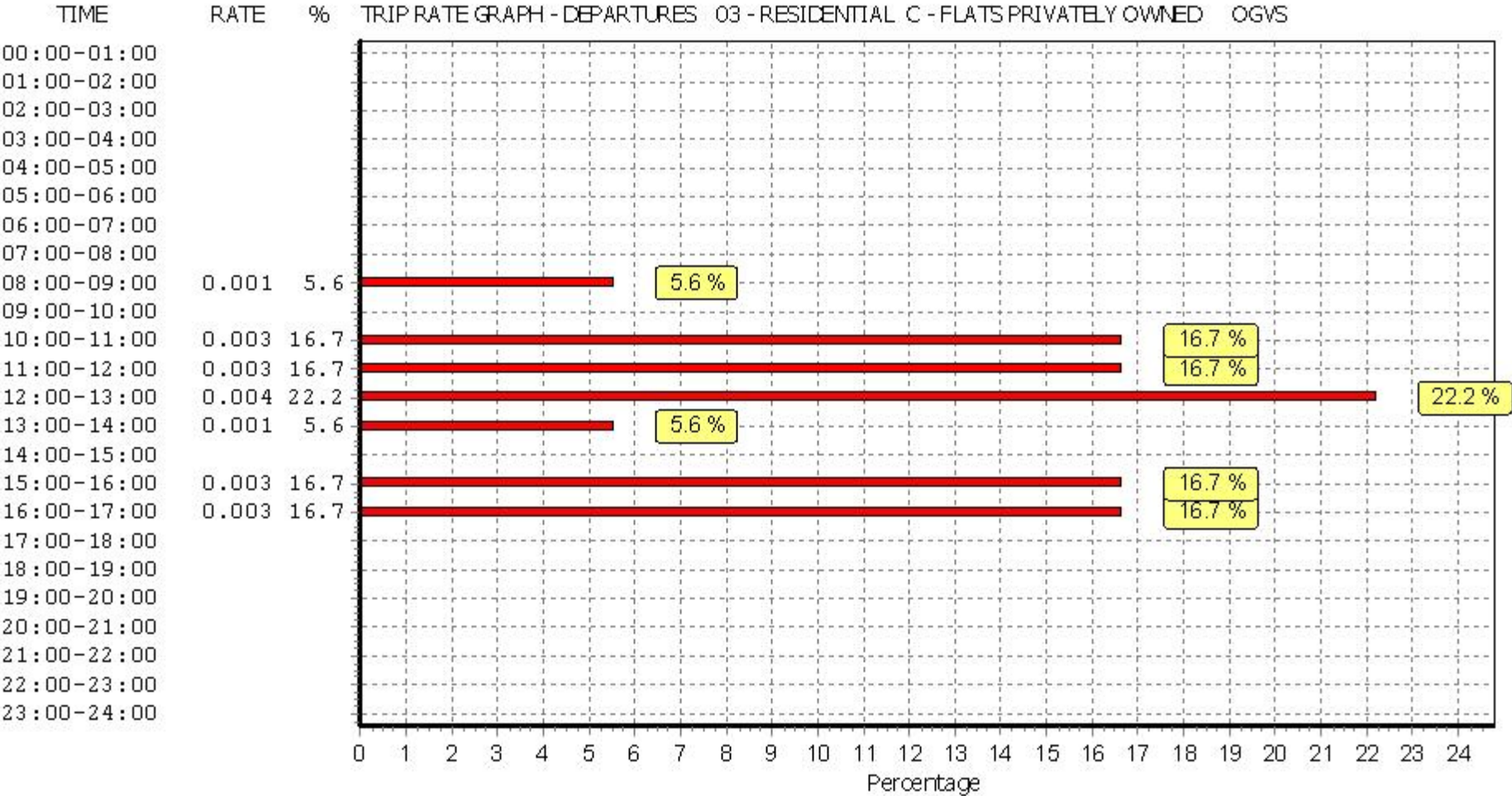
Licence No: 504507



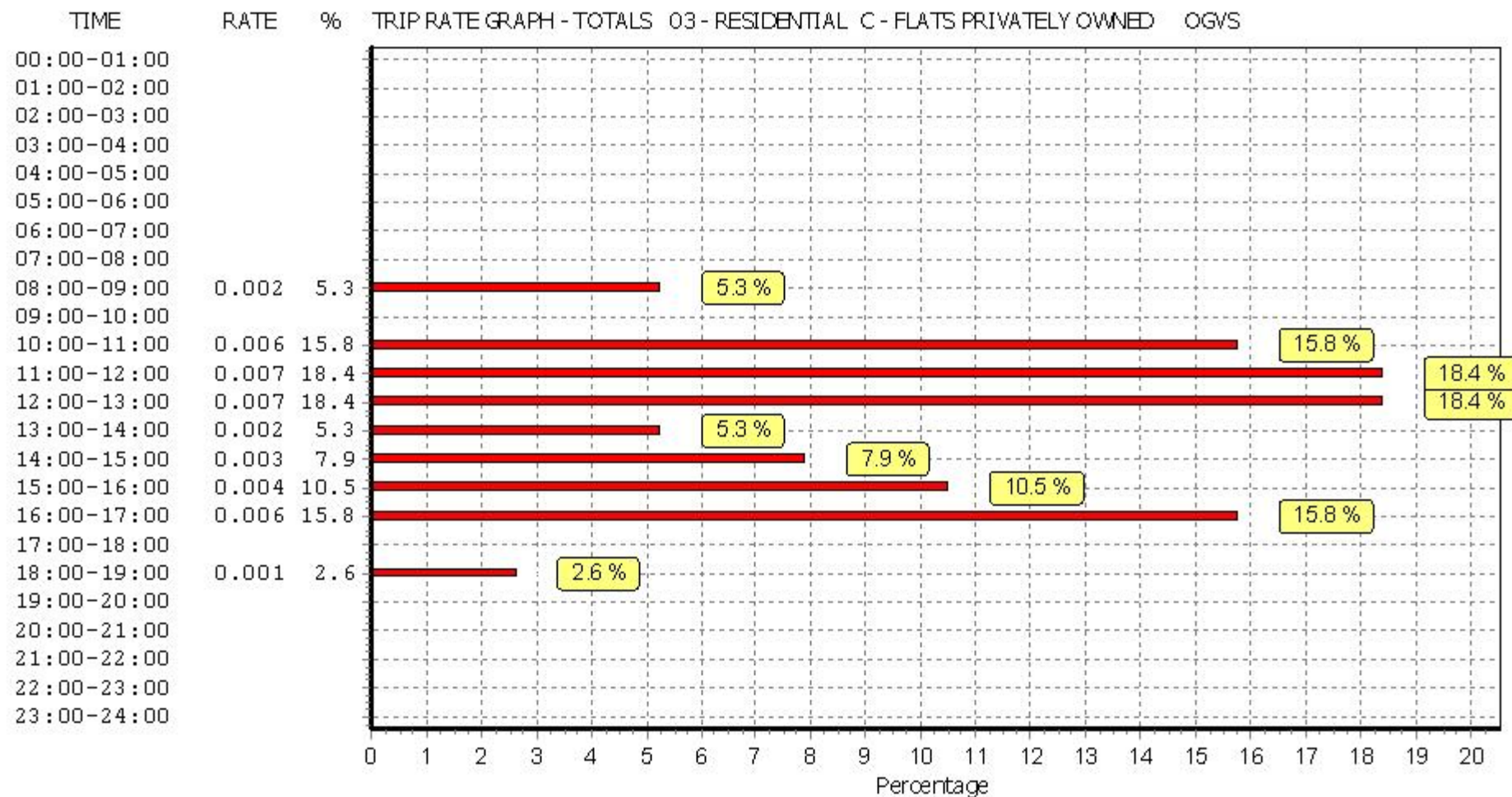
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	48	0.000	15	48	0.000	15	48	0.000
08:00 - 09:00	15	48	0.000	15	48	0.000	15	48	0.000
09:00 - 10:00	15	48	0.000	15	48	0.000	15	48	0.000
10:00 - 11:00	15	48	0.000	15	48	0.000	15	48	0.000
11:00 - 12:00	15	48	0.000	15	48	0.000	15	48	0.000
12:00 - 13:00	15	48	0.000	15	48	0.000	15	48	0.000
13:00 - 14:00	15	48	0.000	15	48	0.000	15	48	0.000
14:00 - 15:00	15	48	0.000	15	48	0.000	15	48	0.000
15:00 - 16:00	15	48	0.000	15	48	0.000	15	48	0.000
16:00 - 17:00	15	48	0.000	15	48	0.000	15	48	0.000
17:00 - 18:00	15	48	0.000	15	48	0.000	15	48	0.000
18:00 - 19:00	15	48	0.000	15	48	0.000	15	48	0.000
19:00 - 20:00	2	15	0.000	2	15	0.000	2	15	0.000
20:00 - 21:00	2	15	0.000	2	15	0.000	2	15	0.000
21:00 - 22:00	2	15	0.000	2	15	0.000	2	15	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:		0.000			0.000			0.000	

