Former Wombwell School Site

Transport Assessment

Premier Construction

Project number: 60593320

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Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	30.11.18	Draft	SM	Stephen Moss	Associate Director
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1. Introduction

1.1 Site Background

AECOM have been appointed by Premier Construction to prepare a Transport Assessment (TA) in support of a proposed development site in the Wombwell area of Barnsley. The proposals consist of the construction of 229 privately owned residential dwellings and a new 1.5 form primary school (Circa 315 pupils) on the land to the north of Gyspy Lane, Wombwell. The proposed site is shown in Figure 1. The traffic modelling has been undertaken based on an elevated number of dwellings (250), which adds to the robustness of the assessment.

The site lies within site AC40, as identified within the emerging Barnsley Local Plan, which is currently at submission stage and due for adoption. This document will then replace the current Local Development Framework (LDF). The report also provides support for the development of the Former Wombwell High School Masterplan. The new site as shown within the Masterplan site area is provided in **Appendix A**.

Within this report, the impact of the development traffic on the local highway network has been assessed, with detailed modelling of key junctions undertaken. The availability of sustainable access options including public transport, cycle routes and parking have also been reviewed.

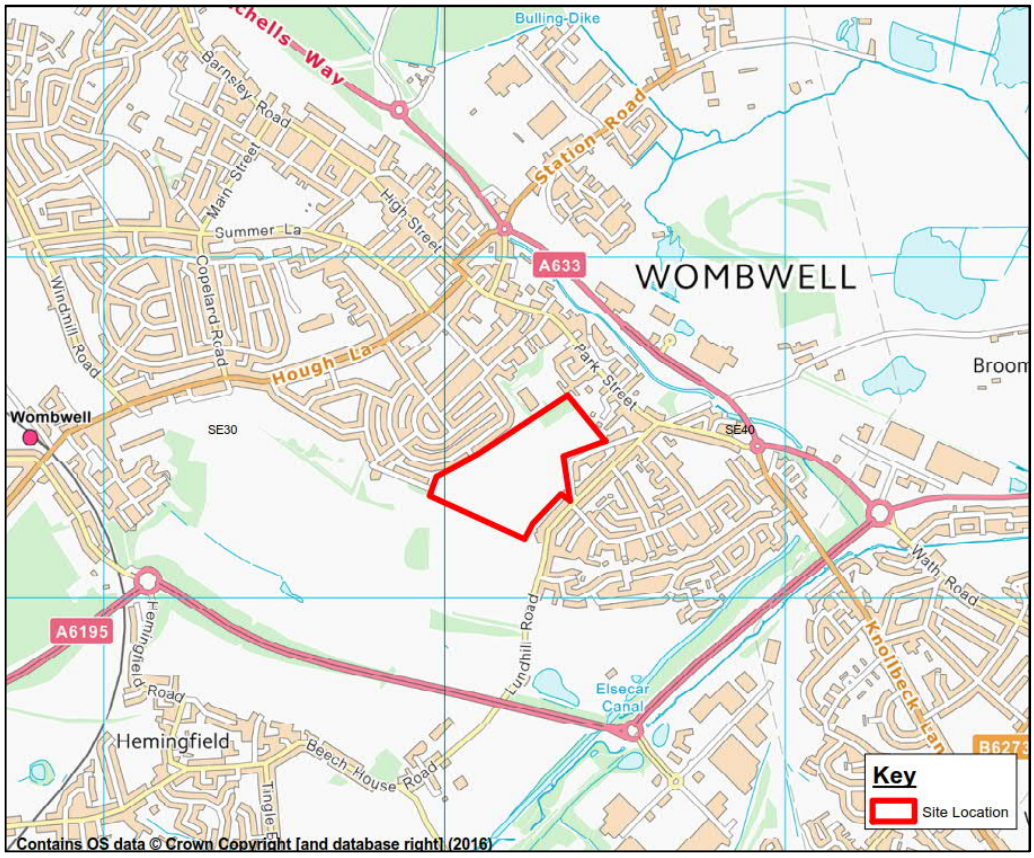
The TA also takes into account local and national planning policy with regards to sustainability etc. Importantly the National Planning Policy Framework sets out the Government's aims for achieving sustainable development. As part of the Framework the Government sets out a presumption in favour of sustainable development. Importantly, National Planning Policy Framework, page 10 states that:

'Development should only be prevented or refused on transport grounds where the residual impact of development are severe.'

As such, this TA seeks to demonstrate the sustainability of the site and its viability in terms of transport.

This TA takes information from a TA report previously produced by AECOM in 2017, which focused on the development site.

Figure 1: Site Location



1.2 Report Structure

Following this introductory chapter, this TA includes the following:

- Section 2 outlines relevant national and local policy documents;
- Section 3 summarises existing conditions at the proposed development site;
- Section 4 details the accessibility of the development site, identifying sustainable transport modes;
- Section 5 presents the trip generation and distribution patterns of the proposed site;
- Section 6 summarises the operational assessments; and
- Section 7 provides a summary and conclusion.

The following appendices are located at the rear of this TA:

- Appendix A - Drawings and Figures;
- Appendix B - Accident Data;
- Appendix C - TRICS Outputs;
- Appendix D - Traffic Flow Diagrams;
- Appendix E - Modelling Results.

2. Transport Policy

2.1 Introduction

This section of the TA sets out the policy context within which the proposal has been developed. National transport and planning policy seeks to support the promotion of accessibility by all travel modes, particularly those sustainable modes. The following documents have been reviewed:

- The Transport White Paper (2011);
- National Planning Policy Framework (2018);
- Barnsley Local Plan – Transport;
- Barnsley Core Strategy;
- Barnsley Sustainable Community Strategy; and
- South Yorkshire Third Local Transport Plan.

2.2 The Transport White Paper

The January 2011 Transport White Paper: "Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen" sets out the Government's vision for a sustainable local transport system. The White Paper acknowledges that transport provision is essential for economic growth if the Government is to improve the economic deficit, which it is currently facing. The Paper also recognises however, that the current levels of carbon emissions from transport cannot be sustained if the nation is to meet its national commitments on climate change mitigation as well as creating a safer and cleaner environment in which to live. With this in mind, the Government highlights sustainable transport solutions as a means by which the economy can grow, whilst also bringing about a positive impact on the environment.

Within the Paper, sustainable transport considers more than just public transport, walking and cycling schemes and acknowledges that it is not feasible for some trips to be undertaken by these modes. There is therefore a realisation that the car will continue to be an important mode of transport and a focus should be given to making car travel greener through electric and other low emission vehicles.

The proposed development is considered to accord with the aspirations of the White Paper as it is supplied by a range of sustainable transport links, including public transport, public footpaths and cycle routes.

2.3 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) was originally adopted in 2012 which superseded the Planning Policy Guidance Notes. The NPPF was subsequently updated in 2018 and considers three dimensions to sustainable development:

- Economic – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation;
- Social – supporting strong, vibrant and healthy communities by providing the supply of housing required to meet the needs of present and future generations; and
- Environmental – contributing to protecting and enhancing our natural, built and historic environment.

Chapter 9 'Promoting Sustainable Transport', states that all developments that generate significant amounts of movement should be supported by a Transport Statement or TA, to consider:

- The opportunities for sustainable transport modes depending on the nature and size of the site, to reduce the need for major infrastructure;
- Ensure a safe and sustainable access to the site can be achieved for all users; and
- Improvements are undertaken within the transport network that cost effectively limits the significant impacts of the development.

Importantly, the NPPF states that developments should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.
Paragraph 104 highlights the importance of balancing land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.

It is stated within Chapter 8: Promoting Healthy Communities that the government attaches great importance to ensuring that a sufficient choice of school places is available to meets the needs of existing and new communities. Local planning authorities should take a proactive, positive and collaborative approach to meeting this requirement, and to development that will widen choice in education. They should:

- Give great weight to the need to create, expand or alter schools; and
- Work with schools promoters to identify and resolve key planning issues before applications are submitted.

2.4 Local Policy

2.4.1 Barnsley Local Plan –Transport

The Barnsley Local Plan is the first of the planning documents of the Barnsley Local Plan (BLP) The purpose of the BLP is to support the next phases of the city's ongoing regeneration by providing the statutory framework for guiding the spatial pattern of change, and the quality of the environment and forms of design.

The aim of the transport policy is to:

- Reduce transport related green gas house emissions;
- Support sustainable development and the location for growth set out in the core strategy;
- Address cross boundary transport issues;
- Reduce the need to travel, particularly by car;
- Improve direct public transport links with significant places of businesses and employment outside the borough;
- Increasing the feeling of safety and security whilst using public transport, walking and cycling;
- Ensuring that sustainable and inclusive travel is embedded within new development;
- Reducing the impact of necessary road travel on the environment, the health and safety of the community and the local economy; and
- Reducing the number of people, particularly children, that are killed on the roads.

There is also the desire to influence travel behaviour, in particular by:

- Encouraging greater take up of walking, cycling and public transport;
- Encourage a healthier lifestyle to help reduce the high levels of obesity and heart disease; and
- Manage car parking provision.

Barnsley's commitment to sustainable travel can be summarised by policy T3 – 'New Development and Sustainable Travel', this can be summarised as follows:

- New development will be expected to: be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists;
- Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people, and should not provide more than the maximum number of car parking spaces set out in the relevant Supplementary Planning Document;
- Provide a transport statement or assessment in line with the thresholds and guidance set out in Department for Transport 'Guidance on Transport Assessments' as published March 2007 (or any subsequent version); and

- Provide a travel plan statement or a travel plan in accordance with the thresholds and guidance set out in Department for Transport 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process' as published April 2009 (or any subsequent version).

Where levels of accessibility through public transport, cycling and walking are unacceptable, Barnsley expect developers to take action or make financial contributions. If it is not possible or appropriate for the minimum amount of parking for cycle's, motorbikes, scooters and mopeds to be met on site, the developer must provide or contribute towards offsite parking, or improve other forms of travel.

A fundamental goal of Barnsley's Local Plan is to provide for sustainable development and it includes a spatial strategy that reduces the need to travel by promoting growth in sustainable accessible locations. This policy is about ensuring that sustainable and inclusive travel is embedded within any new development and providing the opportunities for people to change their travel behaviour where travel is necessary. It recognises that the availability of car parking is a key factor affecting whether people choose to travel by car or use a smarter alternative and aims to limit car parking associated with new development whilst providing appropriate facilities for cycles, motorbikes, scooters, mopeds and disabled people. This is balanced with the considerations of highway safety, living conditions and the economy, and the need to provide enough parking so people can use other forms of transport than the car.

2.4.2 Barnsley Core Strategy

The government introduced a new planning system through the Planning and Compulsory Purchase Act 2004 that aims to respond more quickly to changing circumstances. As a result of these reforms Development Plans are being replaced by Local Development Frameworks. The Barnsley Local Development Framework (LDF) follows national and former regional guidance but reflects local views and the situation in Barnsley. It establishes policies and proposals for the development and use of land up to the year 2026. It will be used when considering planning applications and to co-ordinate investment decisions that affect the towns, villages and countryside of Barnsley.

There are a number of key principles that have guided the preparation of Barnsley Core Strategy:

- Regard to and alignment with national, regional and local strategies and One Barnsley's Sustainable Community Strategy;
- Regard to national planning policy;
- The impact of the spatial strategy and policies on sustainability and climate change issues;
- Deliverability to ensure proposals are achievable within the plan period (to 2026);
- Infrastructure requirements to ensure that proposals and policies are adequately supported by existing or planned infrastructure; and
- Regard to the comments received through the process of adopting the Core Strategy.

Because access and sustainable travel are such important elements of achieving sustainable development, Barnsley's Transport Strategy is part of the LDF. The key principles and strategic policies are included in this chapter and are embedded throughout the Core Strategy. There are no sites allocated in the Core Strategy, however any specific site proposals would be evidence based and shown on the Proposals Maps which will accompany the Development Sites and Places DPD.

As explained in the Climate Change Section and Policy CSP1, reducing the impact of climate change is a key objective of the Core Strategy. In response to this challenge, the policies included in this Transport Strategy aim to contribute to the reduction in transportation related greenhouse gas emissions.

The overall aim for sustainable travel is firstly to reduce the need to travel, but where travel is necessary to make it easy for people to move between home, work, health, community and leisure facilities by walking, cycling, or where necessary using public transport. We want to reduce the need for individuals with a car to use it for these journeys. We also need to ensure that everybody has a real alternative option, other than the car.

Achieving these aims will need us to change our travel behaviour, but by encouraging these 'smarter choices' and efficient movement, this strategy will also play a part in improving local prosperity, health,

quality of life and reduce the impact of climate change. It aims to minimise the impact of travel on the environment and will help to reduce Barnsley's carbon emissions.

In addressing these aims for accessible, inclusive and sustainable travel, Barnsley's Transport Strategy is consistent with the national goals set out in 'Delivering a Sustainable Transport System' (Department for Transport, November 2008) and Local Transport Plan guidance.

2.4.3 Barnsley Sustainable Community Strategy

Published by Barnsley's Local Strategic Partnership, the Community Strategy sets out a strategic vision for the borough with Barnsley as a '21st century market town' at its heart. Transport plays a role in that strategy by supporting:

- The economy by improving access to jobs and services;
- Inclusion through the support of community regeneration and quality of life; and
- The environment by reducing carbon footprint.

The strategy aims to reduce congestion and car dependency, whilst increasing walking, cycling and public transport use through the use of park and ride initiatives and travel planning.

2.4.4 South Yorkshire Third Local Transport Plan (LTP) (2011 – 2026)

The Local Transport Plan and the 'Sheffield City Region Transport Strategy' (SCRT) defines the priorities for the transport system for the next 15 years. It includes overarching aims as follows:

- Supporting economic growth;
- Enhancing social inclusion and health;
- Reducing emissions; and
- Maximising safety.

To achieve the overarching aims, the document identifies strategic policies. The most relevant policies for this development are:

- To focus new development along key public transport corridors and in places adjacent to existing services;
- To develop public transport that connects people to jobs and training in both urban and rural areas;
- To develop user-friendly public transport;
- To ensure public transport is accessible to all;
- To reduce carbon emissions;
- To encourage active travel and develop high quality cycling and walking networks;
- To provide information and travel advice for the users of all modes of transport, so that they can make informed travel choices; and
- To encourage safer road use and reduce casualties on the roads.

A series of actions are also mentioned which will support the policies outlined above:

- New links to major regeneration areas will be created to facilitate employment opportunities;
- More travel options will be given to people using a range of public transport enhancements (additional train, tram vehicles, etc.);
- Pedestrian-friendly streets and footpaths will be designed as well as a continuous cycling network. The council will also support car clubs and car sharing schemes, making information about these travel options easy to find.
- The approach to traffic management in urban centres will acknowledge the importance of parking provision to local businesses, and the vulnerability of local economies to restricted access by car.

2.5 Summary

The overriding theme of the NPPF is that developments should be accessible by sustainable means of transport as well as to all members of the local community.

It is considered that the development site is located in an area with very good existing public transport links, walking and cycling infrastructure, which will support sustainable travel and reduce the reliance on private vehicular modes, as is considered in sections to follow.

In summary, the proposals are considered to be in accordance with national and local planning policy from a transport perspective as the impact of the development proposals are not seemed to be severe.

3. Existing Conditions

3.1 Introduction

This section of the TA sets out the location of the proposed development and provides a summary of the existing highway conditions within the vicinity of the site.

3.2 Site Location

The proposed site is located within Site AC40, as identified in the Local Plan, which is located on the former Wombwell High School site approximately 1km to the south of Wombwell. The site is bounded by residential properties along Lundhill Road and Gypsy Lane to the south, residential properties along Roebuck Street to the north, residential properties along Park Street / Poplar Road to the east and agricultural land to the west.

3.3 Existing Road Network

3.3.1 Lundhill Road / Gypsy Lane

Lundhill Road is located to the south of the site and runs in a northeast / southwest alignment, connecting to Park Street at its northern extent forming the minor arm of the junction and passing under the A6195 Dearne Valley Parkway at its southern extent to then form Beech House Road which links to Hemingfield Village.

Gypsy Lane connects to Lundhill Road twice at its northern extent forming the minor arm of the junction. A single carriageway is provided in order to access properties located between the proposed development site and properties fronting Lundhill Road. Its junction with Lundhill near to number – Gypsy Lane will form the proposed vehicular access to the site.

The road provides a single carriageway in either direction, with a speed limit of 30mph. A well maintained footway approximately 2m wide is provided along either side of the carriageway and street lighting provided along its northbound carriageway near to the proposed site entrance.

Unrestricted parking is permitted either side of the carriageway with residential properties forming the frontage to the road at its northern extent and dropped kerbs with tactile paving are also provided to facilitate crossing movements at its junctions with other residential streets such as Ewden and Overdale Road.

3.3.2 Wath Road / Park Street

Park Street is located approximately 350m east of the proposed site access and forms the northern arm of the Lundhill Road / Park Street / Wath Road priority junction at its southern extent and becomes Wombwell High Street at its northern extent at its junction with Church Street.

A single carriageway is provided in either direction, with street lighting along its length. Footways are provided along both sides of the carriageway, with dropped kerbs at its junctions and is subject to a 30mph speed limit along its entire length.

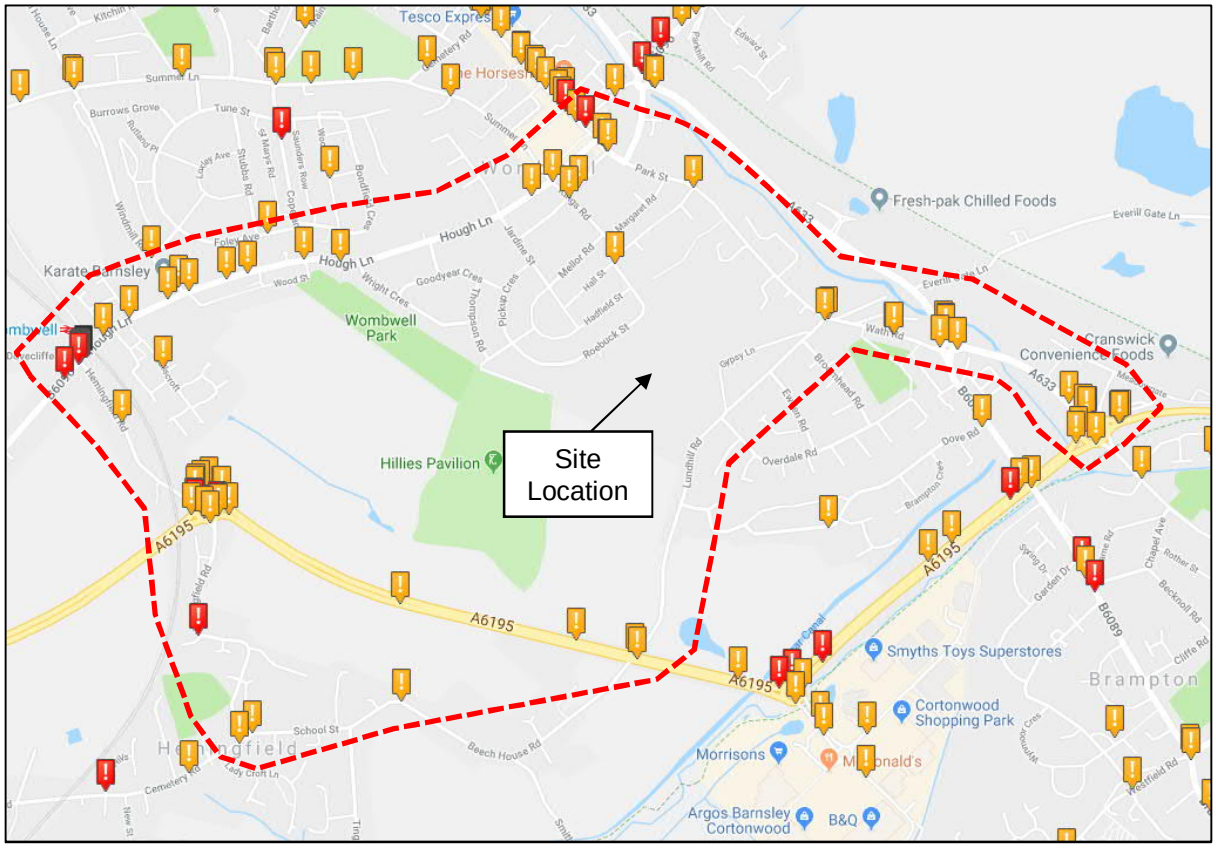
To the south of the junction of Park Street and Lundhill Road is Wath Road. Wath Road is a continuation of Park Street to the southeast and runs in an east / west alignment, linking to the A633 Valley Way / Brampton Road roundabout.

Wath Road is subject to a 30mph speed limit and provides footways on either side of the carriageway which are lit.

3.4 Road Safety

Personal Injury Accident data (PIA) has been considered for the most recent five year period (2013-2017 inclusive) in the vicinity of the proposed site in Wombwell, Barnsley. The full data is included with **Appendix B**, but is summarised in the following section for ease of reference. This is shown in Figure 2.

Figure 2: Accident Data Map



Analysis of the data shows that a total of 70 incidents occurred, of which 60 were recorded as slight in severity, 9 as serious and 1 fatal, Table 1 provides a summary of accident by year and severity type.

Table 1: Total Number of Accidents 2013-2017

Year	Total Accidents	Severity		
		Slight	Serious	Fatal
2013	15	11	3	1
2014	14	12	2	0
2015	18	17	1	0
2016	15	12	3	0
2017	8	8	0	0
Total	**70**	**60**	**9**	**1**

Source: CrashMap

For the purpose of analysis, the following summaries are split into the following sections of Highway:

- Beech House Road / School Street / Hemingfield Road;
- Hemingfield Road Roundabout;
- Hemingfield Road;
- A6195 Dearne Valley Pkwy;

- B6096 Hough Lane / Hemingfield Road Junction;
- Bellscroft;
- Hough Lane (Between Wombwell Station and Summer Lane Junction);
- Kings Road / Summer Lane Junction (including Kelvin Grove);
- Roebuck Street;
- High Street / Park Street;
- Lundhill Road / Park Street Junction;
- Wath Road (Between Lundhill and A633 / B6089 Roundabout);
- A633 / B6089 / Wath Road Roundabout; and
- Wath Road Roundabout.

3.4.1 Beech House Road / School Street / Hemingfield Road

Four incidents occurred along the Beech House Road / School Street / Hemingfield Road within the study area, three of which were slight and one serious. The following table provides a brief summary of the incident that occurred:

Table 2: Beech House Road / School Street / Hemingfield Road Accidents 2013-2017

Date	Severity	Condition	Vehicles	Casualties	Causation	Description
04/05/13	Slight	Daylight	1	1	Alcohol	Lost control on bend at excessive speed
18/02/15	Slight	Daylight	2	1	Poor Turn / Loss of Control	Vehicle approaching bend and collided with another vehicle on wrong side of the road
18/04/16	Serious	Darkness	2	1	Poor turn or manoeuvre	Vehicle travelling through bend loses control and tips onto N/S
06/04/17	Slight	Daylight	2	1	Loss of Control	Motorcycle collides with a parked vehicle in carriageway

As detailed above, all of the incidents were due to driver error and losing control of the vehicle, likely due to a poor turn or manoeuvre. One of the incidents involved alcohol. The accidents are evenly spread and do not suggest an intrinsic design flaw with a specific section of the highway of which is likely to be exacerbated by additional vehicle movements.

3.4.2 Hemingfield Road Roundabout

14 incidents occurred at the Hemingfield Roundabout within the study area, twelve of which were slight and two serious. The following table provides a brief summary of the incidents that occurred:

Table 3: Hemingfield Roundabout Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
31/01/13	Slight	Daylight	1	1	High Winds / Speed	HGV overturns onto nearside likely due to traveling too fast for high winds
20/06/13	Slight	Daylight	2	1	Poor turn or Manoeuvre	V1 collides with V2 on circulatory of the Rbt after V1 does not take turning
26/08/13	Serious	Daylight	1	1	Poor Turn / Inexperience	Enters roundabout with speed and fails to negotiate, clips kerb and thrown from bike
02/06/14	Slight	Daylight	2	1	Failed to look properly	Cyclist struck by vehicle on the roundabout travelling in the

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
						opposite direction
22/08/14	Serious	Daylight	2	3	Poor turn or manoeuvre	Car collides with motorbike on the roundabout due to incorrect turning movement
15/12/14	Slight	Daylight	2	2	Failed to look properly	V1 collided with stationary Vehicle at roundabout
19/10/15	Slight	Daylight	2	1	Failed to Look Properly	V1 on roundabout turning right – V2 enters roundabout in front of V1
09/11/15	Slight	Darkness	2	2	Failed to Look Properly	V1 enters roundabout from Dearne Valley and collides with V2
23/11/15	Slight	Darkness	2	1	Defective Brakes / Passing too close	Car collides with cyclist on roundabout
29/02/16	Slight	Darkness	2	1	Failed to Judge path or speed	Driver experiences sneezing fit causing her to press accelerator and collide with V2
21/03/16	Slight	Darkness	2	1	Failed to Judge Path	V1 collides with V2 on the roundabout whilst trying to move into lane.
01/04/16	Slight	Daylight	2	1	Poor Turn	HGV collided with turning vehicle
25/08/16	Slight	Daylight	2	1	Inexperience of driving on the left	V1 in O/S lane collides with V2
27/09/16	Slight	Darkness	1	1	Slippery Road / Illegal Tyres	Vehicle skids on approach to Rbt, loss of control and driver collides with lamp post

The road network in the vicinity of the proposed site has experienced a high number of accidents from 2013-2016 with two serious injuries occurring. However, in 2017 there have been no recorded incidents at the roundabout. As detailed in the above table, all incidents that took place at the roundabout were due to a form of driver error or poor manoeuvre; none of the incidents were due to an intrinsic problem with the roundabout design which is likely to be exacerbated by additional vehicular traffic.

3.4.3 Hemingfield Road

One incident occurred along Hemingfield Road between the Hemingfield Roundabout and its junction with the B6096 Hough Lane which was classified as slight. The following table provides a brief summary of the incident that occurred:

Table 4: Hemingfield Road Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
17/05/16	Slight	Daylight	3	3	Following too close / Failed to look properly	Vehicle reverses from car park and collision occurs with another that could not stop quickly enough

As detailed in the table above, the incident that occurred was due to driver error and not due to an intrinsic problem with the highway in this area likely to be exacerbated by additional vehicle trips.

3.4.4 A6195 (Dearne Valley Pkwy)

Four incidents occurred along the A6195 between the Hemingfield Roundabout and Lundhill Road cross-over, all of which were classified as slight. The following table provides a brief summary of the incidents that occurred:

Table 5: A6195 Dearne Valley Pkwy Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
25/11/14	Slight	Darkness	2	1	Driver error	Vehicle changing lanes to the left collides with the central reservation / bollard and another vehicle in the process of overtaking
10/03/15	Slight	Daylight	2	2	Failed to judge other persons path	Rear end collision with vehicle changing lanes to the left
08/07/15	Slight	Daylight	2	1	Failed to judge other persons path	Vehicle in the act of turning left in front of vehicle proceeding normally
12/12/15	Slight	Daylight	1	1	Driver error	Collision with crash barrier

As detailed in the table above, all of the incidents occurred as a result of driver error and were not due to an intrinsic problem with the highway in this area.

3.4.5 B6096 Hough Lane / Hemingfield Road Junction

Eight incidents occurred at the B6096 Hough Lane / Hemingfield Road Junction (between Wood Walk and Wombwell Train Station), three of which were slight, four serious and one fatal. The following table provides a brief summary of the incidents that occurred:

Table 6: B6096 Hough Lane / Hemingfield Road Junction Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
03/01/13	Serious	Darkness	2	2	Unknown	Vehicle pulled out into path of oncoming vehicle
13/06/13	Fatal	Daylight	1	1	Failed to judge other persons path	Pedestrian crossing Hough Lane towards Station, vehicle turned left and collided with pedestrian
26/07/13	Slight	Daylight	2	1	Failed to Look Properly	V1 fails to see V2 whilst turning right - Collides
04/06/14	Slight	Daylight	2	1	Poor Turn or Manoeuvre	Vehicle crosses path of oncoming vehicle and collision occurs
14/11/14	Serious	Darkness	2	1	Failed to Look Properly	Car pulls out into path of oncoming motorcycle after failing to look properly
31/03/15	Serious	Daylight	2	1	Failed to Look Properly	Motorcycle veered onto O/S of road and collided with goods van
27/04/16	Serious	Darkness	1	1	Alcohol / Exceeding Speed Limit	Pedestrian struck by driver crossing the road
02/03/17	Slight	Daylight	2	1	Failed to Look Properly	Collision with vehicle in the act of turning right

As detailed in the above, all but one of the incidents that took place at the junction were due to a form of driver error or poor manoeuvre. The causation of one incident was unknown, however it is not considered that this is likely to be due to an intrinsic problem with the highway.

3.4.6 Bellscroft

One incident occurred on Bellscroft within the study area, which was slight in severity. The following table provides a brief summary of the incident that occurred:

Table 7: Bellscroft Accidents 2013-2017

Date	Severity	Condition	Vehicles	Casualties	Causation	Description
13/05/13	Slight	Daylight	1	1	Pedestrian (age 6-10)	Vehicle collision in the carriageway. Pedestrian masked by parked or stationary vehicle

As detailed above, the slight incident was due to a pedestrian in the carriageway. This does not suggest an intrinsic design flaw with a specific section of the highway.

3.4.7 Hough Lane (Between Wombwell Station and Summer Lane Junction)

Nine incidents occurred along Hough Lane between Wombwell Station and its junction with Summer Lane, all of which were slight. The following table provides a brief summary of the incidents that occurred:

Table 8: Hough Lane (Between Wombwell Station and Summer Lane Junction) Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
13/02/13	Slight	Darkness	2	1	Failed to look properly	Vehicle reversed into another parked
05/02/14	Slight	Daylight	1	1	Failed to look properly	Pedestrian ran out in front of bus into oncoming vehicle
03/06/14	Slight	Daylight	2	1	Failed to judge persons path or speed	Vehicles collide in central area due to parked cars on either side of the carriageway
16/11/14	Slight	Darkness	1	1	Impaired by alcohol	Driver loses control and collides with boundary wall
08/05/15	Slight	Darkness	2	1	Slippery Road / Failed to look properly	Rear end shunt occurs are V1 waits in traffic and V2 collides
28/11/15	Slight	Darkness	2	2	Weather / Slippery Road	Driver brakes and loses control, skids and collides with another vehicle
17/05/16	Slight	Daylight	2	2	Failed to look properly	Vehicle loses control and collides with lamp post
05/11/16	Slight	Darkness	2	1	Impaired by alcohol	Aggressive driving causes collision
16/08/17	Slight	Daylight	2	2	Failed to look properly	Collision with two vehicles; one waiting to turn right

As detailed in the above table, two of the incidents that took place along Hough Lane were due to drink driving, two due to weather conditions and the remainder due to driver error or a poor manoeuvre. One incident involved a pedestrian, although any incident is undesirable, this does not suggest any negative pattern or trend associated with pedestrian safety.

3.4.8 Kings Road / Summer Lane Junction (including Kelvin Grove)

Three incidents occurred at the Kings Road / Summer Lane Junction, all of which were slight in severity. The following table provides a brief summary of the incidents that occurred:

Table 9: Kings Road / Summer Lane Junction Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
15/04/15	Slight	Daylight	1	1	Disobeyed road sign	Van reversing down one-way street collides with pedestrian in carriageway
25/08/15	Slight	Daylight	2	2	Disobeyed traffic signal	Vehicle ignored traffic light and causes collision
22/12/15	Slight	Daylight	2	1	Failed to look properly	Vehicle turned right across the path of V1

As detailed in the table above, three incidents were slight in severity; two of which occurred due to the driver disobeying road signs/signals; the other was as a result of driver error. It is not considered that these incidents were due to an intrinsic problem with the highway.

3.4.9 Roebuck Street

One incident occurred on Roebuck Street, which was slight in severity. The following table provides a brief summary of the incident that occurred:

Table 10: Roebuck Street

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
03/09/16	Slight	Darkness	1	2	Loss of control	Collision with stone wall. Driver flees the scene

As detailed in the table above, the only incident was considered slight in severity as a result of driver loss of control with street lights present and lit. It is not considered that this incident was due to an intrinsic problem with the highway.

3.4.10 High Street / Park Street

Five incidents occurred on High Street / Park Street, three of which were slight and two serious. The following table provides a brief summary of the incidents that occurred:

Table 11: Church Street / High Street Junction Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
04/02/13	Serious	Darkness	1	1	Failed to look properly	Pedestrian crossing the road collides with car travelling towards the High Street
30/09/13	Slight	Daylight	2	1	Failed to look properly	V1 turning into Gower Street, V2 overtakes and causes collision
26/02/15	Slight	Daylight	2	1	Junction restart / Failed to look properly	Vehicle edges out into junction whilst another exits junction and collides.
17/12/16	Serious	Darkness	1	1	Failed to judge persons path or speed	Pedestrian runs out into the round into path of oncoming vehicle
06/05/17	Slight	Daylight	2	1	Loss of concentration	Rear end collision at pedestrian light crossing

As detailed in the table above, there were two serious incidents that involved pedestrians at the junction and three slight, all of which were due to failing to look properly as a causation factor.

It is noted that the junction sight lines are constrained at Church Street by existing buildings on either side however pedestrian crossings are provided at the junction to facilitate movements across both High Street and Church Street. It should also be taken into account that this is a junction within the centre of Wombwell therefore it is likely that there are a high number of pedestrians crossing at this location and vehicles using the junction.

Whilst any incident any incident is undesirable, it is not considered that there are a particularly high number of incidents that have occurred or that the junction is intrinsically unsafe for either pedestrians or road users. Therefore, it is not considered that development traffic will have a negative effect at the junction in relation to safety.

3.4.11 Lundhill Road / Park Street Junction

Two incidents occurred at the Lundhill Road / Park Street junction, both of which were slight in severity. The following table provides a brief summary of the incidents that occurred:

Table 12: Lundhill Road / Park Street Junction Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
10/01/13	Slight	Daylight	1	1	Failed to look properly	Turning vehicle collides with child pedestrian crossing the road without looking
19/10/13	Slight	Daylight	2	2	Carless/ reckless driving	V1 turning right out of the junction collides with another vehicle overtaking a bus

As detailed in the table above, two slight incidents occurred in 2013. Therefore, it is not considered that development traffic will have a negative effect at the junction in relation to safety.

3.4.12 Wath Road (Between Lundhill and A633 / B6089 Roundabout)

Two incidents occurred along Wath Road between its junction with Lundhill and the A633 / B6089 Roundabout, both of which were slight. The following table provides a brief summary of the incidents that occurred:

Table 13: Wath Road (Between Lundhill and A633 / B6089 Roundabout) Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
15/04/14	Slight	Daylight	2	1	Junction overshoot	Vehicle pulled out of junction into path of oncoming vehicle
06/11/16	Slight	Darkness	2	1	Failed to look properly	Vehicle unexpectedly performed a U-turn and collides with another vehicle

As detailed in the table above, there were two slight incidents at the junction, none of which involved pedestrians and both of which were due to driver error.

The incidents that took place along Wath Road are considered to be isolated and not a cause of concern in relation additional development traffic travelling along Wath Road.

3.4.13 A633 / B6089 / Wath Road Roundabout

Six incidents occurred at the A633 / B6089 / Wath Road Roundabout, all of which were slight in severity. The following table provides a brief summary of the incidents that occurred:

Table 14: A633 / B6089 / Wath Road Roundabout Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
05/02/14	Slight	Darkness	2	1	Failed to judge path of speed	Rear end shunt occurs at with two vehicles approaching the roundabout
15/01/15	Slight	Darkness	1	2	Failed to look properly / Impaired by alcohol	Pedestrian hit whilst crossing on pedestrian crossing
10/04/15	Slight	Daylight	2	1	Failed to look properly	V1 enters roundabout but fails to see V2 and collision occurs
03/09/16	Slight	Darkness	1	1	Failed to look properly / Alcohol / Dark clothing	Pedestrian crossing the road is struck by vehicle
20/05/17	Slight	Daylight	2	2	Failed to look properly	Rear end collision due to vehicle waiting to proceed but is held up
02/02/17	Slight	Darkness	2	2	Driver error	Head on collision between two vehicles. Street lights present and lit

As detailed in the table above, there were six slight incidents at the junction, two of which involved pedestrians at the roundabout. The majority of incidents at the roundabout were due to failing to look properly, with the two incidents that involved pedestrians also due to either the driver / pedestrian impaired by alcohol.

Whilst any incident any incident is undesirable, it is not considered that there are a particularly high number of incidents that have occurred or that the junction is intrinsically unsafe for either pedestrians or road users. Therefore, it is not considered that development traffic will have a negative effect at the junction in relation to safety.

3.4.14 Wath Road Roundabout

Ten incidents occurred at Wath Roundabout Road, all of which were slight. The following table provides a brief summary of the incidents that occurred:

Table 15: Wath Road Roundabout Accidents 2013-2017

Date	Severity	Conditions	Vehicles	Casualties	Causation	Description
22/04/13	Slight	Daylight	2	2	Stolen Vehicle	A stolen vehicle crosses white line to exit roundabout a collision occurs with another vehicle
31/07/13	Slight	Daylight	2	1	Inexperienced driver	Vehicle brakes suddenly on approach causing rear end shunt to occur
25/02/14	Slight	Darkness	2	1	Failed to judge other persons path of speed	Car enters roundabout and collides with motorcycle travelling straight ahead
10/09/14	Slight	Daylight	3	3	Failed to judge other persons path of speed	Vehicle collides with another and causes rear end shunt into third vehicle
12/12/14	Slight	Darkness	2	1	Overloaded / Poorly loaded trailer	Trailer becomes detached from vehicle and collisions with another. Weather conditions wet or damp

19/09/15	Slight	Daylight	2	1	Failed to look properly	Vehicle entered roundabout into oncoming vehicle
24/11/15	Slight	Darkness	2	1	Aggressive driving	Vehicle brakes suddenly causing motorcycle to also brake and driver to lose control
03/10/16	Slight	Daylight	2	2	Carless / Reckless driving	Vehicle stationary on roundabout when hit by another from behind
05/11/17	Slight	Daylight	2	1	Aggressive driving	Motorcycle passing a moving vehicle collides with vehicle performing U-turn
05/12/17	Slight	Daylight	2	1	Failed to look properly	Rear end collision with vehicle waiting to proceed but is held up

As detailed in the table above, there were ten incidents that occurred at the junction, all of which were classified as slight and none of which involved pedestrians.

All incidents that took place at the roundabout were due to a form of driver error or poor manoeuvre, none of the incidents were due to an intrinsic problem with the roundabout design which is likely to be exacerbated by additional vehicular traffic.

3.5 Summary

In summary, a review of the local area shows that no accidents took place close to the proposed accesses on Lundhill Road in the last five years with a significant decrease in the number of accidents in 2017 (no serious or fatal accidents occurred).

It should be noted that the incident on Roebuck Street was a result of the driver losing control and colliding with a stone wall, before fleeing the scene. Therefore, it is not considered that development traffic will have a negative effect in relation to safety.

4. Sustainable Accessibility

4.1 Introduction

This section provides a review of the sustainability of the site. Sustainability is essential to new development in terms of providing connectivity to surrounding areas including local amenities, transport interchanges and residential areas. The NPPF considers three dimensions to providing sustainable development;

- Economic – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation;
- Social – supporting strong, vibrant and healthy communities by providing the supply of housing required to meet the needs of present and future generations; and
- Environmental – contributing to protecting and enhancing our natural, built and historic environment.

The access by alternative modes of travel and the ease with which these can be used is set out by mode as follows.

4.2 Pedestrian Accessibility

Walking is the most sustainable form of travel due to the positive environmental effects, including zero harmful emissions, associated with it. It also provides distinct health benefits and is the lowest cost form of travel. Walking is often required for the secondary part of a journey made using public transport.

Therefore, pedestrian facilities are an essential part of a development proposal providing connectivity to existing facilities. Adequate footways will ensure that journeys on foot will be a viable option.

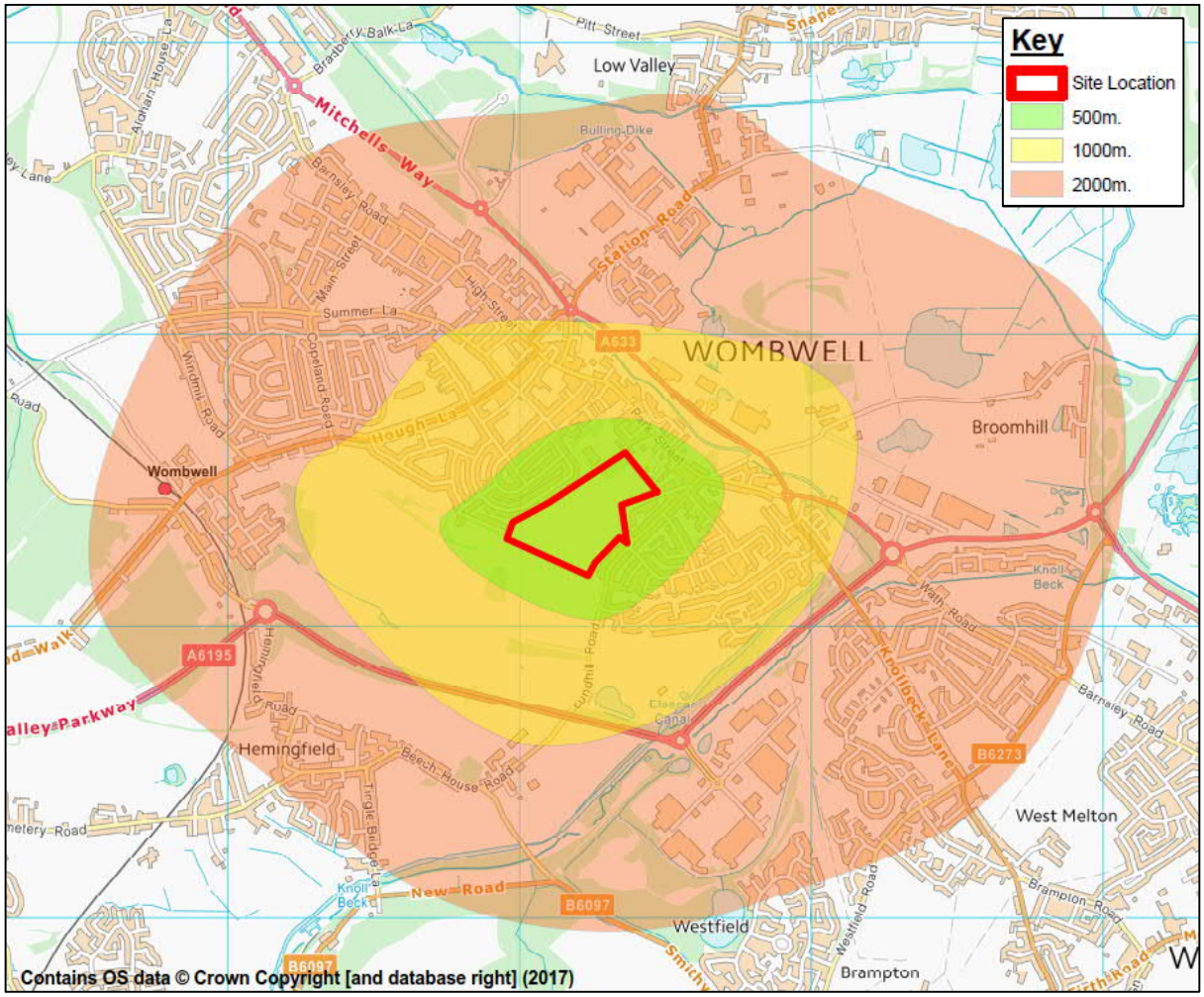
Table 16 provides an extract from 'Guidelines for Providing for Journeys on Foot' by the Chartered Institute of Highways and Transportation (CIHT), which suggests acceptable walking distances for different types of journeys.

Table 16: Suggested Acceptable Walking Distance

	Town Centres (m)	Commuting (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred maximum	800	2000	1200

Using the CIHT guidance on walking distances for commuting, a plan illustrating 500m, 1000m and 2000m catchment areas from the site has been produced using GIS software.

Figure 3: Walking Accessibility



As shown in Figure 3, Wombwell and Wombwell Railway Station accessible within a 2km walking distance of the development site.

The residential areas surrounding the site to the north and south are characterised by 2m footways, street lighting and dropped kerbs to facilitate crossing movements at junctions.

A range of amenities are accessible within a 1000m walking distance of the site; such as a Church, Public House, Care Home, Library, Pharmacy and Chemist.

In addition to the above, Wombwell Railway Station is located within the preferred maximum walking distance, approximately 1.6km west of the site, with existing footways linking to the north of the development site via Roebuck Street.

The CIHT also recommends a walking distance of up to 400m to a bus waiting facilities from new developments, which is equivalent to a five-minute walk based on approximately 1.4m/s walking speed. This distance is generally accepted as a reasonable walking distance to bus stops from a site. The nearest bus stop is located along Park Street approximately 400m east of the site. As such, the site is considered highly accessible by public transport.

4.3 Cycling Accessibility

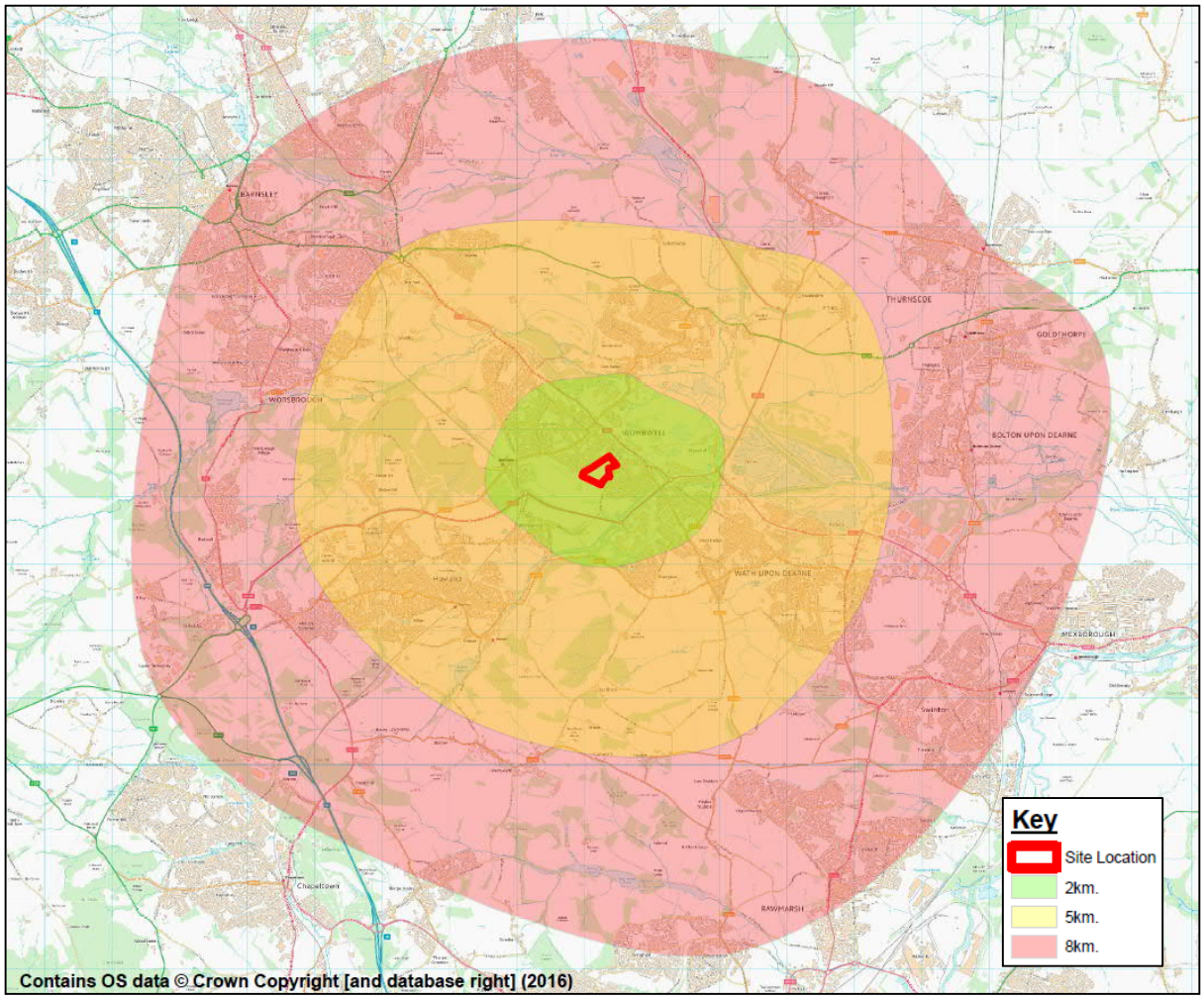
As with pedestrian accessibility, the level of a site's cycling accessibility depends upon a combination of the distance from local amenities and the standard of existing cycle infrastructure. It should, however, be noted that that cycle infrastructure can include facilities shared with vehicles and pedestrians as well as dedicated cycle-only infrastructure.

As well as benefits in terms of reduced vehicle emissions and health, trips by bicycle are widely recognised as a sustainable alternative to car journeys.

In respect of acceptable cycle distances, 'Local Transport Note 2/08: Cycling Infrastructure Design', published by DfT, states that many utility cycle trips are less than three miles (approximately five kilometres), but for commuter journeys a distance of over five miles (approximately eight kilometres) is not uncommon. Although specific guidance is not available in relation to leisure trips, it is considered that the distance will be similar if not greater than the 5km distance outlined for utility trips.

In light of the DfT Local Transport Note, a plan illustrating a 2, 5 and 8km catchment from the site has been produced using GIS software, as shown in Figure 4 below.

Figure 4: Cycle Accessibility



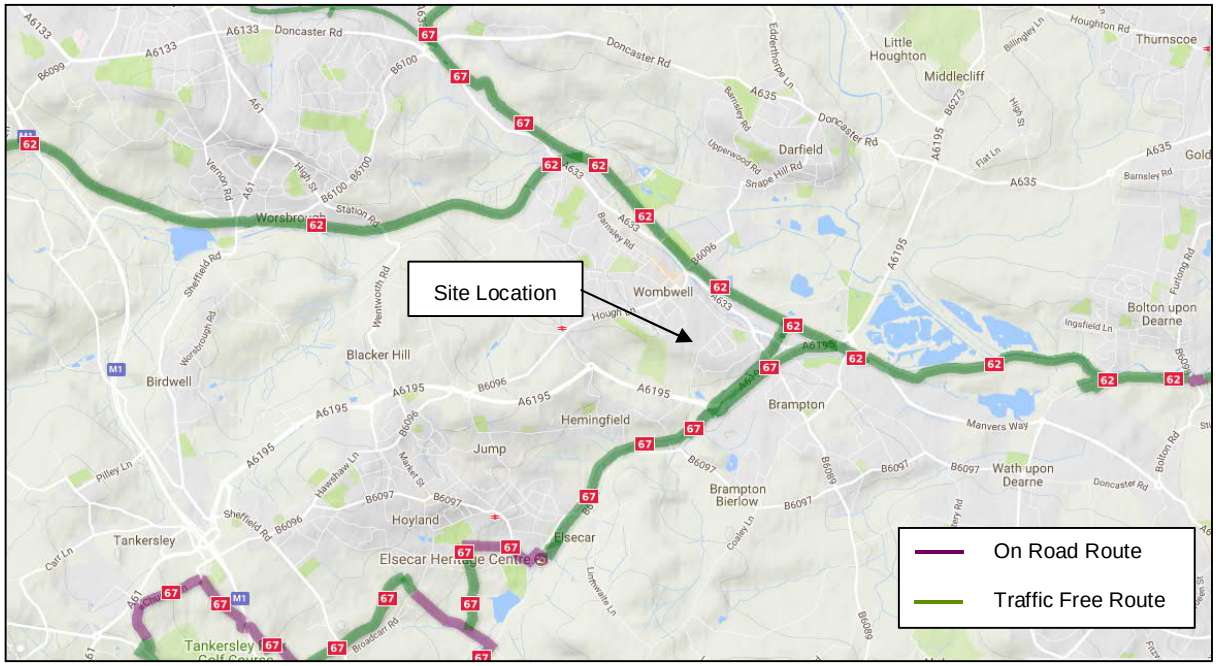
As can be seen from Figure 4, the site location enables a high level of access to / from surrounding Towns and Villages within a 5km cycling distance. These include areas such as Wath-upon-Dearne to the east, Hoyland to the west and Darfield to the North.

Within an 8km cycle distance from the site, areas such as Stairfoot, Swinton, Bolton-upon-Dearne and Barnsley Town Centre can all be accessed within the distance outlined for commuter journeys.

Notwithstanding the above, bus stops within Wombwell and Wombwell Railway Station are also accessible within a journey less than 2km distance from the site. These transport links offer the opportunity to undertake a multimodal journey to / from destinations further afield.

In addition the above, existing cycle routes within the vicinity of the site are shown in Figure 4. The cycle routes shown on the figure have been obtained from Sustrans online cycling map (link: http://www.sustrans.org.uk/ncn/map).

Figure 5: Cycle Routes - Sustrans



As shown in Figure 5, National Cycle Route 62 is located to the east of the A633 and runs in and northeast / southwest alignment near to the site. NCN 62 provides a traffic free route within the vicinity of the site, connecting to Bolton-upon-Dearne and Sprotbrough to the southeast of the site and Worsbrough and Silkstone Common to the northwest.

NCN 62 also connects to NCN 67 to the north of Wombwell, this section of NCN 67 runs in a north / south alignment providing a mostly off-road route, connecting to Wombwell at its southern extent and routing to the east of Barnsley Town Centre and connecting to the Carlton and Royston areas of Barnsley to the north.

To the south of the site NCN 62 connects again to NCN 67, which runs in a northeast / southwest alignment, connecting at its north-eastern extent to Wombwell, and to Hemingfield, Elsecar, Wentworth and Hoyland at its south-western extent within the vicinity of the site.

4.4 Public Transport Facilities

4.4.1 Buses

The CIHT guidance states that 400m is the maximum desirable distance to walk in order to access bus facilities, which is equivalent to a five-minute walk based on approximately 1.4m/s walking speed. This distance is generally considered as being a reasonable walking distance to bus stops from a site.

As discussed, it is envisaged that as part of the proposals that a dedicated Bus Car Park will be provided at the site to accommodate school buses for children attending Wombwell Primary School.

The nearest bus stop is located less than 400m from the site at the junction with Park Street / Lundhill Road, providing a shelter and timetable information. The services available at these stops are shown in Figure 6 and presented in Table 17.

Figure 6: Bus Network close to the site

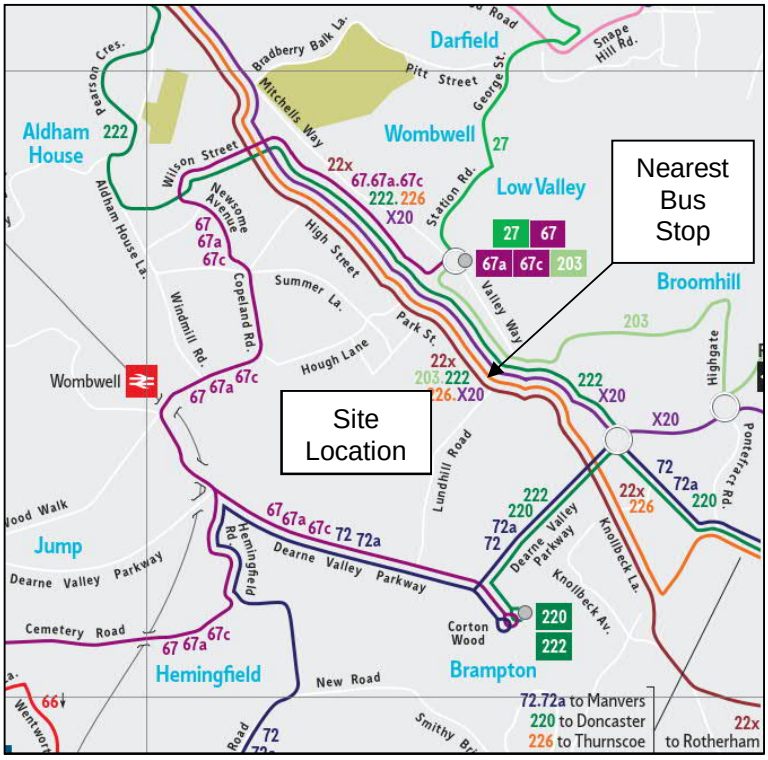


Table 17: Park Street / Lundhill Road Bus Services

Service	Route	Frequency		
		Mon-Fri	Saturday	Sunday
22x	Rotherham Interchange – Wombwell – Barnsley Interchange	Every 15mins	Every 15mins	Hourly
222	Barnsley – Stairfoot – Wombwell – Cortonwood	Every 30mins	Every 30mins	Hourly
226	Barnsley – Stairfoot – Wombwell – Wath – Goldthorpe – Thurnscoe	Every 30mins	Every 30mins	Hourly
X20	Barnsley – Wombwell – Manvers – Warmsworth – Balby – Doncaster	Hourly	Hourly	-

Note: Services typically between 0600 and 2300

Based on the above, it is considered that the site is accessible via bus, with a high number of stopping services to local and regional destinations further afield such as Doncaster, Barnsley and Rotherham.

4.4.2 Trains

Wombwell Railway Station is located approximately 1.6km northwest of the proposed development site (inside the preferred walking distance of 2km) and forms part of the Hallam and Penistone lines. The station is fully accessible with ramped access to both platforms and provides regular services to Wakefield, Leeds, Sheffield and Huddersfield with recent improvements provided information display screens with real-time service information. The station benefits from 80 parking bays (including 4 disabled bays), 10 cycle spaces and sheltered waiting.

The rail services available are shown in Figure 7 and presented in Table 18.

Figure 7: South Yorkshire Rail Network

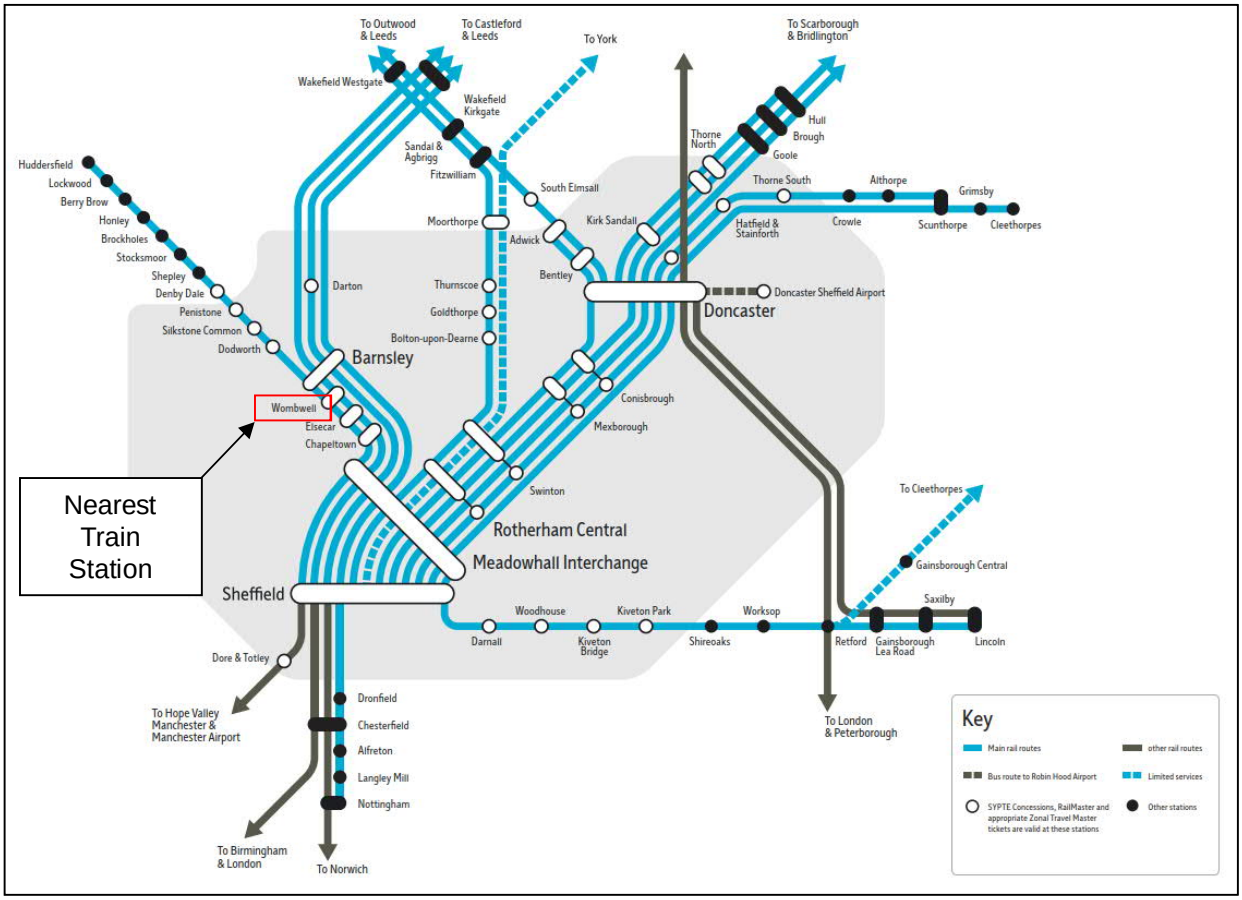


Table 18: Wombwell Station Rail Services

Destination	Duration (Approx.)	Frequency		
		Mon-Fri	Saturday	Sunday
Barnsley	6mins	Every 30mins	Every 2hrs	Hourly
Wakefield	25mins	Every 30mins	Every 2hrs	Hourly
Sheffield	24mins	Every 30mins	Every 2hrs	Hourly
Leeds	1hr	Every 20mins	Every 2hrs	Hourly
Huddersfield	1hr	Every 30mins	Every 2hrs	Hourly

Note: Services typically between 0600

It is considered that rail travel offers a realistic alternative for employees, students and residents to undertake a sustainable multimodal journey to / from areas further afield for work, school or leisure.

5. Trip Generation and Distribution

5.1 Introduction

This section outlines the methodology which has been used to determine the potential additional vehicle trips generated as a result of proposals.

5.2 Residential Development

As part of the report a TRICS assessment was undertaken to determine multimodal vehicle trip rates.

The proposals consist of the construction of 229 privately owned residential dwellings and a new primary school. The traffic modelling has been undertaken based on an elevated number of dwellings (250), which adds to the robustness of the assessment.

AECOM also undertook a comparison exercise, which based the vehicle trip generation on the derived TRICS total person trip rates, with the Barnsley 026 ward census modal split for car drivers applied. The difference in vehicle trips did not amount to a material impact, therefore AECOM considered the trip generation based on the total vehicle trip rate to be acceptable.

Considering the above, the following table shows the total vehicle trip generation for the proposed residential element of the site, based on the trip rates derived in the previous TA. These have then been applied to the proposed 250 privately owned dwellings:

Table 19: TRICS Vehicle Trip Rate / Generation - Residential

250 Dwellings	AM Peak Hour (07:30-08:30am)			PM Peak Hour (17:00-18:00pm)		
	ARR	DEP	2-WAY	ARR	DEP	2-WAY
Vehicle Trip Rates (Per Dwelling)	0.142	0.370	0.512	0.331	0.184	0.515
Trip Generation	36	93	129	83	46	129

Source: Previous AECOM Transport Assessment

For the purpose of comparison, the table below shows total vehicle trip generation based on the previous TA total person trip rates, with Barnsley 026 ward car driver modal split (64%) applied, derived from the NOMIS 2011 census journey to work data:

Table 20: TRICS Total Person Trip Rate / Generation - Residential

250 Dwellings	AM Peak Hour (07:30-08:30am)			PM Peak Hour (17:00-18:00pm)		
	ARR	DEP	2-WAY	ARR	DEP	2-WAY
Total Person Rates (Per Dwelling)	0.236	0.731	0.967	0.577	0.340	0.917
Trip Generation – 64% Census Modal Split.	38	117	155	92	54	147

Source: Previous AECOM Transport Assessment

In order to ensure the assessment is robust, the higher trip rates based on the car driver modal split have been used. As such the total two-way trips associated with the residential element of the site are considered to be 155 vehicle trips during the AM peak and 147 vehicle trips during the PM peak.

5.3 Primary School

5.3.1 TRICS Assessment

To estimate the number of trips associated with the proposed development, the TRICS database (v7.5.3) has been interrogated to derive a weekday AM (08:00-09:00) and PM (15:00-16:00) peak hour vehicle trip rates for sites of a similar size and nature to the development proposals. Sites have been selected based on TRICS land use category ‘Education – Primary School’ for geographical areas excluding London, Ireland and Scotland.

It is proposed that the capacity of the new facility will be 1.5 form entry, circa. 315 pupils; however it is proposed that will school will provide a 1 form entry, circa. 210 pupils when operational. Therefore, the maximum potential number of trips which could be generated by the potential 315 pupils at the school has been determined based on TRICS total vehicle trip rates, which are shown in the following table.

Full outputs from TRICS are contained within **Appendix C** of this report.

Table 21: TRICs Vehicle Trips – 315 Pupils – Primary School

	AM Peak Hour (08:00-09:00)			PM Peak Hour (15:00-16:00)		
	ARR	DEP	2-WAY	ARR	DEP	2-WAY
Vehicle Trip Rate	0.354	0.223	0.577	0.129	0.247	0.376
Vehicle Trips	112	70	182	41	78	118

Based on the above, the TRICS derived assessment, based on total vehicle trip rates applied to the proposed capacity of 315 pupils predicts a total two-way trip generation of 182 movements during the AM peak and 118 two-way movements during the PM peak.

5.3.2 Travel Plan Based Assessment

For the purpose of comparison, a further assessment has been undertaken which is based on the proposed capacity for 315 pupils at the school and the average 2017 surveyed modal split for car / van trips to / from school for the following existing Primary Schools shown below:

- High View Primary Learning Centre – 26%
- Kings Oak Primary Learning Centre – 20%
- Wombwell Park Street Primary School – 18%

The above modal splits give an average car / van travel to / from school of 21%; as such, this has been applied to the proposed capacity for 315 pupils, to give of 67 arrivals / departures during both the AM and PM peak.

In addition to the above, it is estimated that the pupil to teacher ratio will be approximately 21.0, which has been taken from Department for Education 2015 statistics, within 'Table 17a: Pupil / teacher ratios and pupil / adult ratios in state funded schools for Local Authority Primary Schools'.

Therefore for 315 pupils, there is likely to be an approximately 15 staff members associated with the proposals. In order to account for support staff within the school, this figure has then been doubled to give a potential 30 staff members within the school.

In order to provide a robust assessment, it is considered that the majority of staff travel to work by car, therefore the total number of vehicle trips associated with staff members is considered to be 30 arrivals during the AM peak and 30 departures during the PM peak.

Based on the above, the total number of vehicle trips associated with the Travel Plan based assessment are shown in the following table.

Table 22: Vehicle Trips – 315 Pupils – TP Based Assessment

	AM Peak Hour (08:00-09:00)		PM Peak Hour (15:00-16:00)			
	ARR	DEP	ARR	DEP	ARR	DEP
Vehicle Trips	97	67	164	67	97	164

Based on the above, a total two-way trip generation of 164 vehicle movements are expected during both the AM and PM peaks.

It is considered that the first principles approach detailed above is likely to be a more accurate representation of expected vehicle trips in comparison to the TRICS derived assessment. As such, it is considered that the assessment will be based on this.

5.4 Residential Distribution

In order to distribute proposed residential traffic, AECOM have obtained information from the National Travel Survey (NTS) for the 5 year between 2006 and 2010 for the category 'Trip Start Time by Trip Purpose' between Monday - Friday for the AM peak period (07:00-09:00) and PM peak period (16:00-18:00). This data was also used within the previous TA in support of the 'Land off Lundhill Road' residential site and considered an acceptable approach.

As such, in order to provide a consistent approach between the two applications, the distribution percentages and trips for car drivers by journey purpose are provided in the following table. The 08:00 to 09:00 hour has been used for the AM peak hour, and the average of the 17:00 to 18:00 hour has been used for the PM peak hour.

Table 23: NTS Journey Purpose / Trips – Residential

Time Period	Journey Purpose			
	Work	Education	Other	Total
Weekday AM Peak Hour (0800-09:00) (%)	**44%**	**24%**	**32%**	**100%**
Car Trips - Arrivals	12	6	9	27
Car Trips - Departures	37	20	27	84
Weekday PM Peak Hour (17:00-18:00) (%)	**47%**	**2%**	**51%**	**100%**
Car Trips - Arrivals	31	1	34	66
Car Trips - Departures	18	1	20	39

Source: NTS Travel Survey

Based on the above, Census Journey to Work data has been used to assign work related trips and a local assignment has been developed for education and non-work trips, which has been development in line with the approved previous TA distribution for the proposed 'Land off Lundhill Road' residential site in order to provide a consistent approach.

5.5 Journeys to Work

Due to the close proximity of the proposed development sites, in order to provide a consistent approach, vehicle trips for work purposes have been distributed onto the local road network according to the approved journey to work distribution within the previous TA. The assessment was based on Journey to Work data for car based trips among residents of Barnsley 026 (E02001534).

As such, the following table details the distribution pattern applied to the journey to work trips, which has also been used within the following assessment:

Table 24: Journey to Work Distribution Pattern

Cordon	Distribution Pattern
A - Park Street North	2.0%
B - A633 North	14.5%
C - A633 East	27.0%
D - B6089 South	4.0%
E - Smithy Bridge Lane South	21.5%
F - A6195 West	26.0%
G - Hemingfield Road North	5.0%
Total	**100%**

The above distributions have also been used to calculate staff journeys to the Primary School element of the site.

5.6 Education Distribution

As within the previous TA it is assumed pupils from the proposed development will attend local schools as follows:

- Brampton 'The Ellis' C of E Primary School;
- The Ellis C of E Primary School; and
- Netherwood Advanced Learning Centre.

It should be noted that both Wombwell Park Street Primary School and the proposed new Primary School have not been counted as it is expected that students living within the proposed development site are able to walk to both of these locations within less than 400m.

The distribution pattern to be applied to the education car trips is detailed in following table, the mode share by car for education trips for each school is based on the 2011 School Census data.

Table 25: Other Journey Purpose - Distribution Pattern

School	Pupils	% Car Users	No Cars	Distribution Pattern
Brampton 'The Ellis' C of E Primary School	255	33.9%	86	24%
The Ellis C of E Primary School	190	39.8%	76	21%
Netherwood Advanced Learning Centre	1,100	17.7%	195	55%

5.7 Other Journey Purpose Distribution

As with the journey to work trip distribution, in order to provide a consistent approach, 'other journey purposes' have been proportioned according to the distribution set out within the approved 'Land off Lundhill Road' TA (April 2017).

It is assumed 'other' trips are to / from local facilities and have been distributed between Cortonwood Retail Park, Wombwell and Barnsley. Both the AM and PM peak distribution pattern is assumed to be identical, these proportions have then been applied to 'other' car driver trips identified in relation to the residential element of the site.

As such, the following table details the other pattern.

Table 26: Other Journey Purpose - Distribution Pattern

Cordon	Distribution Pattern
Cortonwood Retail Park	50.0%
Wombwell	25.0%
Barnsley	25.0%

It should be noted that the number of vehicle movements have not been discounted to take into account the fact that pupils at the new school may also live within the proposed residential portion of the site. This adds to the robustness of the assessment of additional traffic.

6. Junction Assessments

6.1 Introduction

This section of the report provides details on the anticipated impact of the development on the local road network.

6.2 Assessment Scenarios

In accordance with the DfT's 'Guidance on Transport Assessments' the assessments consider the impact of the development trips on the local road network for the 'Base', 'Base + Development' and 'Base + Committed + Development' scenarios for an opening year and design year. The scenarios that have been applied to the operational assessments are as follows:

- Base 2019;
- Base 2024;
- Base 2024 + Proposed Development; and
- Base 2024 + Committed Development + Proposed Development.

Full results of the modelling are provided in **Appendix E**.

6.3 Committed Developments

Through discussion with BMBC, it is understood that only the 'Land off Lundhill Road' Persimmon site is to be included as a committed development within the operational assessment.

As such, traffic flows associated with the development have been extracted from the previous TA and included within the assessment as a committed development. The development trips associated with the 'Land off Lundhill Road' site are shown at **Appendix D**.

6.4 Assessment Hours

It should be noted that a network peak hours have been assessed within the following scenarios, which are 07:30 - 08:30 during the AM peak and 17:00 – 18:00 during the PM peak.

As such, during the PM peak, vehicle trips associated with the Primary School element of the site have not been included within the following assessment. This is due to the Primary School closing at approximately 15:15, therefore all trips associated with the school PM peak are considered to have been made prior to the network PM peak.

During the Primary School PM peak, it is considered that there will be a high number of trips within a short space of time; therefore this would be controlled by a management plan organised by the School.

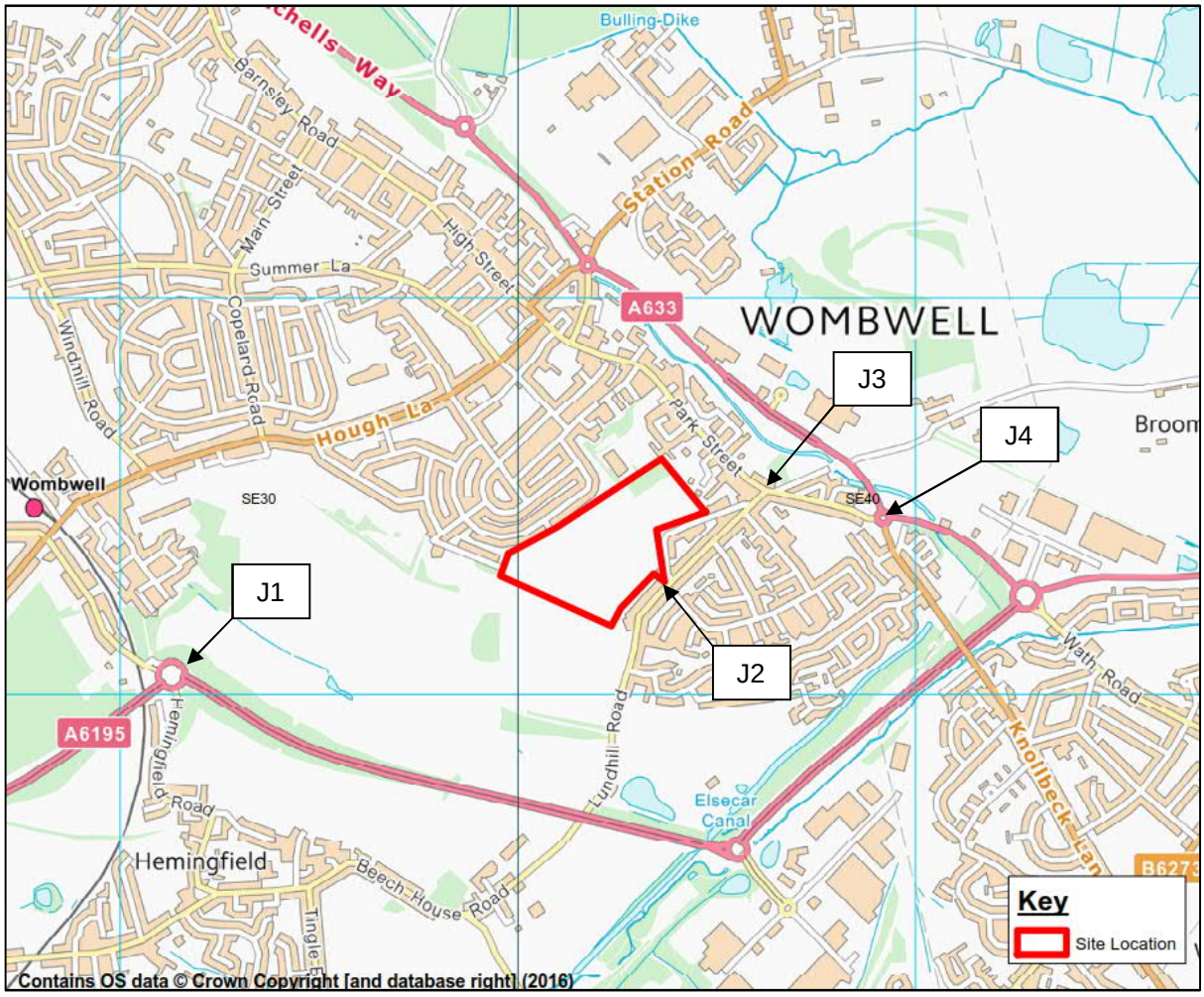
6.5 Junctions Assessed

The following section of the report provides further details on the anticipated impact of the development traffic on the local highway network. The junctions considered in this section are those most likely to be affected by the proposed development site, this includes the following:

- J1 – A6195 / Hemingfield Road;
- J2 – Lundhill Road / Gypsy Lane / Proposed Site Access;
- J3 – Lundhill Road / Park Street / Wath Road; and
- J4 – Wath Road / A633 / B6089.

These junctions are shown in Figure 8 below.

Figure 8: Junctions Assessed



6.6 Base Flows and Growth Factors

As part of the previous TA, base traffic surveys were undertaken on Tuesday 28th June 2016 at the following junctions:

- Wath Road / Lundhill Road;
- A633 / B6089 / Wath Road roundabout; and
- Hemingfield Road / A6195 roundabout.

TEMPRO was then used to identify growth factors to scale base flows (2016) to the assessment years of 2019 and 2024. The factors are provided in the table below.

Table 27: TEMPRO Growth Factors

Scenario		Growth Rate
Weekday AM & PM peak	2016-2019	1.04
Weekday AM & PM peak	2016-2024	1.12

Source: TEMPRO 7.2

6.7 Operational Assessments

Junctions 9 modelling software has been used to assess the operation of the junctions. The software uses Ratio to Flow Capacity (RFC) to measure the capacity of the access junction. RFC values of less than 0.85 are considered to indicate the junction operates at an acceptable level. Values between 0.85 – 1.00 are considered to indicate the junction is approaching capacity. Values above 1.00 are considered to indicate a junction operation over capacity.

The full results are provided in **Appendix E**.

6.7.1 Junction 1: A6195 / Hemingfield Road Roundabout

This roundabout junction has been modelled using Junctions 9 which is used to assess capacities, queues and delays on the highway network.

The table below outlines the results of the modelling.

Table 28: Junction 1 - A6195 / Hemingfield Road Roundabout

Movement	Scenario	AM Peak		PM Peak	
		RFC	Queue	RFC	Queue
Arm 1 – A6195 (E)	Base 2019	0.58	1	0.44	1
	Base 2024	0.66	2	0.50	1
	Base 2024 + Dev	0.66	2	0.50	1
	Base 2024 + Com + Dev	0.66	2	0.50	1
Arm 2 – Hemingfield Rd (S)	Base 2019	0.16	0	0.14	0
	Base 2024	0.19	0	0.17	0
	Base 2024 + Dev.	0.21	0	0.18	0
	Base 2024 + Com + Dev	0.22	0	0.20	0
Arm 3 – A6195 (W)	Base 2019	0.47	1	0.44	1
	Base 2024	0.54	1	0.50	1
	Base 2024 + Dev.	0.54	1	0.51	1
	Base 2024 + Com + Dev	0.54	1	0.51	1
Arm 4 – Hemingfield Rd (N)	Base 2019	0.17	0	0.19	0
	Base 2024	0.21	0	0.23	0
	Base 2024 + Dev	0.21	0	0.24	0
	Base 2024 + Com + Dev	0.22	0	0.24	0

Results indicate that this junction is predicted to operate satisfactorily with the addition of the development traffic during the peak hours and minimal vehicle queuing. It is anticipated that the junction would have a maximum delay of 5 seconds at the Hemingfield Rd (N) approach with the addition of committed development and development traffic.

6.7.2 Junction 2: Lundhill Road / Gypsy Lane / Proposed Site Access Junction

This junction has been modelled using Junctions 9 which is used to assess capacities, queues and delays on the highway network.

The table below outlines the results of the modelling.

Table 29: Junction 2 - Lundhill Road / Gypsy Lane / Proposed Site Access Junction

Movement	Scenario	AM Peak		PM Peak	
		RFC	Queue	RFC	Queue
Site Access left turn to Lundhill Rd (N)	Base 2024 + Dev	0.24	0	0.29	0
	Base 2024 + Com + Dev	0.24	0	0.29	0
Site Access right turn to Lundhill Rd (S)	Base 2024 + Dev.	0.08	0	0.09	0
	Base 2024 + Com + Dev	0.08	0	0.09	0
Lundhill Rd (S) straight ahead to Lundhill Rd (N) and right turn to Site Access	Base 2024 + Dev.	0.23	0	0.30	0
	Base 2024 + Com + Dev	0.23	0	0.30	0

Results indicate that this junction is predicted to operate satisfactorily with the addition of the development traffic during the peak hours and no vehicle queuing.

6.7.3 Junction 3: Lundhill Road / Park Street / Wath Road Junction

This junction has been modelled using Junctions 9 which is used to assess capacities, queues and delays on the highway network.

The table below outlines the results of the modelling.

Table 30: Junction 3 - Lundhill Road / Park Street / Wath Road Junction

Movement	Scenario	AM Peak		PM Peak	
		RFC	Queue	RFC	Queue
Lundhill Rd (S) left turn to Park Street	Base 2019	0.12	0	0.14	0
	Base 2024	0.15	0	0.16	0
	Base 2024 + Dev	0.34	1	0.39	1
	Base 2024 + Com + Dev	0.38	1	0.48	1
Lundhill Rd (S) Right turn to Wath Rd	Base 2019	0.21	0	0.21	0
	Base 2024	0.25	0	0.24	0
	Base 2024 + Dev.	0.51	1	0.55	1
	Base 2024 + Com + Dev	0.56	1	0.65	2
Park Street straight ahead to Wath Rd and right turn to Lundhill Rd (S)	Base 2019	0.20	0	0.12	0
	Base 2024	0.23	1	0.15	0
	Base 2024 + Dev.	0.36	1	0.38	1
	Base 2024 + Com + Dev	0.38	1	0.39	1

Results indicate that this junction is predicted to operate satisfactorily with the addition of the development traffic during the peak hours and minimal vehicle queuing. It is anticipated that the junction would have a maximum delay of 22 seconds for the Lundhill Rd (S) right turn to Wath Rd with the addition of committed development and development traffic.

6.7.4 Junction 4: Wath Road / A633 / B6089 Roundabout

This roundabout junction has been modelled using Junctions 9 which is used to assess capacities, queues and delays on the highway network.

The table below outlines the results of the modelling.

Table 31: Junction 4 – Wath Road / A633 / B6089 Roundabout

Movement	Scenario	AM Peak		PM Peak	
		RFC	Queue	RFC	Queue
Arm 1 – A633 (E)	Base 2019	0.57	1	0.40	1
	Base 2024	0.66	2	0.46	1
	Base 2024 + Dev	0.69	2	0.47	1
	Base 2024 + Com + Dev	0.70	2	0.48	1
Arm 2 – B6089 (S)	Base 2019	0.33	1	0.32	1
	Base 2024	0.39	1	0.37	1
	Base 2024 + Dev.	0.41	1	0.40	1
	Base 2024 + Com + Dev	0.43	1	0.41	1
Arm 3 – Wath Rd (W)	Base 2019	0.32	1	0.29	0
	Base 2024	0.37	1	0.35	1
	Base 2024 + Dev.	0.43	1	0.41	1
	Base 2024 + Com + Dev	0.45	1	0.44	1
Arm 4 – A633 (N)	Base 2019	0.57	1	0.56	1
	Base 2024	0.65	2	0.64	2
	Base 2024 + Dev.	0.69	2	0.67	2
	Base 2024 + Com + Dev	0.70	2	0.67	2

Results indicate that this junction is predicted to operate satisfactorily with the addition of the development traffic during the peak hours and minimal vehicle queuing. It is anticipated that the junction would have a maximum delay of 8 seconds on the A633 (Arm 4) approach with the addition of committed development and development traffic.

7. Summary and Conclusions

AECOM have been appointed by Premier Construction to prepare a Transport Assessment (TA) in support of a proposed development site in the Wombwell area of Barnsley. The proposals consist of the construction of 229 privately owned residential dwellings and a new 1.5 form primary school (Circa 315 pupils) on the land to the north of Gyspy Lane, Wombwell.

The traffic modelling has been undertaken based on an elevated number of dwellings (250), which adds to the robustness of the assessment.

The proposals are considered to be in accordance with national and local planning policy from a transport perspective as the impact of the development proposals are not seemed to be severe.

A review of the local area shows that no accidents took place close to the proposed accesses on Lundhill Road in the last five years with a significant decrease in the number of accidents in 2017 (no serious or fatal accidents occurred). The incident on Roebuck Street was a result of the driver losing control and colliding with a stone wall, before fleeing the scene. Therefore, it is not considered that development traffic will have a negative effect in relation to safety.

It is considered that the development site is located in an area with very good existing public transport links, walking and cycling infrastructure, which will support sustainable travel and reduce the reliance on private vehicular modes.

The methodology used to determine the potential additional vehicle trips generated as a result of proposals has been described. The total two-way trips associated with the residential element are considered to be 155 vehicle trips during the AM peak and 147 vehicle trips during the PM peak.

Derivation of potential trips generated by the primary school has been assumed by using the existing school Travel Plan to pro-rata the additional pupils and staff expected based on existing modal splits. A total two-way trip generation of 164 vehicle movements would be expected during both the AM peak, with 164 vehicle movements in the PM peak.

The following junctions are those most likely to be affected by the proposed development site. The following were assessed:

- J1 – A6195 / Hemingfield Road;
- J2 – Lundhill Road / Gypsy Lane / Proposed Site Access;
- J3 – Lundhill Road / Park Street / Wath Road; and
- J4 – Wath Road / A633 / B6089.

The scenarios that have been applied to the operational assessments are as follows:

- Base 2019;
- Base 2024;
- Base 2024 + Proposed Development; and
- Base 2024 + Committed Development + Proposed Development.

The results of the modelling are provided in Table 32.

Table 32: Modelling Summary

Junction	2019 Base		2024 Base		2024 Base With Proposed Development		2024 Base With Committed Development & Proposed Development	
	AM	PM	AM	PM	AM	PM	AM	PM
J1 – A6195 / Hemingfield Road;	N/A	N/A	N/A	N/A	✔	✔	✔	✔
J2 – Lundhill Road / Gypsy Lane / Proposed Site Access;	✔	✔	✔	✔	✔	✔	✔	✔
J3 – Lundhill Road / Park Street / Wath Road; and	✔	✔	✔	✔	✔	✔	✔	✔
J4 – Wath Road / A633 / B6089	✔	✔	✔	✔	✔	✔	✔	✔

Key: ✔ Under capacity ~ Approaching Capacity **X** Over Capacity

The junction modelling indicated that the junctions would all operate under capacity in a future year with the additional development traffic.