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

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

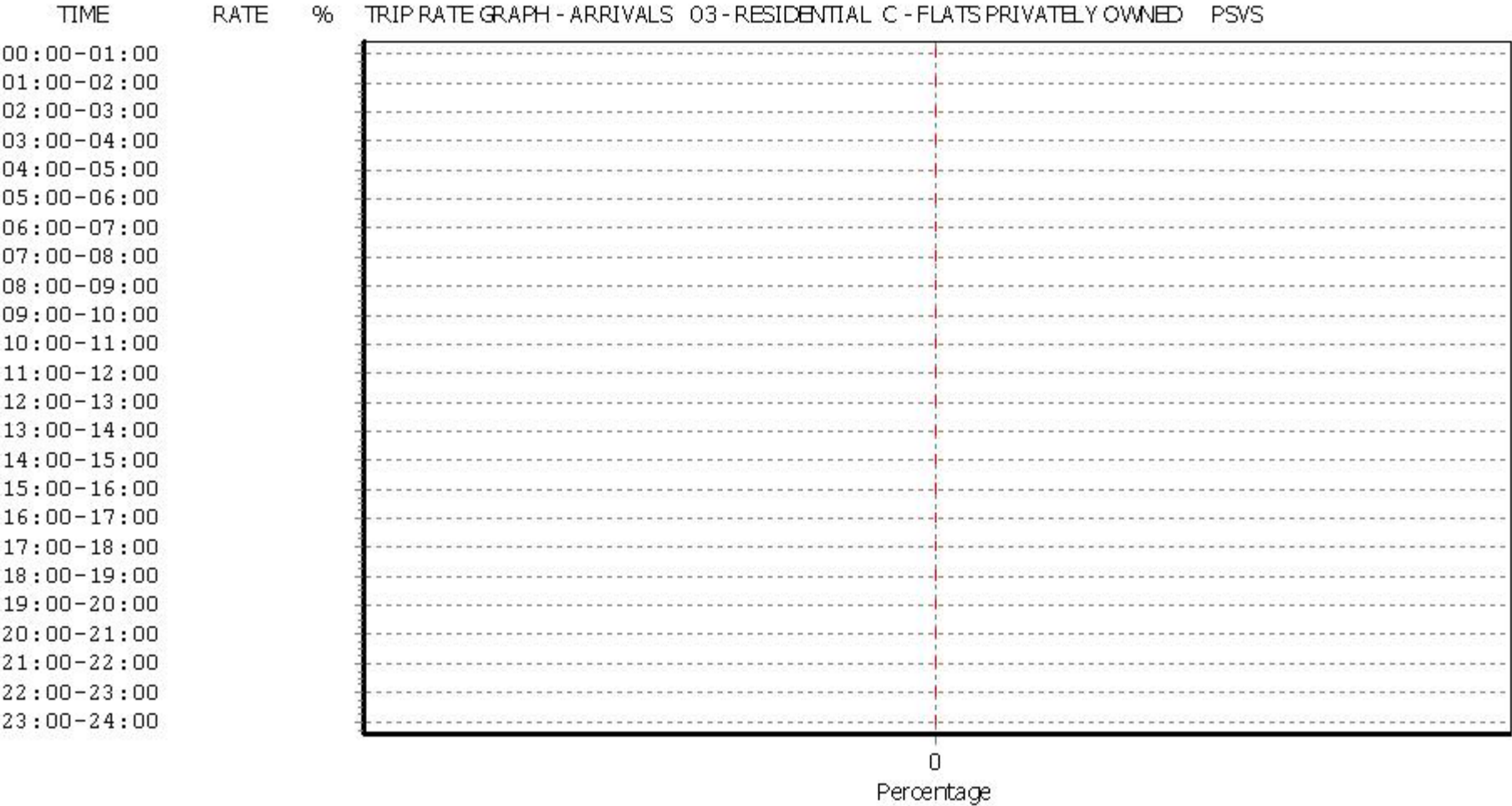
Parameter summary

Trip rate parameter range selected: 8 - 140 (units:)
 Survey date range: 01/01/05 - 18/10/11
 Number of weekdays (Monday-Friday): 15
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

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

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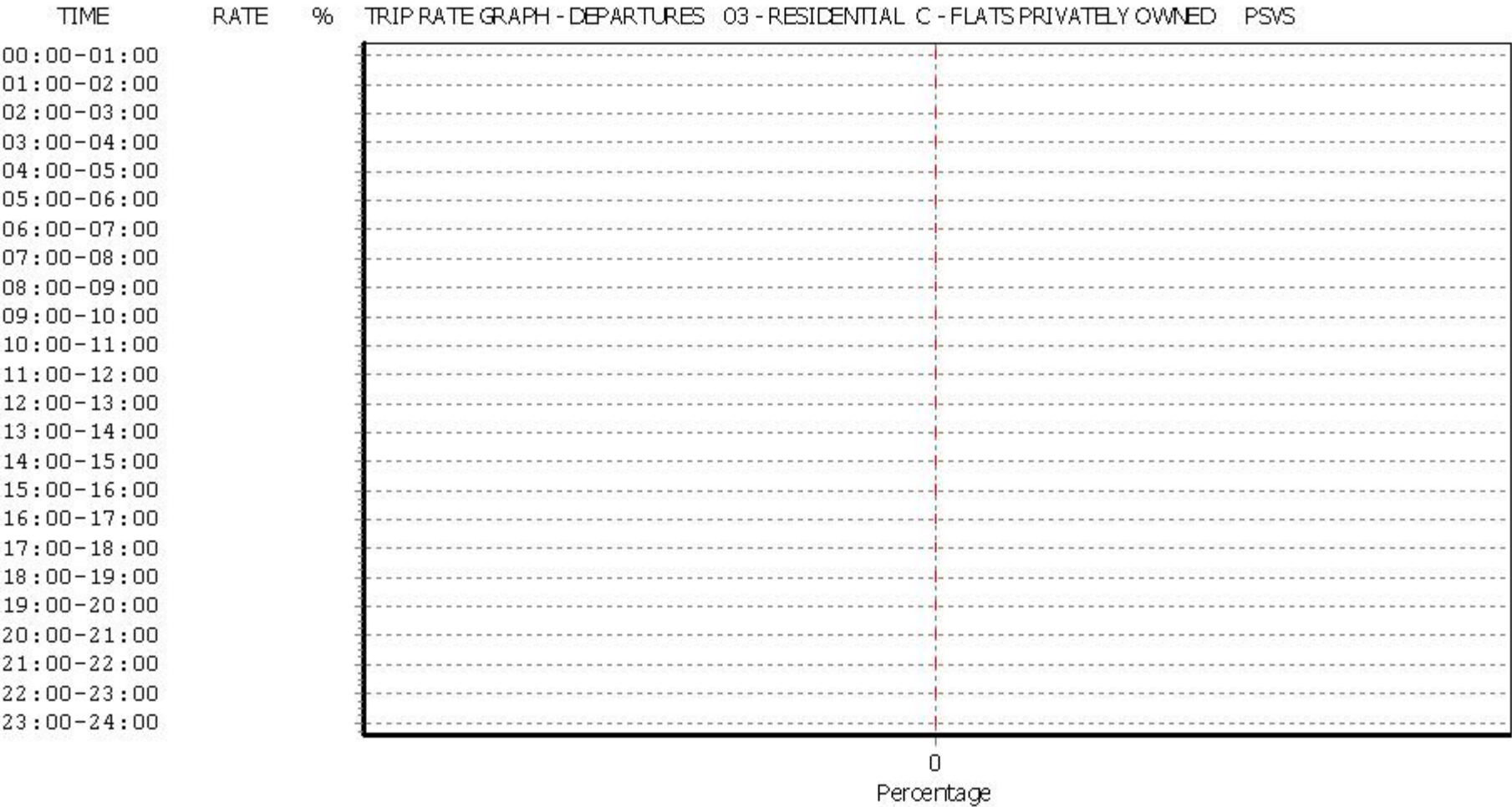
Licence No: 504507



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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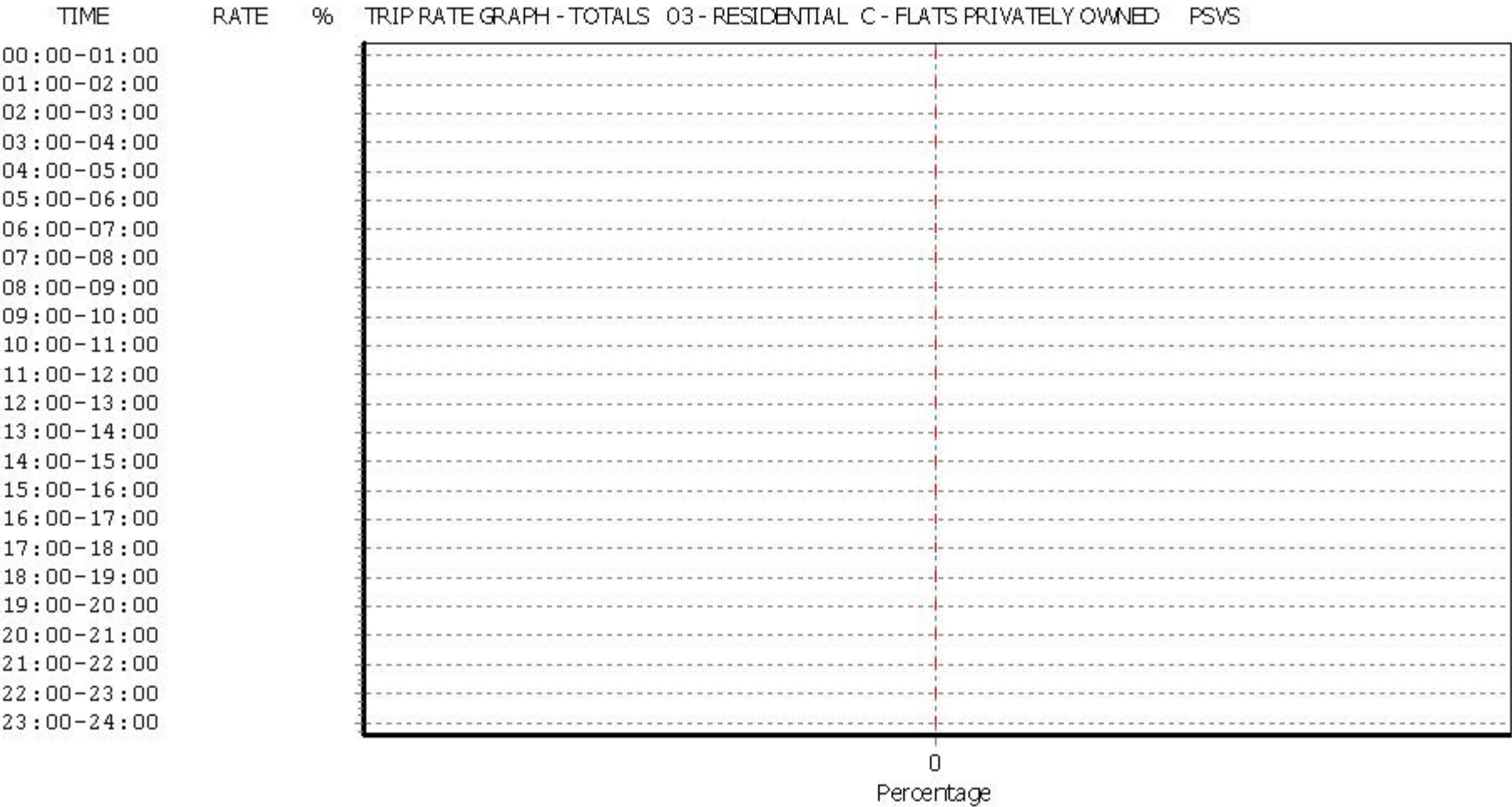
Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507



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Capita Carloli Square Newcastle upon Tyne

Licence No: 504507

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	48	0.003	15	48	0.008	15	48	0.011
08:00 - 09:00	15	48	0.001	15	48	0.004	15	48	0.005
09:00 - 10:00	15	48	0.001	15	48	0.004	15	48	0.005
10:00 - 11:00	15	48	0.004	15	48	0.004	15	48	0.008
11:00 - 12:00	15	48	0.001	15	48	0.007	15	48	0.008
12:00 - 13:00	15	48	0.004	15	48	0.003	15	48	0.007
13:00 - 14:00	15	48	0.006	15	48	0.007	15	48	0.013
14:00 - 15:00	15	48	0.006	15	48	0.008	15	48	0.014
15:00 - 16:00	15	48	0.007	15	48	0.006	15	48	0.013
16:00 - 17:00	15	48	0.011	15	48	0.007	15	48	0.018
17:00 - 18:00	15	48	0.000	15	48	0.004	15	48	0.004
18:00 - 19:00	15	48	0.006	15	48	0.000	15	48	0.006
19:00 - 20:00	2	15	0.000	2	15	0.000	2	15	0.000
20:00 - 21:00	2	15	0.000	2	15	0.000	2	15	0.000
21:00 - 22:00	2	15	0.000	2	15	0.000	2	15	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.050			0.062			0.112