Appendix A – Figures & Drawings

THE Premier Group OF COMPANIES

Gypsy Lane, Wombwell
ACCOMMODATION SCHEDULE

STEN ARCHITECTURE

Reference	Code	Floor Area (Sqft)	Beds	Storeys	Total	Total Sqft	% of Mix
Private							
Type L		624	2	1	2	1248	1.0
Bungalow PB		832	3	1	3	2496	1.5
Type F		839	3	2	31	26009	15.0
Type H		919	3	2	15	13785	7.3
Type S		978	3	2	28	27384	13.6
Type T		1055	3	2	10	10550	4.9
Type C		1000	3	2	4	4000	1.9
Type G		1100	3	2.5	20	22000	9.7
Type D		1215	4	2	28	34020	13.6
Type J		1200	4	2.5	38	45600	18.4
Type A		1296	4	2	14	18144	6.8
Type E		1420	4	2	13	18460	6.3
Sub-Total					206	**223696**	100.0
Affordable							
Type L		624	2	1	4	2496	17.4
Type B		685	2	2	19	13015	82.6
Sub-Total					23	**15511**	100.0
Grand Total					229	239207	

		hectares	acres
Approx gross area		7.72	19.08
Gross developable area		7.39	18.26
POS required (15%)		1.11	2.74
POS provided		1.12	2.77
nett developable area		5.92	14.63
coverage		39	**16352**

Notes:

This drawing design and concepts are copyright of STEN Architecture.

All Dimensions are to be verified on site before any work commences. If any discrepancies, errors are emissions are noted, these are to be report to STEN architecture immediately.

If any other drawings are reference within this layout, please refer to the specific detailed drawing for design, materials and specific working practices.

PLANNING LAYOUT KEY:

Boundary treatments

- Brick wall
- Close boarded timber fence
- Property division
- Metal railings
- Post & rail
- 450 Knee rail

General

- Affordable plot
- Bin collection point (bin collection day only)
- Site boundary
- Herringbone Block paving
- Retained tree

N

Scaled @ 1:500

0 10m 20m 50m

REV:	DESCRIPTION:	BY:	DATE:

STEN ARCHITECTURE

Suite 4, Unit 1,
Benton Office Park,
Bennett Avenue,
Horbury,
Wakefield,
WF4 5RA
Tel: 01924 669424

Web: www.sten-architecture.co.uk
Twitter: @STEN_arch
Facebook: stenarchitectureltd
Linkedin: Sten Architecture

CLIENT: Premier group of companies
51 Rimington Road
Wombwell
Barnsley
S73 8DQ

SITE: Wombwell

TITLE: Planning Layout

SCALE AT A0:	DATE:	DRAWN:	CHECKED:
1:500	13.12.18	TS	--

PROJECT NO:	DRAWING NO:	REVISION:
1876	1876.01	--

Appendix B – Accident Data

Accidents between dates **01/01/2012** **and** **31/12/2016** (60) months

Selection:
Selected using Build Query : Local_auth = 'Barnsley'

Notes:
AECOM - Luke Oddy Wombwell Area

Police Ref.	Acc Class	Date	Time	Grid References		Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
B-00148-12	Slight	12/02/2012	2018	438823	402409	0	0	3	410V1A 602V1B 408V1A 403V1B 509V1B	0 0 0	Dark	Fine without high winds	Dry	9
B-00191-12	Slight	04/03/2012	1725	440749	402485	0	0	1	406V1A 103V1B	0 0 0	Dark	Other	Wet/Damp	9 9 9
B-00406-12	Slight	06/05/2012	2030	439865	401445	0	0	1	501V1A	0 0 0	Light	Fine without high winds	Dry	9
B-00610-12	Serious	05/07/2012	1345	439179	402032	0	1	1	410V1B 706V1B	0 0 0	Light	Fine without high winds	Dry	9
B-00622-12	Slight	19/07/2012	0845	440561	402558	0	0	1		0 0 0	Light	Unknown	Dry	9 9 9
B-00860-12	Slight	18/09/2012	2230	439092	402052	0	0	1	406V2A 408V1A	0 0 0	Dark	Fine without high winds	Dry	9 9
B-01050-12	Serious	21/11/2012	0820	439624	401806	0	1	0	103V1B 410V1A 102V1A	0 0 0	Light	Raining without high winds	Wet/Damp	9
B-01089-12	Serious	28/11/2012	1715	440834	402587	0	1	0	405V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 1
B-01165-12	Serious	17/12/2012	1700	439914	402809	0	1	0	809C1A	9 9 9	Dark	Snowing without high win	Wet/Damp	9
131898	Serious	03/01/2013	1900	438814	402394	0	1	1		0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
132299	Slight	10/01/2013	1142	440622	402512	0	0	1	802C1A	8 3 9	Light	Fine without high winds	Dry	9
133206	Slight	31/01/2013	1420	439132	402089	0	0	1	999V1B 307V1A 401V1A	0 0 0	Light	Fine with high winds	Dry	21
133318	Serious	04/02/2013	1922	440090	402916	0	1	0	802C1B 406V1B	5 3 6	Dark	Raining without high winds	Wet/Damp	9
133775	Slight	13/02/2013	1759	439908	402807	0	0	1	405V2A	0 0 0	Dark	Fine without high winds	Dry	9 9
B-00167-13	Slight	22/04/2013	1137	441334	402267	0	0	2	901V1A 605V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00218-13	Slight	04/05/2013	1540	439601	401579	0	0	1	401V1A 410V1A	0 0 0	Light	Fine without high winds	Dry	3
B-00221-13	Slight	13/05/2013	1830	439019	402383	0	0	1	808C1A	9 2 1	Light	Unknown	Dry	9
B-00308-13	Fatal	13/06/2013	0952	438824	402406	1	0	0	406V1A	8 3 9	Light	Unknown	Dry	19
B-00334-13	Slight	20/06/2013	1140	439119	402018	0	0	1	403V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00440-13	Slight	26/07/2013	1215	438815	402390	0	0	1	405V2A	0 0 0	Light	Fine without high winds	Dry	9 9
C-00670-13	Slight	31/07/2013	2022	441250	402284	0	0	1	605V2B 408V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00723-13	Serious	26/08/2013	1800	439151	402030	0	1	0	403V1A 605V1A 410V1B	0 0 0	Light	Fine without high winds	Dry	3
B-00582-13	Slight	30/09/2013	1449	440301	402830	0	0	1	405V2A 406V2A 405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00643-13	Slight	19/10/2013	1610	440631	402514	0	0	2	602V1B 405V1A	0 0 0	Light	Unknown	Dry	9 9
B-00116-14	Slight	05/02/2014	2149	440914	402477	0	0	1	406V1A	0 0 0	Dark	Raining without high winds	Wet/Damp	9 9
B-00189-14	Slight	25/02/2014	2330	441260	402279	0	0	1	406V2A	0 0 0	Dark	Fine without high winds	Dry	2 9

Accidents between dates **01/01/2012** **and** **31/12/2016** (60) months

Selection:
Selected using Build Query : Local_auth = 'Barnsley'

Notes:
AECOM - Luke Oddy Wombwell Area

Police Ref.	Acc Class	Date	Time	Grid References		Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
B-00208-14	Slight	25/02/2014	1150	439169	402598	0	0	1	802C1B	5 4 9	Light	Fine without high winds	Dry	9
B-00545-14	Slight	15/04/2014	1512	440788	402480	0	0	1	401V1A 403V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00509-14	Slight	02/06/2014	1410	439154	402026	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 1
B-00529-14	Slight	03/06/2014	2140	439222	402614	0	0	1	406V2A 406V1A 306V2B 306V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00530-14	Slight	04/06/2014	1143	438819	402395	0	0	1	403V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00783-14	Serious	22/08/2014	1825	439098	402035	0	1	2	403V1A 405V1A	0 0 0	Light	Fine without high winds	Dry	9 5
C-00974-14	Slight	10/09/2014	1720	441233	402218	0	0	3	406V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
B-01090-14	Serious	14/11/2014	1645	438814	402388	0	1	0	405V2B	0 0 0	Dark	Unknown	Dry	3 9
B-01145-14	Slight	16/11/2014	2252	439445	402643	0	0	1	501V1A 103V1B	0 0 0	Dark	Unknown	Dry	9
B-01151-14	Slight	25/11/2014	1940	440173	401687	0	0	1	406V1B 406V2B	0 0 0	Dark	Fine without high winds	Dry	9 9
B-01232-14	Slight	12/12/2014	1900	441345	402270	0	0	1	206V2B 999V2B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-01318-14	Slight	15/12/2014	1215	439090	402026	0	0	2	405V2B	0 0 0	Light	Unknown	Dry	9 9
B-00044-15	Slight	15/01/2015	1830	440945	402442	0	0	2	405V1A 501V1A	1 9 9	Dark	Raining with high winds	Wet/Damp	9
B-00159-15	Slight	18/02/2015	1400	439242	401498	0	0	1	403V2B 409V2B 410V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00192-15	Slight	26/02/2015	1410	440092	402915	0	0	1	402V1B 405V2B 701V1B 406V1B 406V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00278-15	Slight	10/03/2015	1827	440025	401729	0	0	2	406V1A 405V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00290-15	Serious	31/03/2015	0613	438812	402390	0	1	0	405V1B 406V1B 403V1B 602V1B 203V1A 101V1B	0 0 0	Light	Raining with high winds	Wet/Damp	3 19
B-00324-15	Slight	10/04/2015	1353	440902	402448	0	0	1	405V1A 405V2A	0 0 0	Light	Fine without high winds	Dry	9 1
B-00331-15	Slight	15/04/2015	1105	440022	402827	0	0	1	710V1A 405V1A	6 9 1	Light	Fine without high winds	Dry	19
B-00411-15	Slight	08/05/2015	2037	439078	402568	0	0	1	103V2A 405V2A 607V2A	0 0 0	Dark	Raining without high winds	Wet/Damp	9 9
B-00610-15	Slight	08/07/2015	1620	440169	401696	0	0	1	302V2A 405V2A 401V2A 602V2B 601V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00882-15	Slight	25/08/2015	1850	439958	402841	0	0	2	301V2A 405V2A 602V2B 605V2B	0 0 0	Light	Fine without high winds	Dry	9 9

Accidents between dates **01/01/2012** **and** **31/12/2016** (60) months

Selection:
Selected using Build Query : Local_auth = 'Barnsley'

Notes:
AECOM - Luke Oddy Wombwell Area

Police Ref.	Acc Class	Date	Time	Grid References		Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
B-00839-15	Slight	19/09/2015	0920	441260	402278	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 1
B-00954-15	Slight	19/10/2015	0730	439101	402071	0	0	1	405V2A 406V2B 606V2A 709V2A	0 0 0	Light	Fine without high winds	Dry	9 19
B-01021-15	Slight	09/11/2015	0609	439112	402080	0	0	2	405V2B 406V1B	0 0 0	Dark	Other	Wet/Damp	9 19
B-01070-15	Slight	23/11/2015	0710	439096	402037	0	0	1	203V2A 407V1B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 1
B-01083-15	Slight	24/11/2015	1915	441339	402266	0	0	1	601V1A	0 0 0	Dark	Fine without high winds	Dry	9 2
B-01098-15	Slight	28/11/2015	1630	438934	402503	0	0	2	707V2B 103V2B	0 0 0	Dark	Raining with high winds	Wet/Damp	9 9
B-01156-15	Slight	12/12/2015	1130	439598	401816	0	0	1	103V1A 707V1A	0 0 0	Light	Raining without high winds	Flood	9
B-01221-15	Slight	22/12/2015	0850	440000	402801	0	0	1	403V2A 405V2B 602V2B	0 0 0	Light	Fine with high winds	Dry	9 9
1650732	Slight	29/02/2016	0128	439098	402067	0	0	1	999V1B 406V1B 401V1A	0 0 0	Dark	Fine without high winds	Dry	9 9
1656325	Slight	21/03/2016	2030	439159	402067	0	0	1	406V1A 406V2A 605V1A 605V2A	0 0 0	Dark	Fine without high winds	Dry	9 9
1657803	Slight	01/04/2016	1354	439162	402066	0	0	1	403V1A 606V1B	0 0 0	Light	Fine without high winds	Dry	98 9
1664714	Serious	18/04/2016	2216	439109	401734	0	1	0	403V1A	0 0 0	Dark	Fine without high winds	Dry	9 9
1668018	Serious	27/04/2016	2030	438780	402354	0	1	0	501V1A 306V1B 602V1B 802C1B	5 3 4	Dark	Raining without high winds	Wet/Damp	9
1672494	Slight	17/05/2016	0850	439027	402548	0	0	2	405V1B 509V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1673766	Slight	17/05/2016	1145	438921	402250	0	0	3	308V3A 405V1B 406V2B 408V2A 701V1B	0 0 0	Light	Fine without high winds	Dry	9 9 9
16104019	Slight	25/08/2016	0744	439135	402007	0	0	1	606V1A 404V1A 406V2B	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
16109283	Slight	03/09/2016	0040	440916	402472	0	0	1	405V1A 406V1B 501V1A 809C1A	7 3 3	Dark	Fine without high winds	Dry	9
16106160	Slight	03/09/2016	0157	440111	402641	0	0	2	306V1A 501V1A 403V1A 410V1A 405V1A 602V1A	0 0 0	Dark	Fine without high winds	Dry	9
16115054	Slight	27/09/2016	0600	439180	402027	0	0	1	103V1A 201V1A 602V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9
16113078	Slight	03/10/2016	1254	441282	402216	0	0	2	602V2A	0 0 0	Light	Fine without high winds	Dry	9 9

Accidents between dates **01/01/2012** **and** **31/12/2016** (60) months

Selection:
Selected using Build Query : Local_auth = 'Barnsley'

Notes:
AECOM - Luke Oddy Wombwell Area

Police Ref.	Acc Class	Date	Time	Grid References		Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
16129546	Slight	05/11/2016	2125	438872	402460	0	0	1	501V2A 502V2B 103V2B 602V2B 601V2A 405V2B	0 0 0	Dark	Raining without high winds	Wet/Damp	9 9
16127629	Slight	06/11/2016	1915	440791	402478	0	0	1	405V2A 602V2B 405V2B	0 0 0	Dark	Other	Dry	9 9
16153568	Serious	17/12/2016	2300	440038	402970	0	1	0	406V1B	4 1 3	Dark	Fine without high winds	Dry	9
Column Totals						1	13	0			**Light :** 41 **Dark :** 30		**Dry :** 52 **Wet :** 18	

Total number of accidents listed: 71

Appendix C – TRICS Outputs

Calculation Reference: AUDIT-204609-170831-0808

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : A - PRIMARY
MULTI-MODAL VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	DV	DEVON	1 days
06	WEST MIDLANDS		
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	1 days
08	NORTH WEST		
	LC	LANCASHIRE	1 days
	MS	MERSEYSIDE	2 days
10	WALES		
	MT	MERTHYR TYDFIL	1 days
	WR	WREXHAM	1 days

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

Secondary Filtering selection:

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

Parameter: Number of pupils
Actual Range: 147 to 472 (units:)
Range Selected by User: 92 to 472 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 28/09/16

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

Selected survey days:

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

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

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	6
Edge of Town	1

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

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

D1	8 days

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

Population within 1 mile:

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

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

Population within 5 miles:

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

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	4 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	8 days

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

PTAL Rating:

No PTAL Present	8 days

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

LIST OF SITES relevant to selection parameters

1 DV-04-A-03 PRIMARY SCHOOL DEVON
ARDEN GROVE
PENNYCROSS
PLYMOUTH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 230
Survey date: FRIDAY 08/07/05 Survey Type: MANUAL

2 LC-04-A-05 PRIMARY SCHOOL LANCASHIRE
NEWTON STREET

BLACKBURN
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of pupils: 472
Survey date: WEDNESDAY 28/09/16 Survey Type: MANUAL

3 MS-04-A-01 RC PRIMARY SCHOOL MERSEYSIDE
DERWENT ROAD

ST HELENS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 193
Survey date: THURSDAY 05/10/06 Survey Type: MANUAL

4 MS-04-A-02 PRIMARY SCHOOL MERSEYSIDE
BOOKER AVENUE
ALVERTON
LIVERPOOL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 264
Survey date: THURSDAY 13/06/13 Survey Type: MANUAL

5 MT-04-A-01 PRIMARY SCHOOL MERTHYR TYDFIL
BRECON ROAD

MERTHYR TYDFIL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 184
Survey date: FRIDAY 18/10/13 Survey Type: MANUAL

6 NE-04-A-01 PRIMARY SCHOOL NORTH EAST LINCOLNSHIRE
SUNNINGDALE ROAD

SCUNTHORPE
Edge of Town
Residential Zone
Total Number of pupils: 147
Survey date: TUESDAY 20/05/14 Survey Type: MANUAL

7 WO-04-A-01 PRIMARY SCHOOL WORCESTERSHIRE
ST PETERS CHURCH LANE

DROITWICH SPA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of pupils: 447
Survey date: MONDAY 13/06/05 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 WR-04-A-01 PRIMARY SCHOOL WREXHAM
BODHYFRYD

WREXHAM
Edge of Town Centre
No Sub Category
Total Number of pupils: 283
Survey date: THURSDAY 13/10/11 Survey Type: MANUAL

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL VEHICLES
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.052	8	278	0.023	8	278	0.075
08:00 - 09:00	8	278	0.354	8	278	0.223	8	278	0.577
09:00 - 10:00	8	278	0.032	8	278	0.052	8	278	0.084
10:00 - 11:00	8	278	0.012	8	278	0.014	8	278	0.026
11:00 - 12:00	8	278	0.035	8	278	0.021	8	278	0.056
12:00 - 13:00	8	278	0.018	8	278	0.032	8	278	0.050
13:00 - 14:00	8	278	0.023	8	278	0.031	8	278	0.054
14:00 - 15:00	8	278	0.069	8	278	0.018	8	278	0.087
15:00 - 16:00	8	278	0.129	8	278	0.247	8	278	0.376
16:00 - 17:00	8	278	0.040	8	278	0.073	8	278	0.113
17:00 - 18:00	8	278	0.022	8	278	0.037	8	278	0.059
18:00 - 19:00	6	301	0.007	6	301	0.001	6	301	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.793			0.772			1.565

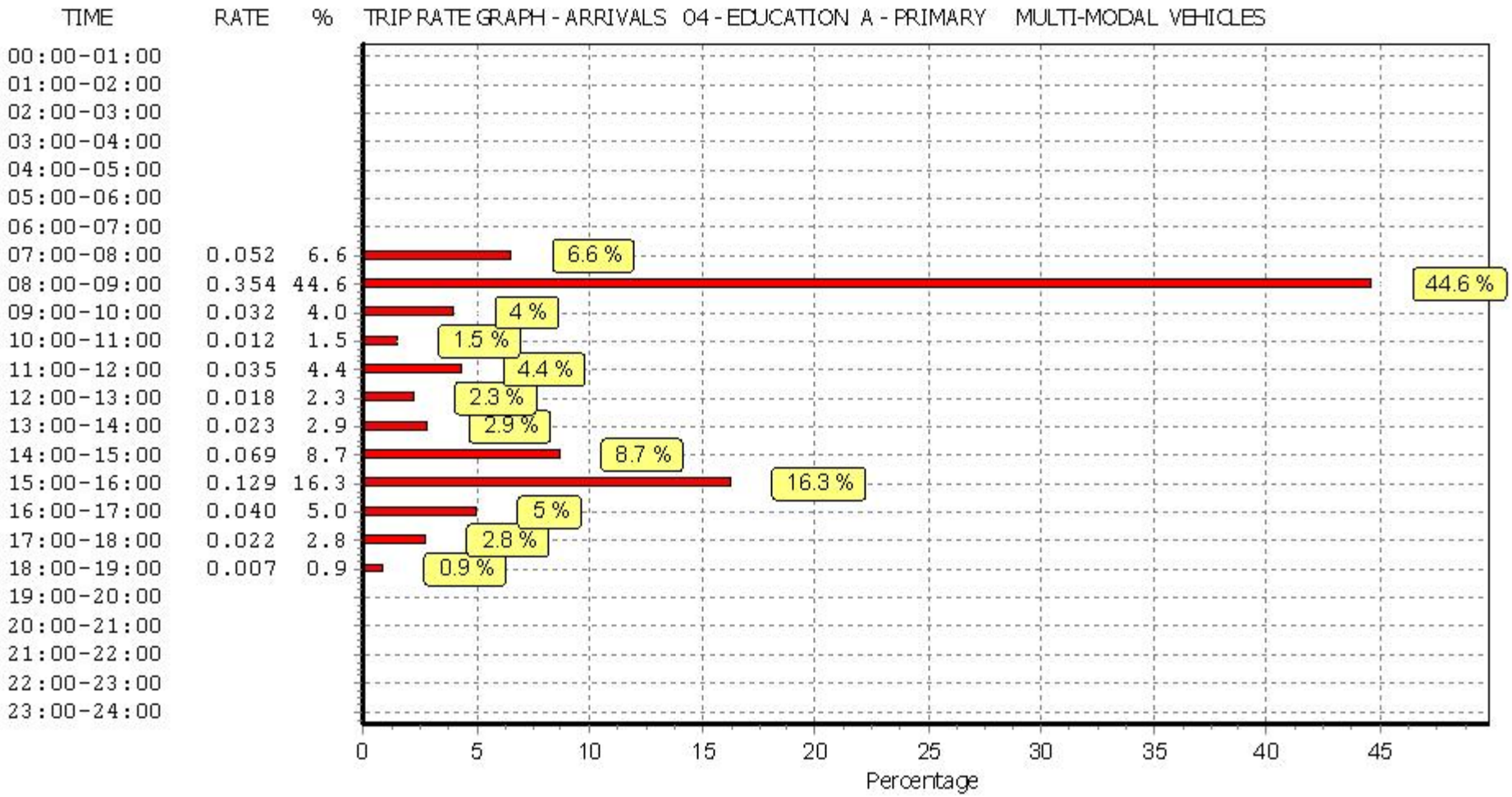
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

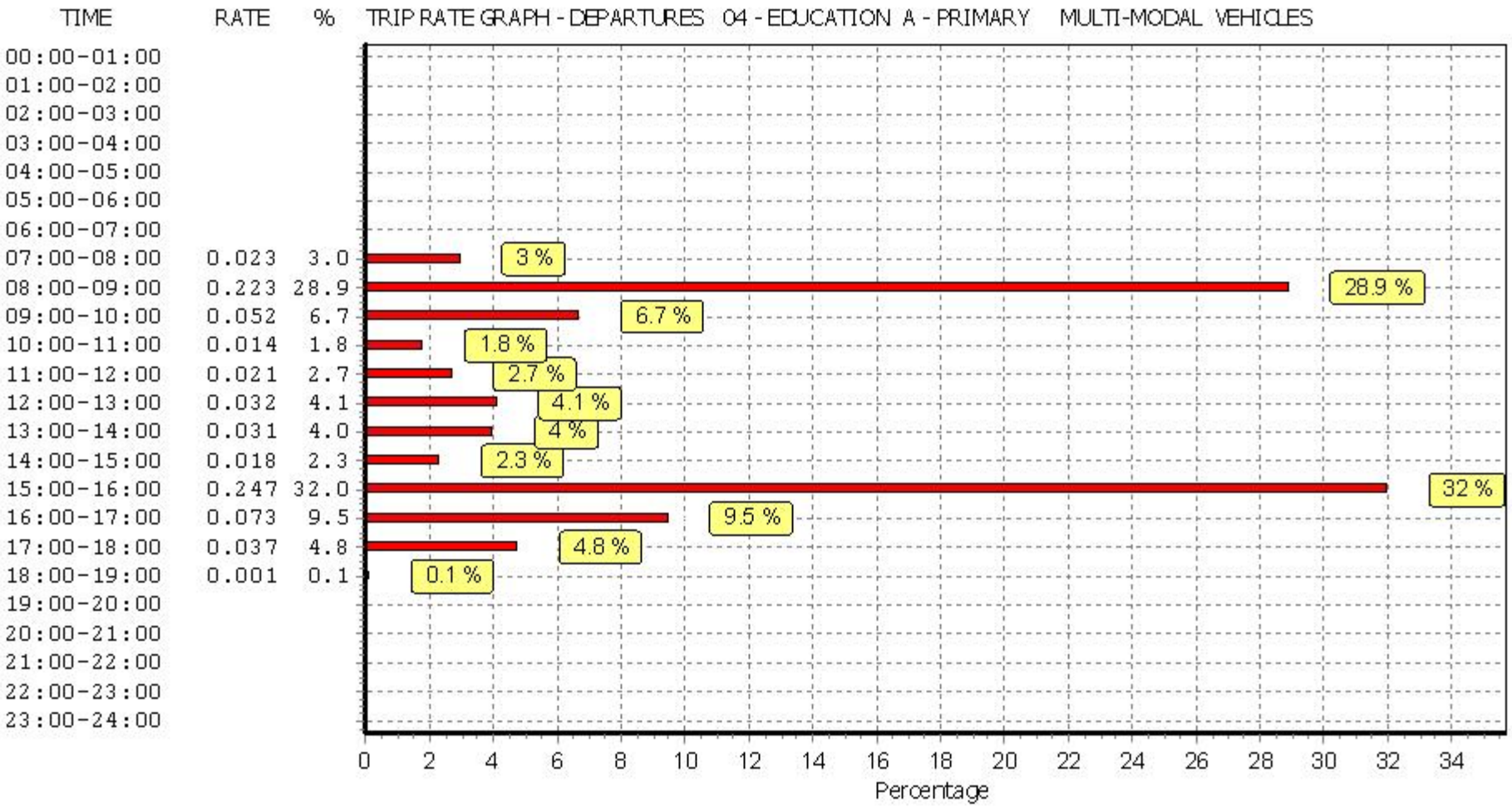
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



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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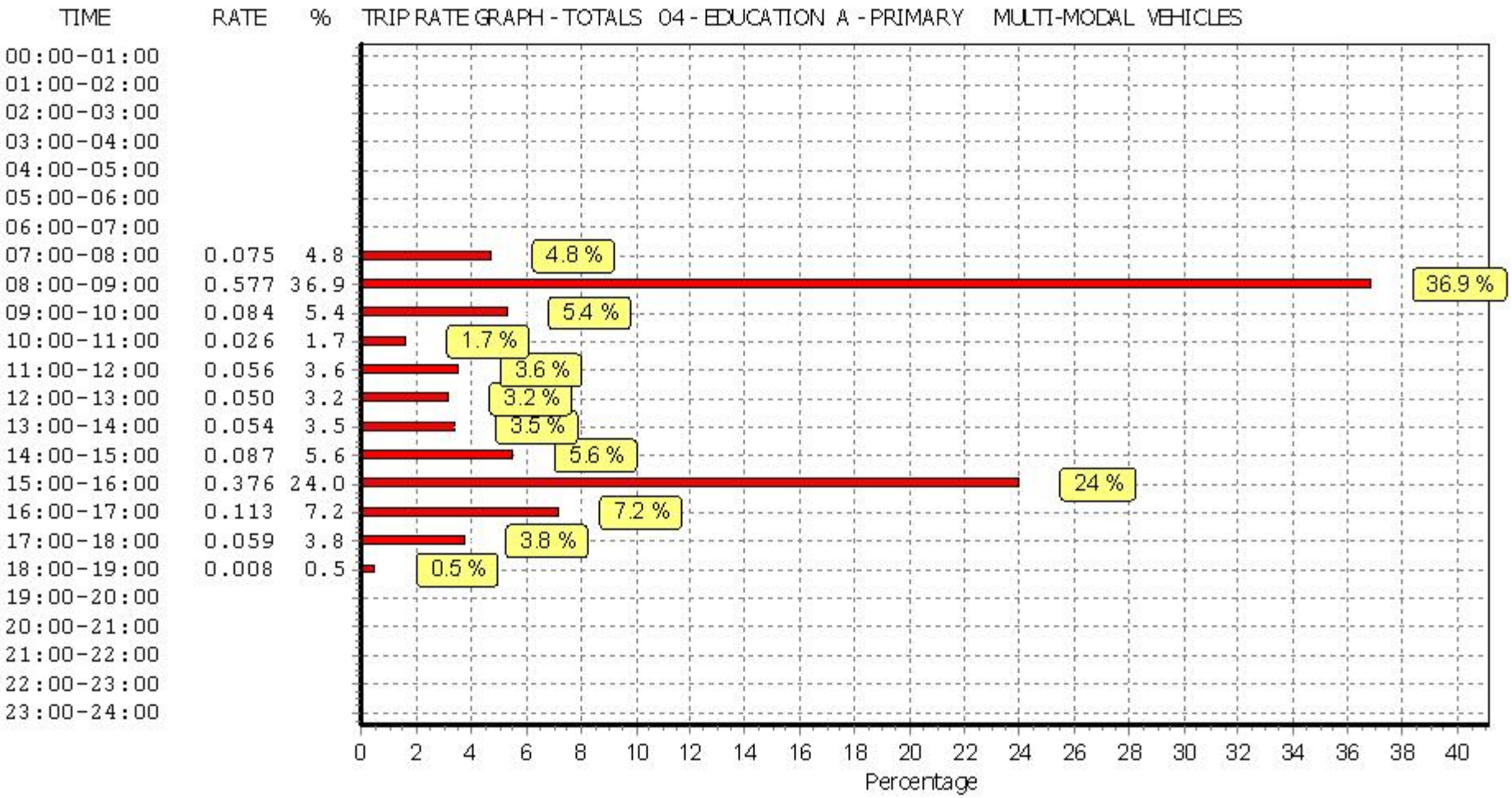

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TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL OGVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.000	8	278	0.000	8	278	0.000
08:00 - 09:00	8	278	0.000	8	278	0.000	8	278	0.000
09:00 - 10:00	8	278	0.000	8	278	0.000	8	278	0.000
10:00 - 11:00	8	278	0.000	8	278	0.000	8	278	0.000
11:00 - 12:00	8	278	0.001	8	278	0.001	8	278	0.002
12:00 - 13:00	8	278	0.000	8	278	0.000	8	278	0.000
13:00 - 14:00	8	278	0.001	8	278	0.001	8	278	0.002
14:00 - 15:00	8	278	0.000	8	278	0.000	8	278	0.000
15:00 - 16:00	8	278	0.000	8	278	0.000	8	278	0.000
16:00 - 17:00	8	278	0.000	8	278	0.000	8	278	0.000
17:00 - 18:00	8	278	0.000	8	278	0.000	8	278	0.000
18:00 - 19:00	6	301	0.000	6	301	0.000	6	301	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

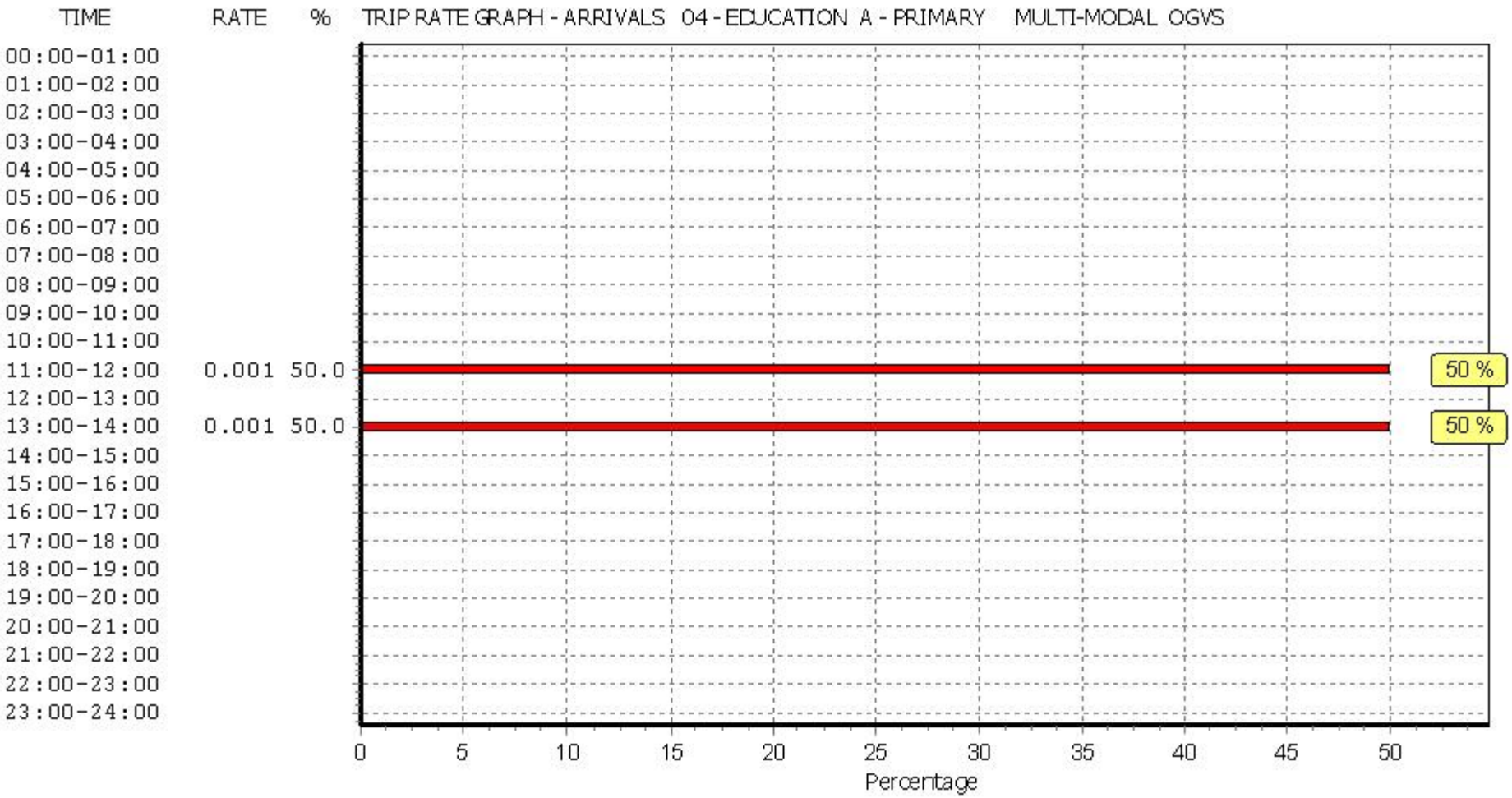
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

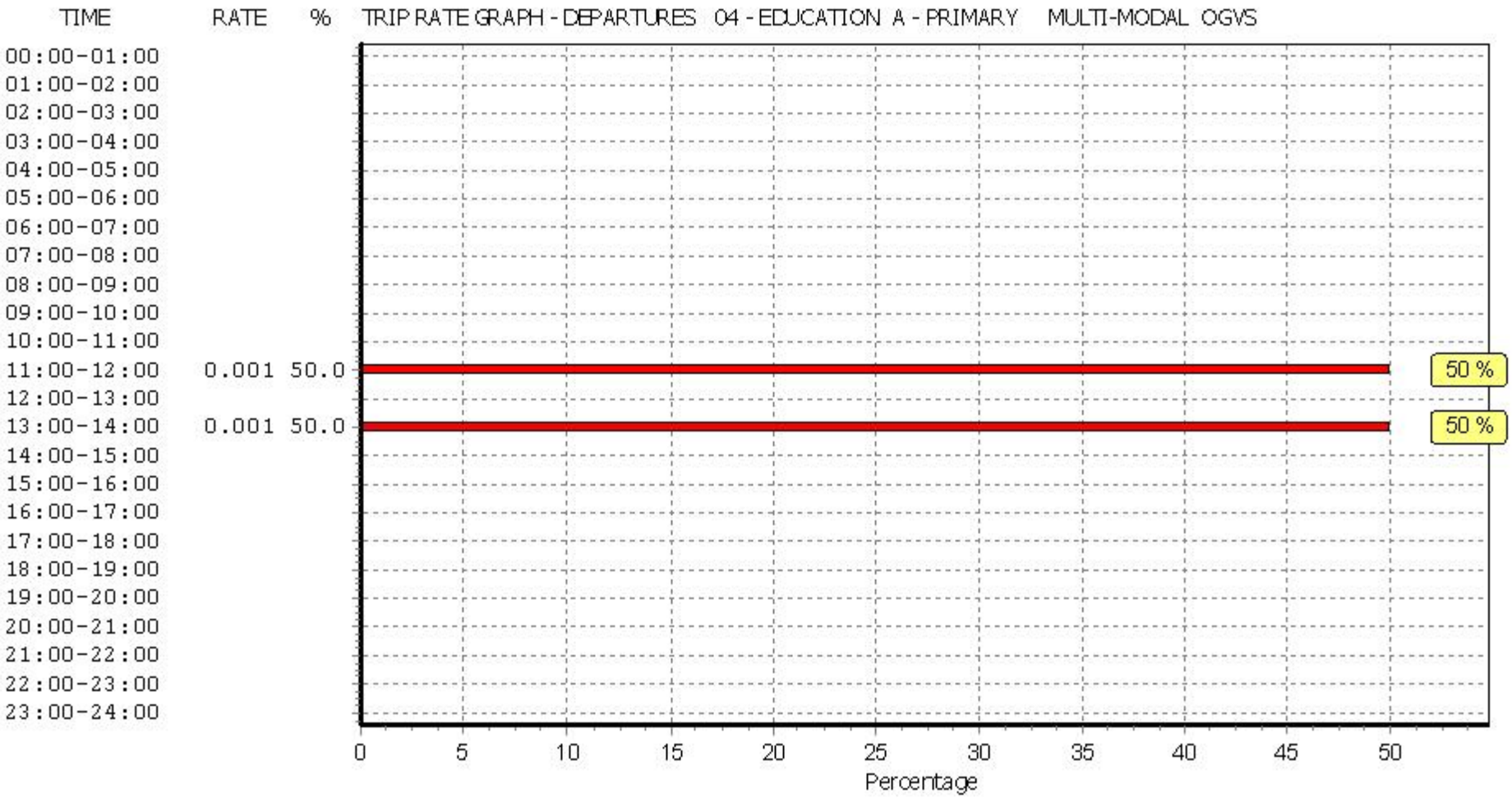
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



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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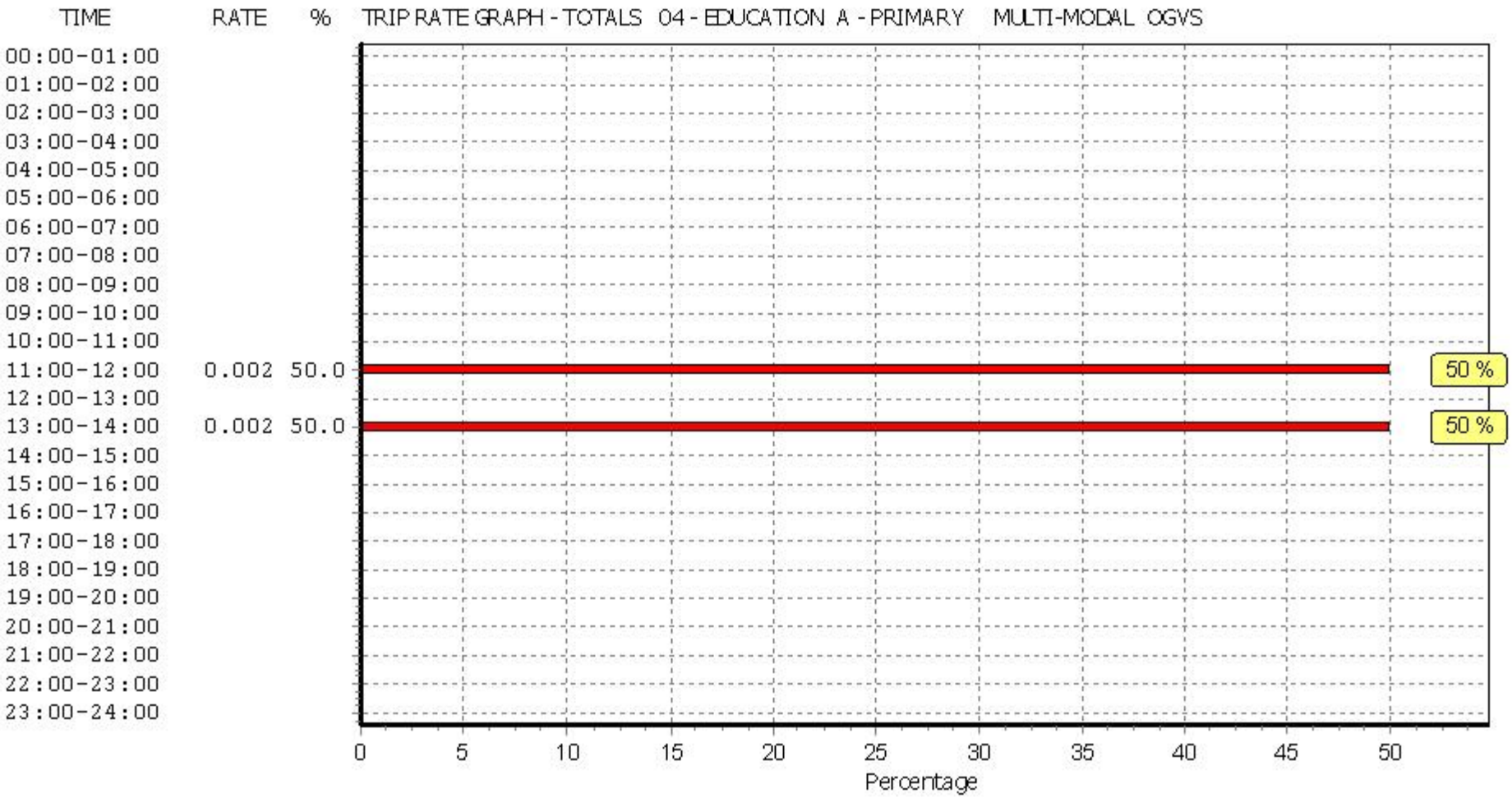

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TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PSVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.000	8	278	0.000	8	278	0.000
08:00 - 09:00	8	278	0.002	8	278	0.002	8	278	0.004
09:00 - 10:00	8	278	0.001	8	278	0.001	8	278	0.002
10:00 - 11:00	8	278	0.000	8	278	0.000	8	278	0.000
11:00 - 12:00	8	278	0.000	8	278	0.000	8	278	0.000
12:00 - 13:00	8	278	0.000	8	278	0.000	8	278	0.000
13:00 - 14:00	8	278	0.000	8	278	0.000	8	278	0.000
14:00 - 15:00	8	278	0.000	8	278	0.000	8	278	0.000
15:00 - 16:00	8	278	0.000	8	278	0.000	8	278	0.000
16:00 - 17:00	8	278	0.000	8	278	0.000	8	278	0.000
17:00 - 18:00	8	278	0.000	8	278	0.000	8	278	0.000
18:00 - 19:00	6	301	0.000	6	301	0.000	6	301	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

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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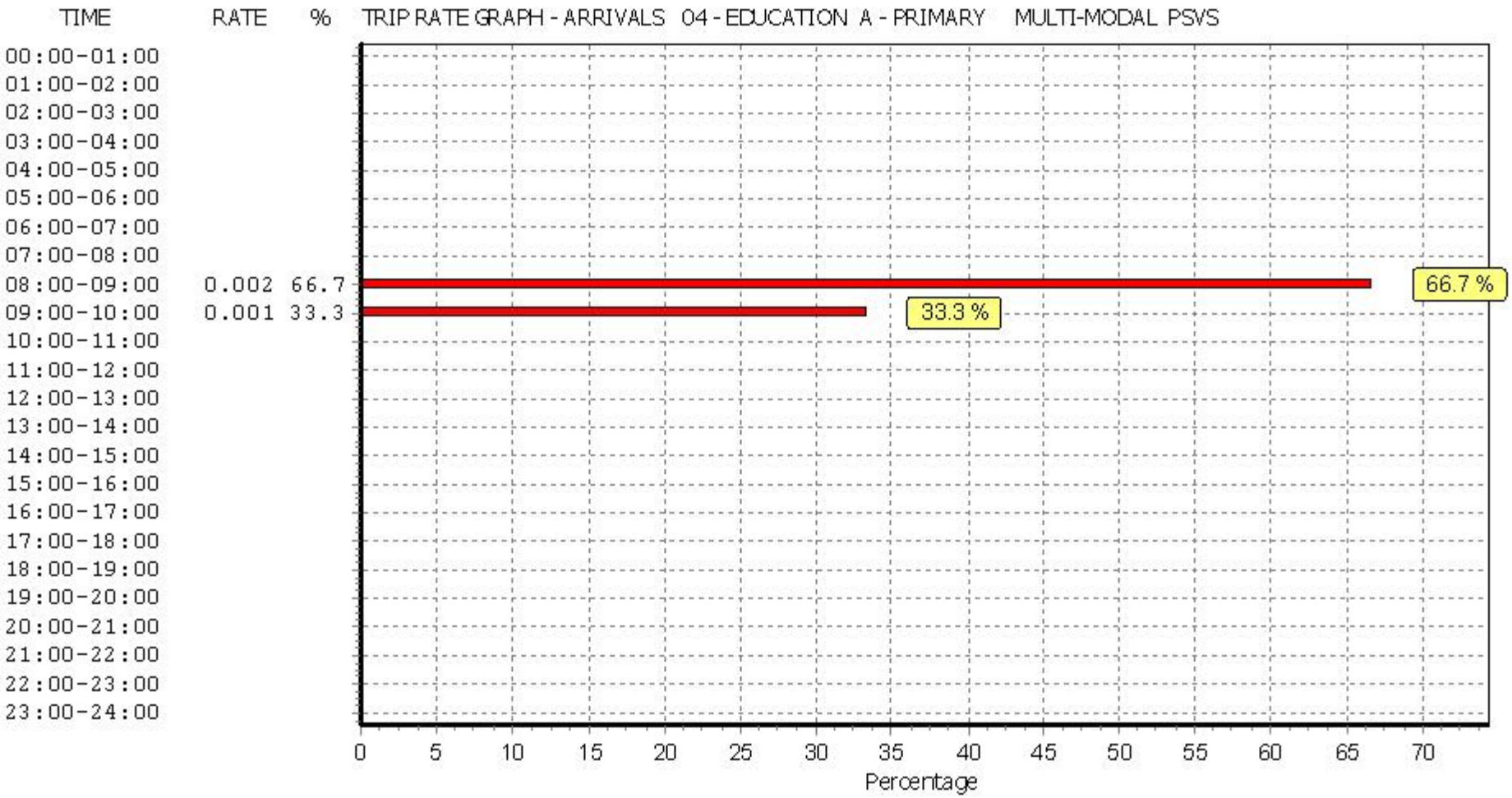
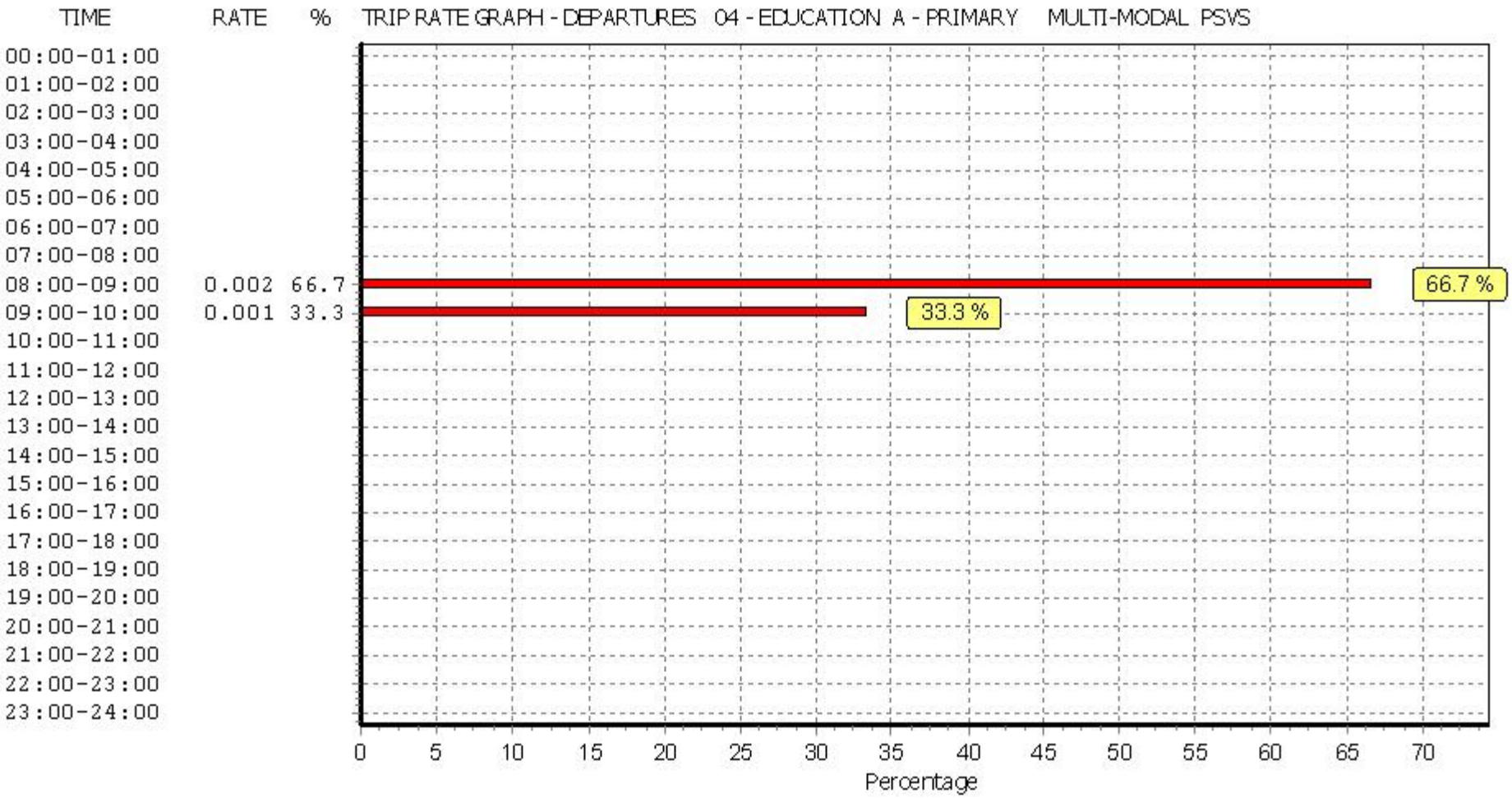
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



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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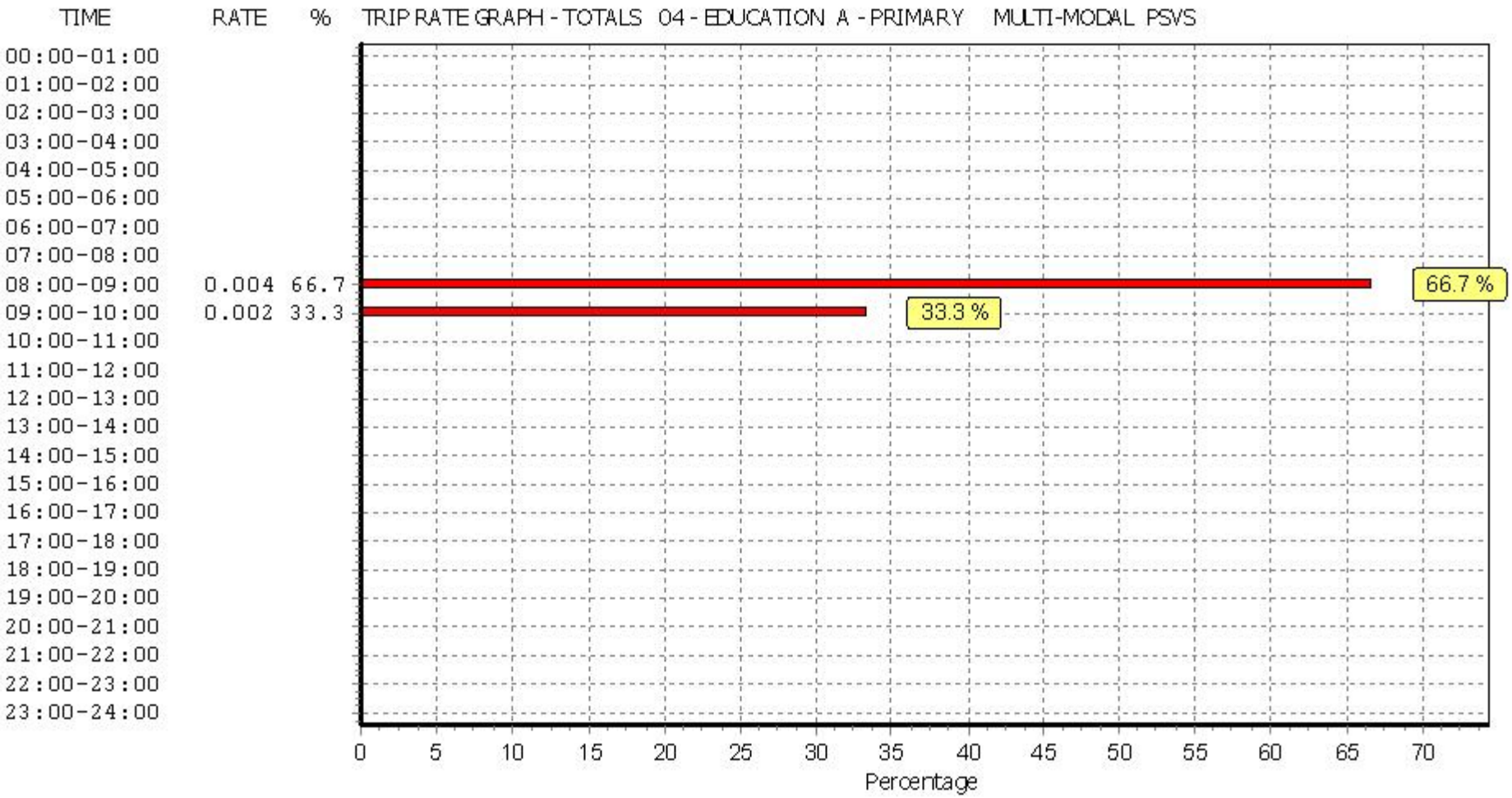


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL CYCLISTS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.000	8	278	0.000	8	278	0.000
08:00 - 09:00	8	278	0.004	8	278	0.001	8	278	0.005
09:00 - 10:00	8	278	0.000	8	278	0.000	8	278	0.000
10:00 - 11:00	8	278	0.000	8	278	0.000	8	278	0.000
11:00 - 12:00	8	278	0.000	8	278	0.000	8	278	0.000
12:00 - 13:00	8	278	0.000	8	278	0.000	8	278	0.000
13:00 - 14:00	8	278	0.000	8	278	0.000	8	278	0.000
14:00 - 15:00	8	278	0.000	8	278	0.001	8	278	0.001
15:00 - 16:00	8	278	0.000	8	278	0.004	8	278	0.004
16:00 - 17:00	8	278	0.000	8	278	0.000	8	278	0.000
17:00 - 18:00	8	278	0.000	8	278	0.000	8	278	0.000
18:00 - 19:00	6	301	0.000	6	301	0.000	6	301	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			0.006			0.010

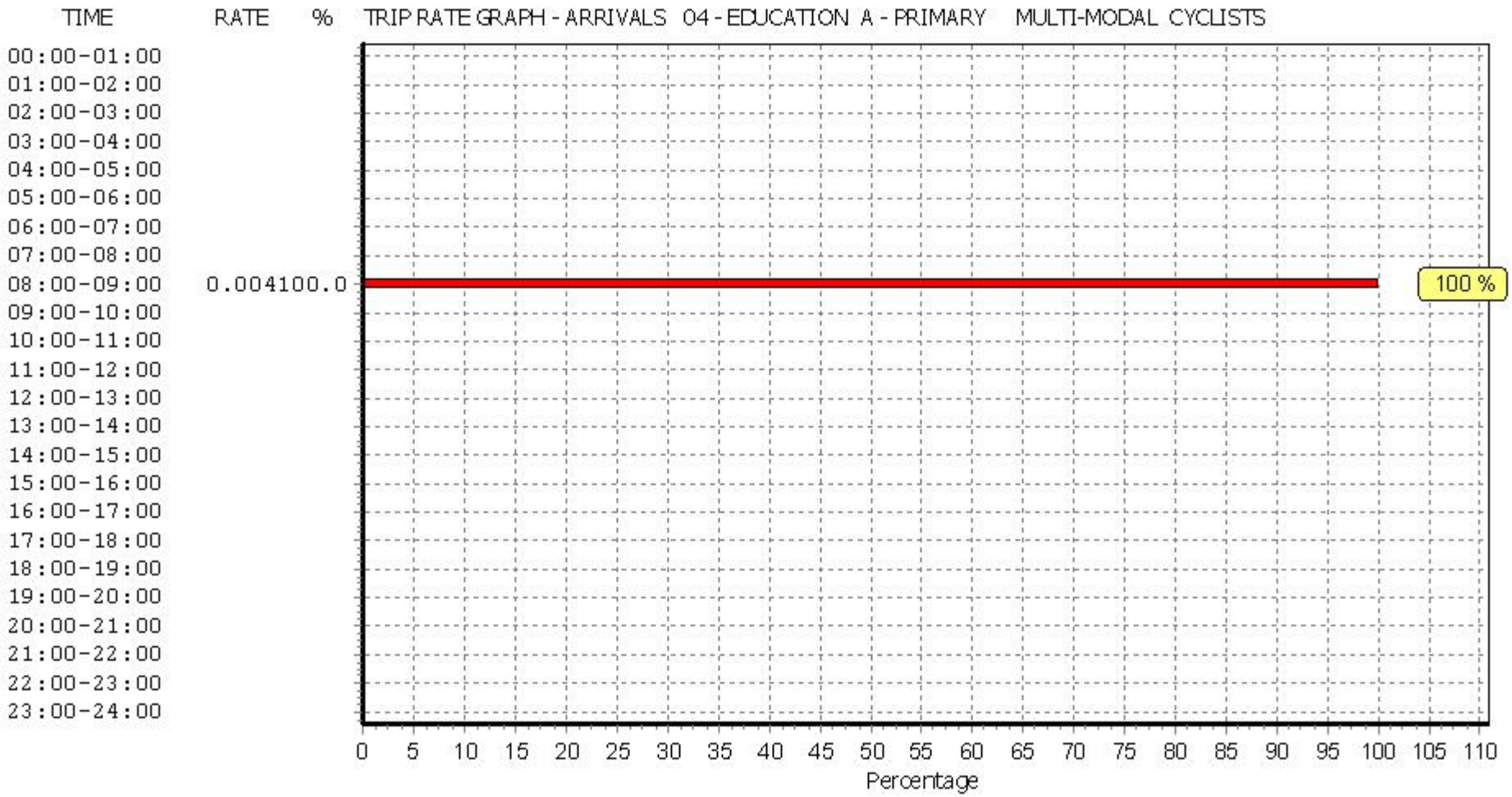
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

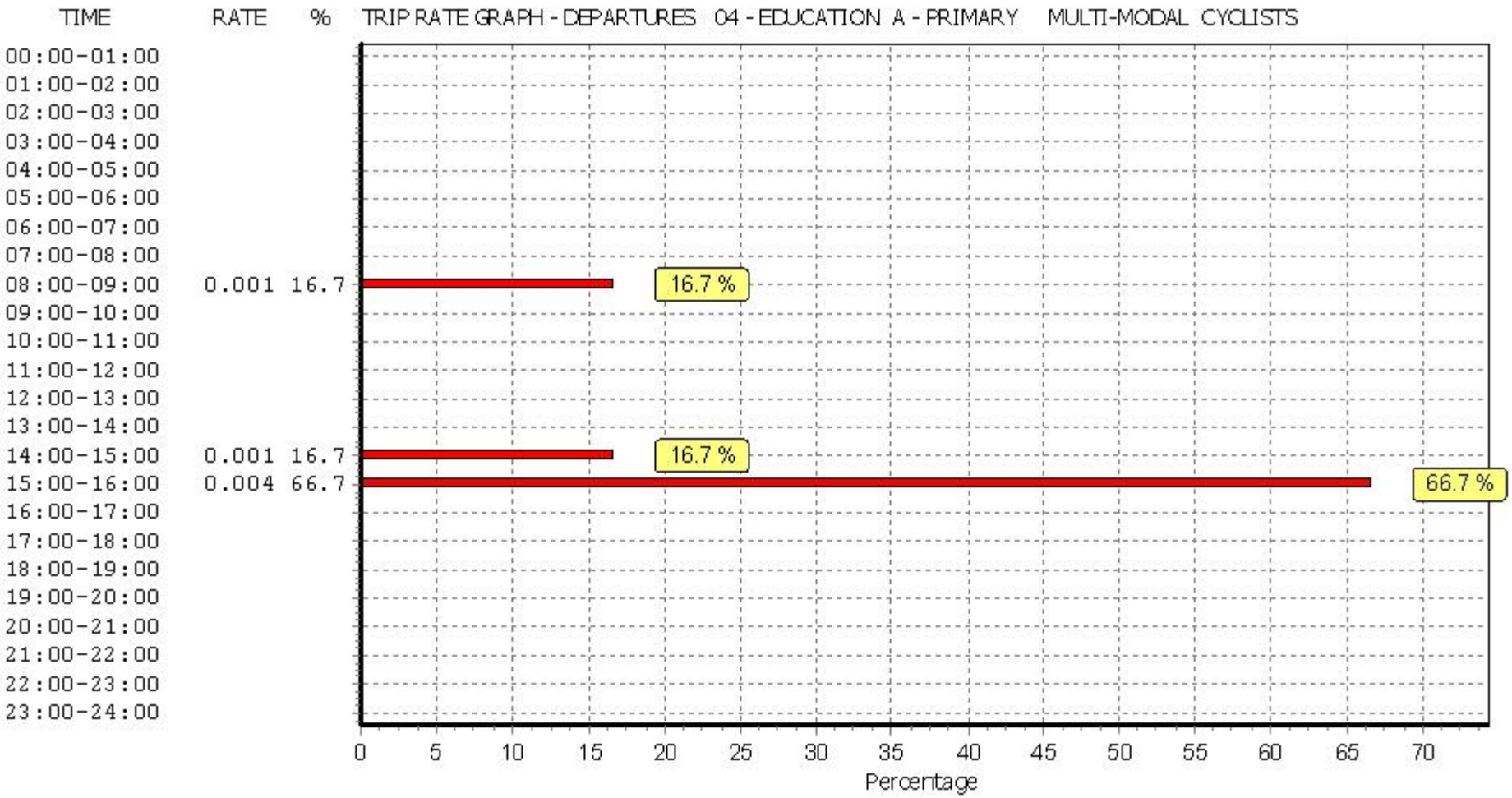
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

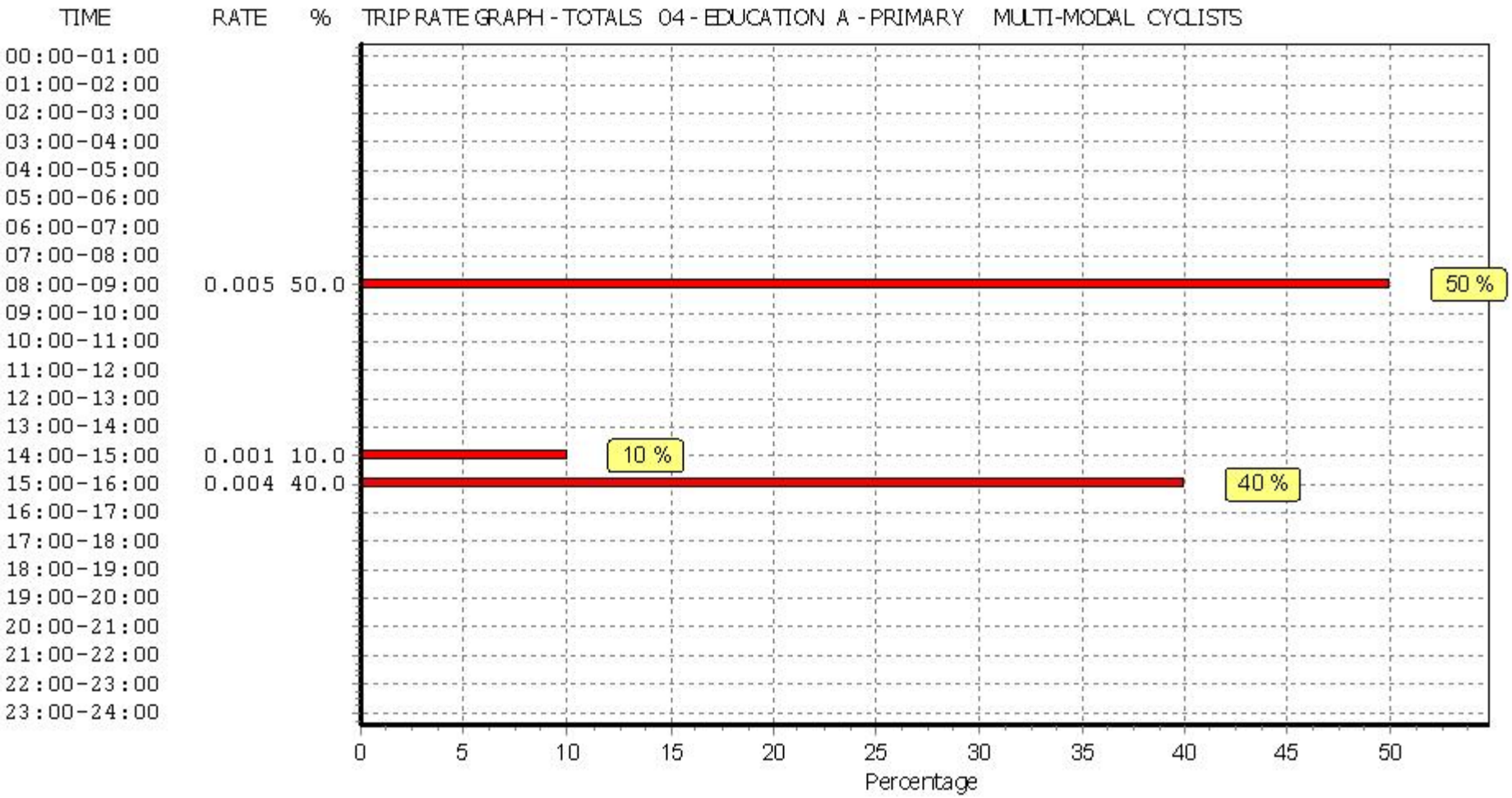
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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.



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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.062	8	278	0.018	8	278	0.080
08:00 - 09:00	8	278	0.514	8	278	0.142	8	278	0.656
09:00 - 10:00	8	278	0.041	8	278	0.057	8	278	0.098
10:00 - 11:00	8	278	0.014	8	278	0.017	8	278	0.031
11:00 - 12:00	8	278	0.045	8	278	0.025	8	278	0.070
12:00 - 13:00	8	278	0.019	8	278	0.045	8	278	0.064
13:00 - 14:00	8	278	0.036	8	278	0.037	8	278	0.073
14:00 - 15:00	8	278	0.052	8	278	0.022	8	278	0.074
15:00 - 16:00	8	278	0.096	8	278	0.391	8	278	0.487
16:00 - 17:00	8	278	0.045	8	278	0.111	8	278	0.156
17:00 - 18:00	8	278	0.021	8	278	0.047	8	278	0.068
18:00 - 19:00	6	301	0.001	6	301	0.001	6	301	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.946			0.913			1.859

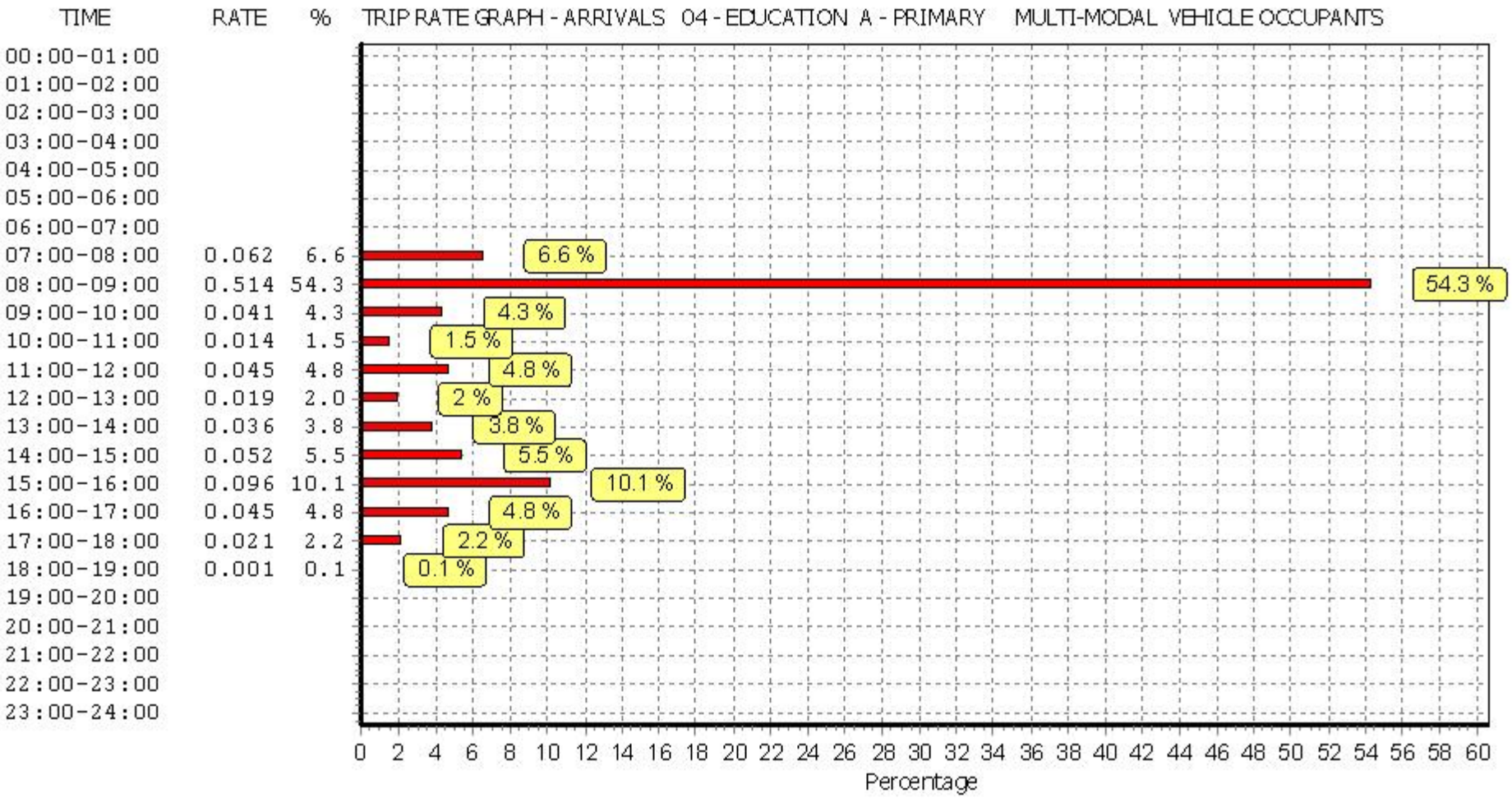
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

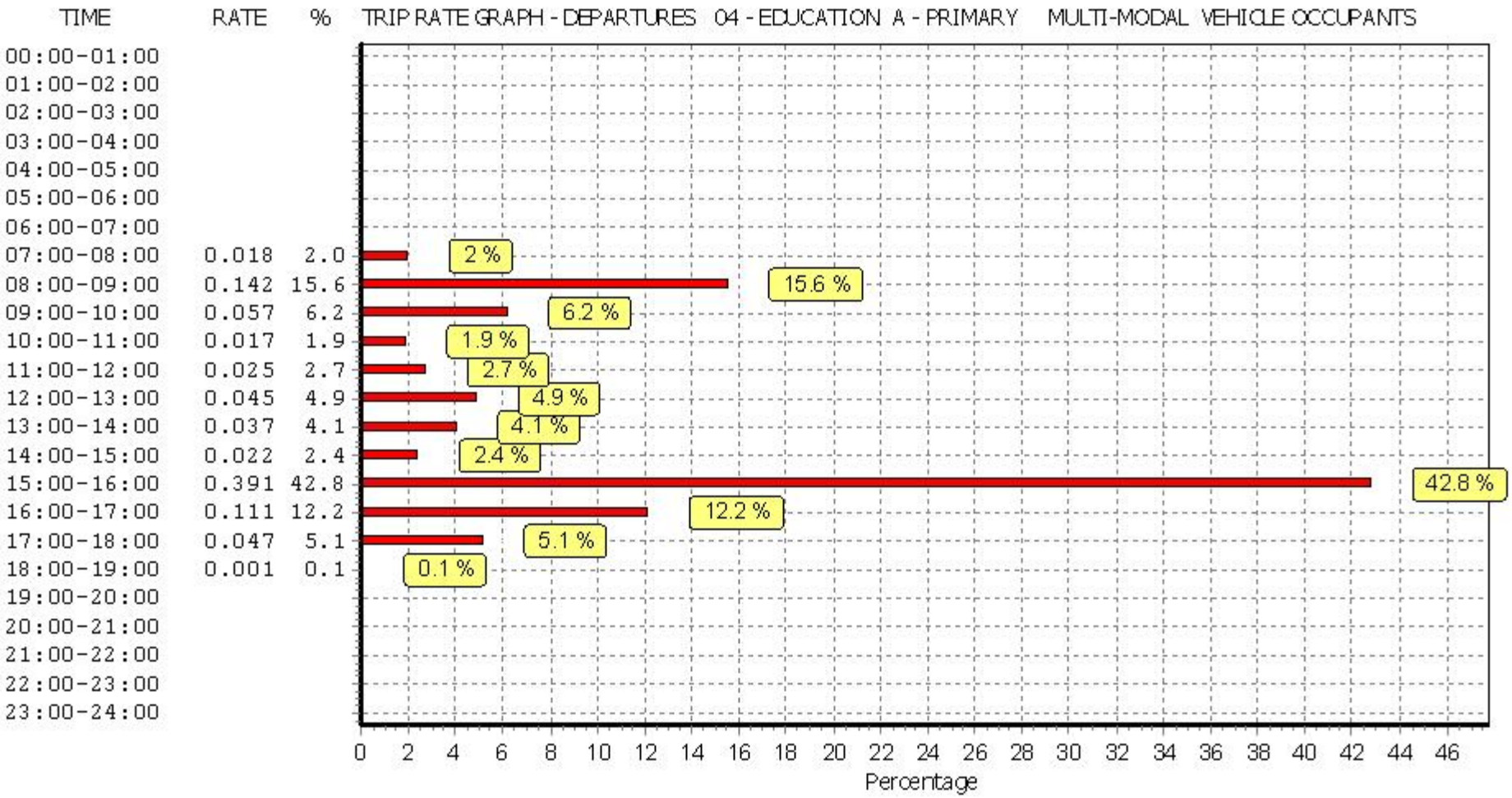
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

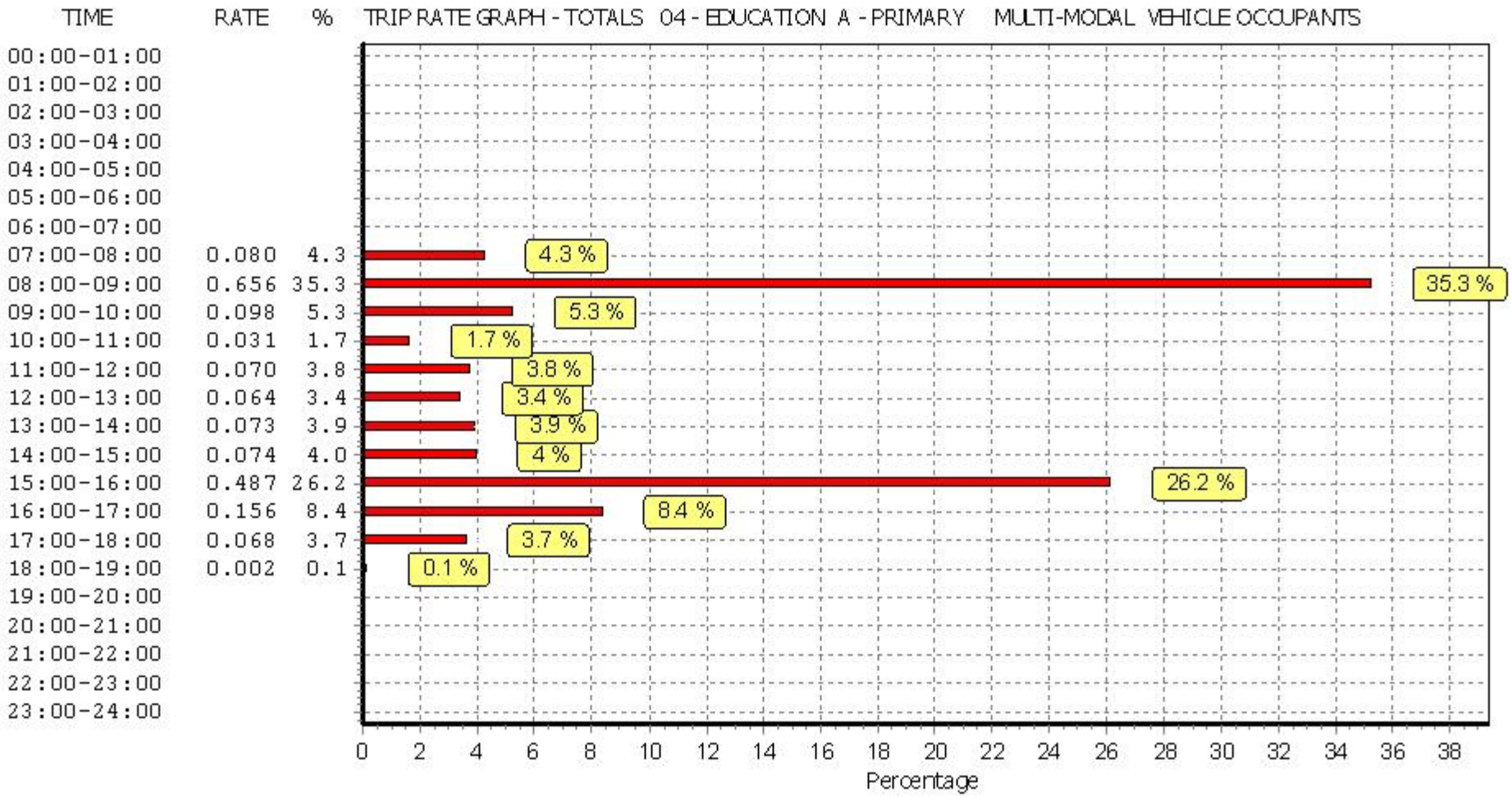
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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.



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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.013	8	278	0.000	8	278	0.013
08:00 - 09:00	8	278	0.709	8	278	0.211	8	278	0.920
09:00 - 10:00	8	278	0.039	8	278	0.103	8	278	0.142
10:00 - 11:00	8	278	0.011	8	278	0.014	8	278	0.025
11:00 - 12:00	8	278	0.034	8	278	0.030	8	278	0.064
12:00 - 13:00	8	278	0.038	8	278	0.026	8	278	0.064
13:00 - 14:00	8	278	0.023	8	278	0.050	8	278	0.073
14:00 - 15:00	8	278	0.122	8	278	0.024	8	278	0.146
15:00 - 16:00	8	278	0.282	8	278	0.771	8	278	1.053
16:00 - 17:00	8	278	0.019	8	278	0.069	8	278	0.088
17:00 - 18:00	8	278	0.005	8	278	0.009	8	278	0.014
18:00 - 19:00	6	301	0.000	6	301	0.003	6	301	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.295			1.310			2.605

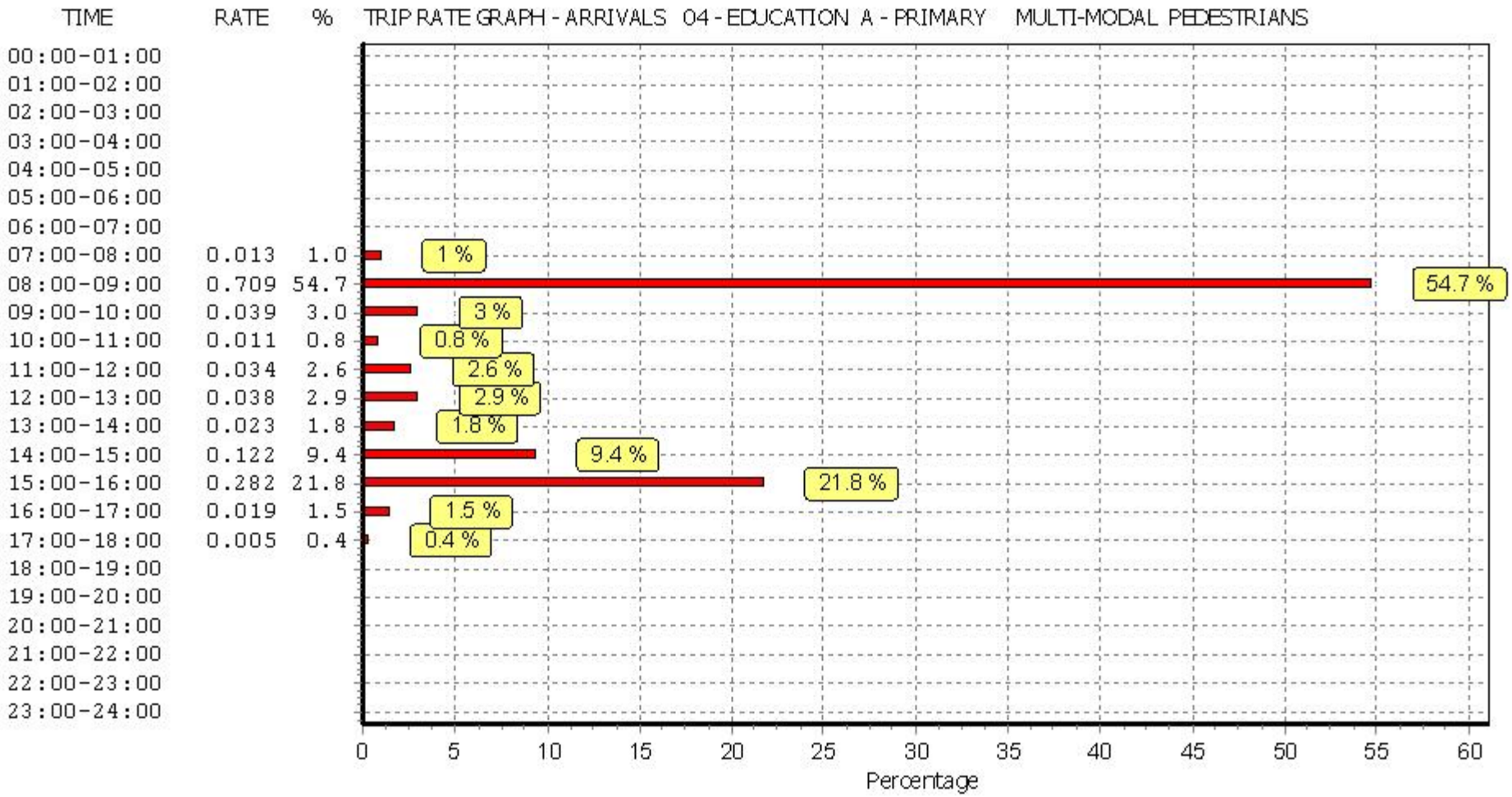
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

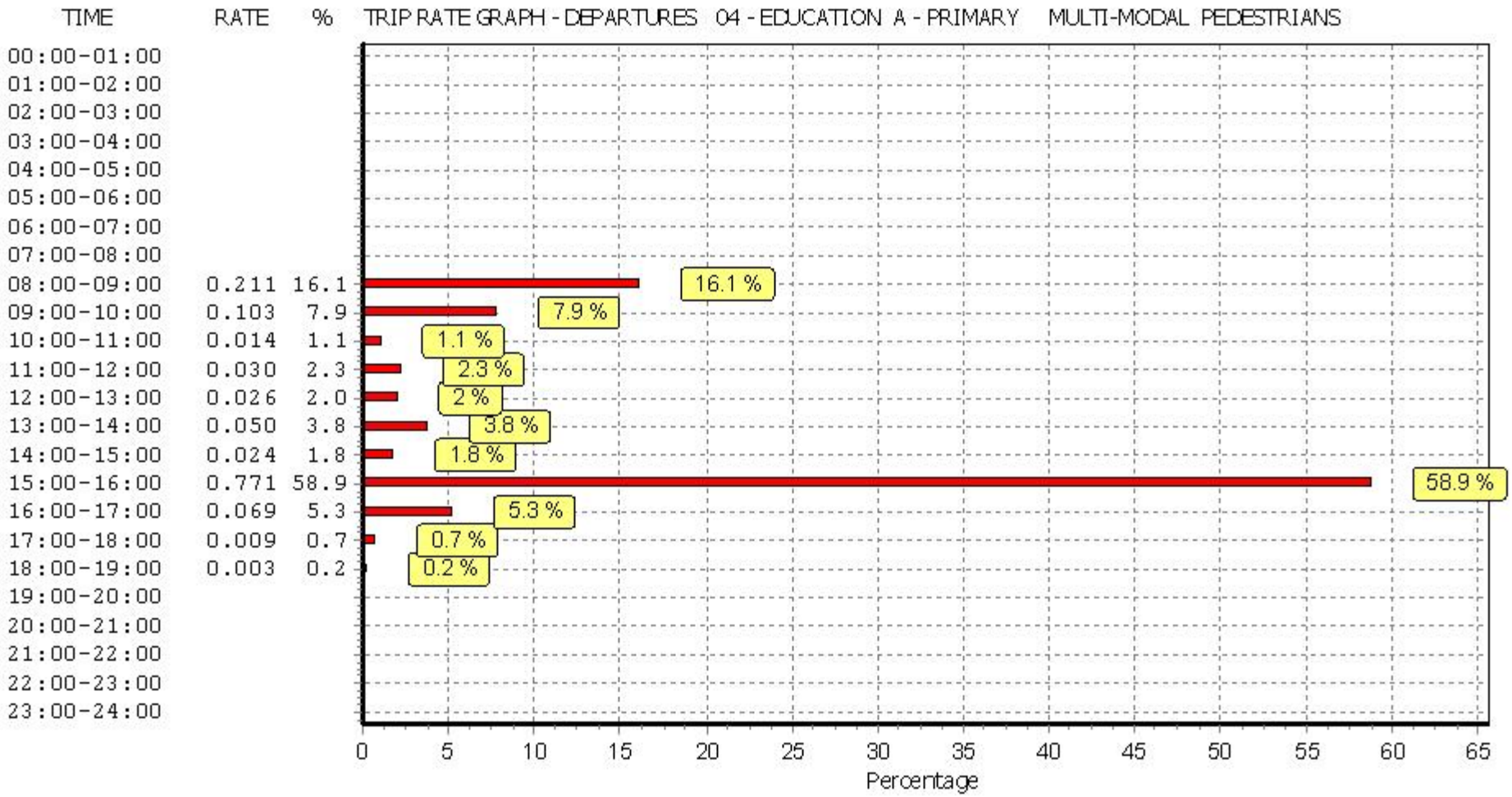
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

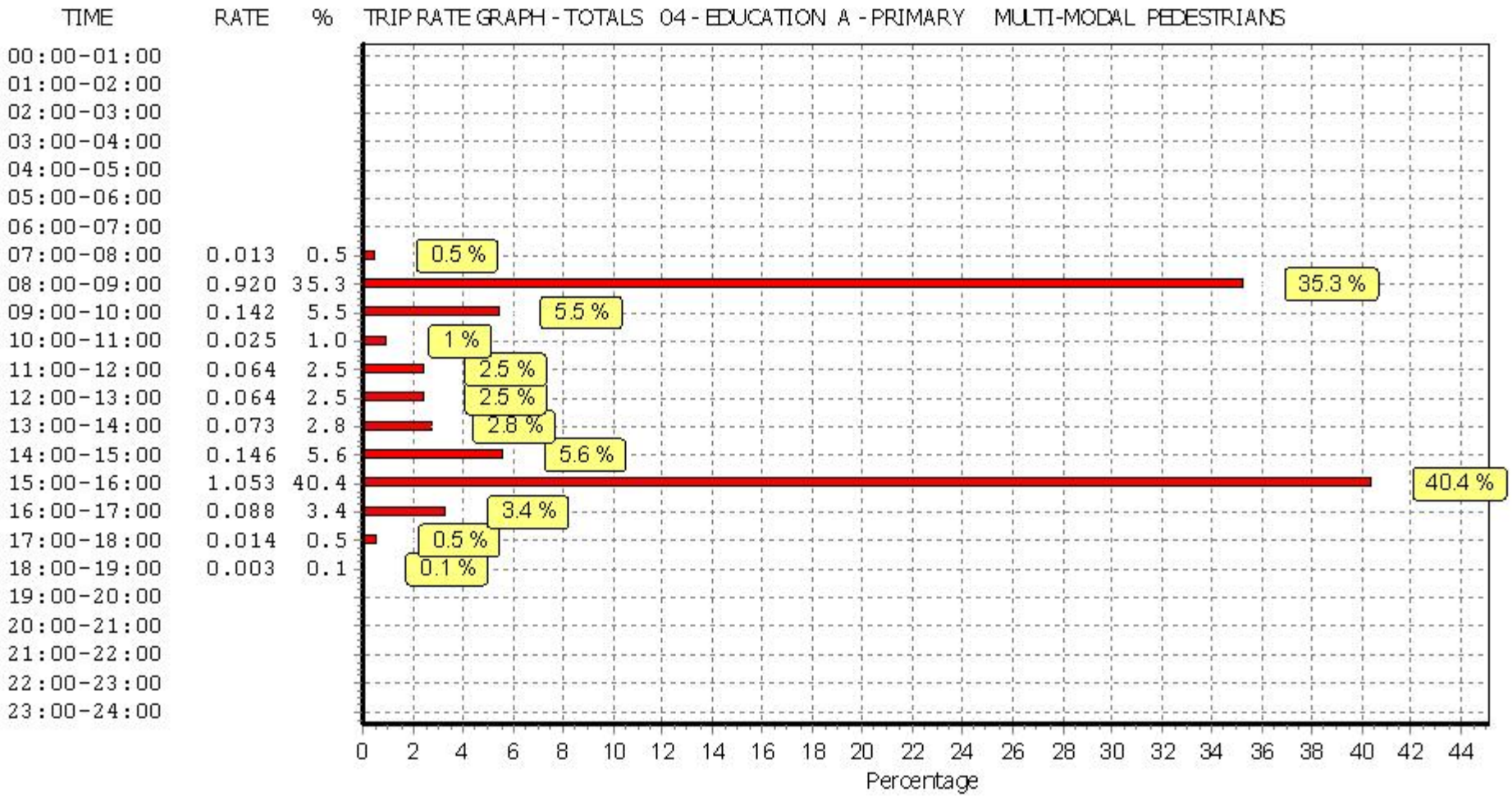
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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.