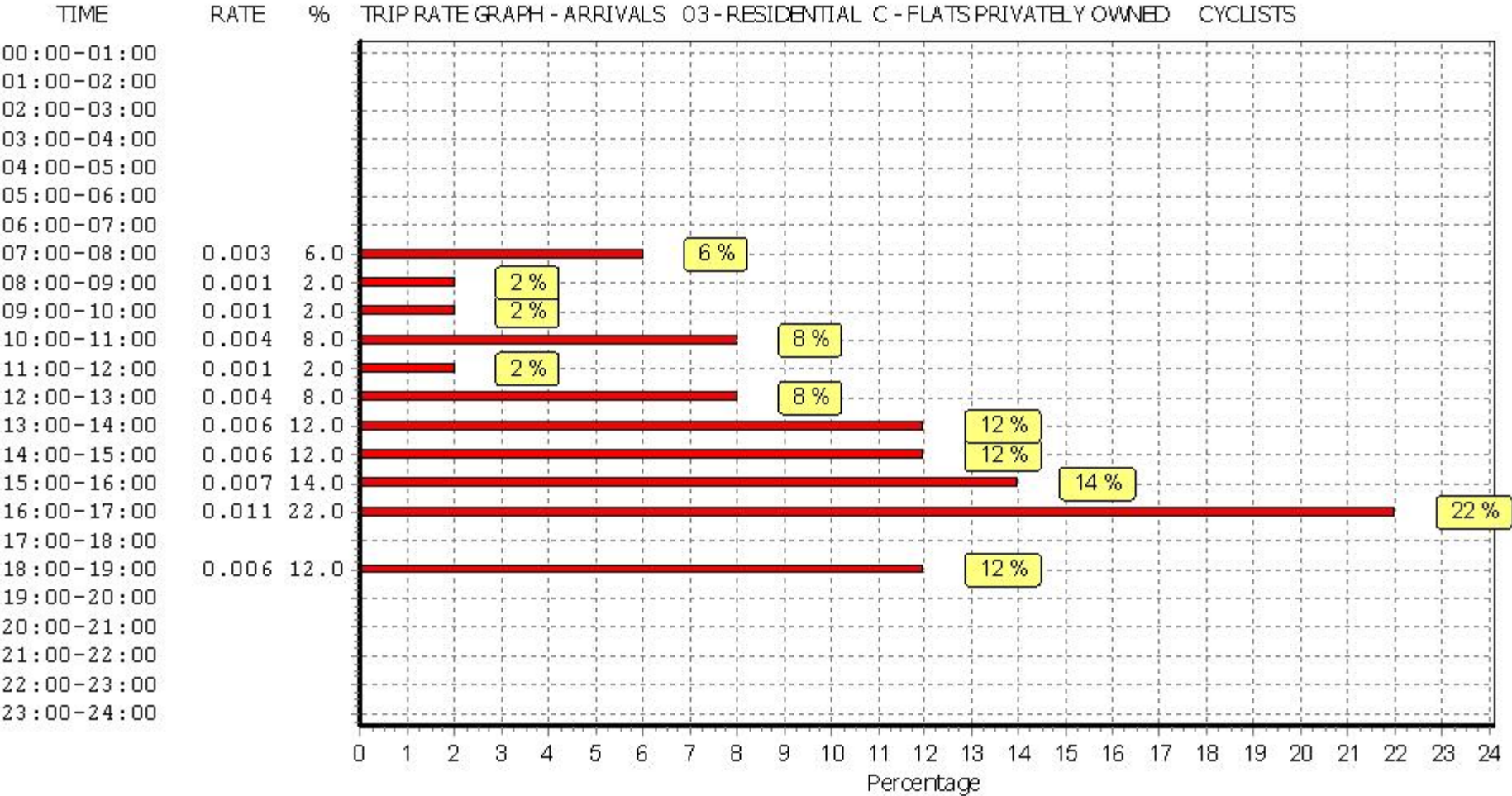
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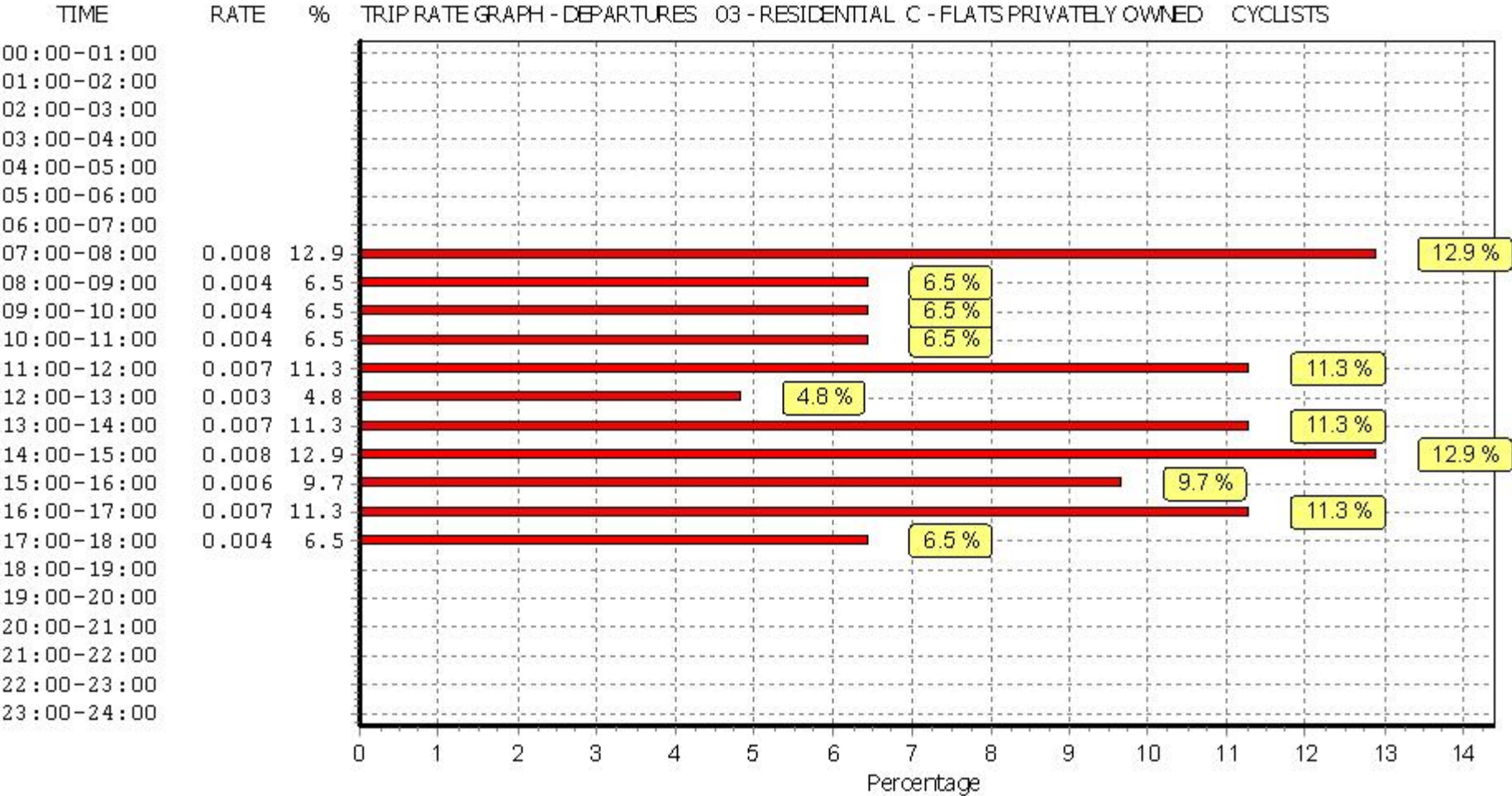
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 Number of Sundays: 0
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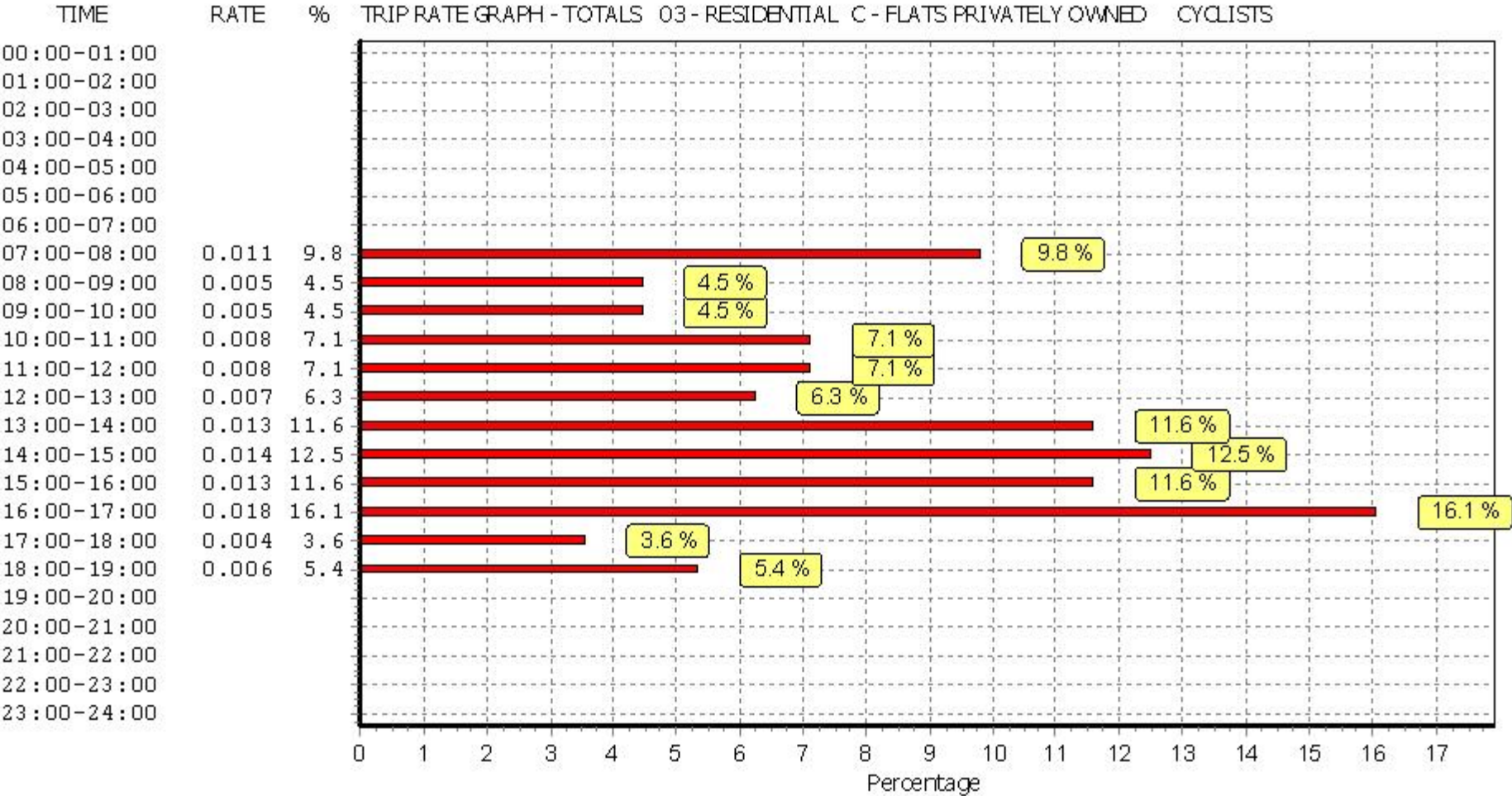
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Appendix D – Junctions 8 Output – Carrington Avenue/ Honeywell Lane