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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.000	8	278	0.000	8	278	0.000
08:00 - 09:00	8	278	0.039	8	278	0.008	8	278	0.047
09:00 - 10:00	8	278	0.012	8	278	0.011	8	278	0.023
10:00 - 11:00	8	278	0.001	8	278	0.000	8	278	0.001
11:00 - 12:00	8	278	0.001	8	278	0.000	8	278	0.001
12:00 - 13:00	8	278	0.018	8	278	0.003	8	278	0.021
13:00 - 14:00	8	278	0.005	8	278	0.008	8	278	0.013
14:00 - 15:00	8	278	0.017	8	278	0.015	8	278	0.032
15:00 - 16:00	8	278	0.015	8	278	0.050	8	278	0.065
16:00 - 17:00	8	278	0.003	8	278	0.007	8	278	0.010
17:00 - 18:00	8	278	0.000	8	278	0.000	8	278	0.000
18:00 - 19:00	6	301	0.000	6	301	0.000	6	301	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.111			0.102			0.213

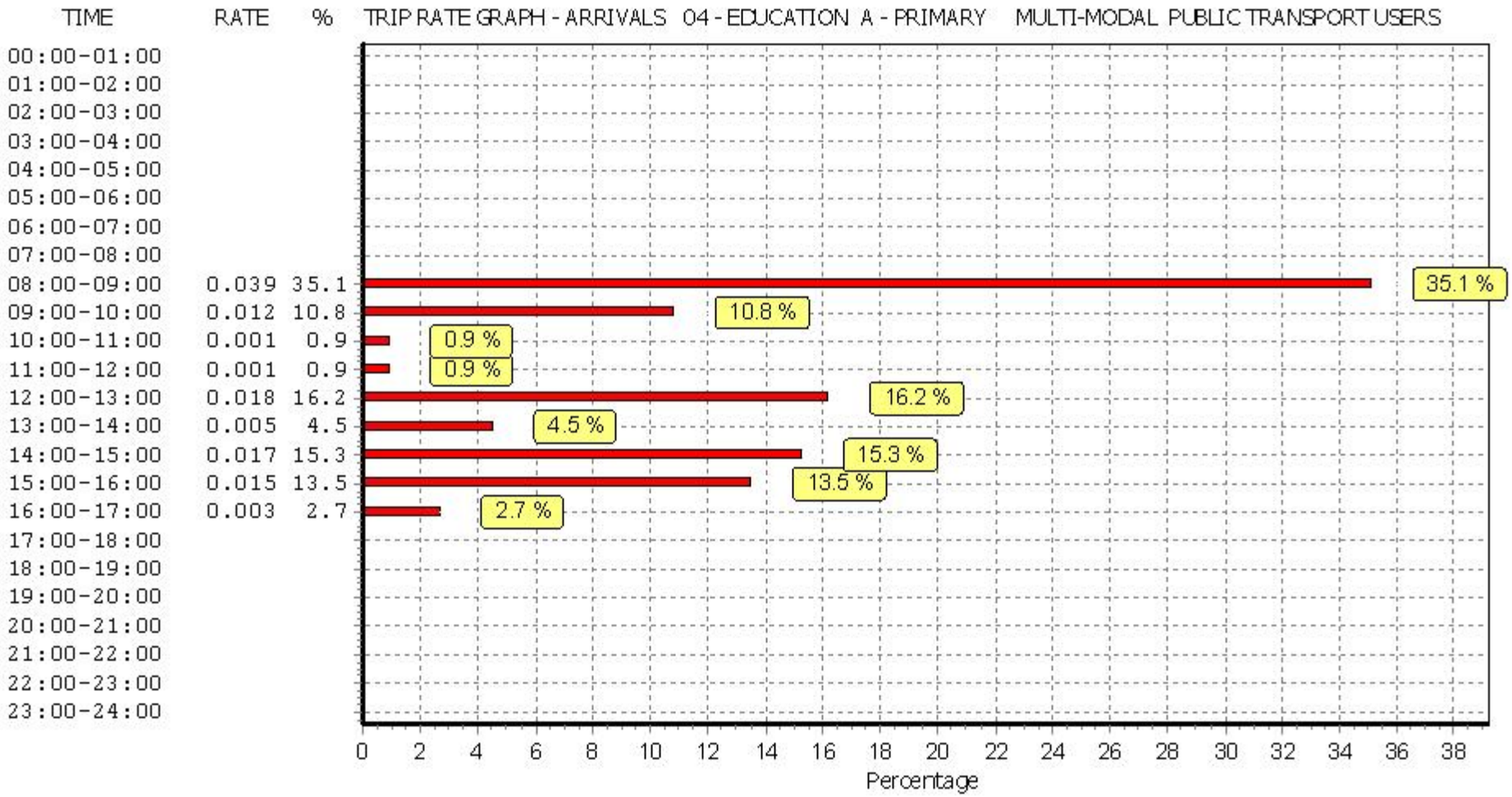
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

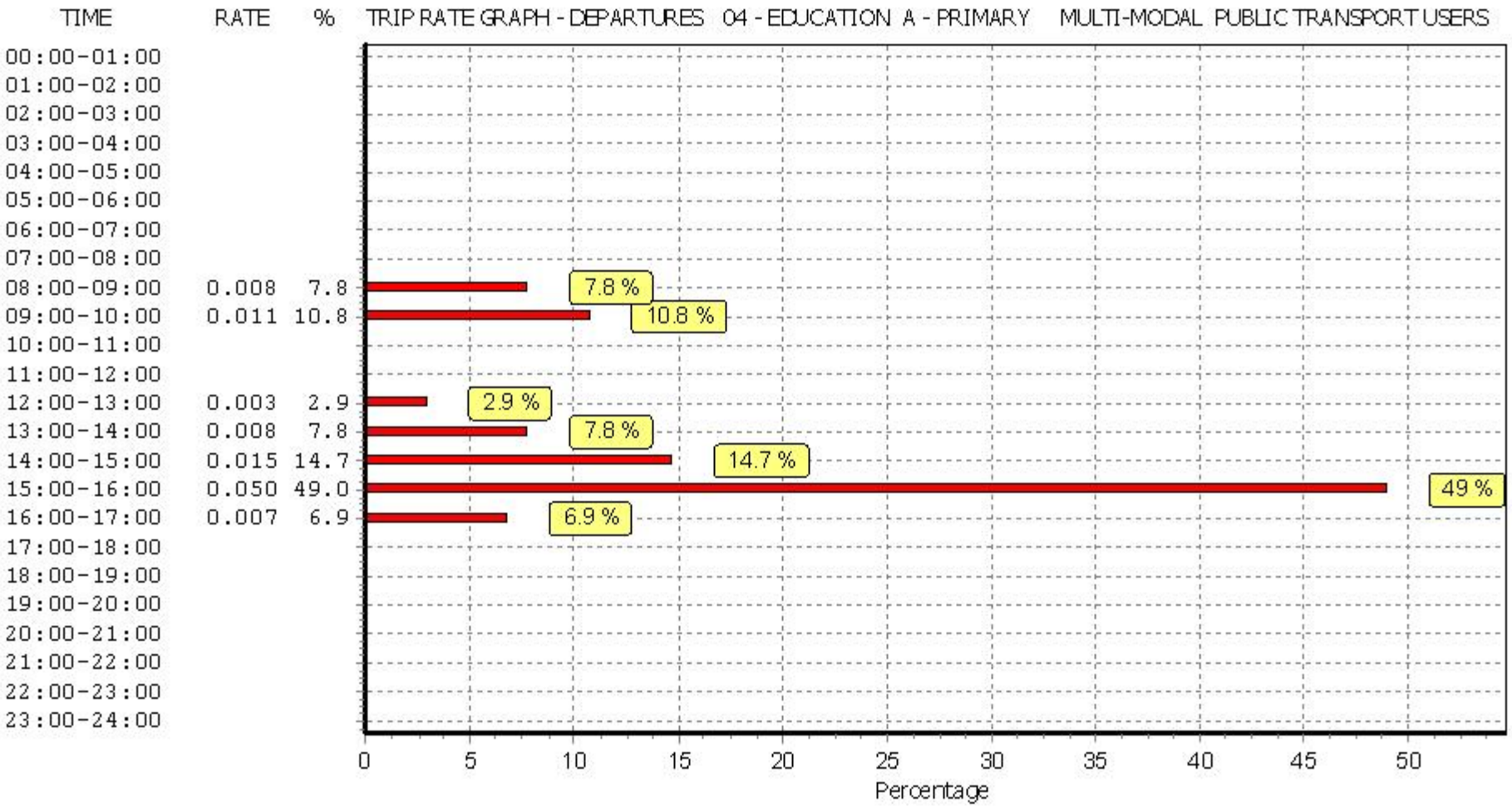
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

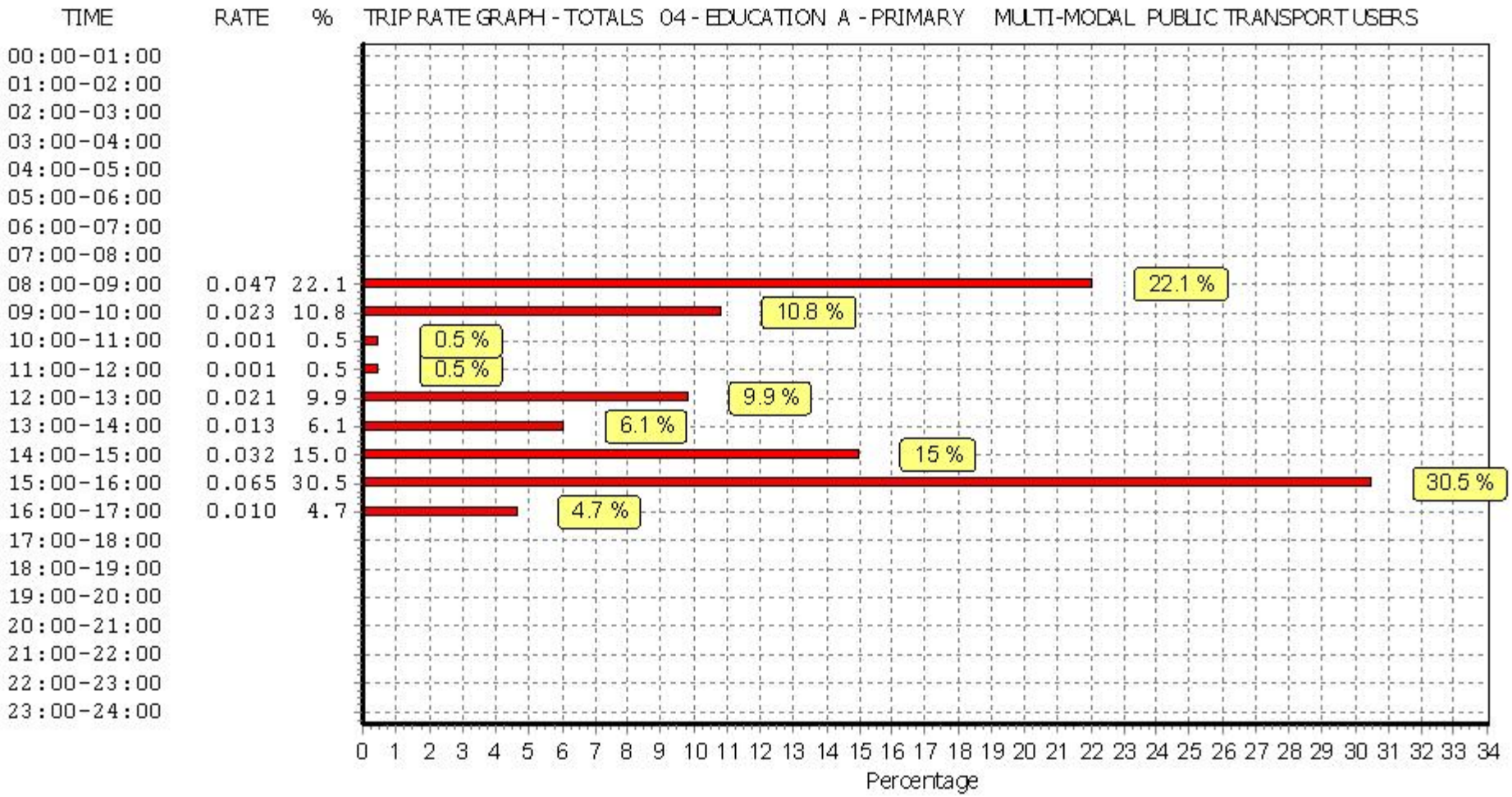
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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.



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.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	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	8	278	0.076	8	278	0.019	8	278	0.095
08:00 - 09:00	8	278	1.265	8	278	0.362	8	278	1.627
09:00 - 10:00	8	278	0.092	8	278	0.170	8	278	0.262
10:00 - 11:00	8	278	0.025	8	278	0.031	8	278	0.056
11:00 - 12:00	8	278	0.081	8	278	0.055	8	278	0.136
12:00 - 13:00	8	278	0.076	8	278	0.074	8	278	0.150
13:00 - 14:00	8	278	0.065	8	278	0.095	8	278	0.160
14:00 - 15:00	8	278	0.191	8	278	0.063	8	278	0.254
15:00 - 16:00	8	278	0.394	8	278	1.216	8	278	1.610
16:00 - 17:00	8	278	0.067	8	278	0.187	8	278	0.254
17:00 - 18:00	8	278	0.026	8	278	0.057	8	278	0.083
18:00 - 19:00	6	301	0.001	6	301	0.004	6	301	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.359			2.333			4.692

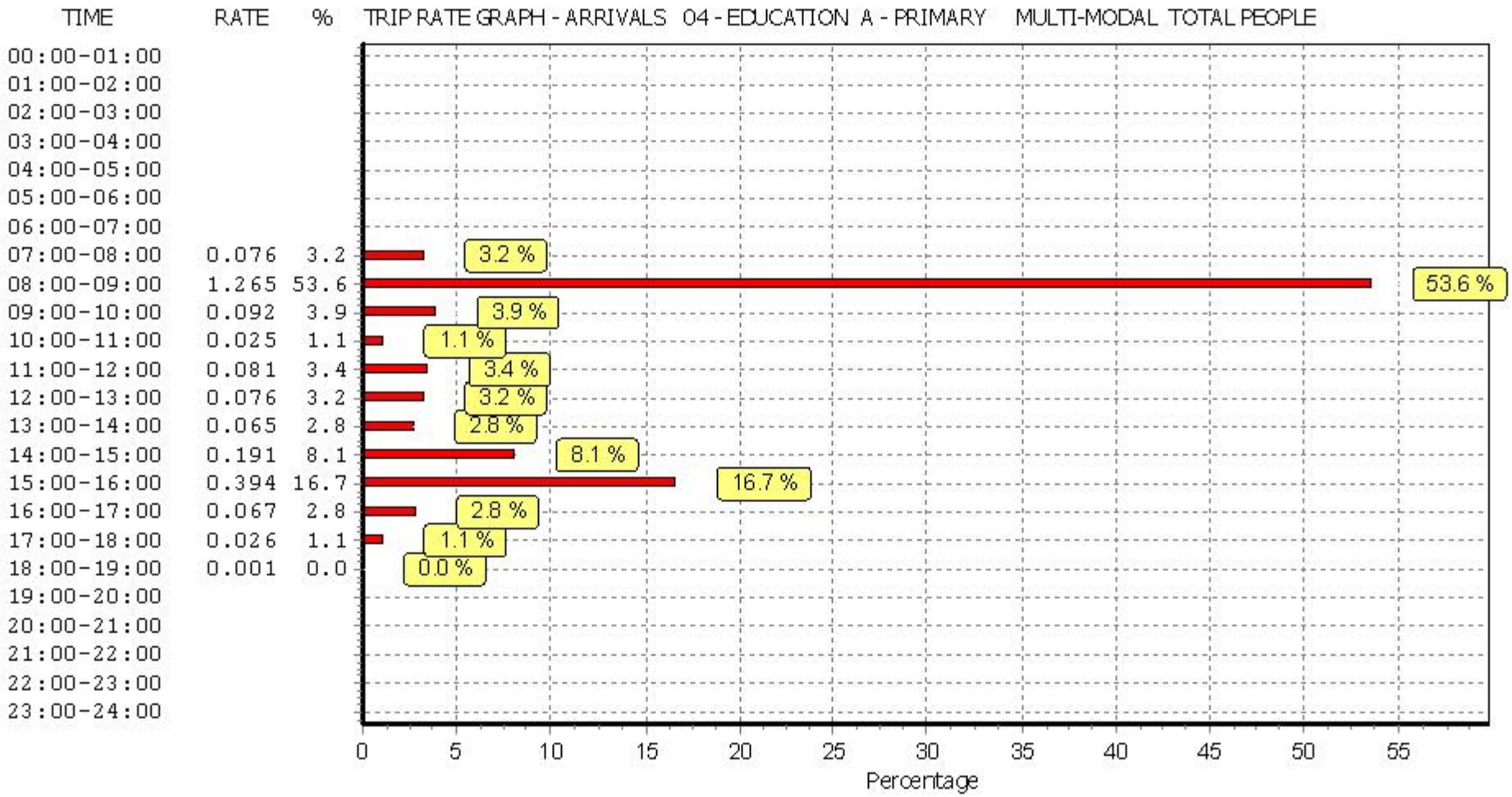
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

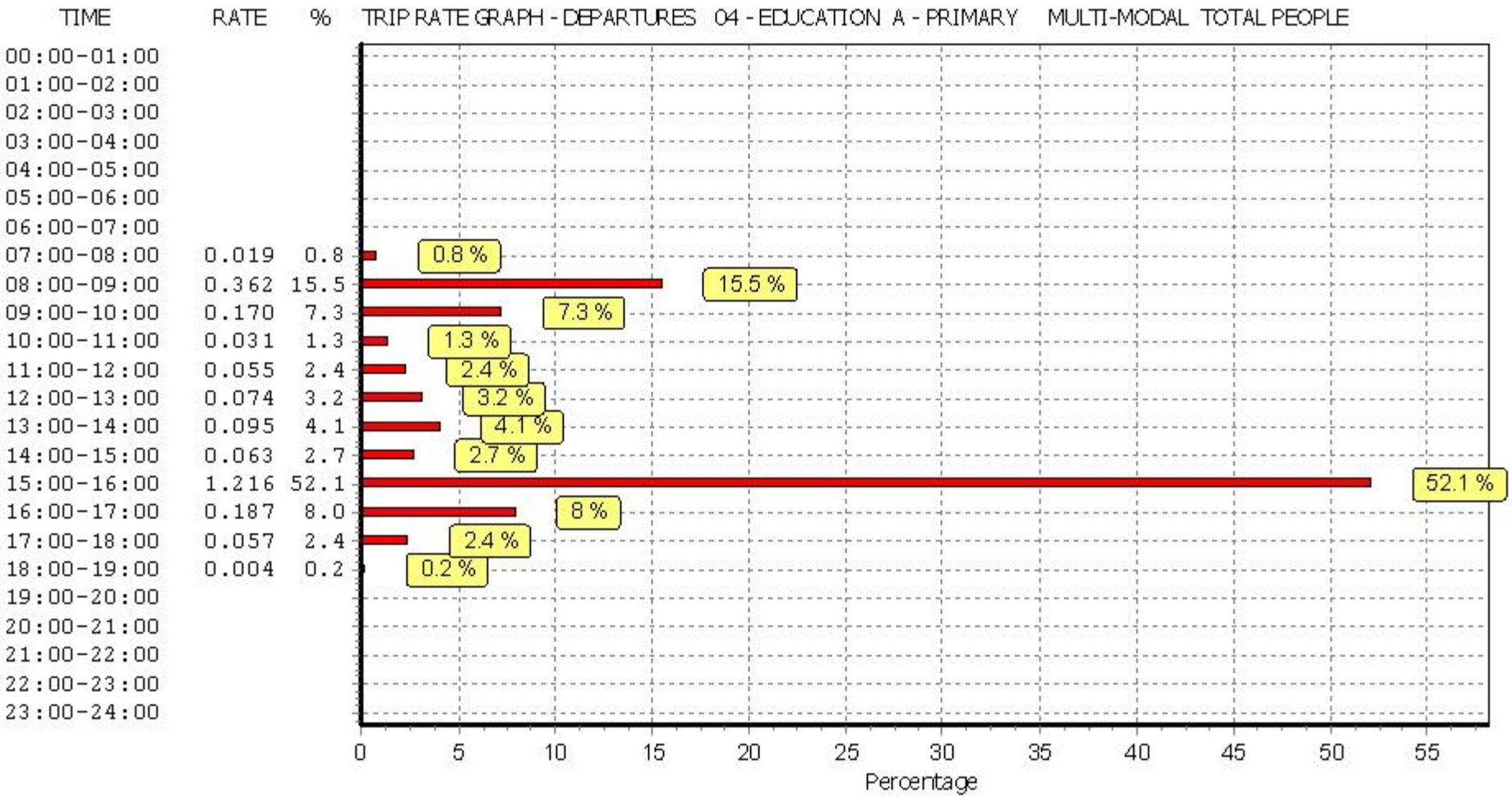
Parameter summary

Trip rate parameter range selected:	147 - 472 (units:)
Survey date date range:	01/01/00 - 28/09/16
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

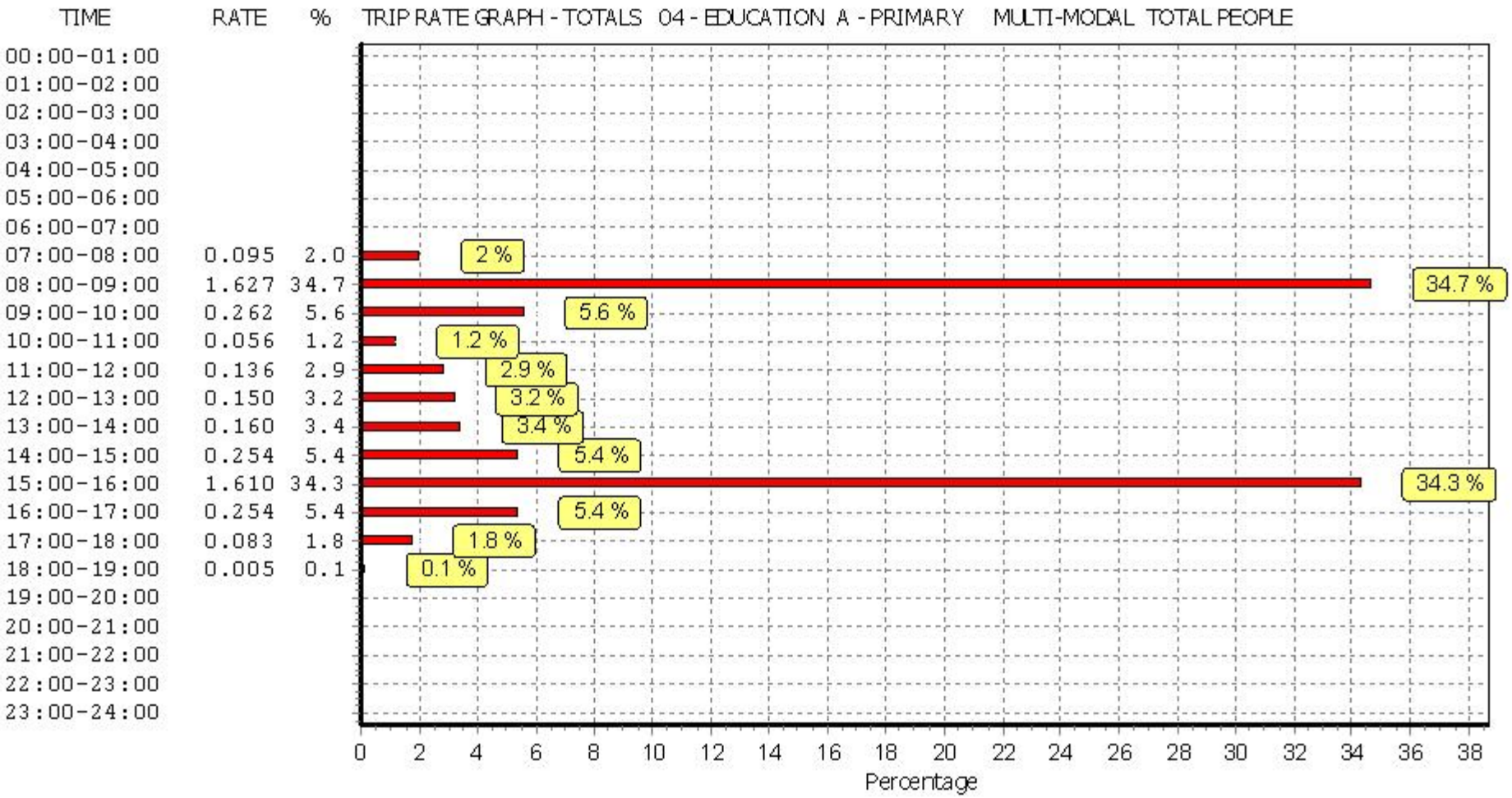
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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.

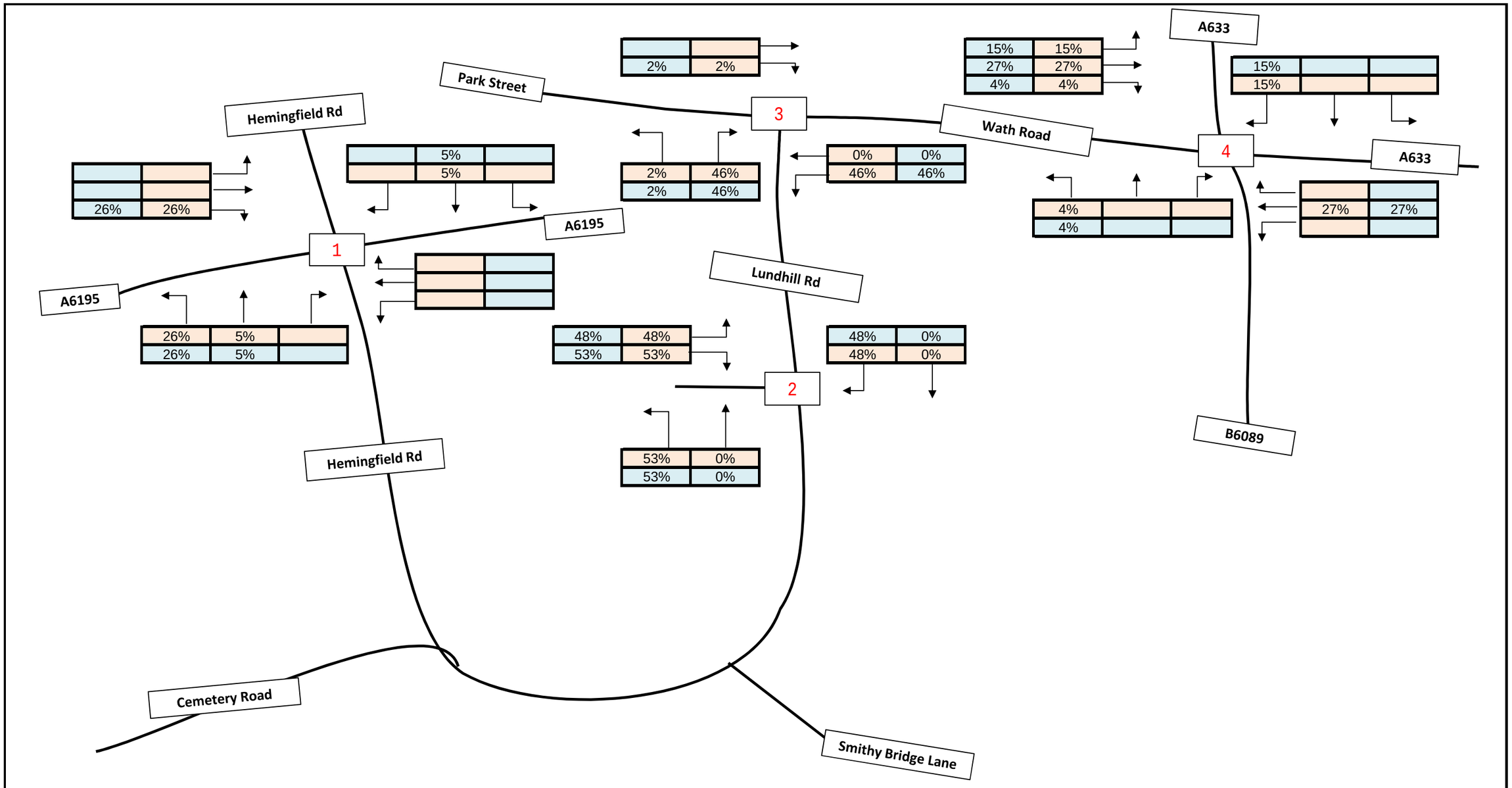


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

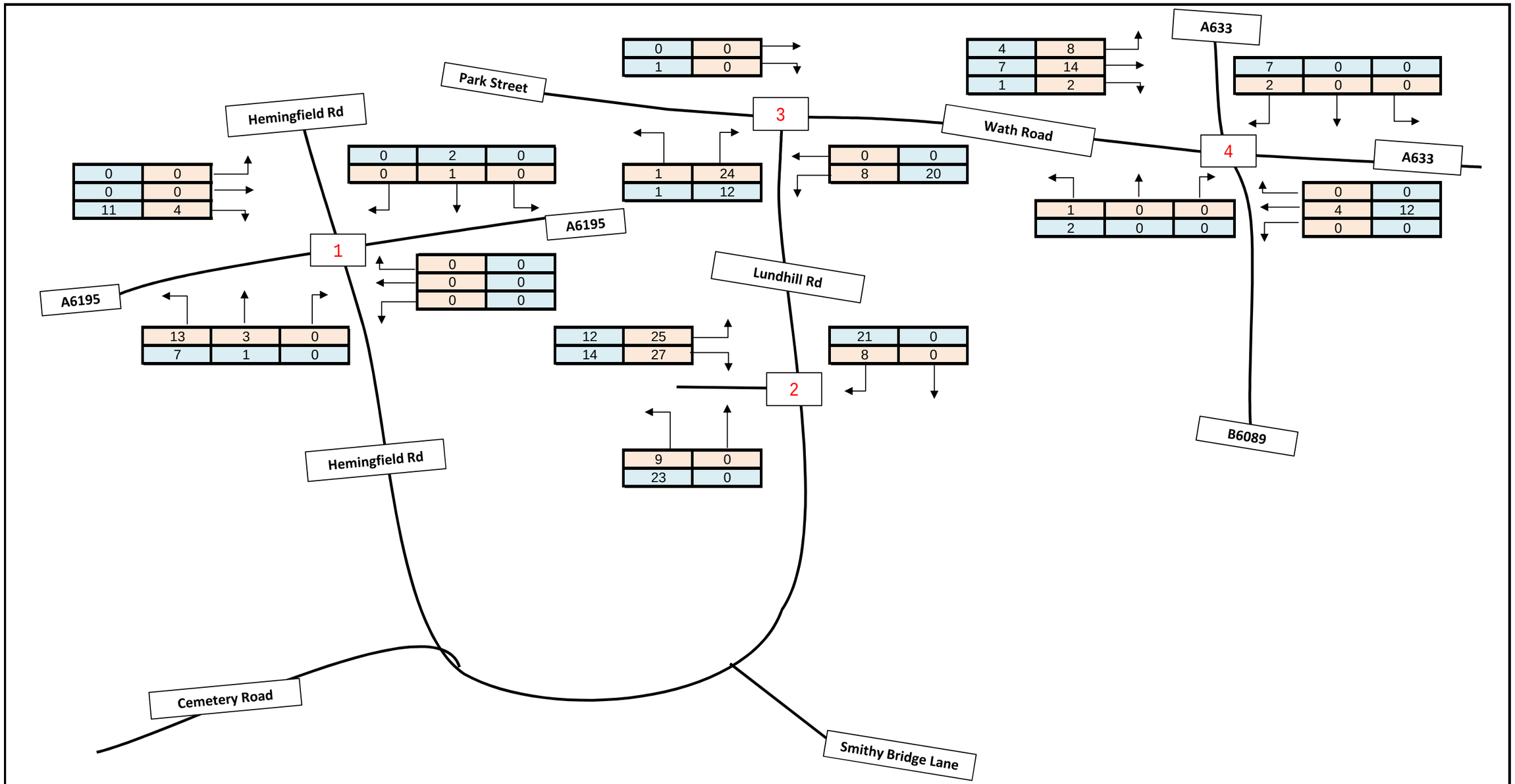


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

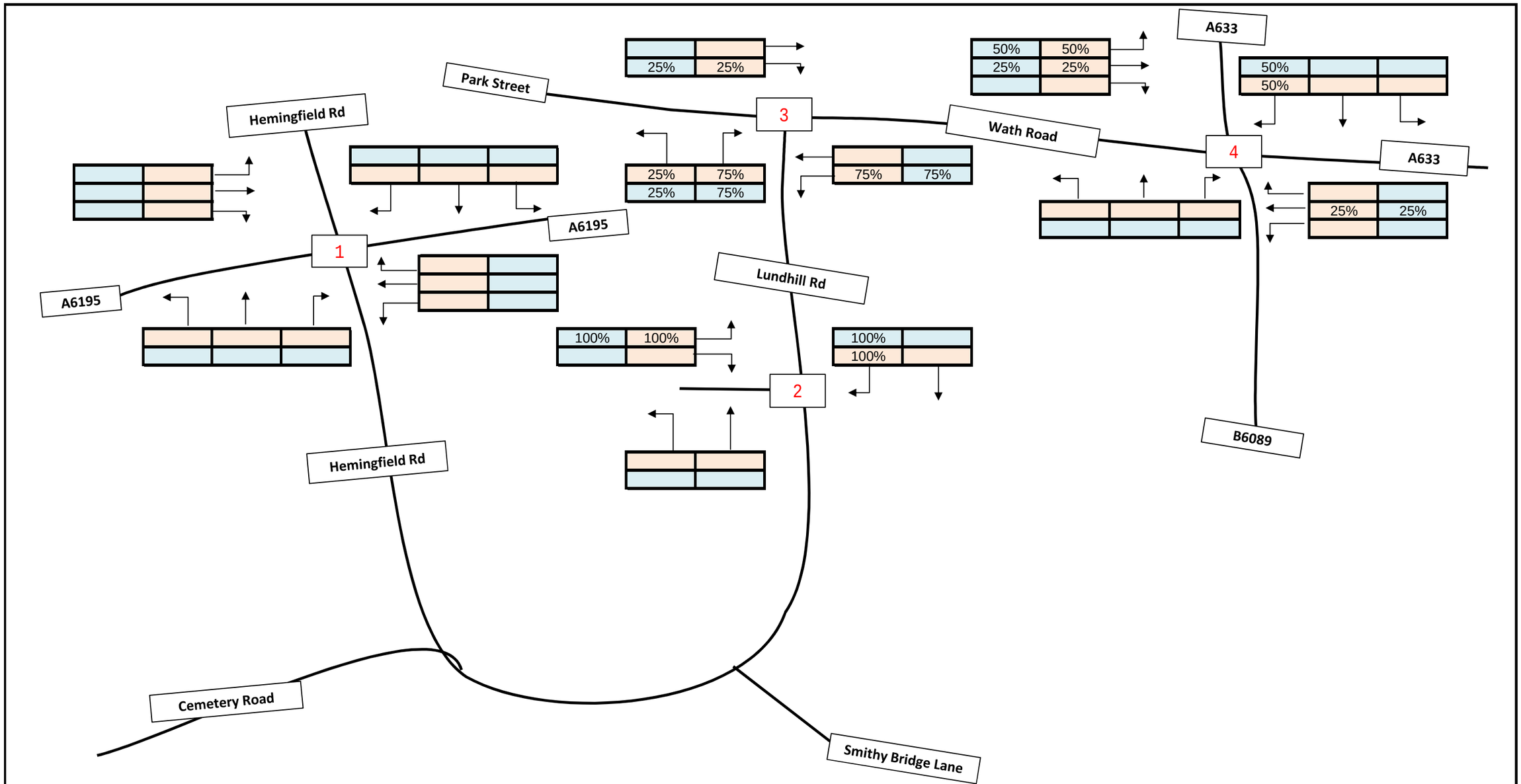
Appendix D – Traffic Flow Diagrams



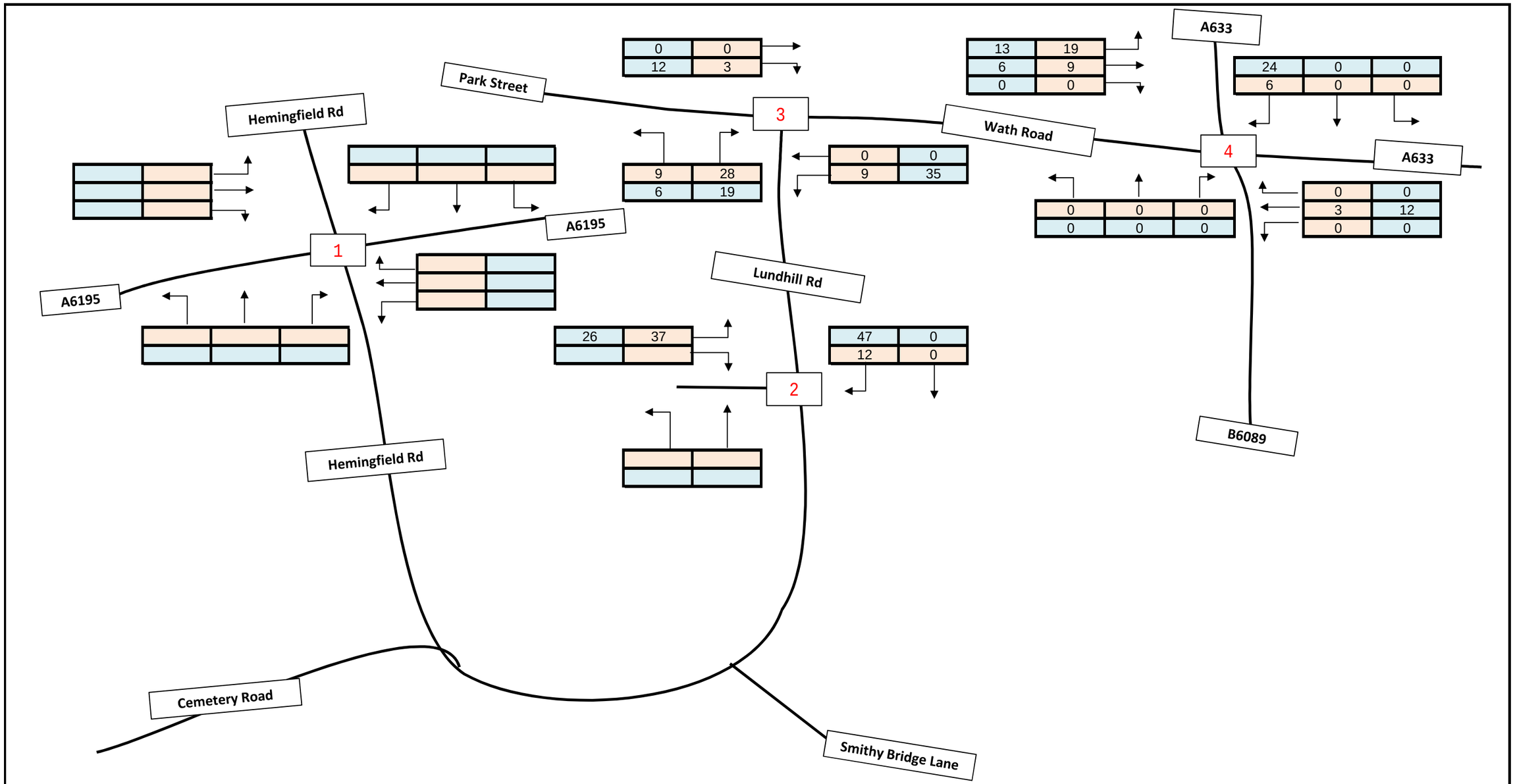
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Residential Work Distribution	Drawn	DC	0	1
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



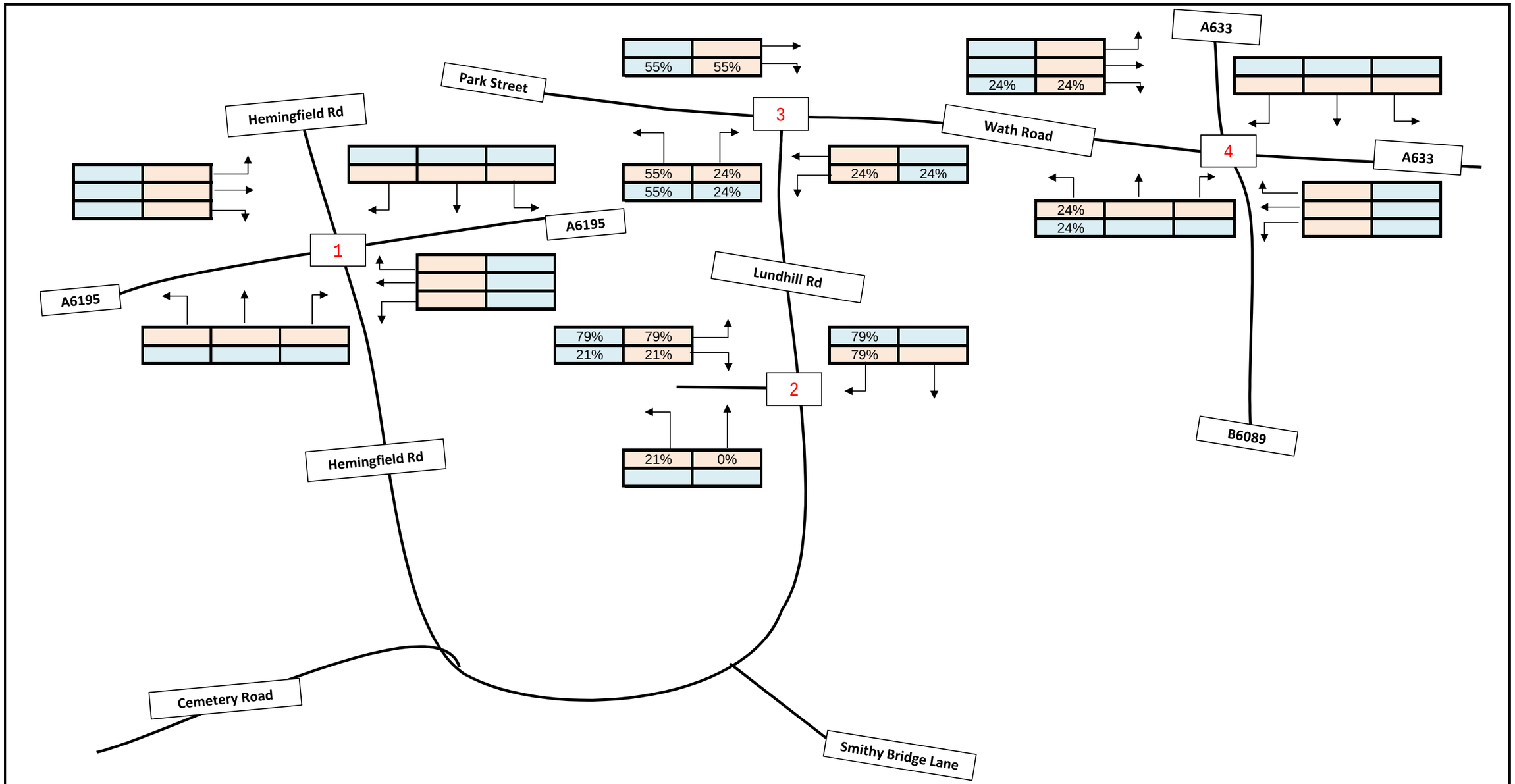
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Residential Work Generation	Drawn	DC	0	2
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



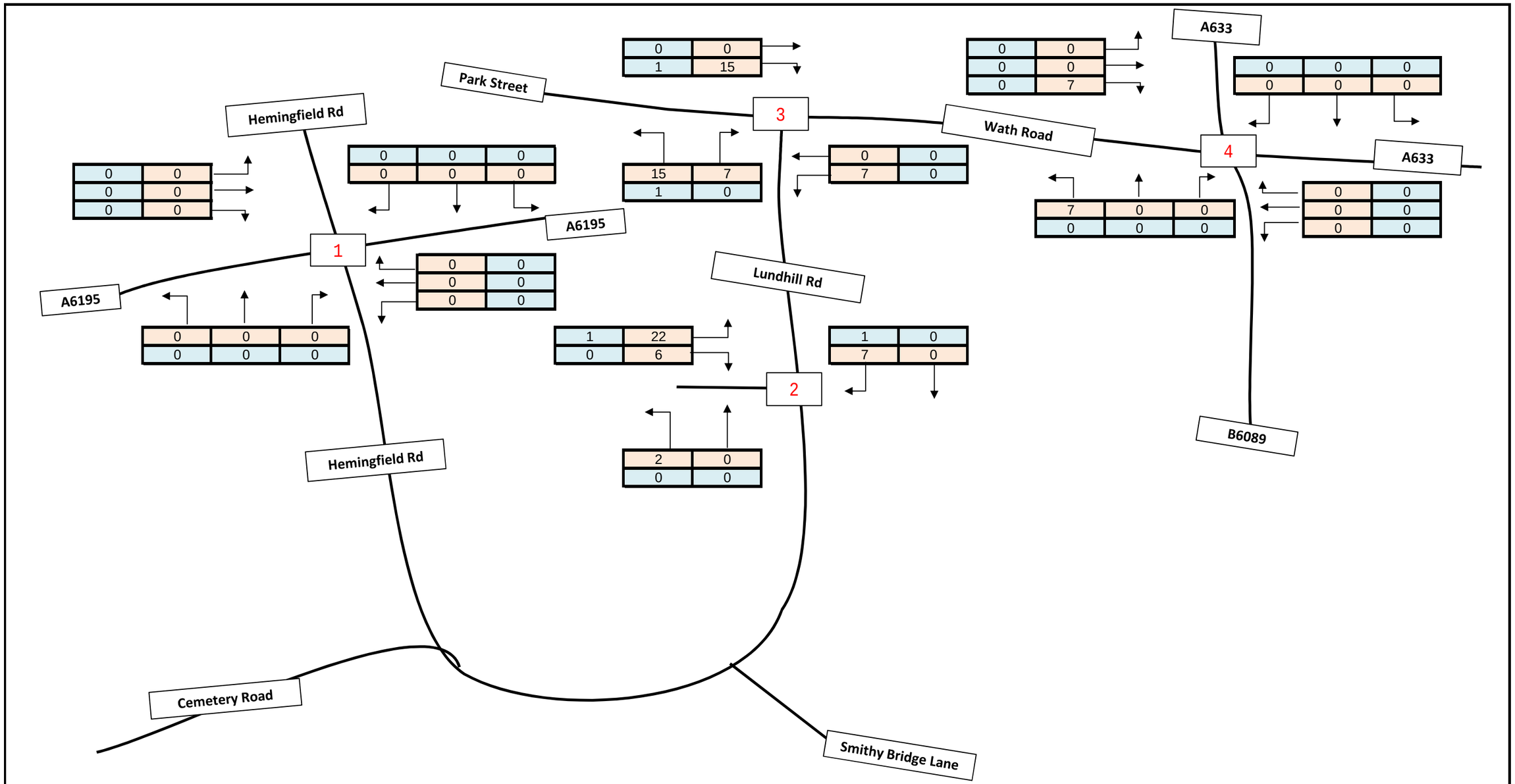
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Development Distribution	Drawn	DC	0	3
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



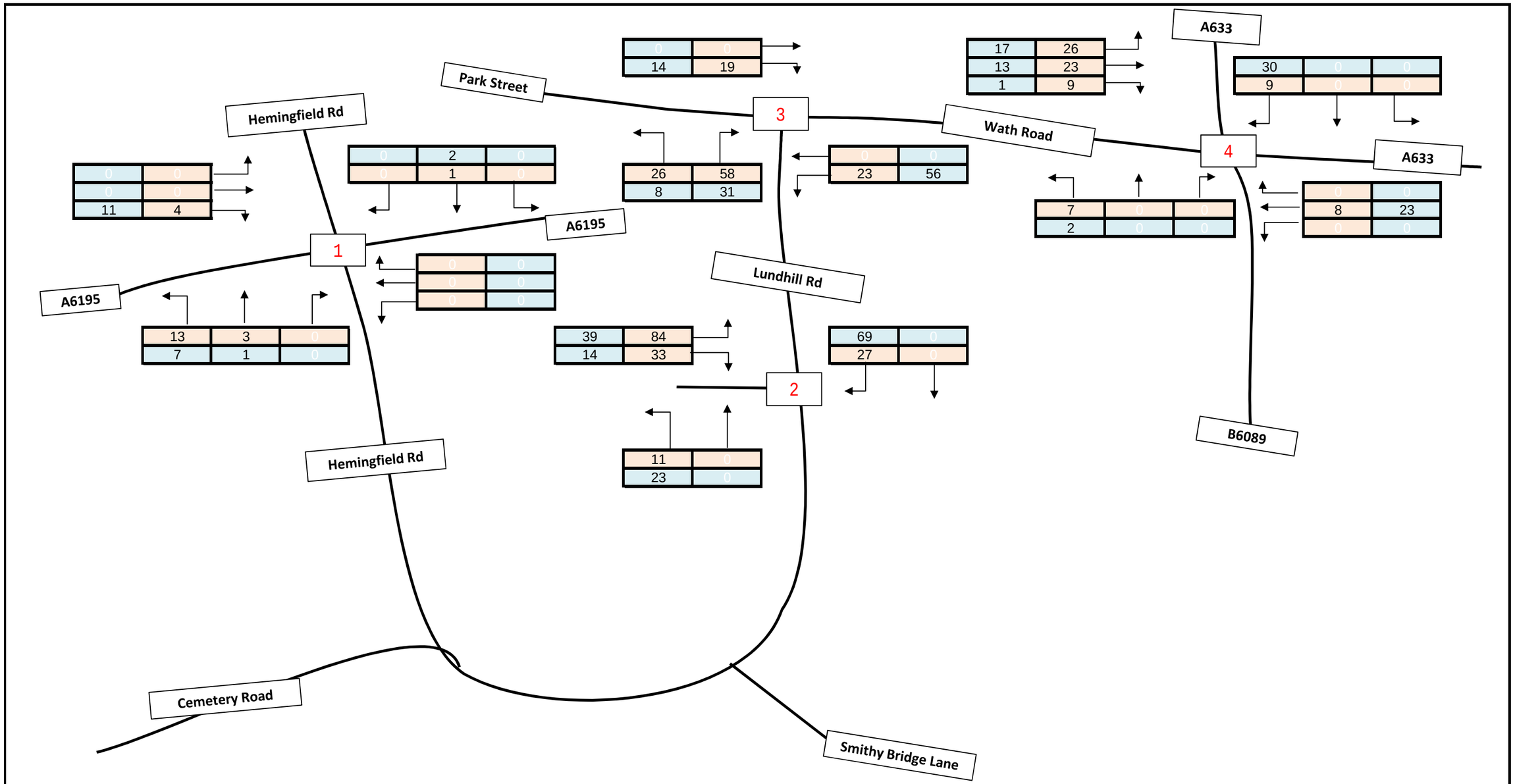
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Development Generation	Drawn	DC	0	4
				Checked	MR		
				Approved	SM		
				Date	30.11.2018	4	



Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Residential Education Distributon	Drawn	DC	0	5
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Residential Education Generation	Drawn	DC	0	6
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Total Residential Generation	Drawn	DC	0	7
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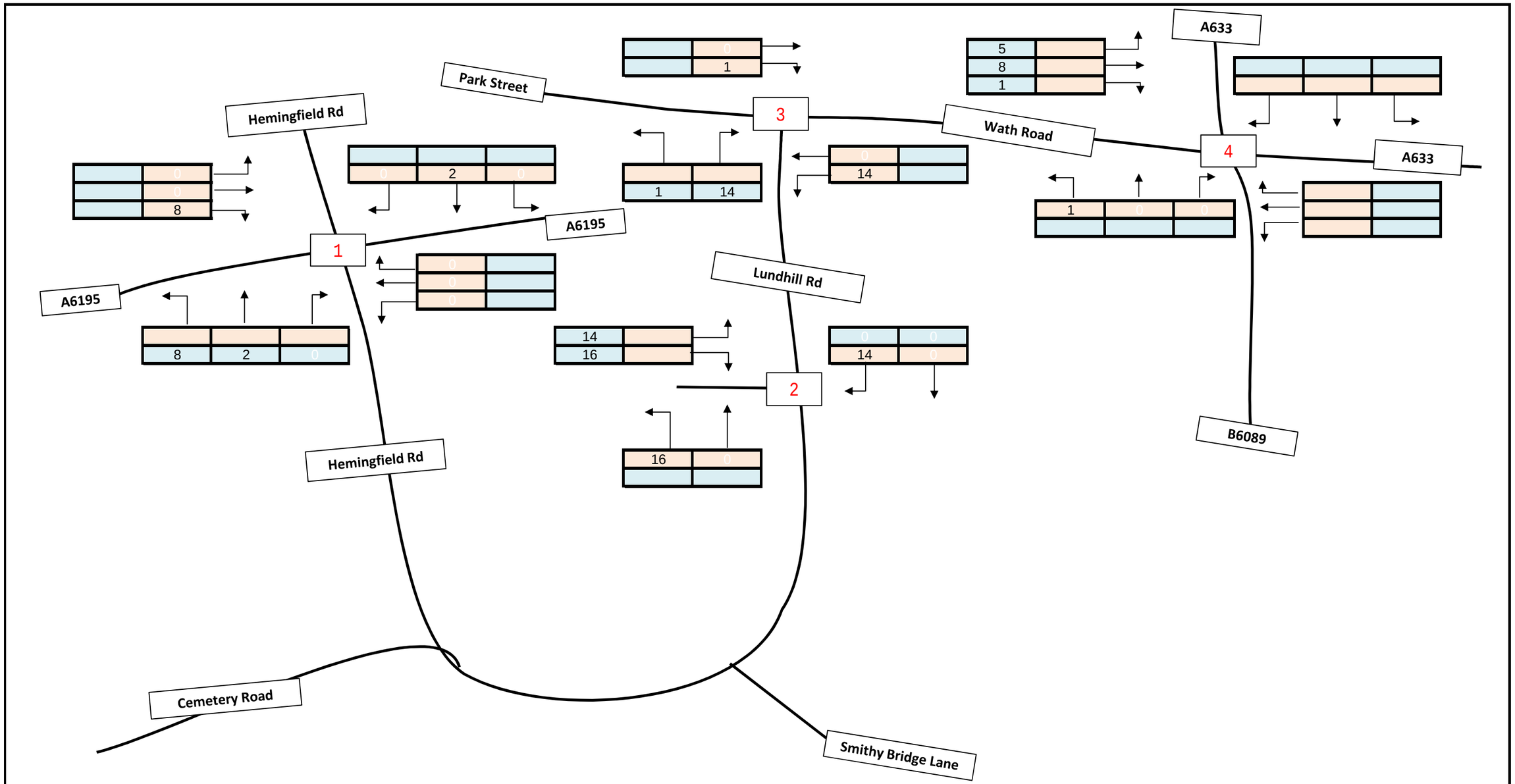
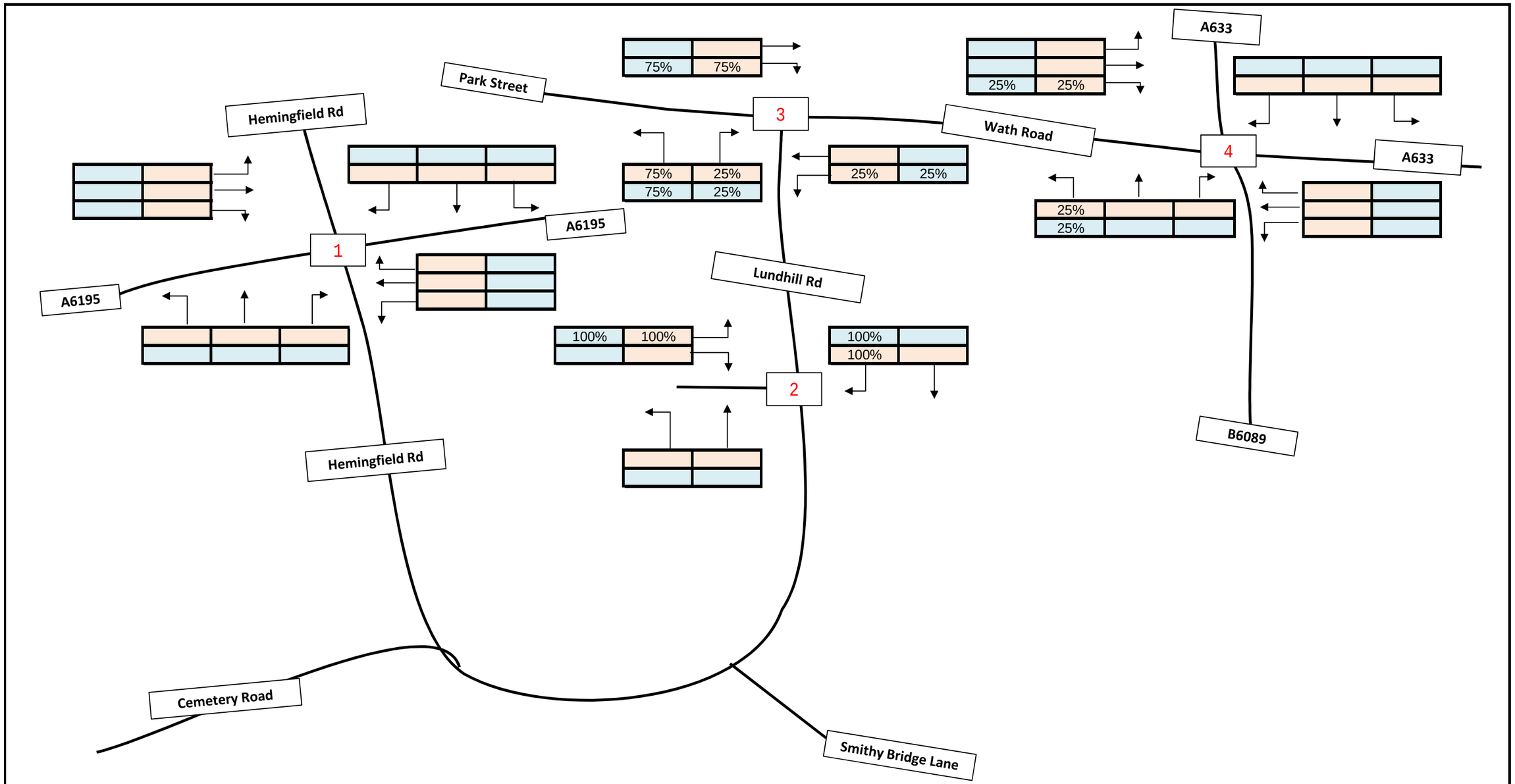
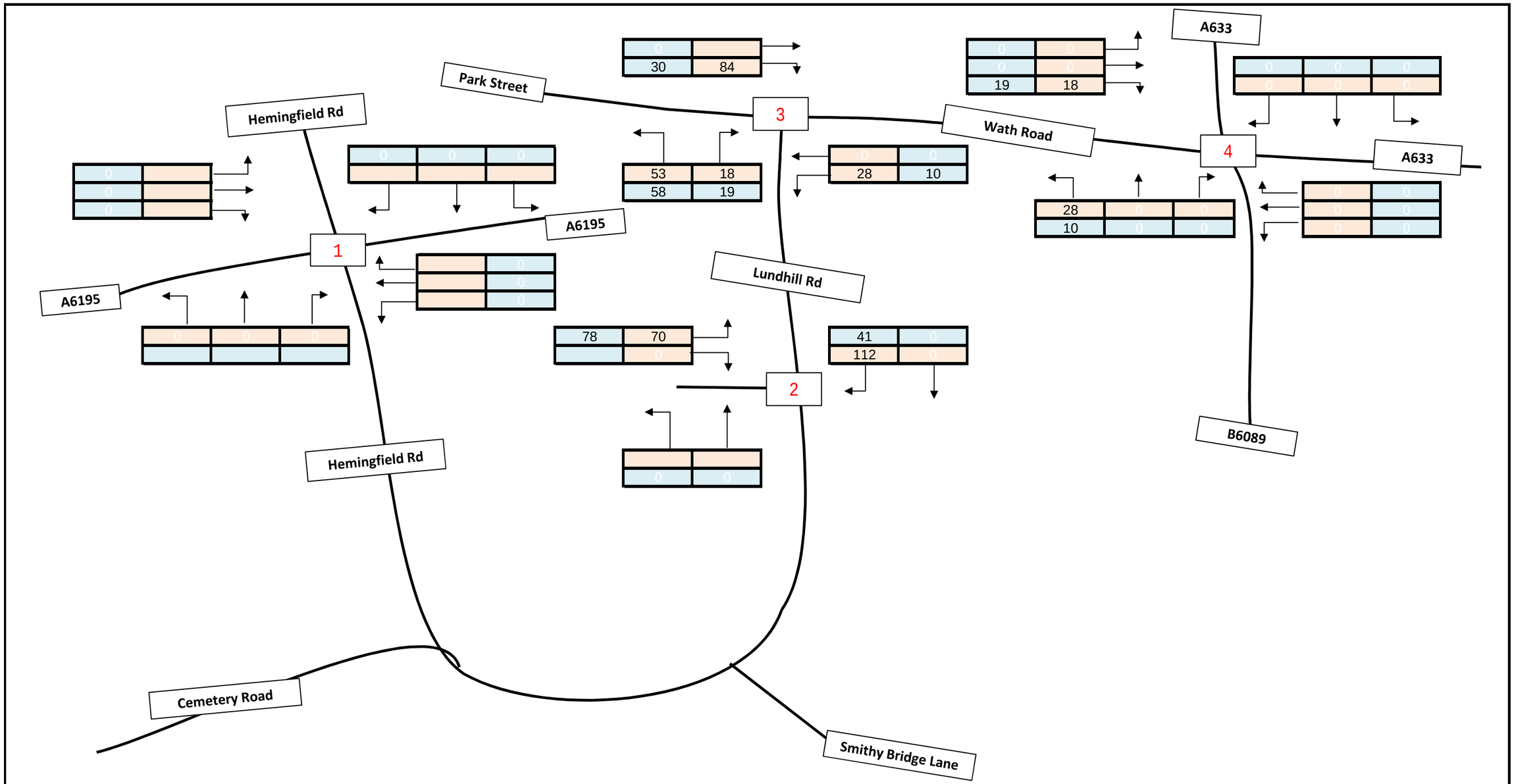
				Approved	SM		
				Date	30.11.2018		



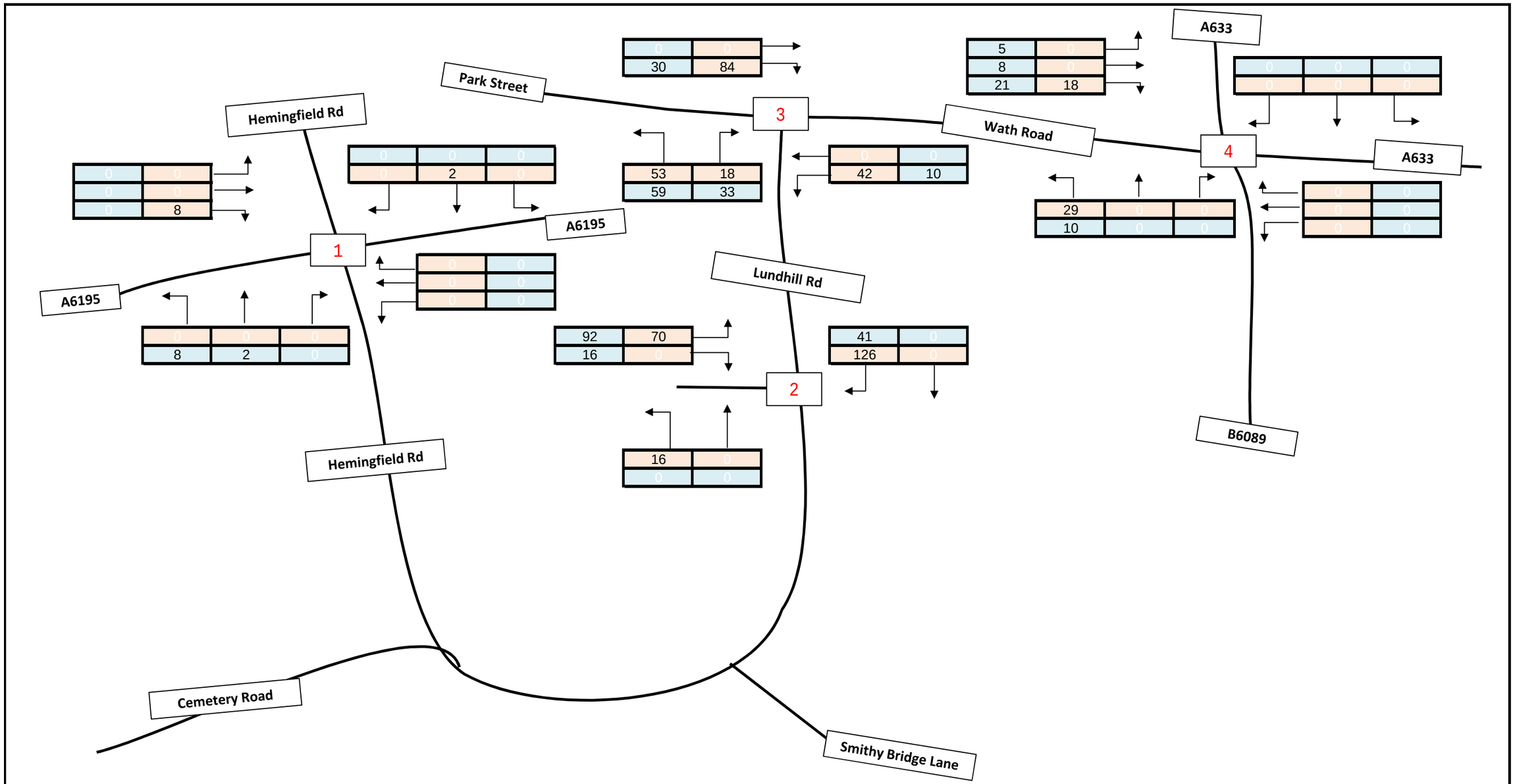
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Primary School Staff Distribution	Drawn	DC	0	8
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



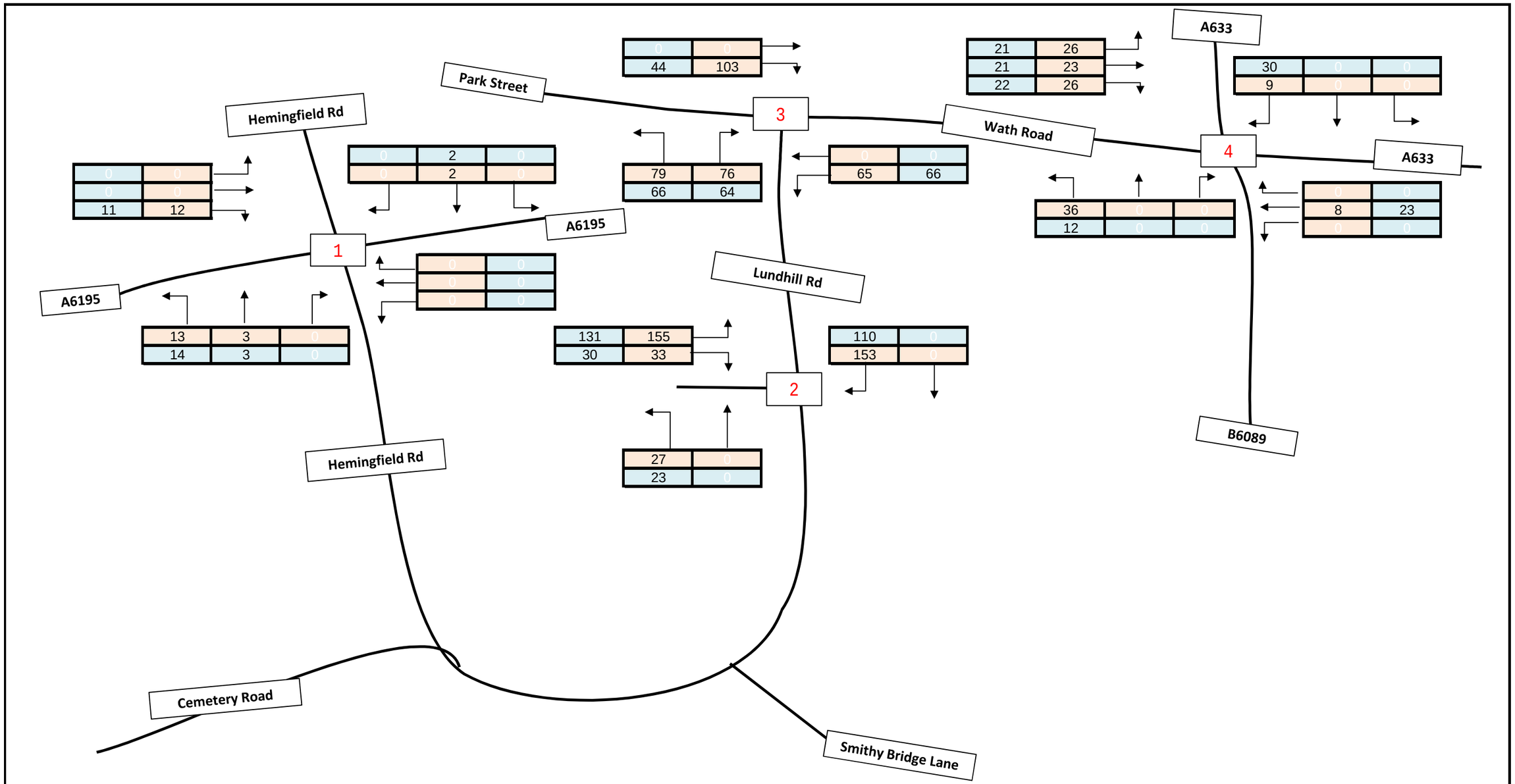
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Primary School Pupil Distribution	Drawn	DC	0	9
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



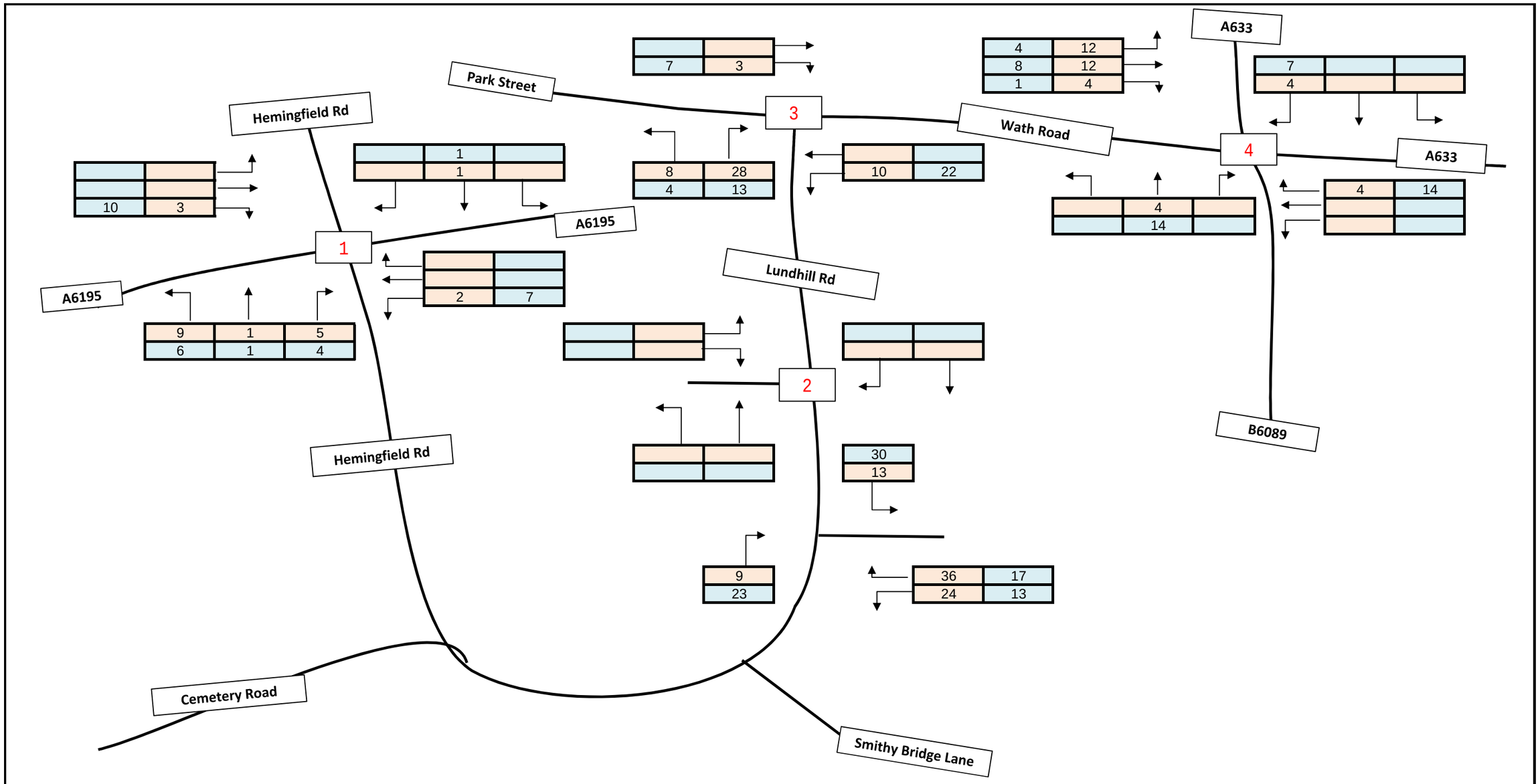
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Primary School Pupil Trip Generation	Drawn	DC	0	10
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



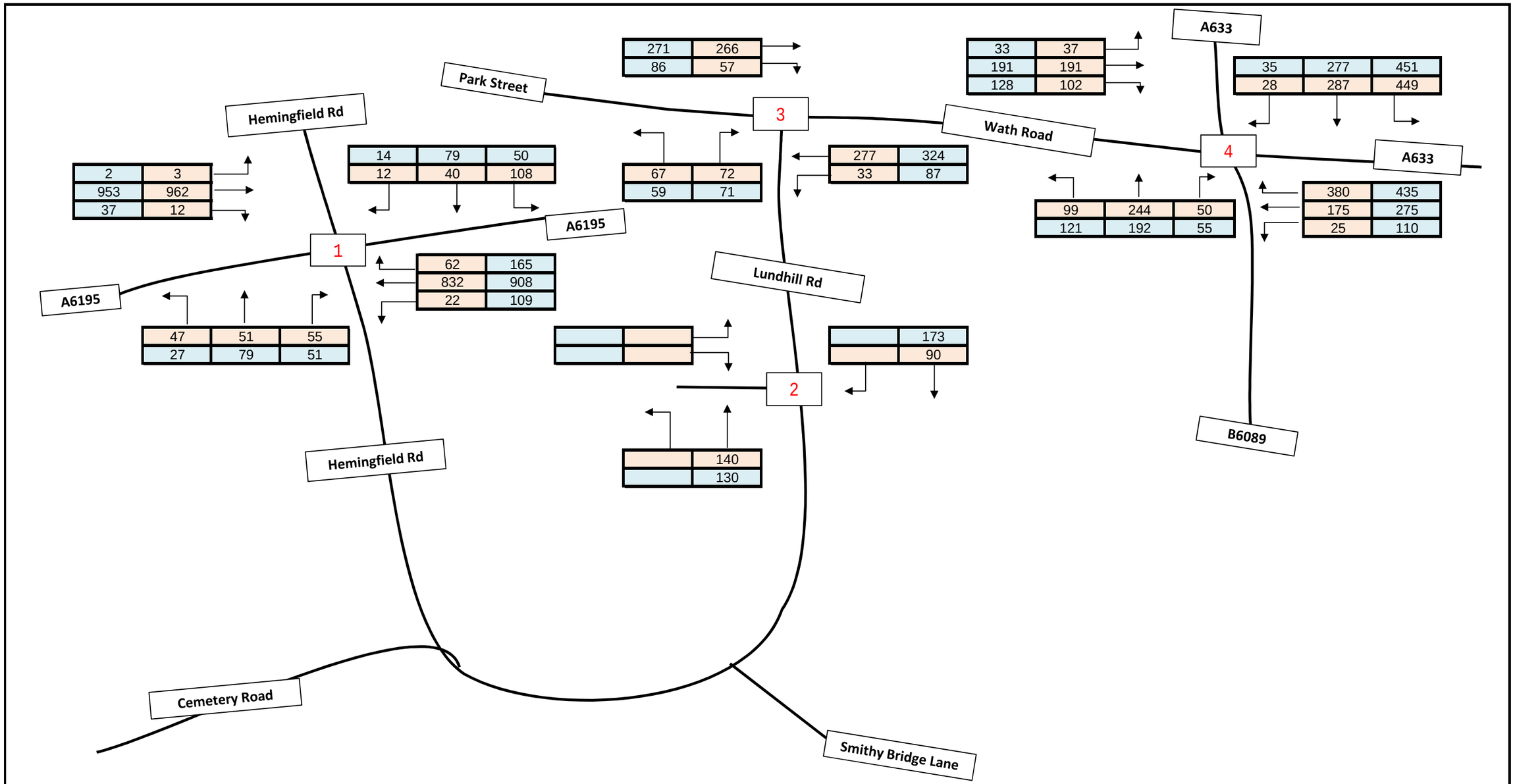
Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Total Primary School Trips	Drawn	DC	0	11
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Total Development Flows	Drawn	DC	0	12
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		

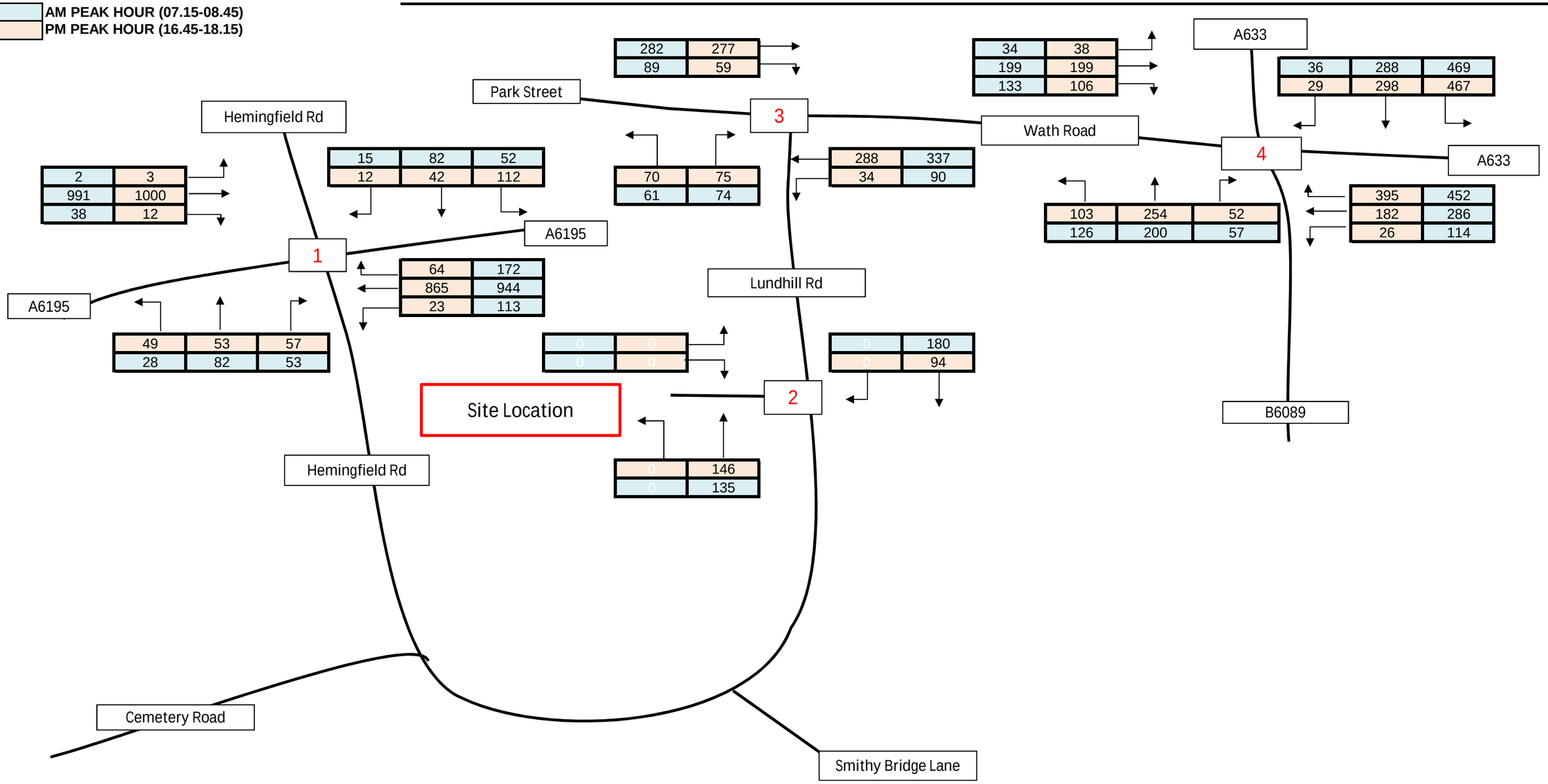


Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Committed Development Trips	Drawn	DC	0	13
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		

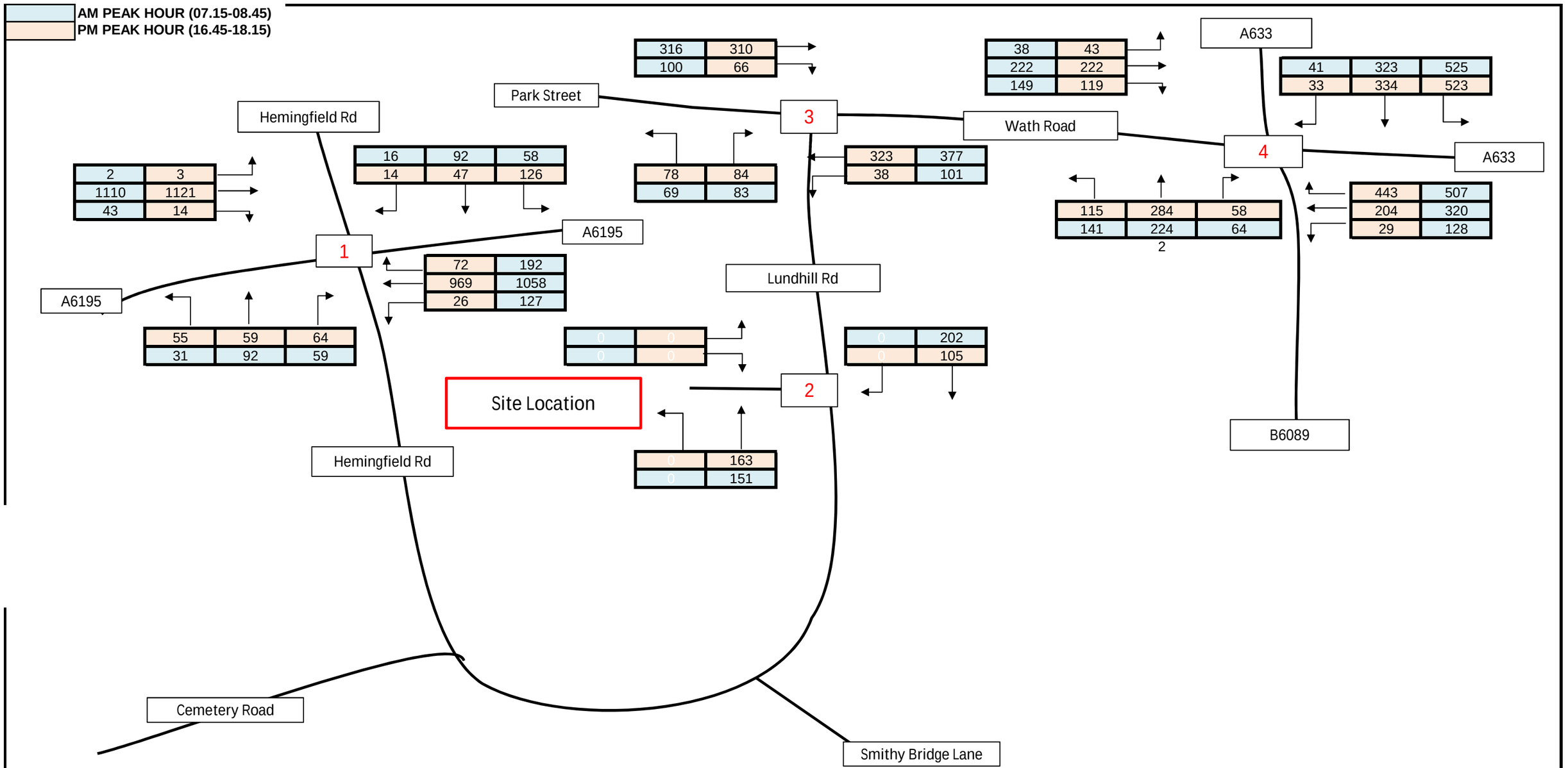


Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Base 2016	Drawn	DC	0	14
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		