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

Filename: Carrington_Honeywell2.arc8

Path: C:\Users\elaine.provan\Desktop\Barnsley Residential\JUNCTIONS 8

Report generation date: 27/06/2014 10:50:21

Summary of junction performance

	AM							PM						
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	2014 Base													
Stream B-AC	0.03	6.39	0.03	A	6.22	A	900 %	0.03	6.43	0.03	A	6.25	A	893 %

Stream C-A	-	-	-	-			[]	-	-	-	-			[Stream B-AC]
Stream C-B	0.01	5.77	0.01	A				0.02	5.92	0.02	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2014 Base+Com													
Stream B-AC	0.12	7.14	0.11	A	6.94	A	346 % [Stream B-AC]	0.05	6.57	0.05	A	6.40	A	548 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.03	6.28	0.03	A				0.06	6.28	0.06	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2016 Base													
Stream B-AC	0.03	6.39	0.03	A	6.22	A	900 % []	0.03	6.44	0.03	A	6.25	A	876 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.01	5.77	0.01	A				0.02	5.93	0.02	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2016 Base+Com													
Stream B-AC	0.12	7.15	0.11	A	6.94	A	345 % [Stream B-AC]	0.05	6.58	0.05	A	6.41	A	550 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			

Stream C-B	0.03	6.28	0.03	A				0.06	6.28	0.06	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2016 Base+Com+Dev													
Stream B-AC	0.15	7.48	0.13	A	7.18	A	289 % [Stream B-AC]	0.08	6.93	0.07	A	6.69	A	404 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.05	6.38	0.04	A				0.08	6.47	0.07	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2024 Base													
Stream B-AC	0.03	6.43	0.03	A	6.26	A	900 % []	0.04	6.51	0.03	A	6.31	A	777 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.01	5.79	0.01	A				0.02	5.97	0.02	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2024 Base+Com													
Stream B-AC	0.13	7.18	0.11	A	6.98	A	334 % [Stream B-AC]	0.05	6.62	0.05	A	6.46	A	505 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.03	6.30	0.03	A				0.07	6.33	0.06	A			

Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	2024 Base+Com+Dev													
Stream B-AC	0.15	7.52	0.13	A	7.22	A	280 % [Stream B-AC]	0.08	7.07	0.08	A	6.78	A	367 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.05	6.40	0.04	A				0.08	6.52	0.08	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			

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

"D1 - 2014 Base, AM" model duration: 07:45 - 09:15
"D2 - 2014 Base, PM" model duration: 16:35 - 18:05
"D3 - 2016 Base, AM" model duration: 07:45 - 09:15
"D4 - 2016 Base, PM" model duration: 16:35 - 18:05
"D5 - 2024 Base, AM" model duration: 07:45 - 09:15
"D6 - 2024 Base, PM" model duration: 16:35 - 18:05
"D9 - 2014 Base+Com, AM" model duration: 07:45 - 09:15
"D10 - 2014 Base+Com, PM" model duration: 16:35 - 18:05
"D11 - 2016 Base+Com, AM" model duration: 07:45 - 09:15
"D12 - 2016 Base+Com, PM" model duration: 16:35 - 18:05
"D13 - 2024 Base+Com, AM" model duration: 07:45 - 09:15
"D14 - 2024 Base+Com, PM" model duration: 16:35 - 18:05
"D15 - 2016 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D16 - 2016 Base+Com+Dev, PM" model duration: 16:35 - 18:05
"D17 - 2024 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D18 - 2024 Base+Com+Dev, PM " model duration: 16:35 - 18:05

Run using Junctions 8.0.4.487 at 27/06/2014 10:50:21

File summary

Title	(untitled)
-------	------------

Location	
Site Number	
Date	11/06/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Elaine.Provan
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		✓	Delay	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+Com+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base+Com+Dev, PM	2024 Base+Com+Dev	PM		ONE HOUR	16:35	18:05	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Carrington Ave/Honeywell Lane	T-Junction	Two-way	A,B,C	6.78	A

Junction Network Options

Driving Side	Lighting	Network Residual Capacity (%)	First Arm Reaching Threshold
Left	Normal/unknown	367	Stream B-AC

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Honeywell Lane W		Major
B	B	Carrington Avenue		Minor
C	C	Honeywell Lane E		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	7.30		0.00		2.20	123.00		

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	2.90								✓		21	17

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	487.844	0.084	0.212	0.133	0.303
1	B-C	628.285	0.091	0.230	-	-
1	C-B	645.194	0.236	0.236	-	-

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	✓	184.00	100.000
B	ONE HOUR	✓	39.00	100.000
C	ONE HOUR	✓	226.00	100.000

Turning Proportions

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

From	To			
		A	B	C
	A	0.000	11.000	173.000
	B	5.000	0.000	34.000
	C	185.000	41.000	0.000

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

From	To			
		A	B	C
	A	0.00	0.06	0.94
	B	0.13	0.00	0.87
	C	0.82	0.18	0.00

Vehicle Mix

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

From	To			
		A	B	C

	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	0.0	0.0
	B	0.0	0.0
	C	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	7.07	0.08	A
C-A	-	-	-	-
C-B	0.08	6.52	0.08	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:35-16:50)

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	29.36	29.15	0.00	569.54	0.052	0.05	6.657	A
C-A	139.28	139.28	0.00	-	-	-	-	-
C-B	30.87	30.66	0.00	612.52	0.050	0.05	6.186	A
A-B	8.28	8.28	0.00	-	-	-	-	-
A-C	130.24	130.24	0.00	-	-	-	-	-

Main results: (16:50-17:05)

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	35.06	35.01	0.00	562.36	0.062	0.07	6.826	A
C-A	166.31	166.31	0.00	-	-	-	-	-
C-B	36.86	36.81	0.00	606.18	0.061	0.06	6.322	A
A-B	9.89	9.89	0.00	-	-	-	-	-

A-C	155.52	155.52	0.00	-	-	-	-	-
-----	--------	--------	------	---	---	---	---	---

Main results: (17:05-17:20)

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	42.94	42.87	0.00	552.38	0.078	0.08	7.065	A
C-A	203.69	203.69	0.00	-	-	-	-	-
C-B	45.14	45.07	0.00	597.41	0.076	0.08	6.517	A
A-B	12.11	12.11	0.00	-	-	-	-	-
A-C	190.48	190.48	0.00	-	-	-	-	-

Main results: (17:20-17:35)

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	42.94	42.94	0.00	552.38	0.078	0.08	7.065	A
C-A	203.69	203.69	0.00	-	-	-	-	-
C-B	45.14	45.14	0.00	597.41	0.076	0.08	6.517	A
A-B	12.11	12.11	0.00	-	-	-	-	-
A-C	190.48	190.48	0.00	-	-	-	-	-

Main results: (17:35-17:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
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B-AC	35.06	35.13	0.00	562.35	0.062	0.07	6.828	A
C-A	166.31	166.31	0.00	-	-	-	-	-
C-B	36.86	36.92	0.00	606.18	0.061	0.07	6.324	A
A-B	9.89	9.89	0.00	-	-	-	-	-
A-C	155.52	155.52	0.00	-	-	-	-	-

Main results: (17:50-18:05)

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	29.36	29.41	0.00	569.53	0.052	0.05	6.665	A
C-A	139.28	139.28	0.00	-	-	-	-	-
C-B	30.87	30.91	0.00	612.52	0.050	0.05	6.191	A
A-B	8.28	8.28	0.00	-	-	-	-	-
A-C	130.24	130.24	0.00	-	-	-	-	-

Appendix E – Junctions 8 Output – Cockerham Lane/ Honeywell Lane

Junctions 8 PICADY 8 - Priority Intersection Module Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2014													
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Filename: Cockerham_Honeywell2.arc8

Path: C:\Users\elaine.provan\Desktop\Barnsley Residential\JUNCTIONS 8

Report generation date: 27/06/2014 12:30:08

Summary of junction performance

	AM							PM						
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	A1 - 2014 Base													
Stream B-C	0.07	6.60	0.07	A	7.53	A	212 %	0.07	6.30	0.06	A	7.02	A	222 %

Stream B-A	0.14	8.99	0.12	A			[Stream B-A]	0.13	8.92	0.12	A			[Stream B-A]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.04	5.77	0.04	A				0.12	5.96	0.11	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2014 Base+Com													
Stream B-C	0.14	7.09	0.12	A	8.05	A	118 % [Stream B-A]	0.18	7.01	0.15	A	7.80	A	134 % [Stream B-A]
Stream B-A	0.22	10.62	0.18	B				0.24	10.07	0.20	B			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.23	7.00	0.19	A				0.12	6.00	0.11	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2016 Base													
Stream B-C	0.08	6.63	0.07	A	7.57	A	206 % [Stream B-A]	0.07	6.32	0.06	A	7.06	A	216 % [Stream B-A]
Stream B-A	0.14	9.05	0.13	A				0.14	8.98	0.12	A			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.04	5.78	0.04	A				0.12	5.98	0.11	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			

	A1 - 2016 Base+Com													
Stream B-C	0.14	7.13	0.12	A	8.10	A	115 % [Stream B-A]	0.18	7.05	0.15	A	7.84	A	130 % [Stream B-A]
Stream B-A	0.22	10.69	0.18	B				0.25	10.14	0.20	B			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.23	7.03	0.19	A				0.12	6.02	0.11	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2016 Base+Com+Dev													
Stream B-C	0.18	7.40	0.15	A	8.31	A	102 % [Stream B-A]	0.21	7.29	0.17	A	8.08	A	115 % [Stream B-A]
Stream B-A	0.26	11.09	0.20	B				0.28	10.48	0.22	B			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.23	7.04	0.19	A				0.12	6.07	0.11	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2024 Base													
Stream B-C	0.09	6.80	0.08	A	7.80	A	177 % [Stream B-A]	0.08	6.45	0.07	A	7.25	A	185 % [Stream B-A]
Stream B-A	0.16	9.39	0.14	A				0.16	9.32	0.14	A			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.05	5.88	0.04	A				0.14	6.11	0.12	A			

Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2024 Base+Com													
Stream B-C	0.15	7.33	0.13	A	8.38	A	101 % [Stream B-A]	0.19	7.23	0.16	A	8.09	A	113 % [Stream B-A]
Stream B-A	0.25	11.15	0.20	B				0.28	10.58	0.22	B			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.24	7.18	0.20	A				0.14	6.15	0.12	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2024 Base+Com+Dev													
Stream B-C	0.19	7.64	0.16	A	8.62	A	89 % [Stream B-A]	0.23	7.48	0.18	A	8.32	A	101 % [Stream B-A]
Stream B-A	0.28	11.59	0.22	B				0.30	10.92	0.23	B			
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.25	7.20	0.20	A				0.14	6.20	0.12	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			

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

"D1 - 2014 Base, AM" model duration: 07:45 - 09:15
"D2 - 2014 Base, PM" model duration: 16:35 - 18:05
"D3 - 2016 Base, AM" model duration: 07:45 - 09:15
"D4 - 2016 Base, PM" model duration: 16:35 - 18:05

"D5 - 2024 Base, AM" model duration: 07:45 - 09:15
"D6 - 2024 Base, PM" model duration: 16:35 - 18:05
"D9 - 2014 Base+Com, AM" model duration: 07:45 - 09:15
"D10 - 2014 Base+Com, PM" model duration: 16:35 - 18:05
"D11 - 2016 Base+Com, AM" model duration: 07:45 - 09:15
"D12 - 2016 Base+Com, PM" model duration: 16:35 - 18:05
"D13 - 2024 Base+Com, AM" model duration: 07:45 - 09:15
"D14 - 2024 Base+Com, PM" model duration: 16:35 - 18:05
"D15 - 2016 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D16 - 2016 Base+Com+Dev, PM" model duration: 16:35 - 18:05
"D17 - 2024 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D18 - 2024 Base+Com+Dev, PM " model duration: 16:35 - 18:05

Run using Junctions 8.0.4.487 at 27/06/2014 12:30:08

File summary

Title	(untitled)
Location	
Site Number	
Date	11/06/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Elaine.Provan
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		✓	Delay	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

(Default Analysis Set) - 2024 Base+Com+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base+Com+Dev, PM	2024 Base+Com+Dev	PM		ONE HOUR	16:35	18:05	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Cockerham Lane/ Honeywell Lane	T-Junction	Two-way	A,B,C	8.32	A

Junction Network Options

Driving Side	Lighting	Network Residual Capacity (%)	First Arm Reaching Threshold
Left	Normal/unknown	101	Stream B-A

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Cockerham Lane N		Major
B	B	Honeywell Lane		Minor
C	C	Cockerham Lane 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	7.60		0.00		2.20	250.00		

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

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane plus flare				10.00	4.60	4.00	4.00	4.00	✓	1.00	24	16

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	523.267	0.089	0.224	0.141	0.320
1	B-C	677.943	0.097	0.244	-	-
1	C-B	718.741	0.259	0.259	-	-

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	✓	202.00	100.000
B	ONE HOUR	✓	191.00	100.000
C	ONE HOUR	✓	228.00	100.000

Turning Proportions

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

From	To			
	A	B	C	
	A	0.000	74.000	128.000
	B	92.000	0.000	99.000
	C	155.000	73.000	0.000

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

From	To		
	A	B	C
	A	0.00	0.37

	B	0.48	0.00	0.52
	C	0.68	0.32	0.00

Vehicle Mix

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

		To		
From		A	B	C
	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	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.18	7.48	0.23	A
B-A	0.23	10.92	0.30	B
C-A	-	-	-	-
C-B	0.12	6.20	0.14	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:35-16:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	74.53	73.99	0.00	622.58	0.120	0.13	6.557	A
B-A	69.26	68.56	0.00	461.67	0.150	0.17	9.144	A
C-A	116.69	116.69	0.00	-	-	-	-	-
C-B	54.96	54.61	0.00	679.34	0.081	0.09	5.760	A

A-B	55.71	55.71	0.00	-	-	-	-	-
A-C	96.37	96.37	0.00	-	-	-	-	-

Main results: (16:50-17:05)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	89.00	88.86	0.00	609.61	0.146	0.17	6.911	A
B-A	82.71	82.51	0.00	449.06	0.184	0.22	9.816	A
C-A	139.34	139.34	0.00	-	-	-	-	-
C-B	65.63	65.55	0.00	671.69	0.098	0.11	5.939	A
A-B	66.52	66.52	0.00	-	-	-	-	-
A-C	115.07	115.07	0.00	-	-	-	-	-

Main results: (17:05-17:20)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	109.00	108.78	0.00	590.31	0.185	0.22	7.472	A
B-A	101.29	100.98	0.00	431.11	0.235	0.30	10.893	B
C-A	170.66	170.66	0.00	-	-	-	-	-
C-B	80.37	80.26	0.00	661.12	0.122	0.14	6.195	A
A-B	81.48	81.48	0.00	-	-	-	-	-

A-C	140.93	140.93	0.00	-	-	-	-	-
-----	--------	--------	------	---	---	---	---	---

Main results: (17:20-17:35)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	109.00	109.00	0.00	590.09	0.185	0.23	7.482	A
B-A	101.29	101.28	0.00	431.07	0.235	0.30	10.915	B
C-A	170.66	170.66	0.00	-	-	-	-	-
C-B	80.37	80.37	0.00	661.12	0.122	0.14	6.198	A
A-B	81.48	81.48	0.00	-	-	-	-	-
A-C	140.93	140.93	0.00	-	-	-	-	-

Main results: (17:35-17:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	89.00	89.21	0.00	609.28	0.146	0.17	6.924	A
B-A	82.71	83.01	0.00	449.02	0.184	0.23	9.843	A
C-A	139.34	139.34	0.00	-	-	-	-	-
C-B	65.63	65.74	0.00	671.69	0.098	0.11	5.943	A
A-B	66.52	66.52	0.00	-	-	-	-	-
A-C	115.07	115.07	0.00	-	-	-	-	-

Main results: (17:50-18:05)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	74.53	74.67	0.00	622.05	0.120	0.14	6.580	A
B-A	69.26	69.46	0.00	461.60	0.150	0.18	9.184	A
C-A	116.69	116.69	0.00	-	-	-	-	-
C-B	54.96	55.04	0.00	679.34	0.081	0.09	5.768	A
A-B	55.71	55.71	0.00	-	-	-	-	-
A-C	96.37	96.37	0.00	-	-	-	-	-

Appendix F – Junctions 8 Output – Cockerham Lane/ Cavendish Road

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]

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Filename: Cockerham_Cavendish2.arc8

Path: C:\Users\elaine.provan\Desktop\Barnsley Residential\JUNCTIONS 8

Report generation date: 27/06/2014 12:42:44

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2014 Base							
Stream B-ACD	0.02	7.45	0.02	A	0.01	7.63	0.01	A
Stream A-BCD	0.12	5.11	0.08	A	0.06	5.39	0.04	A

Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	0.53	10.64	0.35	B	0.76	11.98	0.43	B
Stream C-ABD	0.00	0.00	0.00	A	0.01	5.05	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2014 Base+Com							
Stream B-ACD	0.02	7.54	0.02	A	0.01	7.71	0.01	A
Stream A-BCD	0.12	5.13	0.08	A	0.06	5.45	0.04	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	0.97	14.60	0.50	B	0.88	13.13	0.47	B
Stream C-ABD	0.00	0.00	0.00	A	0.01	4.95	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2016 Base							
Stream B-ACD	0.02	7.47	0.02	A	0.01	7.66	0.01	A
Stream A-BCD	0.12	5.11	0.08	A	0.06	5.39	0.04	A
Stream A-B	-	-	-	-	-	-	-	-

Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	0.55	10.78	0.36	B	0.79	12.21	0.44	B
Stream C-ABD	0.00	0.00	0.00	A	0.01	5.05	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2016 Base+Com							
Stream B-ACD	0.02	7.56	0.02	A	0.01	7.77	0.01	A
Stream A-BCD	0.12	5.14	0.08	A	0.06	5.45	0.04	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	1.00	14.85	0.50	B	0.91	13.39	0.48	B
Stream C-ABD	0.00	0.00	0.00	A	0.01	4.94	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2016 Base+Com+Dev							
Stream B-ACD	0.02	7.59	0.02	A	0.01	7.81	0.01	A
Stream A-BCD	0.12	5.15	0.08	A	0.06	5.47	0.04	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Stream D-ABC	1.06	15.46	0.52	C	1.09	14.97	0.53	B
Stream C-ABD	0.00	0.00	0.00	A	0.01	4.90	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2024 Base							
Stream B-ACD	0.02	7.65	0.02	A	0.01	7.84	0.01	A
Stream A-BCD	0.14	5.10	0.09	A	0.07	5.41	0.05	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	0.66	11.69	0.40	B	0.98	13.67	0.50	B
Stream C-ABD	0.00	0.00	0.00	A	0.01	5.00	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2024 Base+Com							
Stream B-ACD	0.02	7.72	0.02	A	0.01	7.90	0.01	A
Stream A-BCD	0.14	5.12	0.09	A	0.07	5.48	0.05	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	1.19	16.47	0.55	C	1.14	15.20	0.54	C

Stream C-ABD	0.00	0.00	0.00	A	0.01	4.90	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
	A1 - 2024 Base+Com+Dev							
Stream B-ACD	0.02	7.76	0.02	A	0.01	7.97	0.01	A
Stream A-BCD	0.14	5.13	0.09	A	0.07	5.49	0.05	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-ABC	1.26	17.13	0.56	C	1.37	17.19	0.58	C
Stream C-ABD	0.00	0.00	0.00	A	0.01	4.86	0.01	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-

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

"D1 - 2014 Base, AM" model duration: 07:45 - 09:15
 "D2 - 2014 Base, PM" model duration: 16:35 - 18:05
 "D3 - 2016 Base, AM" model duration: 07:45 - 09:15
 "D4 - 2016 Base, PM" model duration: 16:35 - 18:05
 "D5 - 2024 Base, AM" model duration: 07:45 - 09:15
 "D6 - 2024 Base, PM" model duration: 16:35 - 18:05
 "D9 - 2014 Base+Com, AM" model duration: 07:45 - 09:15
 "D10 - 2014 Base+Com, PM" model duration: 16:35 - 18:05
 "D11 - 2016 Base+Com, AM" model duration: 07:45 - 09:15
 "D12 - 2016 Base+Com, PM" model duration: 16:35 - 18:05
 "D13 - 2024 Base+Com, AM" model duration: 07:45 - 09:15
 "D14 - 2024 Base+Com, PM" model duration: 16:35 - 18:05
 "D15 - 2016 Base+Com+Dev, AM" model duration: 07:45 - 09:15
 "D16 - 2016 Base+Com+Dev, PM" model duration: 16:35 - 18:05
 "D17 - 2024 Base+Com+Dev, AM" model duration: 07:45 - 09:15
 "D18 - 2024 Base+Com+Dev, PM" model duration: 16:35 - 18:05