AM PEAK HOUR (07.15-08.45)
PM PEAK HOUR (16.45-18.15)

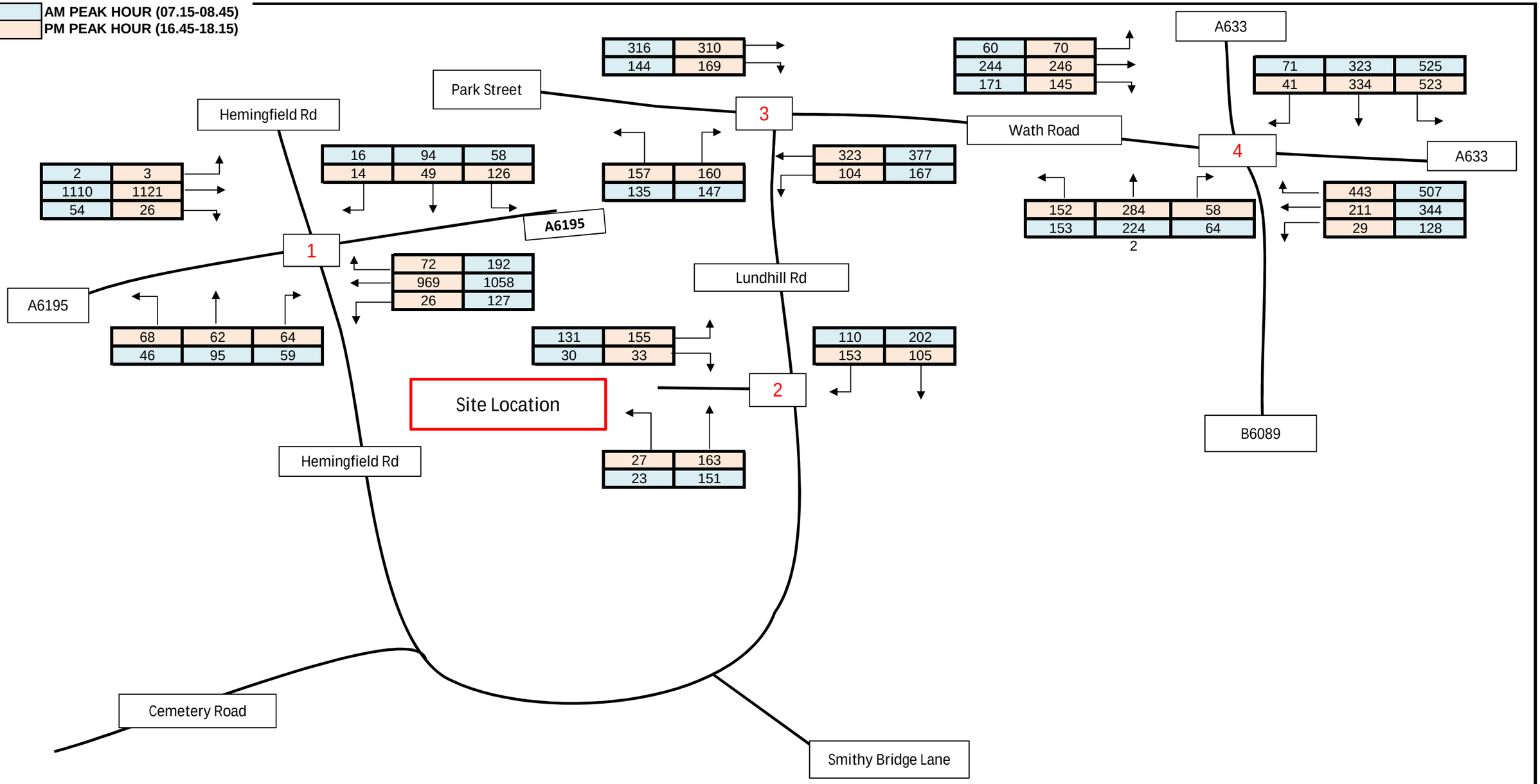


Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Base 2019	Drawn	DC	0	15
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		

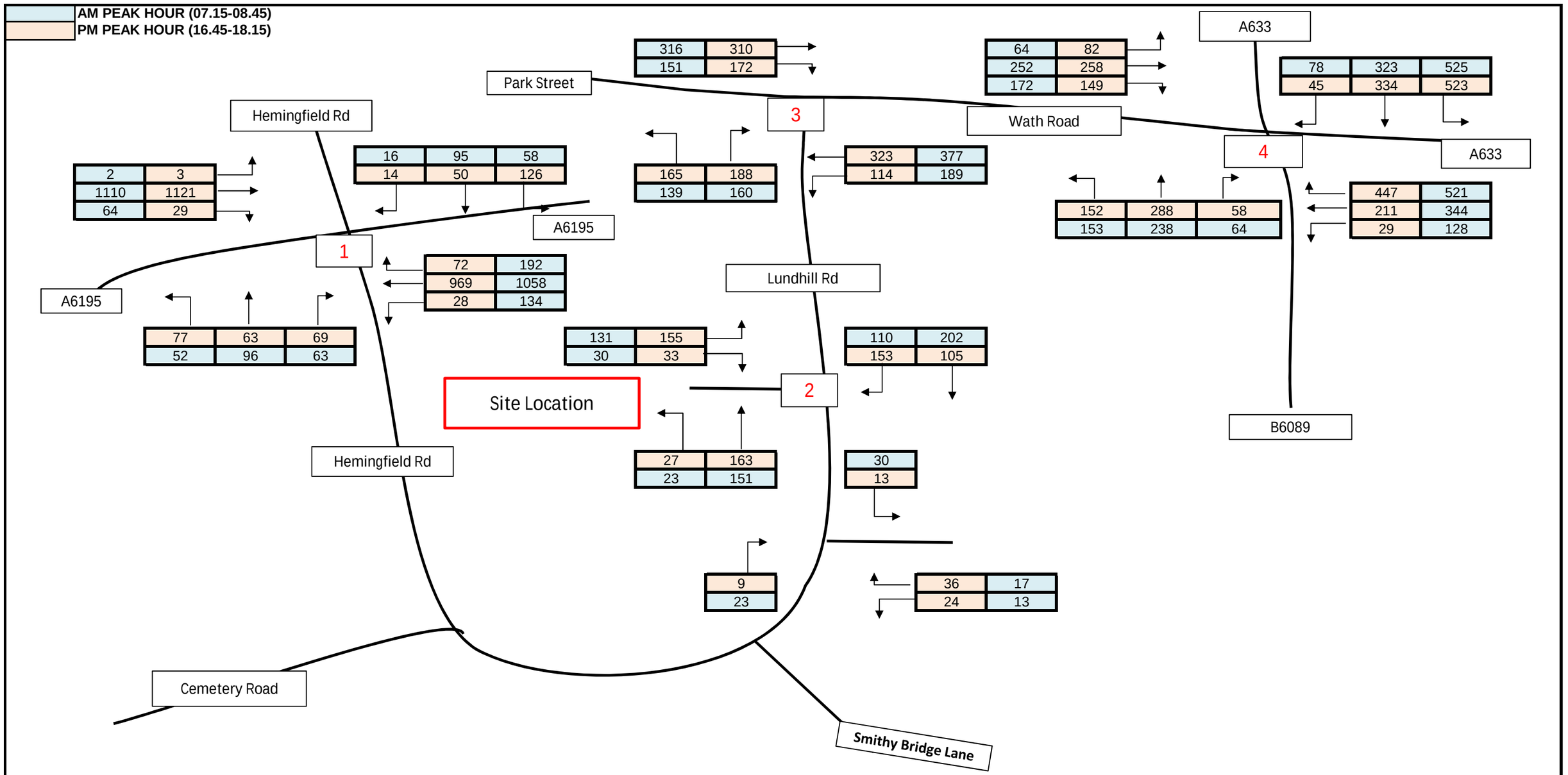


Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Base 2024	Drawn	DC	0	16
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		

AM PEAK HOUR (07.15-08.45)
PM PEAK HOUR (16.45-18.15)



Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Base 2024 + Development	Drawn	DC	0	17
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		



Client		Project	Title	Details		Rev	Number
Premier Construction	AECOM	Former Wombwell Grammar School Site	Base 2024 + Committed + Development	Drawn	DC	0	18
				Checked	MR		
				Approved	SM		
				Date	30.11.2018		

Appendix E – Modelling Results

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J1 - Hemingfield Rd_A6195 Roundabout.j9
Path: \\Ukld s2pfpsw001\ukld s2pfpsw001-v1tp\PROJECTS\99999Speculative\DEVELOPMENT\Wombwell Transport Assessment\02_Modelling\Junctions 9\J1
Report generation date: 22/11/2018 09:41:54

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Base 2019							
Arm 1	1.4	3.72	0.58	A	0.8	2.73	0.44	A
Arm 2	0.2	3.80	0.16	A	0.2	3.42	0.14	A
Arm 3	0.9	2.79	0.47	A	0.8	2.58	0.44	A
Arm 4	0.2	4.63	0.17	A	0.2	4.70	0.19	A
	Base 2024							
Arm 1	1.9	4.53	0.66	A	1.0	3.04	0.50	A
Arm 2	0.2	4.22	0.19	A	0.2	3.71	0.17	A
Arm 3	1.1	3.19	0.53	A	1.0	2.88	0.50	A
Arm 4	0.3	5.20	0.21	A	0.3	5.33	0.23	A
	Base 2024 + Development							
Arm 1	1.9	4.60	0.66	A	1.0	3.07	0.50	A
Arm 2	0.3	4.33	0.21	A	0.2	3.80	0.19	A
Arm 3	1.2	3.25	0.54	A	1.0	2.93	0.51	A
Arm 4	0.3	5.29	0.21	A	0.3	5.42	0.24	A
	Base 2024 + Committed + Development							
Arm 1	2.0	4.69	0.67	A	1.0	3.08	0.50	A
Arm 2	0.3	4.39	0.22	A	0.3	3.87	0.20	A
Arm 3	1.2	3.29	0.54	A	1.0	2.95	0.51	A
Arm 4	0.3	5.36	0.22	A	0.3	5.46	0.24	A

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

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

File summary

File Description

Title	J1 - Hemingfield Road / A6195 Roundabout
Location	
Site number	
Date	21/11/2018
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	EU\henry.eyre
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Base 2019, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	3.40	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A6195 (E)	
2	Hemingfield Road (S)	
3	A6195 (W)	
4	Hemingfield Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.04	7.88	18.5	22.4	80.0	25.1	
2	4.57	6.22	6.2	21.9	80.0	17.5	
3	7.52	9.93	4.7	20.7	80.0	21.6	
4	3.38	5.79	6.4	19.9	80.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.581	2407
2	0.488	1734
3	0.616	2633
4	0.465	1496

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1229	100.000
2		✓	163	100.000
3		✓	1031	100.000
4		✓	149	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	113	944	172
	2	53	0	28	82
	3	991	38	0	2
	4	52	82	15	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	925	925
	2	123	123
	3	776	776
	4	112	112
07:30-07:45	1	1105	1105
	2	147	147
	3	927	927
	4	134	134
07:45-08:00	1	1353	1353
	2	179	179
	3	1135	1135
	4	164	164
08:00-08:15	1	1353	1353
	2	179	179
	3	1135	1135
	4	164	164
08:15-08:30	1	1105	1105
	2	147	147
	3	927	927
	4	134	134
08:30-08:45	1	925	925
	2	123	123
	3	776	776
	4	112	112

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.58	3.72	1.4	A
2	0.16	3.80	0.2	A
3	0.47	2.79	0.9	A
4	0.17	4.63	0.2	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	925	101	2349	0.394	923	0.6	2.521	A
2	123	849	1320	0.093	122	0.1	3.007	A
3	776	230	2491	0.312	774	0.5	2.095	A
4	112	813	1118	0.100	112	0.1	3.576	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1105	121	2337	0.473	1104	0.9	2.916	A
2	147	1016	1238	0.118	146	0.1	3.296	A
3	927	276	2463	0.376	926	0.6	2.341	A
4	134	972	1044	0.128	134	0.1	3.957	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1353	148	2321	0.583	1351	1.4	3.703	A
2	179	1243	1127	0.159	179	0.2	3.797	A
3	1135	338	2425	0.468	1134	0.9	2.786	A
4	164	1190	942	0.174	164	0.2	4.624	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1353	149	2321	0.583	1353	1.4	3.718	A
2	179	1245	1126	0.159	179	0.2	3.800	A
3	1135	338	2425	0.468	1135	0.9	2.791	A
4	164	1191	942	0.174	164	0.2	4.629	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1105	122	2337	0.473	1107	0.9	2.931	A
2	147	1019	1237	0.118	147	0.1	3.302	A
3	927	276	2463	0.376	928	0.6	2.348	A
4	134	974	1043	0.128	134	0.1	3.964	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	925	102	2348	0.394	926	0.7	2.532	A
2	123	852	1318	0.093	123	0.1	3.014	A
3	776	231	2490	0.312	777	0.5	2.101	A
4	112	815	1117	0.100	112	0.1	3.587	A

Base 2019, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	2.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	952	100.000
2		✓	159	100.000
3		✓	1015	100.000
4		✓	166	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	23	865	64
	2	57	0	49	53
	3	1000	12	0	3
	4	112	42	12	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	717	717
	2	120	120
	3	764	764
	4	125	125
17:00-17:15	1	856	856
	2	143	143
	3	912	912
	4	149	149
17:15-17:30	1	1048	1048
	2	175	175
	3	1118	1118
	4	183	183
17:30-17:45	1	1048	1048
	2	175	175
	3	1118	1118
	4	183	183
17:45-18:00	1	856	856
	2	143	143
	3	912	912
	4	149	149
18:00-18:15	1	717	717
	2	120	120
	3	764	764
	4	125	125

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.44	2.73	0.8	A
2	0.14	3.42	0.2	A
3	0.44	2.58	0.8	A
4	0.19	4.70	0.2	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	717	50	2379	0.301	715	0.4	2.162	A
2	120	707	1389	0.086	119	0.1	2.835	A
3	764	131	2552	0.299	762	0.4	2.009	A
4	125	803	1122	0.111	124	0.1	3.605	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	856	59	2373	0.361	855	0.6	2.372	A
2	143	845	1321	0.108	143	0.1	3.054	A
3	912	156	2537	0.360	912	0.6	2.216	A
4	149	960	1049	0.142	149	0.2	4.000	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1048	73	2365	0.443	1047	0.8	2.730	A
2	175	1035	1229	0.142	175	0.2	3.415	A
3	1118	191	2515	0.444	1117	0.8	2.573	A
4	183	1176	949	0.193	182	0.2	4.697	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1048	73	2365	0.443	1048	0.8	2.733	A
2	175	1036	1228	0.143	175	0.2	3.416	A
3	1118	192	2515	0.444	1118	0.8	2.575	A
4	183	1177	948	0.193	183	0.2	4.702	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	856	59	2373	0.361	857	0.6	2.377	A
2	143	847	1321	0.108	143	0.1	3.059	A
3	912	157	2536	0.360	913	0.6	2.220	A
4	149	962	1048	0.142	150	0.2	4.006	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	717	50	2378	0.301	717	0.4	2.169	A
2	120	709	1388	0.086	120	0.1	2.838	A
3	764	131	2552	0.299	765	0.4	2.015	A
4	125	805	1121	0.111	125	0.1	3.616	A

Base 2024, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	4.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1377	100.000
2		✓	182	100.000
3		✓	1155	100.000
4		✓	166	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	127	1058	192
	2	59	0	31	92
	3	1110	43	0	2
	4	58	92	16	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	1037	1037
	2	137	137
	3	870	870
	4	125	125
07:30-07:45	1	1238	1238
	2	164	164
	3	1038	1038
	4	149	149
07:45-08:00	1	1516	1516
	2	200	200
	3	1272	1272
	4	183	183
08:00-08:15	1	1516	1516
	2	200	200
	3	1272	1272
	4	183	183
08:15-08:30	1	1238	1238
	2	164	164
	3	1038	1038
	4	149	149
08:30-08:45	1	1037	1037
	2	137	137
	3	870	870
	4	125	125

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.66	4.53	1.9	A
2	0.19	4.22	0.2	A
3	0.53	3.19	1.1	A
4	0.21	5.20	0.3	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1037	113	2342	0.443	1034	0.8	2.745	A
2	137	950	1270	0.108	137	0.1	3.173	A
3	870	257	2474	0.351	867	0.5	2.237	A
4	125	910	1072	0.117	124	0.1	3.795	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1238	136	2329	0.532	1237	1.1	3.292	A
2	164	1137	1179	0.139	163	0.2	3.543	A
3	1038	308	2443	0.425	1038	0.7	2.560	A
4	149	1089	989	0.151	149	0.2	4.283	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1516	166	2311	0.656	1513	1.9	4.495	A
2	200	1391	1055	0.190	200	0.2	4.209	A
3	1272	377	2401	0.530	1270	1.1	3.180	A
4	183	1333	876	0.209	182	0.3	5.190	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1516	166	2311	0.656	1516	1.9	4.529	A
2	200	1394	1054	0.190	200	0.2	4.217	A
3	1272	378	2400	0.530	1272	1.1	3.189	A
4	183	1334	875	0.209	183	0.3	5.199	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1238	136	2328	0.532	1241	1.1	3.318	A
2	164	1141	1177	0.139	164	0.2	3.555	A
3	1038	309	2443	0.425	1040	0.7	2.570	A
4	149	1091	988	0.151	150	0.2	4.294	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1037	114	2341	0.443	1038	0.8	2.764	A
2	137	954	1268	0.108	137	0.1	3.185	A
3	870	259	2474	0.352	870	0.5	2.247	A
4	125	913	1071	0.117	125	0.1	3.808	A

Base 2024, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	3.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1067	100.000
2		✓	178	100.000
3		✓	1138	100.000
4		✓	187	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	26	969	72
	2	64	0	55	59
	3	1121	14	0	3
	4	126	47	14	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	803	803
	2	134	134
	3	857	857
	4	141	141
17:00-17:15	1	959	959
	2	160	160
	3	1023	1023
	4	168	168
17:15-17:30	1	1175	1175
	2	196	196
	3	1253	1253
	4	206	206
17:30-17:45	1	1175	1175
	2	196	196
	3	1253	1253
	4	206	206
17:45-18:00	1	959	959
	2	160	160
	3	1023	1023
	4	168	168
18:00-18:15	1	803	803
	2	134	134
	3	857	857
	4	141	141

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.50	3.04	1.0	A
2	0.17	3.71	0.2	A
3	0.50	2.88	1.0	A
4	0.23	5.33	0.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	803	56	2375	0.338	801	0.5	2.285	A
2	134	792	1347	0.099	134	0.1	2.966	A
3	857	146	2543	0.337	855	0.5	2.129	A
4	141	900	1077	0.131	140	0.1	3.840	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	959	67	2368	0.405	959	0.7	2.552	A
2	160	948	1271	0.126	160	0.1	3.238	A
3	1023	175	2525	0.405	1022	0.7	2.394	A
4	168	1077	995	0.169	168	0.2	4.353	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1175	82	2359	0.498	1174	1.0	3.033	A
2	196	1160	1168	0.168	196	0.2	3.703	A
3	1253	214	2501	0.501	1252	1.0	2.879	A
4	206	1319	882	0.233	205	0.3	5.315	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1175	83	2359	0.498	1175	1.0	3.038	A
2	196	1162	1167	0.168	196	0.2	3.705	A
3	1253	215	2501	0.501	1253	1.0	2.884	A
4	206	1320	882	0.234	206	0.3	5.326	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	959	68	2368	0.405	960	0.7	2.559	A
2	160	950	1271	0.126	160	0.1	3.242	A
3	1023	176	2525	0.405	1024	0.7	2.402	A
4	168	1079	994	0.169	169	0.2	4.365	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	803	57	2375	0.338	804	0.5	2.292	A
2	134	795	1346	0.100	134	0.1	2.970	A
3	857	147	2542	0.337	857	0.5	2.137	A
4	141	903	1076	0.131	141	0.2	3.852	A

Base 2024 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	4.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1377	100.000
2		✓	202	100.000
3		✓	1172	100.000
4		✓	169	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	127	1058	192
	2	59	0	48	95
	3	1110	60	0	2
	4	58	95	16	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	1037	1037
	2	152	152
	3	882	882
	4	127	127
07:30-07:45	1	1238	1238
	2	182	182
	3	1054	1054
	4	152	152
07:45-08:00	1	1516	1516
	2	222	222
	3	1290	1290
	4	186	186
08:00-08:15	1	1516	1516
	2	222	222
	3	1290	1290
	4	186	186
08:15-08:30	1	1238	1238
	2	182	182
	3	1054	1054
	4	152	152
08:30-08:45	1	1037	1037
	2	152	152
	3	882	882
	4	127	127

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.66	4.60	1.9	A
2	0.21	4.33	0.3	A
3	0.54	3.25	1.2	A
4	0.21	5.29	0.3	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1037	128	2333	0.444	1033	0.8	2.763	A
2	152	950	1270	0.120	152	0.1	3.216	A
3	882	260	2473	0.357	880	0.6	2.257	A
4	127	923	1067	0.119	127	0.1	3.828	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1238	154	2318	0.534	1237	1.1	3.324	A
2	182	1137	1179	0.154	181	0.2	3.607	A
3	1054	311	2442	0.432	1053	0.8	2.591	A
4	152	1104	982	0.155	152	0.2	4.333	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1516	188	2298	0.660	1513	1.9	4.567	A
2	222	1391	1055	0.211	222	0.3	4.318	A
3	1290	380	2399	0.538	1289	1.2	3.239	A
4	186	1351	867	0.215	186	0.3	5.281	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1516	188	2298	0.660	1516	1.9	4.604	A
2	222	1394	1054	0.211	222	0.3	4.329	A
3	1290	381	2398	0.538	1290	1.2	3.248	A
4	186	1353	866	0.215	186	0.3	5.291	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1238	154	2318	0.534	1241	1.2	3.354	A
2	182	1141	1177	0.154	182	0.2	3.620	A
3	1054	312	2441	0.432	1055	0.8	2.602	A
4	152	1107	981	0.155	152	0.2	4.346	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1037	129	2332	0.444	1038	0.8	2.783	A
2	152	954	1268	0.120	152	0.1	3.228	A
3	882	261	2472	0.357	883	0.6	2.266	A
4	127	926	1065	0.119	127	0.1	3.840	A

Base 2024 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	3.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1067	100.000
2		✓	201	100.000
3		✓	1154	100.000
4		✓	190	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	26	969	72
	2	64	0	74	63
	3	1121	30	0	3
	4	126	50	14	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	803	803
	2	151	151
	3	869	869
	4	143	143
17:00-17:15	1	959	959
	2	181	181
	3	1037	1037
	4	171	171
17:15-17:30	1	1175	1175
	2	221	221
	3	1271	1271
	4	209	209
17:30-17:45	1	1175	1175
	2	221	221
	3	1271	1271
	4	209	209
17:45-18:00	1	959	959
	2	181	181
	3	1037	1037
	4	171	171
18:00-18:15	1	803	803
	2	151	151
	3	869	869
	4	143	143

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.50	3.07	1.0	A
2	0.19	3.80	0.2	A
3	0.51	2.93	1.0	A
4	0.24	5.42	0.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	803	71	2366	0.339	801	0.5	2.297	A
2	151	792	1347	0.112	151	0.1	3.007	A
3	869	149	2541	0.342	867	0.5	2.147	A
4	143	912	1071	0.134	142	0.2	3.873	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	959	84	2358	0.407	959	0.7	2.570	A
2	181	948	1271	0.142	181	0.2	3.299	A
3	1037	179	2523	0.411	1037	0.7	2.421	A
4	171	1092	988	0.173	171	0.2	4.402	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1175	103	2347	0.500	1174	1.0	3.064	A
2	221	1160	1168	0.190	221	0.2	3.802	A
3	1271	219	2498	0.509	1269	1.0	2.927	A
4	209	1336	874	0.239	209	0.3	5.407	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1175	103	2347	0.501	1175	1.0	3.069	A
2	221	1162	1167	0.190	221	0.2	3.805	A
3	1271	219	2498	0.509	1271	1.0	2.932	A
4	209	1338	873	0.240	209	0.3	5.418	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	959	85	2358	0.407	960	0.7	2.577	A
2	181	950	1270	0.142	181	0.2	3.304	A
3	1037	179	2523	0.411	1039	0.7	2.427	A
4	171	1094	987	0.173	171	0.2	4.416	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	803	71	2366	0.339	804	0.5	2.305	A
2	151	795	1346	0.112	151	0.1	3.015	A
3	869	150	2541	0.342	870	0.5	2.154	A
4	143	915	1070	0.134	143	0.2	3.885	A

Base 2024 + Committed + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	4.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1384	100.000
2		✓	213	100.000
3		✓	1182	100.000
4		✓	170	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	134	1058	192
	2	63	0	54	96
	3	1110	70	0	2
	4	58	96	16	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	1042	1042
	2	160	160
	3	890	890
	4	128	128
07:30-07:45	1	1244	1244
	2	191	191
	3	1063	1063
	4	153	153
07:45-08:00	1	1524	1524
	2	235	235
	3	1301	1301
	4	187	187
08:00-08:15	1	1524	1524
	2	235	235
	3	1301	1301
	4	187	187
08:15-08:30	1	1244	1244
	2	191	191
	3	1063	1063
	4	153	153
08:30-08:45	1	1042	1042
	2	160	160
	3	890	890
	4	128	128

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.67	4.69	2.0	A
2	0.22	4.39	0.3	A
3	0.54	3.29	1.2	A
4	0.22	5.36	0.3	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1042	137	2328	0.448	1039	0.8	2.785	A
2	160	950	1270	0.126	160	0.1	3.240	A
3	890	263	2471	0.360	888	0.6	2.271	A
4	128	933	1062	0.121	127	0.1	3.852	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1244	163	2312	0.538	1243	1.2	3.361	A
2	191	1137	1179	0.162	191	0.2	3.643	A
3	1063	315	2439	0.436	1062	0.8	2.613	A
4	153	1117	976	0.157	153	0.2	4.369	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1524	200	2291	0.665	1521	2.0	4.652	A
2	235	1391	1055	0.222	234	0.3	4.382	A
3	1301	386	2395	0.543	1300	1.2	3.282	A
4	187	1367	860	0.218	187	0.3	5.346	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1524	200	2291	0.665	1524	2.0	4.692	A
2	235	1394	1054	0.223	235	0.3	4.393	A
3	1301	386	2395	0.543	1301	1.2	3.291	A
4	187	1369	859	0.218	187	0.3	5.356	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1244	164	2312	0.538	1247	1.2	3.393	A
2	191	1141	1177	0.163	192	0.2	3.656	A
3	1063	316	2438	0.436	1064	0.8	2.622	A
4	153	1119	975	0.157	153	0.2	4.381	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1042	137	2328	0.448	1043	0.8	2.807	A
2	160	954	1268	0.126	161	0.1	3.250	A
3	890	265	2470	0.360	891	0.6	2.280	A
4	128	937	1060	0.121	128	0.1	3.865	A

Base 2024 + Committed + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	Hemingfield Road / A6195 Roundabout	Standard Roundabout	3.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1069	100.000
2		✓	216	100.000
3		✓	1157	100.000
4		✓	191	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	969	72
	2	69	0	83	64
	3	1121	33	0	3
	4	126	51	14	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	805	805
	2	163	163
	3	871	871
	4	144	144
17:00-17:15	1	961	961
	2	194	194
	3	1040	1040
	4	172	172
17:15-17:30	1	1177	1177
	2	238	238
	3	1274	1274
	4	210	210
17:30-17:45	1	1177	1177
	2	238	238
	3	1274	1274
	4	210	210
17:45-18:00	1	961	961
	2	194	194
	3	1040	1040
	4	172	172
18:00-18:15	1	805	805
	2	163	163
	3	871	871
	4	144	144

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.50	3.08	1.0	A
2	0.20	3.87	0.3	A
3	0.51	2.95	1.0	A
4	0.24	5.46	0.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	805	74	2365	0.340	803	0.5	2.302	A
2	163	792	1347	0.121	162	0.1	3.035	A
3	871	154	2538	0.343	869	0.5	2.154	A
4	144	918	1069	0.135	143	0.2	3.888	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	961	88	2356	0.408	960	0.7	2.577	A
2	194	948	1271	0.153	194	0.2	3.341	A
3	1040	184	2520	0.413	1039	0.7	2.431	A
4	172	1099	985	0.174	171	0.2	4.425	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1177	108	2345	0.502	1176	1.0	3.077	A
2	238	1160	1168	0.204	238	0.3	3.869	A
3	1274	225	2494	0.511	1273	1.0	2.945	A
4	210	1345	870	0.242	210	0.3	5.449	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1177	108	2345	0.502	1177	1.0	3.082	A
2	238	1162	1167	0.204	238	0.3	3.873	A
3	1274	226	2494	0.511	1274	1.0	2.950	A
4	210	1347	869	0.242	210	0.3	5.461	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	961	88	2356	0.408	962	0.7	2.586	A
2	194	950	1270	0.153	194	0.2	3.345	A
3	1040	185	2519	0.413	1041	0.7	2.439	A
4	172	1101	984	0.175	172	0.2	4.437	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	805	74	2364	0.340	805	0.5	2.309	A
2	163	795	1346	0.121	163	0.1	3.042	A
3	871	154	2538	0.343	872	0.5	2.161	A
4	144	922	1067	0.135	144	0.2	3.901	A

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

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Filename: J2 - Lundhill Rd_Gypsy Ln_Proposed Site Access.j9
Path: \\Uklds2pfpsw001\uklds2pfpsw001-v1tp\PROJECTS\99999Speculative\DEVELOPMENT\Wombwell Transport Assessment\02_Modelling\Junctions 9\J2
Report generation date: 22/11/2018 10:19:10

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Base 2019							
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Base 2024							
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Base 2024 + Development							
Stream B-C	0.2	7.50	0.18	A	0.3	7.78	0.20	A
Stream B-A	0.1	9.60	0.09	A	0.1	9.66	0.11	A
Stream C-AB	0.3	5.99	0.20	A	0.3	6.76	0.22	A
	Base 2024 + Committed + Development							
Stream B-C	0.2	7.50	0.18	A	0.3	7.78	0.20	A
Stream B-A	0.1	9.60	0.09	A	0.1	9.66	0.11	A
Stream C-AB	0.3	5.99	0.20	A	0.3	6.76	0.22	A

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

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

File summary

File Description

Title	J2 - Lundhill Rd / Gypsy Ln / Proposed Site Access
Location	
Site number	
Date	21/11/2018
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	EU\henry.eyre
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Base 2019, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Lundhill Rd (NE)		Major
B	Proposed Site Access (Gypsy Ln)		Minor
C	Lundhill Rd (SW)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.70			135.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	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	8.50	3.20	2.40	2.40	2.40	✓	1.00	20	25

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	493	0.083	0.210	0.132	0.300
1	B-C	720	0.102	0.258	-	-
1	C-B	652	0.234	0.234	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	135	100.000
B		✓	0	100.000
C		✓	180	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	135
	B	0	0	0
	C	180	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	102	102
	B	0	0
	C	136	136
07:30-07:45	A	121	121
	B	0	0
	C	162	162
07:45-08:00	A	149	149
	B	0	0
	C	198	198
08:00-08:15	A	149	149
	B	0	0
	C	198	198
08:15-08:30	A	121	121
	B	0	0
	C	162	162
08:30-08:45	A	102	102
	B	0	0
	C	136	136

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	693	0.000	0	0.0	0.000	A
B-A	0	454	0.000	0	0.0	0.000	A
C-AB	0	628	0.000	0	0.0	0.000	A
C-A	136			136			
A-B	0			0			
A-C	102			102			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	688	0.000	0	0.0	0.000	A
B-A	0	446	0.000	0	0.0	0.000	A
C-AB	0	624	0.000	0	0.0	0.000	A
C-A	162			162			
A-B	0			0			
A-C	121			121			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	681	0.000	0	0.0	0.000	A
B-A	0	435	0.000	0	0.0	0.000	A
C-AB	0	617	0.000	0	0.0	0.000	A
C-A	198			198			
A-B	0			0			
A-C	149			149			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	681	0.000	0	0.0	0.000	A
B-A	0	435	0.000	0	0.0	0.000	A
C-AB	0	617	0.000	0	0.0	0.000	A
C-A	198			198			
A-B	0			0			
A-C	149			149			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	688	0.000	0	0.0	0.000	A
B-A	0	446	0.000	0	0.0	0.000	A
C-AB	0	624	0.000	0	0.0	0.000	A
C-A	162			162			
A-B	0			0			
A-C	121			121			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	693	0.000	0	0.0	0.000	A
B-A	0	454	0.000	0	0.0	0.000	A
C-AB	0	628	0.000	0	0.0	0.000	A
C-A	136			136			
A-B	0			0			
A-C	102			102			

Base 2019, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	146	100.000
B		✓	0	100.000
C		✓	94	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	146
	B	0	0	0
	C	94	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	110	110
	B	0	0
	C	71	71
17:00-17:15	A	131	131
	B	0	0
	C	85	85
17:15-17:30	A	161	161
	B	0	0
	C	103	103
17:30-17:45	A	161	161
	B	0	0
	C	103	103
17:45-18:00	A	131	131
	B	0	0
	C	85	85
18:00-18:15	A	110	110
	B	0	0
	C	71	71

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	691	0.000	0	0.0	0.000	A
B-A	0	460	0.000	0	0.0	0.000	A
C-AB	0	626	0.000	0	0.0	0.000	A
C-A	71			71			
A-B	0			0			
A-C	110			110			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	686	0.000	0	0.0	0.000	A
B-A	0	454	0.000	0	0.0	0.000	A
C-AB	0	621	0.000	0	0.0	0.000	A
C-A	85			85			
A-B	0			0			
A-C	131			131			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	678	0.000	0	0.0	0.000	A
B-A	0	445	0.000	0	0.0	0.000	A
C-AB	0	615	0.000	0	0.0	0.000	A
C-A	103			103			
A-B	0			0			
A-C	161			161			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	678	0.000	0	0.0	0.000	A
B-A	0	445	0.000	0	0.0	0.000	A
C-AB	0	615	0.000	0	0.0	0.000	A
C-A	103			103			
A-B	0			0			
A-C	161			161			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	686	0.000	0	0.0	0.000	A
B-A	0	454	0.000	0	0.0	0.000	A
C-AB	0	621	0.000	0	0.0	0.000	A
C-A	85			85			
A-B	0			0			
A-C	131			131			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	691	0.000	0	0.0	0.000	A
B-A	0	460	0.000	0	0.0	0.000	A
C-AB	0	626	0.000	0	0.0	0.000	A
C-A	71			71			
A-B	0			0			
A-C	110			110			

Base 2024, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	151	100.000
B		✓	0	100.000
C		✓	202	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	151
	B	0	0	0
	C	202	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	114	114
	B	0	0
	C	152	152
07:30-07:45	A	136	136
	B	0	0
	C	182	182
07:45-08:00	A	166	166
	B	0	0
	C	222	222
08:00-08:15	A	166	166
	B	0	0
	C	222	222
08:15-08:30	A	136	136
	B	0	0
	C	182	182
08:30-08:45	A	114	114
	B	0	0
	C	152	152

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	690	0.000	0	0.0	0.000	A
B-A	0	449	0.000	0	0.0	0.000	A
C-AB	0	626	0.000	0	0.0	0.000	A
C-A	152			152			
A-B	0			0			
A-C	114			114			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	685	0.000	0	0.0	0.000	A
B-A	0	440	0.000	0	0.0	0.000	A
C-AB	0	620	0.000	0	0.0	0.000	A
C-A	182			182			
A-B	0			0			
A-C	136			136			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	677	0.000	0	0.0	0.000	A
B-A	0	429	0.000	0	0.0	0.000	A
C-AB	0	613	0.000	0	0.0	0.000	A
C-A	222			222			
A-B	0			0			
A-C	166			166			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	677	0.000	0	0.0	0.000	A
B-A	0	429	0.000	0	0.0	0.000	A
C-AB	0	613	0.000	0	0.0	0.000	A
C-A	222			222			
A-B	0			0			
A-C	166			166			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	685	0.000	0	0.0	0.000	A
B-A	0	440	0.000	0	0.0	0.000	A
C-AB	0	620	0.000	0	0.0	0.000	A
C-A	182			182			
A-B	0			0			
A-C	136			136			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	690	0.000	0	0.0	0.000	A
B-A	0	449	0.000	0	0.0	0.000	A
C-AB	0	626	0.000	0	0.0	0.000	A
C-A	152			152			
A-B	0			0			
A-C	114			114			

Base 2024, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	163	100.000
B		✓	0	100.000
C		✓	105	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	163
	B	0	0	0
	C	105	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	123	123
	B	0	0
	C	79	79
17:00-17:15	A	147	147
	B	0	0
	C	94	94
17:15-17:30	A	179	179
	B	0	0
	C	116	116
17:30-17:45	A	179	179
	B	0	0
	C	116	116
17:45-18:00	A	147	147
	B	0	0
	C	94	94
18:00-18:15	A	123	123
	B	0	0
	C	79	79

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	688	0.000	0	0.0	0.000	A
B-A	0	457	0.000	0	0.0	0.000	A
C-AB	0	623	0.000	0	0.0	0.000	A
C-A	79			79			
A-B	0			0			
A-C	123			123			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	682	0.000	0	0.0	0.000	A
B-A	0	450	0.000	0	0.0	0.000	A
C-AB	0	618	0.000	0	0.0	0.000	A
C-A	94			94			
A-B	0			0			
A-C	147			147			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	673	0.000	0	0.0	0.000	A
B-A	0	440	0.000	0	0.0	0.000	A
C-AB	0	610	0.000	0	0.0	0.000	A
C-A	116			116			
A-B	0			0			
A-C	179			179			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	673	0.000	0	0.0	0.000	A
B-A	0	440	0.000	0	0.0	0.000	A
C-AB	0	610	0.000	0	0.0	0.000	A
C-A	116			116			
A-B	0			0			
A-C	179			179			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	682	0.000	0	0.0	0.000	A
B-A	0	450	0.000	0	0.0	0.000	A
C-AB	0	618	0.000	0	0.0	0.000	A
C-A	94			94			
A-B	0			0			
A-C	147			147			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	688	0.000	0	0.0	0.000	A
B-A	0	457	0.000	0	0.0	0.000	A
C-AB	0	623	0.000	0	0.0	0.000	A
C-A	79			79			
A-B	0			0			
A-C	123			123			

Base 2024 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	3.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	185	100.000
B		✓	133	100.000
C		✓	298	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	34	151
	B	35	0	98
	C	202	96	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	139	139
	B	100	100
	C	224	224
07:30-07:45	A	166	166
	B	120	120
	C	268	268
07:45-08:00	A	204	204
	B	146	146
	C	328	328
08:00-08:15	A	204	204
	B	146	146
	C	328	328
08:15-08:30	A	166	166
	B	120	120
	C	268	268
08:30-08:45	A	139	139
	B	100	100
	C	224	224

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.18	7.50	0.2	A
B-A	0.09	9.60	0.1	A
C-AB	0.20	5.99	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	607	0.122	73	0.1	6.738	A
B-A	26	449	0.059	26	0.1	8.514	A
C-AB	92	719	0.127	91	0.2	5.726	A
C-A	133			133			
A-B	26			26			
A-C	114			114			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	88	599	0.147	88	0.2	7.042	A
B-A	31	434	0.072	31	0.1	8.938	A
C-AB	115	733	0.157	115	0.2	5.823	A
C-A	153			153			
A-B	31			31			
A-C	136			136			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	108	588	0.184	108	0.2	7.491	A
B-A	39	414	0.093	38	0.1	9.591	A
C-AB	150	752	0.200	150	0.3	5.979	A
C-A	178			178			
A-B	37			37			
A-C	166			166			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	108	588	0.184	108	0.2	7.498	A
B-A	39	414	0.093	39	0.1	9.597	A
C-AB	150	752	0.200	150	0.3	5.988	A
C-A	178			178			
A-B	37			37			
A-C	166			166			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	88	599	0.147	88	0.2	7.054	A
B-A	31	434	0.073	32	0.1	8.948	A
C-AB	115	733	0.157	115	0.2	5.834	A
C-A	153			153			
A-B	31			31			
A-C	136			136			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	607	0.122	74	0.1	6.759	A
B-A	26	448	0.059	26	0.1	8.530	A
C-AB	92	719	0.128	92	0.2	5.744	A
C-A	132			132			
A-B	26			26			
A-C	114			114			

Base 2024 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	3.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	195	100.000
B		✓	151	100.000
C		✓	215	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	32	163
	B	43	0	108
	C	105	110	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	147	147
	B	114	114
	C	162	162
17:00-17:15	A	175	175
	B	136	136
	C	193	193
17:15-17:30	A	215	215
	B	166	166
	C	237	237
17:30-17:45	A	215	215
	B	166	166
	C	237	237
17:45-18:00	A	175	175
	B	136	136
	C	193	193
18:00-18:15	A	147	147
	B	114	114
	C	162	162

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.20	7.78	0.3	A
B-A	0.11	9.66	0.1	A
C-AB	0.22	6.76	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	603	0.135	81	0.2	6.883	A
B-A	32	453	0.071	32	0.1	8.537	A
C-AB	94	670	0.140	93	0.2	6.239	A
C-A	68			68			
A-B	24			24			
A-C	123			123			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	594	0.163	97	0.2	7.238	A
B-A	39	440	0.088	39	0.1	8.975	A
C-AB	115	674	0.171	115	0.2	6.446	A
C-A	78			78			
A-B	29			29			
A-C	147			147			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	119	582	0.204	119	0.3	7.770	A
B-A	47	420	0.113	47	0.1	9.654	A
C-AB	146	679	0.215	146	0.3	6.753	A
C-A	91			91			
A-B	35			35			
A-C	179			179			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	119	582	0.204	119	0.3	7.778	A
B-A	47	420	0.113	47	0.1	9.663	A
C-AB	146	679	0.215	146	0.3	6.762	A
C-A	91			91			
A-B	35			35			
A-C	179			179			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	594	0.163	97	0.2	7.252	A
B-A	39	439	0.088	39	0.1	8.989	A
C-AB	115	674	0.171	116	0.2	6.456	A
C-A	78			78			
A-B	29			29			
A-C	147			147			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	603	0.135	81	0.2	6.910	A
B-A	32	453	0.071	32	0.1	8.558	A
C-AB	94	670	0.140	94	0.2	6.260	A
C-A	68			68			
A-B	24			24			
A-C	123			123			

Base 2024 + Committed + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	3.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	185	100.000
B		✓	133	100.000
C		✓	298	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	34	151
	B	35	0	98
	C	202	96	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	139	139
	B	100	100
	C	224	224
07:30-07:45	A	166	166
	B	120	120
	C	268	268
07:45-08:00	A	204	204
	B	146	146
	C	328	328
08:00-08:15	A	204	204
	B	146	146
	C	328	328
08:15-08:30	A	166	166
	B	120	120
	C	268	268
08:30-08:45	A	139	139
	B	100	100
	C	224	224

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.18	7.50	0.2	A
B-A	0.09	9.60	0.1	A
C-AB	0.20	5.99	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	607	0.122	73	0.1	6.738	A
B-A	26	449	0.059	26	0.1	8.514	A
C-AB	92	719	0.127	91	0.2	5.726	A
C-A	133			133			
A-B	26			26			
A-C	114			114			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	88	599	0.147	88	0.2	7.042	A
B-A	31	434	0.072	31	0.1	8.938	A
C-AB	115	733	0.157	115	0.2	5.823	A
C-A	153			153			
A-B	31			31			
A-C	136			136			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	108	588	0.184	108	0.2	7.491	A
B-A	39	414	0.093	38	0.1	9.591	A
C-AB	150	752	0.200	150	0.3	5.979	A
C-A	178			178			
A-B	37			37			
A-C	166			166			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	108	588	0.184	108	0.2	7.498	A
B-A	39	414	0.093	39	0.1	9.597	A
C-AB	150	752	0.200	150	0.3	5.988	A
C-A	178			178			
A-B	37			37			
A-C	166			166			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	88	599	0.147	88	0.2	7.054	A
B-A	31	434	0.073	32	0.1	8.948	A
C-AB	115	733	0.157	115	0.2	5.834	A
C-A	153			153			
A-B	31			31			
A-C	136			136			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	607	0.122	74	0.1	6.759	A
B-A	26	448	0.059	26	0.1	8.530	A
C-AB	92	719	0.128	92	0.2	5.744	A
C-A	132			132			
A-B	26			26			
A-C	114			114			

Base 2024 + Committed + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Gypsy Ln / Proposed Site Access	T-Junction	Two-way	3.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	195	100.000
B		✓	151	100.000
C		✓	215	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	32	163
	B	43	0	108
	C	105	110	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	147	147
	B	114	114
	C	162	162
17:00-17:15	A	175	175
	B	136	136
	C	193	193
17:15-17:30	A	215	215
	B	166	166
	C	237	237
17:30-17:45	A	215	215
	B	166	166
	C	237	237
17:45-18:00	A	175	175
	B	136	136
	C	193	193
18:00-18:15	A	147	147
	B	114	114
	C	162	162

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.20	7.78	0.3	A
B-A	0.11	9.66	0.1	A
C-AB	0.22	6.76	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	603	0.135	81	0.2	6.883	A
B-A	32	453	0.071	32	0.1	8.537	A
C-AB	94	670	0.140	93	0.2	6.239	A
C-A	68			68			
A-B	24			24			
A-C	123			123			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	594	0.163	97	0.2	7.238	A
B-A	39	440	0.088	39	0.1	8.975	A
C-AB	115	674	0.171	115	0.2	6.446	A
C-A	78			78			
A-B	29			29			
A-C	147			147			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	119	582	0.204	119	0.3	7.770	A
B-A	47	420	0.113	47	0.1	9.654	A
C-AB	146	679	0.215	146	0.3	6.753	A
C-A	91			91			
A-B	35			35			
A-C	179			179			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	119	582	0.204	119	0.3	7.778	A
B-A	47	420	0.113	47	0.1	9.663	A
C-AB	146	679	0.215	146	0.3	6.762	A
C-A	91			91			
A-B	35			35			
A-C	179			179			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	594	0.163	97	0.2	7.252	A
B-A	39	439	0.088	39	0.1	8.989	A
C-AB	115	674	0.171	116	0.2	6.456	A
C-A	78			78			
A-B	29			29			
A-C	147			147			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	603	0.135	81	0.2	6.910	A
B-A	32	453	0.071	32	0.1	8.558	A
C-AB	94	670	0.140	94	0.2	6.260	A
C-A	68			68			
A-B	24			24			
A-C	123			123			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: J3 - Lundhill Rd_Park St_Wath Rd.j9
Path: F:\PROJECTS\99999Speculative\DEVELOPMENT\Wombwell Transport Assessment\02_Modelling\Junctions 9\J3
Report generation date: 29/11/2018 13:41:04

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Base 2019							
Stream B-C	0.1	7.65	0.12	A	0.2	7.31	0.14	A
Stream B-A	0.3	12.01	0.21	B	0.3	11.25	0.21	B
Stream C-AB	0.4	5.57	0.20	A	0.2	4.98	0.12	A
	Base 2024							
Stream B-C	0.2	8.14	0.15	A	0.2	7.73	0.16	A
Stream B-A	0.3	13.45	0.25	B	0.3	12.29	0.24	B
Stream C-AB	0.5	5.74	0.23	A	0.3	5.01	0.15	A
	Base 2024 + Development							
Stream B-C	0.5	12.49	0.34	B	0.6	13.43	0.39	B
Stream B-A	1.0	23.04	0.51	C	1.2	24.91	0.55	C
Stream C-AB	0.8	6.88	0.35	A	0.9	7.09	0.38	A
	Base 2024 + Committed + Development							
Stream B-C	0.6	14.15	0.38	B	0.9	18.10	0.48	C
Stream B-A	1.2	26.21	0.56	D	1.8	32.65	0.65	D
Stream C-AB	0.9	7.16	0.37	A	0.9	7.22	0.39	A

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

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

File summary

File Description

Title	J3 - Lundhill Rd / Park St / Wath Rd
Location	
Site number	
Date	21/11/2018
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	EU\henry.eyre
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Base 2019, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	2.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Wath Rd (E)		Major
B	Lundhill Rd (S)		Minor
C	Park St (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.00			250.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	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	7.40	4.30	3.80	3.80	3.80	✓	1.00	20	40

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	557	0.093	0.234	0.147	0.334
1	B-C	671	0.094	0.238	-	-
1	C-B	719	0.254	0.254	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	427	100.000
B		✓	135	100.000
C		✓	371	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	90	337
	B	74	0	61
	C	282	89	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	321	321
	B	102	102
	C	279	279
07:30-07:45	A	384	384
	B	121	121
	C	334	334
07:45-08:00	A	470	470
	B	149	149
	C	408	408
08:00-08:15	A	470	470
	B	149	149
	C	408	408
08:15-08:30	A	384	384
	B	121	121
	C	334	334
08:30-08:45	A	321	321
	B	102	102
	C	279	279

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	7.65	0.1	A
B-A	0.21	12.01	0.3	B
C-AB	0.20	5.57	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	46	584	0.079	46	0.1	6.676	A
B-A	56	437	0.127	55	0.1	9.406	A
C-AB	92	774	0.119	92	0.2	5.267	A
C-A	187			187			
A-B	68			68			
A-C	254			254			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55	565	0.097	55	0.1	7.049	A
B-A	67	414	0.161	66	0.2	10.355	B
C-AB	118	787	0.150	118	0.3	5.383	A
C-A	215			215			
A-B	81			81			
A-C	303			303			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	67	538	0.125	67	0.1	7.644	A
B-A	81	381	0.214	81	0.3	11.988	B
C-AB	160	807	0.198	159	0.4	5.565	A
C-A	249			249			
A-B	99			99			
A-C	371			371			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	67	538	0.125	67	0.1	7.653	A
B-A	81	381	0.214	81	0.3	12.012	B
C-AB	160	807	0.198	160	0.4	5.573	A
C-A	249			249			
A-B	99			99			
A-C	371			371			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55	565	0.097	55	0.1	7.061	A
B-A	67	414	0.161	67	0.2	10.382	B
C-AB	118	788	0.150	119	0.3	5.394	A
C-A	215			215			
A-B	81			81			
A-C	303			303			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	46	584	0.079	46	0.1	6.696	A
B-A	56	437	0.127	56	0.1	9.444	A
C-AB	93	774	0.120	93	0.2	5.289	A
C-A	187			187			
A-B	68			68			
A-C	254			254			

Base 2019, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	2.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	322	100.000
B		✓	145	100.000
C		✓	336	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	34	288
	B	75	0	70
	C	277	59	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	242	242
	B	109	109
	C	253	253
17:00-17:15	A	289	289
	B	130	130
	C	302	302
17:15-17:30	A	355	355
	B	160	160
	C	370	370
17:30-17:45	A	355	355
	B	160	160
	C	370	370
17:45-18:00	A	289	289
	B	130	130
	C	302	302
18:00-18:15	A	242	242
	B	109	109
	C	253	253

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.14	7.31	0.2	A
B-A	0.21	11.25	0.3	B
C-AB	0.12	4.98	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53	610	0.086	52	0.1	6.449	A
B-A	56	448	0.126	56	0.1	9.160	A
C-AB	60	790	0.076	60	0.1	4.932	A
C-A	193			193			
A-B	26			26			
A-C	217			217			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	63	593	0.106	63	0.1	6.784	A
B-A	67	429	0.157	67	0.2	9.939	A
C-AB	77	805	0.096	77	0.2	4.945	A
C-A	225			225			
A-B	31			31			
A-C	259			259			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	77	569	0.135	77	0.2	7.308	A
B-A	83	403	0.205	82	0.3	11.227	B
C-AB	103	827	0.125	103	0.2	4.972	A
C-A	267			267			
A-B	37			37			
A-C	317			317			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	77	569	0.135	77	0.2	7.315	A
B-A	83	403	0.205	83	0.3	11.246	B
C-AB	103	827	0.125	103	0.2	4.977	A
C-A	267			267			
A-B	37			37			
A-C	317			317			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	63	593	0.106	63	0.1	6.794	A
B-A	67	429	0.157	68	0.2	9.959	A
C-AB	77	805	0.096	77	0.2	4.952	A
C-A	225			225			
A-B	31			31			
A-C	259			259			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53	609	0.086	53	0.1	6.470	A
B-A	56	449	0.126	57	0.1	9.190	A
C-AB	61	790	0.077	61	0.1	4.941	A
C-A	192			192			
A-B	26			26			
A-C	217			217			

Base 2024, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	2.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	478	100.000
B		✓	152	100.000
C		✓	416	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	377
	B	83	0	69
	C	316	100	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	360	360
	B	114	114
	C	313	313
07:30-07:45	A	430	430
	B	137	137
	C	374	374
07:45-08:00	A	526	526
	B	167	167
	C	458	458
08:00-08:15	A	526	526
	B	167	167
	C	458	458
08:15-08:30	A	430	430
	B	137	137
	C	374	374
08:30-08:45	A	360	360
	B	114	114
	C	313	313

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.15	8.14	0.2	A
B-A	0.25	13.45	0.3	B
C-AB	0.23	5.74	0.5	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	52	574	0.091	52	0.1	6.887	A
B-A	62	422	0.148	62	0.2	9.970	A
C-AB	108	782	0.138	107	0.2	5.331	A
C-A	205			205			
A-B	76			76			
A-C	284			284			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	62	552	0.112	62	0.1	7.346	A
B-A	75	396	0.189	74	0.2	11.192	B
C-AB	140	798	0.176	140	0.3	5.475	A
C-A	234			234			
A-B	91			91			
A-C	339			339			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	76	519	0.146	76	0.2	8.123	A
B-A	91	359	0.255	91	0.3	13.409	B
C-AB	192	820	0.234	191	0.5	5.732	A
C-A	266			266			
A-B	111			111			
A-C	415			415			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	76	518	0.147	76	0.2	8.139	A
B-A	91	359	0.255	91	0.3	13.453	B
C-AB	192	820	0.234	192	0.5	5.741	A
C-A	266			266			
A-B	111			111			
A-C	415			415			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	62	551	0.113	62	0.1	7.368	A
B-A	75	396	0.189	75	0.2	11.237	B
C-AB	140	798	0.176	141	0.3	5.492	A
C-A	234			234			
A-B	91			91			
A-C	339			339			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	52	573	0.091	52	0.1	6.913	A
B-A	62	422	0.148	63	0.2	10.021	B
C-AB	109	783	0.139	109	0.2	5.350	A
C-A	205			205			
A-B	76			76			
A-C	284			284			

Base 2024, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	2.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	361	100.000
B		✓	162	100.000
C		✓	376	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	38	323
	B	84	0	78
	C	310	66	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	272	272
	B	122	122
	C	283	283
17:00-17:15	A	325	325
	B	146	146
	C	338	338
17:15-17:30	A	397	397
	B	178	178
	C	414	414
17:30-17:45	A	397	397
	B	178	178
	C	414	414
17:45-18:00	A	325	325
	B	146	146
	C	338	338
18:00-18:15	A	272	272
	B	122	122
	C	283	283

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.16	7.73	0.2	A
B-A	0.24	12.29	0.3	B
C-AB	0.15	5.01	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59	600	0.098	58	0.1	6.639	A
B-A	63	437	0.145	63	0.2	9.597	A
C-AB	70	799	0.088	70	0.1	4.936	A
C-A	213			213			
A-B	29			29			
A-C	243			243			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	70	580	0.121	70	0.1	7.052	A
B-A	76	415	0.182	75	0.2	10.576	B
C-AB	90	817	0.111	90	0.2	4.959	A
C-A	248			248			
A-B	34			34			
A-C	290			290			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	86	552	0.156	86	0.2	7.720	A
B-A	92	385	0.240	92	0.3	12.262	B
C-AB	123	842	0.146	122	0.3	5.006	A
C-A	291			291			
A-B	42			42			
A-C	356			356			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	86	551	0.156	86	0.2	7.732	A
B-A	92	385	0.240	92	0.3	12.292	B
C-AB	123	842	0.146	123	0.3	5.008	A
C-A	291			291			
A-B	42			42			
A-C	356			356			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	70	580	0.121	70	0.1	7.068	A
B-A	76	416	0.182	76	0.2	10.610	B
C-AB	90	817	0.111	91	0.2	4.966	A
C-A	248			248			
A-B	34			34			
A-C	290			290			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59	599	0.098	59	0.1	6.667	A
B-A	63	437	0.145	63	0.2	9.640	A
C-AB	70	799	0.088	71	0.1	4.947	A
C-A	213			213			
A-B	29			29			
A-C	243			243			

Base 2024 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	5.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	544	100.000
B		✓	282	100.000
C		✓	460	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	167	377
	B	147	0	135
	C	316	144	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	410	410
	B	212	212
	C	346	346
07:30-07:45	A	489	489
	B	254	254
	C	414	414
07:45-08:00	A	599	599
	B	310	310
	C	506	506
08:00-08:15	A	599	599
	B	310	310
	C	506	506
08:15-08:30	A	489	489
	B	254	254
	C	414	414
08:30-08:45	A	410	410
	B	212	212
	C	346	346

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.34	12.49	0.5	B
B-A	0.51	23.04	1.0	C
C-AB	0.35	6.88	0.8	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	102	551	0.185	101	0.2	7.988	A
B-A	111	397	0.279	109	0.4	12.454	B
C-AB	157	771	0.203	155	0.3	5.839	A
C-A	190			190			
A-B	126			126			
A-C	284			284			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	121	511	0.237	121	0.3	9.223	A
B-A	132	365	0.362	131	0.6	15.366	C
C-AB	203	785	0.259	203	0.5	6.190	A
C-A	210			210			
A-B	150			150			
A-C	339			339			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	149	440	0.338	148	0.5	12.306	B
B-A	162	318	0.509	160	1.0	22.538	C
C-AB	280	805	0.348	279	0.8	6.852	A
C-A	226			226			
A-B	184			184			
A-C	415			415			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	149	437	0.340	149	0.5	12.485	B
B-A	162	318	0.509	162	1.0	23.037	C
C-AB	281	806	0.348	281	0.8	6.879	A
C-A	226			226			
A-B	184			184			
A-C	415			415			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	121	508	0.239	122	0.3	9.347	A
B-A	132	365	0.362	134	0.6	15.693	C
C-AB	204	786	0.260	205	0.5	6.225	A
C-A	210			210			
A-B	150			150			
A-C	339			339			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	102	548	0.185	102	0.2	8.075	A
B-A	111	397	0.279	111	0.4	12.657	B
C-AB	157	772	0.204	158	0.4	5.877	A
C-A	189			189			
A-B	126			126			
A-C	284			284			

Base 2024 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	6.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	427	100.000
B		✓	317	100.000
C		✓	479	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	104	323
	B	160	0	157
	C	310	169	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	321	321
	B	239	239
	C	361	361
17:00-17:15	A	384	384
	B	285	285
	C	431	431
17:15-17:30	A	470	470
	B	349	349
	C	527	527
17:30-17:45	A	470	470
	B	349	349
	C	527	527
17:45-18:00	A	384	384
	B	285	285
	C	431	431
18:00-18:15	A	321	321
	B	239	239
	C	361	361

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.39	13.43	0.6	B
B-A	0.55	24.91	1.2	C
C-AB	0.38	7.09	0.9	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	118	564	0.210	117	0.3	8.044	A
B-A	120	399	0.302	119	0.4	12.777	B
C-AB	181	788	0.229	179	0.4	5.909	A
C-A	180			180			
A-B	78			78			
A-C	243			243			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	141	522	0.270	141	0.4	9.429	A
B-A	144	368	0.391	143	0.6	15.960	C
C-AB	233	804	0.290	233	0.6	6.306	A
C-A	197			197			
A-B	93			93			
A-C	290			290			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	173	444	0.389	172	0.6	13.160	B
B-A	176	321	0.549	174	1.2	24.198	C
C-AB	318	827	0.384	317	0.9	7.059	A
C-A	209			209			
A-B	115			115			
A-C	356			356			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	173	441	0.392	173	0.6	13.433	B
B-A	176	320	0.550	176	1.2	24.911	C
C-AB	318	828	0.385	318	0.9	7.095	A
C-A	209			209			
A-B	115			115			
A-C	356			356			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	141	518	0.272	142	0.4	9.601	A
B-A	144	368	0.391	146	0.7	16.396	C
C-AB	234	805	0.291	235	0.6	6.349	A
C-A	197			197			
A-B	93			93			
A-C	290			290			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	118	561	0.211	119	0.3	8.150	A
B-A	120	399	0.302	121	0.4	13.024	B
C-AB	181	788	0.230	182	0.4	5.954	A
C-A	179			179			
A-B	78			78			
A-C	243			243			

Base 2024 + Committed + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	5.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	566	100.000
B		✓	299	100.000
C		✓	467	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	189	377
	B	160	0	139
	C	316	151	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	426	426
	B	225	225
	C	352	352
07:30-07:45	A	509	509
	B	269	269
	C	420	420
07:45-08:00	A	623	623
	B	329	329
	C	514	514
08:00-08:15	A	623	623
	B	329	329
	C	514	514
08:15-08:30	A	509	509
	B	269	269
	C	420	420
08:30-08:45	A	426	426
	B	225	225
	C	352	352

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.38	14.15	0.6	B
B-A	0.56	26.21	1.2	D
C-AB	0.37	7.16	0.9	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	105	537	0.195	104	0.2	8.287	A
B-A	120	397	0.304	119	0.4	12.878	B
C-AB	165	768	0.215	163	0.4	5.949	A
C-A	187			187			
A-B	142			142			
A-C	284			284			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	125	493	0.253	125	0.3	9.752	A
B-A	144	363	0.396	143	0.6	16.277	C
C-AB	214	781	0.274	213	0.5	6.351	A
C-A	206			206			
A-B	170			170			
A-C	339			339			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	153	411	0.372	152	0.6	13.841	B
B-A	176	313	0.562	174	1.2	25.382	D
C-AB	295	800	0.369	294	0.8	7.120	A
C-A	219			219			
A-B	208			208			
A-C	415			415			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	153	407	0.376	153	0.6	14.153	B
B-A	176	313	0.563	176	1.2	26.213	D
C-AB	296	801	0.369	296	0.9	7.157	A
C-A	218			218			
A-B	208			208			
A-C	415			415			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	125	489	0.255	126	0.3	9.933	A
B-A	144	363	0.396	146	0.7	16.760	C
C-AB	215	781	0.275	216	0.5	6.392	A
C-A	205			205			
A-B	170			170			
A-C	339			339			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	105	534	0.196	105	0.2	8.394	A
B-A	120	396	0.304	121	0.4	13.130	B
C-AB	165	768	0.215	166	0.4	5.994	A
C-A	186			186			
A-B	142			142			
A-C	284			284			

Base 2024 + Committed + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Lundhill Rd / Park St / Wath Rd	T-Junction	Two-way	8.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	437	100.000
B		✓	353	100.000
C		✓	482	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	114	323
	B	188	0	165
	C	310	172	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	329	329
	B	266	266
	C	363	363
17:00-17:15	A	393	393
	B	317	317
	C	433	433
17:15-17:30	A	481	481
	B	389	389
	C	531	531
17:30-17:45	A	481	481
	B	389	389
	C	531	531
17:45-18:00	A	393	393
	B	317	317
	C	433	433
18:00-18:15	A	329	329
	B	266	266
	C	363	363

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.48	18.10	0.9	C
B-A	0.65	32.65	1.8	D
C-AB	0.39	7.22	0.9	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	124	538	0.231	123	0.3	8.660	A
B-A	142	403	0.351	139	0.5	13.532	B
C-AB	184	786	0.234	183	0.4	5.956	A
C-A	179			179			
A-B	86			86			
A-C	243			243			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	148	487	0.305	148	0.4	10.600	B
B-A	169	370	0.457	168	0.8	17.726	C
C-AB	238	802	0.296	237	0.6	6.377	A
C-A	196			196			
A-B	102			102			
A-C	290			290			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	182	387	0.469	180	0.9	17.244	C
B-A	207	317	0.653	203	1.7	30.696	D
C-AB	324	825	0.393	323	0.9	7.177	A
C-A	206			206			
A-B	126			126			
A-C	356			356			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	182	380	0.478	182	0.9	18.103	C
B-A	207	316	0.655	207	1.8	32.651	D
C-AB	325	826	0.393	325	0.9	7.217	A
C-A	206			206			
A-B	126			126			
A-C	356			356			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	148	480	0.309	150	0.5	10.968	B
B-A	169	369	0.458	173	0.9	18.650	C
C-AB	238	803	0.297	240	0.6	6.422	A
C-A	195			195			
A-B	102			102			
A-C	290			290			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	124	534	0.233	125	0.3	8.814	A
B-A	142	403	0.351	143	0.6	13.898	B
C-AB	185	787	0.235	186	0.4	6.005	A
C-A	178			178			
A-B	86			86			
A-C	243			243			

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []

Filename: J4 - A633_B6089_Wath Rd.j9
Path: F:\PROJECTS\99999Speculative\DEVELOPMENT\Wombwell Transport Assessment\02_Modelling\Junctions 9\J4
Report generation date: 29/11/2018 13:49:58

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Base 2019							
Arm 1	1.3	5.11	0.57	A	0.7	3.61	0.40	A
Arm 2	0.5	4.15	0.33	A	0.5	3.74	0.32	A
Arm 3	0.5	4.11	0.32	A	0.4	3.97	0.29	A
Arm 4	1.3	5.48	0.57	A	1.3	5.30	0.56	A
	Base 2024							
Arm 1	1.9	6.56	0.66	A	0.8	4.11	0.46	A
Arm 2	0.6	4.83	0.39	A	0.6	4.21	0.37	A
Arm 3	0.6	4.69	0.37	A	0.5	4.49	0.35	A
Arm 4	1.9	6.96	0.65	A	1.8	6.63	0.64	A
	Base 2024 + Development							
Arm 1	2.2	7.45	0.69	A	0.9	4.27	0.47	A
Arm 2	0.7	5.20	0.41	A	0.7	4.48	0.40	A
Arm 3	0.7	5.18	0.43	A	0.7	5.02	0.41	A
Arm 4	2.2	7.98	0.69	A	2.0	7.25	0.67	A
	Base 2024 + Committed + Development							
Arm 1	2.3	7.69	0.70	A	0.9	4.33	0.48	A
Arm 2	0.7	5.41	0.43	A	0.7	4.54	0.41	A
Arm 3	0.8	5.45	0.45	A	0.8	5.29	0.44	A
Arm 4	2.3	8.24	0.70	A	2.0	7.49	0.67	A

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

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

File summary

File Description

Title	J4 - A633 / B6089 / Wath Rd Roundabout
Location	
Site number	
Date	21/11/2018
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	EU\henry.eyre
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Base 2019, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	4.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A633 (E)	
2	B6089 (S)	
3	Wath Rd (W)	
4	A633 (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	5.63	7.67	5.8	20.1	44.0	31.5	
2	4.06	6.78	17.1	37.3	44.0	22.0	
3	4.29	7.45	9.5	21.5	44.0	26.6	
4	4.10	6.82	10.5	65.0	44.0	18.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.686	1987
2	0.679	1867
3	0.653	1789
4	0.677	1820

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base 2019	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	852	100.000
2		✓	383	100.000
3		✓	366	100.000
4		✓	793	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	114	286	452
	2	57	0	126	200
	3	199	133	0	34
	4	469	288	36	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	641	641
	2	288	288
	3	276	276
	4	597	597
07:30-07:45	1	766	766
	2	344	344
	3	329	329
	4	713	713
07:45-08:00	1	938	938
	2	422	422
	3	403	403
	4	873	873
08:00-08:15	1	938	938
	2	422	422
	3	403	403
	4	873	873
08:15-08:30	1	766	766
	2	344	344
	3	329	329
	4	713	713
08:30-08:45	1	641	641
	2	288	288
	3	276	276
	4	597	597

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.57	5.11	1.3	A
2	0.33	4.15	0.5	A
3	0.32	4.11	0.5	A
4	0.57	5.48	1.3	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	641	343	1752	0.366	639	0.6	3.228	A
2	288	581	1473	0.196	287	0.2	3.034	A
3	276	532	1442	0.191	275	0.2	3.081	A
4	597	292	1622	0.368	595	0.6	3.497	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	766	410	1706	0.449	765	0.8	3.824	A
2	344	695	1395	0.247	344	0.3	3.425	A
3	329	637	1373	0.240	329	0.3	3.446	A
4	713	349	1583	0.450	712	0.8	4.127	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	938	502	1643	0.571	936	1.3	5.081	A
2	422	850	1289	0.327	421	0.5	4.143	A
3	403	779	1280	0.315	402	0.5	4.098	A
4	873	428	1530	0.571	871	1.3	5.445	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	938	503	1642	0.571	938	1.3	5.114	A
2	422	852	1288	0.327	422	0.5	4.154	A
3	403	781	1279	0.315	403	0.5	4.107	A
4	873	428	1530	0.571	873	1.3	5.481	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	766	412	1705	0.449	768	0.8	3.851	A
2	344	698	1393	0.247	345	0.3	3.435	A
3	329	639	1372	0.240	330	0.3	3.455	A
4	713	350	1583	0.450	715	0.8	4.157	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	641	345	1751	0.366	642	0.6	3.252	A
2	288	584	1471	0.196	289	0.2	3.048	A
3	276	535	1440	0.191	276	0.2	3.095	A
4	597	293	1621	0.368	598	0.6	3.523	A

Base 2019, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	4.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	Base 2019	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	603	100.000
2		✓	409	100.000
3		✓	343	100.000
4		✓	794	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	26	182	395
	2	52	0	103	254
	3	199	106	0	38
	4	467	298	29	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	454	454
	2	308	308
	3	258	258
	4	598	598
17:00-17:15	1	542	542
	2	368	368
	3	308	308
	4	714	714
17:15-17:30	1	664	664
	2	450	450
	3	378	378
	4	874	874
17:30-17:45	1	664	664
	2	450	450
	3	378	378
	4	874	874
17:45-18:00	1	542	542
	2	368	368
	3	308	308
	4	714	714
18:00-18:15	1	454	454
	2	308	308
	3	258	258
	4	598	598

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.40	3.61	0.7	A
2	0.32	3.74	0.5	A
3	0.29	3.97	0.4	A
4	0.56	5.30	1.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	454	325	1764	0.257	453	0.3	2.742	A
2	308	455	1558	0.198	307	0.2	2.878	A
3	258	526	1445	0.179	257	0.2	3.029	A
4	598	268	1638	0.365	595	0.6	3.445	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	542	389	1720	0.315	542	0.5	3.054	A
2	368	544	1497	0.246	367	0.3	3.186	A
3	308	630	1378	0.224	308	0.3	3.365	A
4	714	321	1603	0.445	713	0.8	4.041	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	664	476	1661	0.400	663	0.7	3.605	A
2	450	666	1414	0.318	450	0.5	3.730	A
3	378	771	1286	0.294	377	0.4	3.961	A
4	874	393	1554	0.563	872	1.3	5.266	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	664	477	1660	0.400	664	0.7	3.613	A
2	450	667	1414	0.319	450	0.5	3.735	A
3	378	772	1285	0.294	378	0.4	3.967	A
4	874	393	1554	0.563	874	1.3	5.297	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	542	390	1719	0.315	543	0.5	3.061	A
2	368	546	1496	0.246	368	0.3	3.194	A
3	308	631	1377	0.224	309	0.3	3.374	A
4	714	321	1602	0.446	716	0.8	4.070	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	454	326	1763	0.257	454	0.3	2.751	A
2	308	457	1557	0.198	308	0.2	2.886	A
3	258	528	1444	0.179	259	0.2	3.036	A
4	598	269	1638	0.365	599	0.6	3.470	A

Base 2024, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	6.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	Base 2024	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	955	100.000
2		✓	429	100.000
3		✓	409	100.000
4		✓	889	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	128	320	507
	2	64	0	141	224
	3	222	149	0	38
	4	525	323	41	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	719	719
	2	323	323
	3	308	308
	4	669	669
07:30-07:45	1	859	859
	2	386	386
	3	368	368
	4	799	799
07:45-08:00	1	1051	1051
	2	472	472
	3	450	450
	4	979	979
08:00-08:15	1	1051	1051
	2	472	472
	3	450	450
	4	979	979
08:15-08:30	1	859	859
	2	386	386
	3	368	368
	4	799	799
08:30-08:45	1	719	719
	2	323	323
	3	308	308
	4	669	669

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.66	6.56	1.9	A
2	0.39	4.83	0.6	A
3	0.37	4.69	0.6	A
4	0.65	6.96	1.9	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	719	385	1723	0.417	716	0.7	3.564	A
2	323	651	1425	0.227	322	0.3	3.261	A
3	308	596	1400	0.220	307	0.3	3.291	A
4	669	326	1599	0.419	666	0.7	3.849	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	859	460	1671	0.514	857	1.0	4.415	A
2	386	779	1338	0.288	385	0.4	3.776	A
3	368	714	1323	0.278	367	0.4	3.764	A
4	799	391	1555	0.514	798	1.0	4.743	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1051	563	1601	0.657	1048	1.9	6.476	A
2	472	953	1220	0.387	471	0.6	4.803	A
3	450	873	1219	0.369	450	0.6	4.674	A
4	979	478	1496	0.654	976	1.9	6.874	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1051	565	1600	0.657	1051	1.9	6.563	A
2	472	956	1218	0.388	472	0.6	4.827	A
3	450	875	1217	0.370	450	0.6	4.692	A
4	979	479	1496	0.654	979	1.9	6.963	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	859	463	1670	0.514	862	1.1	4.476	A
2	386	783	1335	0.289	387	0.4	3.798	A
3	368	717	1321	0.278	368	0.4	3.785	A
4	799	392	1554	0.514	802	1.1	4.806	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	719	387	1722	0.418	720	0.7	3.599	A
2	323	655	1422	0.227	323	0.3	3.279	A
3	308	600	1397	0.220	308	0.3	3.308	A
4	669	328	1598	0.419	671	0.7	3.888	A

Base 2024, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	5.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	Base 2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	676	100.000
2		✓	457	100.000
3		✓	384	100.000
4		✓	890	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	29	204	443
	2	58	0	115	284
	3	222	119	0	43
	4	523	334	33	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	509	509
	2	344	344
	3	289	289
	4	670	670
17:00-17:15	1	608	608
	2	411	411
	3	345	345
	4	800	800
17:15-17:30	1	744	744
	2	503	503
	3	423	423
	4	980	980
17:30-17:45	1	744	744
	2	503	503
	3	423	423
	4	980	980
17:45-18:00	1	608	608
	2	411	411
	3	345	345
	4	800	800
18:00-18:15	1	509	509
	2	344	344
	3	289	289
	4	670	670

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.46	4.11	0.8	A
2	0.37	4.21	0.6	A
3	0.35	4.49	0.5	A
4	0.64	6.63	1.8	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	509	364	1737	0.293	507	0.4	2.923	A
2	344	510	1520	0.226	343	0.3	3.055	A
3	289	589	1404	0.206	288	0.3	3.222	A
4	670	299	1617	0.414	667	0.7	3.779	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	608	436	1688	0.360	607	0.6	3.329	A
2	411	611	1452	0.283	410	0.4	3.453	A
3	345	705	1329	0.260	345	0.3	3.659	A
4	800	358	1577	0.507	799	1.0	4.617	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	744	534	1621	0.459	743	0.8	4.096	A
2	503	748	1359	0.370	502	0.6	4.198	A
3	423	863	1225	0.345	422	0.5	4.477	A
4	980	439	1523	0.643	977	1.8	6.557	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	744	535	1620	0.459	744	0.8	4.110	A
2	503	749	1358	0.370	503	0.6	4.208	A
3	423	864	1225	0.345	423	0.5	4.489	A
4	980	439	1522	0.644	980	1.8	6.633	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	608	438	1686	0.360	609	0.6	3.343	A
2	411	612	1451	0.283	412	0.4	3.465	A
3	345	707	1327	0.260	346	0.4	3.672	A
4	800	359	1576	0.508	803	1.0	4.674	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	509	367	1736	0.293	510	0.4	2.936	A
2	344	513	1519	0.227	344	0.3	3.068	A
3	289	592	1403	0.206	289	0.3	3.234	A
4	670	301	1616	0.415	671	0.7	3.814	A

Base 2024 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	6.89	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	Base 2024 + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	979	100.000
2		✓	441	100.000
3		✓	475	100.000
4		✓	919	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	128	344	507
	2	64	0	153	224
	3	244	171	0	60
	4	525	323	71	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	737	737
	2	332	332
	3	358	358
	4	692	692
07:30-07:45	1	880	880
	2	396	396
	3	427	427
	4	826	826
07:45-08:00	1	1078	1078
	2	486	486
	3	523	523
	4	1012	1012
08:00-08:15	1	1078	1078
	2	486	486
	3	523	523
	4	1012	1012
08:15-08:30	1	880	880
	2	396	396
	3	427	427
	4	826	826
08:30-08:45	1	737	737
	2	332	332
	3	358	358
	4	692	692

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.69	7.45	2.2	A
2	0.41	5.20	0.7	A
3	0.43	5.18	0.7	A
4	0.69	7.98	2.2	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	737	424	1697	0.434	734	0.8	3.727	A
2	332	691	1397	0.238	331	0.3	3.372	A
3	358	596	1400	0.255	356	0.3	3.445	A
4	692	359	1577	0.439	689	0.8	4.041	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	880	507	1639	0.537	879	1.1	4.723	A
2	396	827	1305	0.304	396	0.4	3.958	A
3	427	714	1323	0.323	426	0.5	4.012	A
4	826	430	1529	0.540	825	1.2	5.102	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1078	620	1562	0.690	1074	2.2	7.316	A
2	486	1011	1180	0.411	485	0.7	5.167	A
3	523	873	1219	0.429	522	0.7	5.162	A
4	1012	526	1463	0.691	1008	2.2	7.830	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1078	622	1560	0.691	1078	2.2	7.454	A
2	486	1015	1178	0.412	486	0.7	5.200	A
3	523	875	1217	0.430	523	0.7	5.183	A
4	1012	527	1463	0.692	1012	2.2	7.975	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	880	510	1637	0.538	884	1.2	4.806	A
2	396	833	1301	0.305	397	0.4	3.988	A
3	427	717	1320	0.323	428	0.5	4.040	A
4	826	432	1528	0.541	830	1.2	5.194	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	737	426	1695	0.435	739	0.8	3.773	A
2	332	696	1394	0.238	333	0.3	3.393	A
3	358	600	1397	0.256	358	0.3	3.467	A
4	692	361	1575	0.439	693	0.8	4.089	A

Base 2024 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	5.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	Base 2024 + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	683	100.000
2		✓	494	100.000
3		✓	461	100.000
4		✓	898	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	29	211	443
	2	58	0	152	284
	3	246	145	0	70
	4	523	334	41	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	514	514
	2	372	372
	3	347	347
	4	676	676
17:00-17:15	1	614	614
	2	444	444
	3	414	414
	4	807	807
17:15-17:30	1	752	752
	2	544	544
	3	508	508
	4	989	989
17:30-17:45	1	752	752
	2	544	544
	3	508	508
	4	989	989
17:45-18:00	1	614	614
	2	444	444
	3	414	414
	4	807	807
18:00-18:15	1	514	514
	2	372	372
	3	347	347
	4	676	676

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.47	4.27	0.9	A
2	0.40	4.48	0.7	A
3	0.41	5.02	0.7	A
4	0.67	7.25	2.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	514	390	1720	0.299	512	0.4	2.978	A
2	372	521	1513	0.246	371	0.3	3.150	A
3	347	589	1404	0.247	346	0.3	3.396	A
4	676	337	1592	0.425	673	0.7	3.906	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	614	467	1667	0.368	613	0.6	3.415	A
2	444	624	1443	0.308	444	0.4	3.600	A
3	414	705	1329	0.312	414	0.5	3.934	A
4	807	403	1547	0.522	806	1.1	4.850	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	752	571	1596	0.471	751	0.9	4.255	A
2	544	764	1348	0.403	543	0.7	4.467	A
3	508	863	1226	0.414	507	0.7	5.000	A
4	989	493	1486	0.665	985	1.9	7.143	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	752	572	1594	0.472	752	0.9	4.273	A
2	544	765	1347	0.404	544	0.7	4.480	A
3	508	864	1225	0.414	508	0.7	5.020	A
4	989	494	1485	0.666	989	2.0	7.248	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	614	469	1665	0.369	615	0.6	3.434	A
2	444	626	1442	0.308	445	0.4	3.614	A
3	414	707	1327	0.312	415	0.5	3.953	A
4	807	405	1546	0.522	811	1.1	4.919	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	514	392	1718	0.299	515	0.4	2.995	A
2	372	524	1511	0.246	372	0.3	3.164	A
3	347	592	1403	0.247	348	0.3	3.415	A
4	676	339	1591	0.425	678	0.7	3.948	A

Base 2024 + Committed + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	7.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	Base 2024 + Committed + Development	AM	ONE HOUR	07:15	08:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	987	100.000
2		✓	455	100.000
3		✓	488	100.000
4		✓	926	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	128	338	521
	2	64	0	153	238
	3	252	172	0	64
	4	525	323	78	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	743	743
	2	343	343
	3	367	367
	4	697	697
07:30-07:45	1	887	887
	2	409	409
	3	439	439
	4	832	832
07:45-08:00	1	1087	1087
	2	501	501
	3	537	537
	4	1020	1020
08:00-08:15	1	1087	1087
	2	501	501
	3	537	537
	4	1020	1020
08:15-08:30	1	887	887
	2	409	409
	3	439	439
	4	832	832
08:30-08:45	1	743	743
	2	343	343
	3	367	367
	4	697	697

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.70	7.69	2.3	A
2	0.43	5.41	0.7	A
3	0.45	5.45	0.8	A
4	0.70	8.24	2.3	A

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	743	430	1692	0.439	740	0.8	3.767	A
2	343	702	1390	0.246	341	0.3	3.428	A
3	367	617	1386	0.265	366	0.4	3.524	A
4	697	366	1572	0.443	694	0.8	4.085	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	887	514	1634	0.543	886	1.2	4.799	A
2	409	841	1296	0.316	409	0.5	4.054	A
3	439	739	1307	0.336	438	0.5	4.142	A
4	832	438	1523	0.547	831	1.2	5.189	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1087	629	1556	0.698	1082	2.3	7.534	A
2	501	1028	1169	0.428	500	0.7	5.369	A
3	537	903	1199	0.448	536	0.8	5.418	A
4	1020	536	1457	0.700	1015	2.3	8.074	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1087	631	1554	0.699	1087	2.3	7.690	A
2	501	1032	1166	0.429	501	0.7	5.408	A
3	537	906	1197	0.449	537	0.8	5.453	A
4	1020	537	1456	0.700	1019	2.3	8.237	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	887	517	1632	0.544	892	1.2	4.889	A
2	409	846	1292	0.317	410	0.5	4.088	A
3	439	743	1304	0.336	440	0.5	4.172	A
4	832	440	1522	0.547	837	1.2	5.288	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	743	432	1691	0.440	745	0.8	3.812	A
2	343	707	1387	0.247	343	0.3	3.453	A
3	367	621	1384	0.266	368	0.4	3.548	A
4	697	368	1571	0.444	699	0.8	4.138	A

Base 2024 + Committed + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	A633 / B6089 / Wath Rd Roundabout	Standard Roundabout	5.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	Base 2024 + Committed + Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	687	100.000
2		✓	498	100.000
3		✓	489	100.000
4		✓	902	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	29	211	447
	2	58	0	152	288
	3	258	149	0	82
	4	523	334	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	517	517
	2	375	375
	3	368	368
	4	679	679
17:00-17:15	1	618	618
	2	448	448
	3	440	440
	4	811	811
17:15-17:30	1	756	756
	2	548	548
	3	538	538
	4	993	993
17:30-17:45	1	756	756
	2	548	548
	3	538	538
	4	993	993
17:45-18:00	1	618	618
	2	448	448
	3	440	440
	4	811	811
18:00-18:15	1	517	517
	2	375	375
	3	368	368
	4	679	679

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.48	4.33	0.9	A
2	0.41	4.54	0.7	A
3	0.44	5.29	0.8	A
4	0.67	7.49	2.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	517	396	1716	0.301	515	0.4	2.996	A
2	375	527	1509	0.249	374	0.3	3.169	A
3	368	595	1400	0.263	367	0.4	3.478	A
4	679	349	1584	0.429	676	0.7	3.954	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	618	474	1662	0.372	617	0.6	3.443	A
2	448	631	1438	0.311	447	0.4	3.630	A
3	440	712	1324	0.332	439	0.5	4.065	A
4	811	418	1537	0.528	809	1.1	4.937	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	756	579	1590	0.476	755	0.9	4.308	A
2	548	773	1342	0.409	547	0.7	4.523	A
3	538	872	1220	0.441	537	0.8	5.266	A
4	993	511	1474	0.674	989	2.0	7.375	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	756	581	1588	0.476	756	0.9	4.326	A
2	548	774	1341	0.409	548	0.7	4.539	A
3	538	873	1219	0.442	538	0.8	5.289	A
4	993	512	1473	0.674	993	2.0	7.492	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	618	477	1660	0.372	619	0.6	3.460	A
2	448	633	1437	0.312	449	0.5	3.645	A
3	440	714	1323	0.332	441	0.5	4.089	A
4	811	419	1536	0.528	815	1.1	5.015	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	517	398	1714	0.302	518	0.4	3.011	A
2	375	530	1507	0.249	375	0.3	3.182	A
3	368	598	1399	0.263	369	0.4	3.496	A
4	679	351	1582	0.429	681	0.8	3.998	A