File summary

Title	(untitled)
Location	
Site Number	
Date	11/06/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Elaine.Provan
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
---	-----	-----	-----	---------	---	------	--------

(Default Analysis Set) - 2024 Base+Com+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base+Com+Dev, PM	2024 Base+Com+Dev	PM		ONE HOUR	16:35	18:05	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Cockerham Lane/Cavendish Rd	Crossroads	Two-way	A,B,C,D	15.55	C

Junction Network Options

Driving Side	Lighting
--------------	----------

Left	Normal/unknown
------	----------------

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Cockerham Lane N		Major
B	B	Cavendish Road E		Minor
C	C	Cockerham Lane S		Major
D	D	Cavendish Road W		Minor

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)
A	6.75		0.00		2.20	190.00	✓	0.00
C	6.75		0.00		2.20	135.00	✓	0.00

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

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	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	3.90								✓		12	12

D	One lane	3.20														12	12
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Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	683.994	-	-	-	-	-	-	0.256	0.366	0.256	-	-	-
1	B-A	531.387	0.094	0.237	0.237	-	-	-	0.149	0.338	-	0.237	0.237	0.118
1	B-C	688.392	0.102	0.258	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	531.387	0.094	0.237	0.237	-	-	-	0.149	0.338	0.149	-	-	-
1	B-D, offside lane	531.387	0.094	0.237	0.237	-	-	-	0.149	0.338	0.149	-	-	-
1	C-B	652.143	0.244	0.244	0.349	-	-	-	-	-	-	-	-	-
1	D-A	644.136	-	-	-	-	-	-	0.241	-	0.096	-	-	-
1	D-B, nearside lane	497.225	0.139	0.139	0.316	-	-	-	0.221	0.221	0.088	-	-	-
1	D-B, offside lane	497.225	0.139	0.139	0.316	-	-	-	0.221	0.221	0.088	-	-	-
1	D-C	497.225	-	0.139	0.316	0.111	0.221	0.221	0.221	0.221	0.088	-	-	-

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	✓	136.00	100.000
B	ONE HOUR	✓	5.00	100.000
C	ONE HOUR	✓	255.00	100.000
D	ONE HOUR	✓	266.00	100.000

Turning Proportions

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

	To			
From	A	B	C	D

	A	0.000	1.000	109.000	26.000
	B	2.000	0.000	1.000	2.000
	C	219.000	6.000	0.000	30.000
	D	162.000	11.000	93.000	0.000

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

		To			
		A	B	C	D
From	A	0.00	0.01	0.80	0.19
	B	0.40	0.00	0.20	0.40
	C	0.86	0.02	0.00	0.12
	D	0.61	0.04	0.35	0.00

Vehicle Mix

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

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

	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

From		To			
		A	B	C	D
	A	0.0	0.0	0.0	0.0
	B	0.0	0.0	0.0	0.0
	C	0.0	0.0	0.0	0.0
	D	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.01	7.97	0.01	A
A-BCD	0.05	5.49	0.07	A
A-B	-	-	-	-
A-C	-	-	-	-
D-ABC	0.58	17.19	1.37	C

C-ABD	0.01	4.86	0.01	A
C-D	-	-	-	-
C-A	-	-	-	-

Main Results for each time segment

Main results: (16:35-16:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	3.76	3.73	0.00	489.78	0.008	0.01	7.406	A
A-BCD	22.20	22.04	0.00	687.80	0.032	0.04	5.405	A
A-B	0.73	0.73	0.00	-	-	-	-	-
A-C	79.46	79.46	0.00	-	-	-	-	-
D-ABC	200.26	197.85	0.00	526.05	0.381	0.60	10.891	B
C-ABD	5.95	5.92	0.00	746.24	0.008	0.01	4.862	A
C-D	22.41	22.41	0.00	-	-	-	-	-
C-A	163.61	163.61	0.00	-	-	-	-	-

Main results: (16:50-17:05)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	4.49	4.49	0.00	476.11	0.009	0.01	7.632	A
A-BCD	27.22	27.18	0.00	689.02	0.040	0.05	5.439	A
A-B	0.86	0.86	0.00	-	-	-	-	-
A-C	94.17	94.17	0.00	-	-	-	-	-
D-ABC	239.13	238.17	0.00	515.93	0.463	0.84	12.913	B
C-ABD	7.49	7.48	0.00	764.54	0.010	0.01	4.754	A
C-D	26.72	26.72	0.00	-	-	-	-	-
C-A	195.03	195.03	0.00	-	-	-	-	-

Main results: (17:05-17:20)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	5.51	5.49	0.00	457.22	0.012	0.01	7.969	A
A-BCD	34.57	34.50	0.00	690.94	0.050	0.07	5.484	A
A-B	1.05	1.05	0.00	-	-	-	-	-
A-C	114.12	114.12	0.00	-	-	-	-	-
D-ABC	292.87	290.87	0.00	501.92	0.584	1.34	16.890	C
C-ABD	9.83	9.82	0.00	789.78	0.012	0.01	4.615	A

C-D	32.64	32.64	0.00	-	-	-	-	-
C-A	238.29	238.29	0.00	-	-	-	-	-

Main results: (17:20-17:35)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	5.51	5.50	0.00	457.00	0.012	0.01	7.973	A
A-BCD	34.58	34.58	0.00	690.95	0.050	0.07	5.487	A
A-B	1.05	1.05	0.00	-	-	-	-	-
A-C	114.11	114.11	0.00	-	-	-	-	-
D-ABC	292.87	292.76	0.00	501.91	0.584	1.37	17.187	C
C-ABD	9.83	9.83	0.00	789.77	0.012	0.01	4.615	A
C-D	32.64	32.64	0.00	-	-	-	-	-
C-A	238.28	238.28	0.00	-	-	-	-	-

Main results: (17:35-17:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	4.49	4.50	0.00	475.77	0.009	0.01	7.638	A
A-BCD	27.24	27.30	0.00	689.03	0.040	0.05	5.441	A
A-B	0.86	0.86	0.00	-	-	-	-	-

A-C	94.16	94.16	0.00	-	-	-	-	-
D-ABC	239.13	241.07	0.00	515.91	0.464	0.89	13.191	B
C-ABD	7.50	7.51	0.00	764.52	0.010	0.01	4.755	A
C-D	26.72	26.72	0.00	-	-	-	-	-
C-A	195.03	195.03	0.00	-	-	-	-	-

Main results: (17:50-18:05)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	3.76	3.77	0.00	489.39	0.008	0.01	7.415	A
A-BCD	22.23	22.27	0.00	687.81	0.032	0.04	5.409	A
A-B	0.73	0.73	0.00	-	-	-	-	-
A-C	79.43	79.43	0.00	-	-	-	-	-
D-ABC	200.26	201.30	0.00	526.01	0.381	0.63	11.122	B
C-ABD	5.96	5.97	0.00	746.18	0.008	0.01	4.863	A
C-D	22.41	22.41	0.00	-	-	-	-	-
C-A	163.60	163.60	0.00	-	-	-	-	-

Appendix G – Junctions 8 Output – A635 Huddersfield Road/ Cavendish Road/ Bond Road

Junctions 8 PICADY 8 - Priority Intersection Module Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2014														
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Filename: Huddersfield_Cavendish2.arc8

Path: C:\Users\elaine.provan\Desktop\Barnsley Residential\JUNCTIONS 8

Report generation date: 27/06/2014 12:59:05

Summary of junction performance

	AM							PM						
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	A1 - 2014 Base													
Stream B-ACD	0.28	12.60	0.22	B	9.90	A	49 %	0.19	14.50	0.16	B	7.99	A	37 %

Stream A-BCD	0.02	3.61	0.01	A			[Stream B-ACD]	0.04	3.82	0.03	A			[Stream B-ACD]
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.06	9.93	0.05	A				0.12	12.87	0.11	B			
Stream C-ABD	0.06	5.22	0.04	A				0.35	4.55	0.14	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2014 Base+Com													
Stream B-ACD	0.31	13.29	0.24	B	10.36	B	44 % [Stream B-ACD]	0.33	22.09	0.25	C	9.09	A	12 % [Stream A-BCD]
Stream A-BCD	0.02	3.54	0.01	A				0.16	3.13	0.08	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.06	10.10	0.06	B				0.16	17.05	0.14	C			
Stream C-ABD	0.06	5.28	0.04	A				0.78	5.26	0.21	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2016 Base													
Stream B-ACD	0.29	12.91	0.22	B	10.06	B	47 %	0.20	14.96	0.17	B	8.08	A	35 %
Stream A-BCD	0.02	3.59	0.01	A			[Stream B-ACD]	0.04	3.81	0.03	A			[Stream B-ACD]

Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.06	10.05	0.06	B				0.13	13.21	0.12	B			
Stream C-ABD	0.06	5.21	0.04	A				0.37	4.54	0.14	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2016 Base+Com													
Stream B-ACD	0.32	13.54	0.24	B	10.52	B	42 % [Stream B-ACD]	0.24	15.94	0.20	C	8.49	A	31 % [Stream B-ACD]
Stream A-BCD	0.02	3.52	0.01	A				0.04	3.79	0.03	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.06	10.22	0.06	B				0.13	13.22	0.11	B			
Stream C-ABD	0.06	5.27	0.04	A				0.38	4.55	0.14	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2016 Base+Com+Dev													
Stream B-ACD	0.34	13.88	0.25	B	10.78	B	40 % [Stream B-ACD]	0.27	16.62	0.22	C	8.73	A	28 % [Stream B-ACD]
Stream A-BCD	0.02	3.51	0.01	A				0.05	3.76	0.03	A			
Stream A-B	-	-	-	-				-	-	-	-			

Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.06	10.24	0.06	B				0.13	13.31	0.12	B			
Stream C-ABD	0.06	5.27	0.04	A				0.39	4.56	0.15	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2024 Base													
Stream B-ACD	0.37	15.01	0.27	C	11.13	B	33 % [Stream B-ACD]	0.27	18.15	0.21	C	8.60	A	21 % [Stream B-ACD]
Stream A-BCD	0.02	3.50	0.02	A				0.06	3.72	0.04	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.07	10.87	0.07	B				0.17	15.32	0.15	C			
Stream C-ABD	0.08	5.16	0.05	A				0.55	4.47	0.18	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2024 Base+Com													
Stream B-ACD	0.41	15.94	0.29	C	11.64	B	29 % [Stream B-ACD]	0.20	11.80	0.17	B	8.88	A	67 % [Stream B-ACD]
Stream A-BCD	0.02	3.44	0.02	A				0.03	3.38	0.02	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			

Stream D-ABC	0.06	11.00	0.06	B				0.09	8.36	0.08	A			
Stream C-ABD	0.09	5.23	0.06	A				0.05	8.32	0.04	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			
	A1 - 2024 Base+Com+Dev													
Stream B-ACD	0.44	16.44	0.31	C	11.99	B	27 % [Stream B-ACD]	0.36	20.32	0.27	C	9.32	A	16 % [Stream B-ACD]
Stream A-BCD	0.02	3.43	0.02	A				0.06	3.68	0.04	A			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
Stream D-ABC	0.07	11.09	0.07	B				0.15	15.21	0.13	C			
Stream C-ABD	0.09	5.24	0.06	A				0.56	4.49	0.18	A			
Stream C-D	-	-	-	-				-	-	-	-			
Stream C-A	-	-	-	-				-	-	-	-			

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

"D1 - 2014 Base, AM" model duration: 07:45 - 09:15
 "D2 - 2014 Base, PM" model duration: 16:35 - 18:05
 "D3 - 2016 Base, AM" model duration: 07:45 - 09:15
 "D4 - 2016 Base, PM" model duration: 16:35 - 18:05
 "D5 - 2024 Base, AM" model duration: 07:45 - 09:15
 "D6 - 2024 Base, PM" model duration: 16:35 - 18:05
 "D9 - 2014 Base+Com, AM" model duration: 07:45 - 09:15
 "D10 - 2014 Base+Com, PM" model duration: 16:35 - 18:05
 "D11 - 2016 Base+Com, AM" model duration: 07:45 - 09:15
 "D12 - 2016 Base+Com, PM" model duration: 16:35 - 18:05
 "D13 - 2024 Base+Com, AM" model duration: 07:45 - 09:15
 "D14 - 2024 Base+Com, PM" model duration: 16:35 - 18:05
 "D15 - 2016 Base+Com+Dev, AM" model duration: 07:45 - 09:15
 "D16 - 2016 Base+Com+Dev, PM" model duration: 16:35 - 18:05
 "D17 - 2024 Base+Com+Dev, AM" model duration: 07:45 - 09:15
 "D18 - 2024 Base+Com+Dev, PM" model duration: 16:35 - 18:05

File summary

Title	(untitled)
Location	
Site Number	
Date	11/06/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Elaine.Provan
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		✓	Delay	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

(Default Analysis Set) - 2024 Base+Com+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base+Com+Dev, PM	2024 Base+Com+Dev	PM		ONE HOUR	16:35	18:05	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Crossroads	Two-way	A,B,C,D	9.32	A

Junction Network Options

Driving Side	Lighting	Network Residual Capacity (%)	First Arm Reaching Threshold
Left	Normal/unknown	16	Stream B-ACD

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	A635 Huddersfield Road N		Major
B	B	Cavendish Road		Minor
C	C	A635 Huddersfield Road S		Major
D	D	Bond Road		Minor

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)
A	7.60		0.00		2.20	246.00	✓	0.00
C	7.60		0.00		2.20	118.00	✓	0.00

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

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	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	3.40								✓		61	114
D	One lane	2.90								✓		60	72

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	716.424	-	-	-	-	-	-	0.258	0.369	0.258	-	-	-
1	B-A	576.441	0.098	0.247	0.247	-	-	-	0.155	0.353	-	0.247	0.247	0.123
1	B-C	723.564	0.103	0.261	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	576.441	0.098	0.247	0.247	-	-	-	0.155	0.353	0.155	-	-	-
1	B-D, offside lane	576.441	0.098	0.247	0.247	-	-	-	0.155	0.353	0.155	-	-	-
1	C-B	642.298	0.232	0.232	0.331	-	-	-	-	-	-	-	-	-
1	D-A	662.562	-	-	-	-	-	-	0.239	-	0.094	-	-	-
1	D-B, nearside lane	527.508	0.142	0.142	0.323	-	-	-	0.226	0.226	0.089	-	-	-
1	D-B, offside lane	527.508	0.142	0.142	0.323	-	-	-	0.226	0.226	0.089	-	-	-
1	D-C	527.508	-	0.142	0.323	0.113	0.226	0.226	0.226	0.226	0.089	-	-	-

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	✓	942.00	100.000
B	ONE HOUR	✓	58.00	100.000
C	ONE HOUR	✓	770.00	100.000
D	ONE HOUR	✓	32.00	100.000

Turning Proportions

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

	To
--	----

From		A	B	C	D
	A	0.000	217.000	715.000	10.000
	B	27.000	0.000	12.000	19.000
	C	720.000	37.000	0.000	13.000
	D	15.000	9.000	8.000	0.000

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

	To				
From		A	B	C	D
	A	0.00	0.23	0.76	0.01
	B	0.47	0.00	0.21	0.33
	C	0.94	0.05	0.00	0.02
	D	0.47	0.28	0.25	0.00

Vehicle Mix

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

From	To			
	A	B	C	D
A	1.000	1.000	1.000	1.000

	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

	To				
	A	B	C	D	
From	A	0.0	0.0	0.0	0.0
	B	0.0	0.0	0.0	0.0
	C	0.0	0.0	0.0	0.0
	D	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.27	20.32	0.36	C
A-BCD	0.04	3.68	0.06	A
A-B	-	-	-	-
A-C	-	-	-	-

D-ABC	0.13	15.21	0.15	C
C-ABD	0.18	4.49	0.56	A
C-D	-	-	-	-
C-A	-	-	-	-

Main Results for each time segment

Main results: (16:35-16:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	43.67	43.12	0.00	359.28	0.122	0.14	11.367	B
A-BCD	18.53	18.44	0.00	998.08	0.019	0.02	3.674	A
A-B	160.81	160.81	0.00	-	-	-	-	-
A-C	529.85	529.85	0.00	-	-	-	-	-
D-ABC	24.09	23.82	0.00	379.52	0.063	0.07	10.114	B
C-ABD	71.49	70.88	0.00	874.67	0.082	0.15	4.478	A
C-D	9.01	9.01	0.00	-	-	-	-	-

C-A	499.20	499.20	0.00	-	-	-	-	-
-----	--------	--------	------	---	---	---	---	---

Main results: (16:50-17:05)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	52.14	51.89	0.00	310.28	0.168	0.20	13.916	B
A-BCD	25.91	25.88	0.00	1047.28	0.025	0.03	3.523	A
A-B	191.14	191.14	0.00	-	-	-	-	-
A-C	629.79	629.79	0.00	-	-	-	-	-
D-ABC	28.77	28.67	0.00	335.98	0.086	0.09	11.710	B
C-ABD	108.81	108.36	0.00	935.82	0.116	0.27	4.353	A
C-D	10.35	10.35	0.00	-	-	-	-	-
C-A	573.05	573.05	0.00	-	-	-	-	-

Main results: (17:05-17:20)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	63.86	63.25	0.00	241.17	0.265	0.35	20.166	C
A-BCD	49.77	49.65	0.00	1171.62	0.042	0.06	3.208	A
A-B	229.90	229.90	0.00	-	-	-	-	-
A-C	757.49	757.49	0.00	-	-	-	-	-

D-ABC	35.23	35.02	0.00	272.27	0.129	0.15	15.159	C
C-ABD	180.36	179.22	0.00	1014.55	0.178	0.55	4.318	A
C-D	11.84	11.84	0.00	-	-	-	-	-
C-A	655.59	655.59	0.00	-	-	-	-	-

Main results: (17:20-17:35)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	63.86	63.84	0.00	240.90	0.265	0.36	20.325	C
A-BCD	49.84	49.84	0.00	1171.53	0.043	0.06	3.209	A
A-B	229.88	229.88	0.00	-	-	-	-	-
A-C	757.44	757.44	0.00	-	-	-	-	-
D-ABC	35.23	35.23	0.00	271.92	0.130	0.15	15.209	C
C-ABD	181.05	181.01	0.00	1015.21	0.178	0.56	4.329	A
C-D	11.82	11.82	0.00	-	-	-	-	-
C-A	654.91	654.91	0.00	-	-	-	-	-

Main results: (17:35-17:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	52.14	52.74	0.00	309.91	0.168	0.21	14.029	B

A-BCD	25.96	26.08	0.00	1047.08	0.025	0.03	3.525	A
A-B	191.13	191.13	0.00	-	-	-	-	-
A-C	629.75	629.75	0.00	-	-	-	-	-
D-ABC	28.77	28.98	0.00	335.51	0.086	0.10	11.751	B
C-ABD	109.49	110.62	0.00	936.77	0.117	0.28	4.370	A
C-D	10.33	10.33	0.00	-	-	-	-	-
C-A	572.39	572.39	0.00	-	-	-	-	-

Main results: (17:50-18:05)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-ACD	43.67	43.93	0.00	358.98	0.122	0.14	11.435	B
A-BCD	18.60	18.63	0.00	997.91	0.019	0.02	3.678	A
A-B	160.79	160.79	0.00	-	-	-	-	-
A-C	529.80	529.80	0.00	-	-	-	-	-
D-ABC	24.09	24.20	0.00	379.19	0.064	0.07	10.145	B
C-ABD	72.03	72.50	0.00	875.17	0.082	0.16	4.490	A
C-D	9.00	9.00	0.00	-	-	-	-	-
C-A	498.66	498.66	0.00	-	-	-	-	-

Appendix H – Junctions 8 Output – A635 Huddersfield Road/ Cockerham Lane

Junctions 8 PICADY 8 - Priority Intersection Module Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2014														
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Filename: Huddersfield_Cockerham2.arc8

Path: C:\Users\elaine.provan\Desktop\Barnsley Residential\JUNCTIONS 8

Report generation date: 27/06/2014 13:09:05

Summary of junction performance

	AM							PM						
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	A1 - 2014 Base													
Stream B-AC	0.85	14.39	0.46	B	12.53	B	39 %	0.63	12.14	0.39	B	11.43	B	58 %

Stream C-A	-	-	-	-			[Stream B-AC]	-	-	-	-			[Stream B-AC]
Stream C-B	0.35	9.54	0.26	A				0.57	10.73	0.36	B			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2014 Base+Com													
Stream B-AC	1.10	16.39	0.53	C	14.63	B	28 % [Stream B-AC]	1.04	15.72	0.51	C	14.00	B	32 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.80	12.74	0.45	B				0.70	12.04	0.42	B			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2016 Base													
Stream B-AC	0.90	14.82	0.48	B	12.86	B	36 % [Stream B-AC]	0.66	12.43	0.40	B	11.69	B	55 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.37	9.70	0.27	A				0.59	10.96	0.37	B			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2016 Base+Com													
Stream B-AC	1.13	16.65	0.53	C	14.89	B	28 % [Stream B-AC]	1.03	15.20	0.51	C	13.56	B	35 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			

Stream C-B	0.83	13.01	0.46	B				0.70	11.70	0.41	B			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2016 Base+Com+Dev													
Stream B-AC	1.36	18.58	0.58	C	16.13	C	21 % [Stream B-AC]	1.17	16.34	0.54	C	14.72	B	29 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.88	13.38	0.47	B				0.88	13.00	0.47	B			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2024 Base													
Stream B-AC	1.19	17.86	0.55	C	15.11	C	23 % [Stream B-AC]	0.84	14.26	0.46	B	13.34	B	40 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.44	10.67	0.31	B				0.74	12.44	0.43	B			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2024 Base+Com													
Stream B-AC	1.25	18.47	0.56	C	16.63	C	21 % [Stream B-AC]	1.22	16.67	0.55	C	14.73	B	28 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	0.99	14.78	0.50	B				0.82	12.55	0.45	B			

Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			
	A1 - 2024 Base+Com+Dev													
Stream B-AC	1.85	23.47	0.66	C	19.66	C	11 % [Stream B-AC]	1.51	19.62	0.61	C	17.42	C	18 % [Stream B-AC]
Stream C-A	-	-	-	-				-	-	-	-			
Stream C-B	1.06	15.26	0.52	C				1.11	15.10	0.53	C			
Stream A-B	-	-	-	-				-	-	-	-			
Stream A-C	-	-	-	-				-	-	-	-			

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

"D1 - 2014 Base, AM" model duration: 07:45 - 09:15
"D2 - 2014 Base, PM" model duration: 16:35 - 18:05
"D3 - 2016 Base, AM" model duration: 07:45 - 09:15
"D4 - 2016 Base, PM" model duration: 16:35 - 18:05
"D5 - 2024 Base, AM" model duration: 07:45 - 09:15
"D6 - 2024 Base, PM" model duration: 16:35 - 18:05
"D9 - 2014 Base+Com, AM" model duration: 07:45 - 09:15
"D10 - 2014 Base+Com, PM" model duration: 16:35 - 18:05
"D11 - 2016 Base+Com, AM" model duration: 07:45 - 09:15
"D12 - 2016 Base+Com, PM" model duration: 16:35 - 18:05
"D13 - 2024 Base+Com, AM" model duration: 07:45 - 09:15
"D14 - 2024 Base+Com, PM" model duration: 16:35 - 18:05
"D15 - 2016 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D16 - 2016 Base+Com+Dev, PM" model duration: 16:35 - 18:05
"D17 - 2024 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D18 - 2024 Base+Com+Dev, PM " model duration: 16:35 - 18:05

Run using Junctions 8.0.4.487 at 27/06/2014 13:09:04

File summary

Title	(untitled)
-------	------------

Location	
Site Number	
Date	11/06/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Elaine.Provan
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		✓	Delay	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

(Default Analysis Set) - 2024 Base+Com+Dev, PM

Data Errors and Warnings
No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base+Com+Dev, PM	2024 Base+Com+Dev	PM		ONE HOUR	16:35	18:05	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	17.42	C

Junction Network Options

Driving Side	Lighting	Network Residual Capacity (%)	First Arm Reaching Threshold
Left	Normal/unknown	18	Stream B-AC

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	A635 Huddersfield Road N		Major
B	B	Cockerham Lane		Minor
C	C	A635 Huddersfield 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	9.00		0.00	✓	2.20	200.00		

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	2.50								✓		150	69

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	533.553	0.084	0.214	0.134	0.305
1	B-C	633.967	0.084	0.214	-	-
1	C-B	689.785	0.232	0.232	-	-

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

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

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

Traffic 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	✓	715.00	100.000
B	ONE HOUR	✓	258.00	100.000
C	ONE HOUR	✓	1013.00	100.000

Turning Proportions

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

From	To			
		A	B	C
	A	0.000	8.000	707.000
	B	0.000	0.000	258.000
	C	769.000	244.000	0.000

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

From	To			
		A	B	C
	A	0.00	0.01	0.99
	B	0.00	0.00	1.00
	C	0.76	0.24	0.00

Vehicle Mix

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

From	To		
	A	B	C

	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	0.0	0.0
	B	0.0	0.0
	C	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.61	19.62	1.51	C
C-A	-	-	-	-
C-B	0.53	15.10	1.11	C
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:35-16:50)

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	194.24	191.89	0.00	519.78	0.374	0.59	10.904	B
C-A	578.94	578.94	0.00	-	-	-	-	-
C-B	183.70	181.80	0.00	564.70	0.325	0.47	9.357	A
A-B	6.02	6.02	0.00	-	-	-	-	-
A-C	532.27	532.27	0.00	-	-	-	-	-

Main results: (16:50-17:05)

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	231.94	230.88	0.00	497.62	0.466	0.85	13.440	B
C-A	691.32	691.32	0.00	-	-	-	-	-
C-B	219.35	218.57	0.00	540.42	0.406	0.67	11.157	B
A-B	7.19	7.19	0.00	-	-	-	-	-

A-C	635.58	635.58	0.00	-	-	-	-	-
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Main results: (17:05-17:20)

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	284.06	281.56	0.00	466.97	0.608	1.48	19.150	C
C-A	846.68	846.68	0.00	-	-	-	-	-
C-B	268.65	266.96	0.00	506.85	0.530	1.09	14.899	B
A-B	8.81	8.81	0.00	-	-	-	-	-
A-C	778.42	778.42	0.00	-	-	-	-	-

Main results: (17:20-17:35)

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	284.06	283.92	0.00	466.97	0.608	1.51	19.623	C
C-A	846.68	846.68	0.00	-	-	-	-	-
C-B	268.65	268.58	0.00	506.85	0.530	1.11	15.097	C
A-B	8.81	8.81	0.00	-	-	-	-	-
A-C	778.42	778.42	0.00	-	-	-	-	-

Main results: (17:35-17:50)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
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B-AC	231.94	234.40	0.00	497.62	0.466	0.90	13.803	B
C-A	691.32	691.32	0.00	-	-	-	-	-
C-B	219.35	221.00	0.00	540.42	0.406	0.70	11.327	B
A-B	7.19	7.19	0.00	-	-	-	-	-
A-C	635.58	635.58	0.00	-	-	-	-	-

Main results: (17:50-18:05)

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	194.24	195.39	0.00	519.78	0.374	0.61	11.138	B
C-A	578.94	578.94	0.00	-	-	-	-	-
C-B	183.70	184.53	0.00	564.70	0.325	0.49	9.489	A
A-B	6.02	6.02	0.00	-	-	-	-	-
A-C	532.27	532.27	0.00	-	-	-	-	-

Appendix I – Junctions 8 Output – Carrington Avenue Access

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: Site Access2.arc8

Path: C:\Users\elaine.provan\Desktop\Barnsley Residential\JUNCTIONS 8

Report generation date: 27/06/2014 14:14:10

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2016 Base + Com + Dev							
Stream B-AC	0.07	8.75	0.07	A	0.04	8.43	0.04	A

Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.00	5.77	0.00	A	0.01	5.97	0.01	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	A1 - 2024 Base+Com+Dev							
Stream B-AC	0.07	8.50	0.06	A	0.04	8.65	0.04	A
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.00	5.79	0.00	A	0.01	6.00	0.01	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

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

"D1 - 2016 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base+Com+Dev, PM" model duration: 16:35 - 18:05
"D3 - 2024 Base+Com+Dev, AM" model duration: 07:45 - 09:15
"D4 - 2024 Base+Com+Dev, PM " model duration: 16:35 - 18:05

Run using Junctions 8.0.4.487 at 27/06/2014 14:14:10

File summary

Title	(untitled)
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Location	
Site Number	
Date	24/06/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Elaine.Provan
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

(Default Analysis Set) - 2024 Base+Com+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2024 Base+Com+Dev, PM	2024 Base+Com+Dev	PM		ONE HOUR	16:35	18:05	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	A,B,C	8.18	A

Junction Network Options

Driving Side	Lighting
--------------	----------

Left	Normal/unknown
------	----------------

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Honeywell Lane (West)		Major
B	B	Site Access		Minor
C	C	Honeywell Lane (East)		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	7.40		0.00		2.20	125.00		

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	2.75								✓		12	11

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	474.931	0.081	0.205	0.129	0.293
1	B-C	615.256	0.089	0.224	-	-
1	C-B	646.352	0.235	0.235	-	-

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	✓	168.00	100.000
B	ONE HOUR	✓	14.00	100.000
C	ONE HOUR	✓	113.00	100.000

Turning Proportions

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

	To			
		A	B	C
	A	0.000	23.000	145.000
	B	13.000	0.000	1.000
	C	110.000	3.000	0.000

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

	To			
		A	B	C
	A	0.00	0.14	0.86
	B	0.93	0.00	0.07
	C	0.97	0.03	0.00

Vehicle Mix

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

From	To			
		A	B	C
	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)

From	To			
		A	B	C
	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS

B-AC	0.04	8.65	0.04	A
C-A	-	-	-	-
C-B	0.01	6.00	0.01	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:35-16:50)

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	10.54	10.44	0.00	447.87	0.024	0.02	8.228	A
C-A	82.81	82.81	0.00	-	-	-	-	-
C-B	2.26	2.24	0.00	616.61	0.004	0.00	5.859	A
A-B	17.32	17.32	0.00	-	-	-	-	-
A-C	109.16	109.16	0.00	-	-	-	-	-

Main results: (16:50-17:05)

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	12.59	12.56	0.00	441.08	0.029	0.03	8.401	A
C-A	98.89	98.89	0.00	-	-	-	-	-
C-B	2.70	2.69	0.00	610.83	0.004	0.00	5.919	A
A-B	20.68	20.68	0.00	-	-	-	-	-
A-C	130.35	130.35	0.00	-	-	-	-	-

Main results: (17:05-17:20)

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	15.41	15.38	0.00	431.69	0.036	0.04	8.647	A
C-A	121.11	121.11	0.00	-	-	-	-	-
C-B	3.30	3.30	0.00	602.85	0.005	0.01	6.003	A
A-B	25.32	25.32	0.00	-	-	-	-	-
A-C	159.65	159.65	0.00	-	-	-	-	-

Main results: (17:20-17:35)

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	15.41	15.41	0.00	431.69	0.036	0.04	8.647	A
C-A	121.11	121.11	0.00	-	-	-	-	-

C-B	3.30	3.30	0.00	602.85	0.005	0.01	6.003	A
A-B	25.32	25.32	0.00	-	-	-	-	-
A-C	159.65	159.65	0.00	-	-	-	-	-

Main results: (17:35-17:50)

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	12.59	12.61	0.00	441.08	0.029	0.03	8.402	A
C-A	98.89	98.89	0.00	-	-	-	-	-
C-B	2.70	2.70	0.00	610.83	0.004	0.00	5.921	A
A-B	20.68	20.68	0.00	-	-	-	-	-
A-C	130.35	130.35	0.00	-	-	-	-	-

Main results: (17:50-18:05)

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	10.54	10.56	0.00	447.86	0.024	0.02	8.234	A
C-A	82.81	82.81	0.00	-	-	-	-	-
C-B	2.26	2.26	0.00	616.61	0.004	0.00	5.859	A
A-B	17.32	17.32	0.00	-	-	-	-	-
A-C	109.16	109.16	0.00	-	-	-	-	-

