

# LAND AT WORKHOUSE LANE BURBAGE LEICESTERSHIRE

## Transport Assessment

JNY10215-01  
Transport Assessment  
Version 01 a  
21 August 2020

## Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
01a	Information	Matthew Brown	Melanie A'Lee	Melanie A'Lee	21 August 2020

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# 1 INTRODUCTION

## Report Brief

- 1.1 RPS has been instructed to undertake a Transport Assessment (TA) for a proposed residential development located at Workhouse Lane, Burbage, Leicestershire.
- 1.2 The site is located to the south of the village of Burbage and falls within the local planning authority (LPA) administration area of Hinckley and Bosworth Borough, with the local highway authority (LHA) being Leicestershire County Council (LCC).
- 1.3 The site is currently used for agricultural purposes, with Workhouse Lane running along the eastern boundary of the site and the existing residential properties along the north of the site.
- 1.4 The development proposal is for up to 40 dwellings. Access is proposed to the east of the site via a new priority junction with Workhouse Lane.
- 1.5 This TA describes the transport characteristics of the site, and the site's accessibility to facilities by sustainable modes of travel. It includes an assessment and analysis of the travel characteristics of the local Burbage Sketchley and Stretton Ward obtained from the 2011 Census. This information has been used to predict the future travel demands of the proposed development site and the likely impact on the local highway network.
- 1.6 This TA has been prepared in accordance with the National Planning Policy Framework – Planning Guidance for Transport Assessments and Transport Statements and with reference to Manual Streets and the Leicestershire Highway 'Design Guide'. Pre-app scoping discussions have been undertaken with LCC and a copy of their response is provided in **Appendix A**.

## Report Format

- **Section 2** of the report describes the existing transport characteristics of the site and its location. It also includes the details of existing traffic flows and likely traffic growth;
- **Section 3** of the report describes the existing site's accessibility to facilities by sustainable modes of travel. This includes a description of the walking and cycling facilities and access to public transport;
- **Section 4** of the report provides a review of the relevant central government and local government land use and transport planning policies and guidelines;
- **Section 5** provides details of the residential development including, number of dwellings, access arrangements and parking;
- **Section 6** details the likely traffic generation associated with the proposed development and the distribution / assignment of that traffic onto the local highway network;
- **Section 7** considers the impact of the development traffic on the road network; and
- **Section 8** provides a summary of the transport assessment and conclusions.

## 2 EXISTING TRANSPORT CHARACTERISTICS

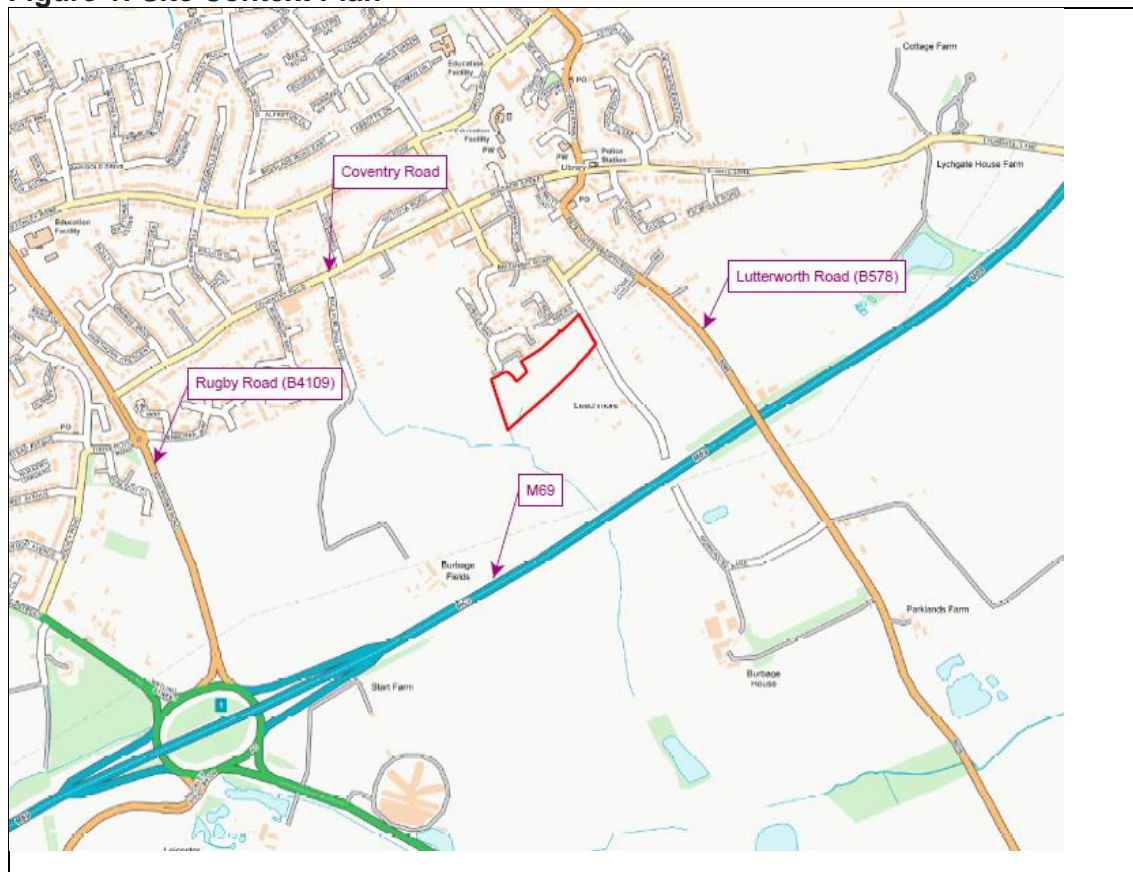
### Introduction

- 2.1 This section of the reports considers the site's transport context, existing levels of car ownership in Burbage and Hinckley and Bosworth Borough, the travel to work characteristics of the residents in Burbage and a review of the local highway network including road traffic collisions. It also includes details of existing traffic flows and likely traffic growth.

### Site Context

- 2.2 The site is located to the south of the village of Burbage, Leicestershire. Burbage is effectively a suburb of the larger urban area of Hinckley. Burbage has a population of 14,568 residents based on the 2011 Census. The site location is shown in **Figure 1**, and a site location plan provided at **Appendix B**.

**Figure 1: Site Context Plan**



- 2.3 The site is currently used for agricultural purposes and is bounded to the north by existing residential properties that form the southern boundary of Burbage, Workhouse Lane to the east and agricultural land to the south and west.

## Car Ownership

- 2.4 **Table 2.1** shows the household car ownership in the Burbage Sketchley and Stretton Ward as obtained from the 2011 Census data.

**Table 2.1: Household Car Ownership Levels in Burbage, Sketchley and Stretton Ward**

Car Ownership	Burbage Sketchley and Stretton Ward
None	10%
One	40%
Two	39%
Three	10%
Four or more	3%

- 2.5 From the 2011 Census data it is possible to ascertain the overall and average levels of car ownership of the Ward based on the and number of dwellings. For the Burbage, Sketchley and Stretton Ward the data is as follows:

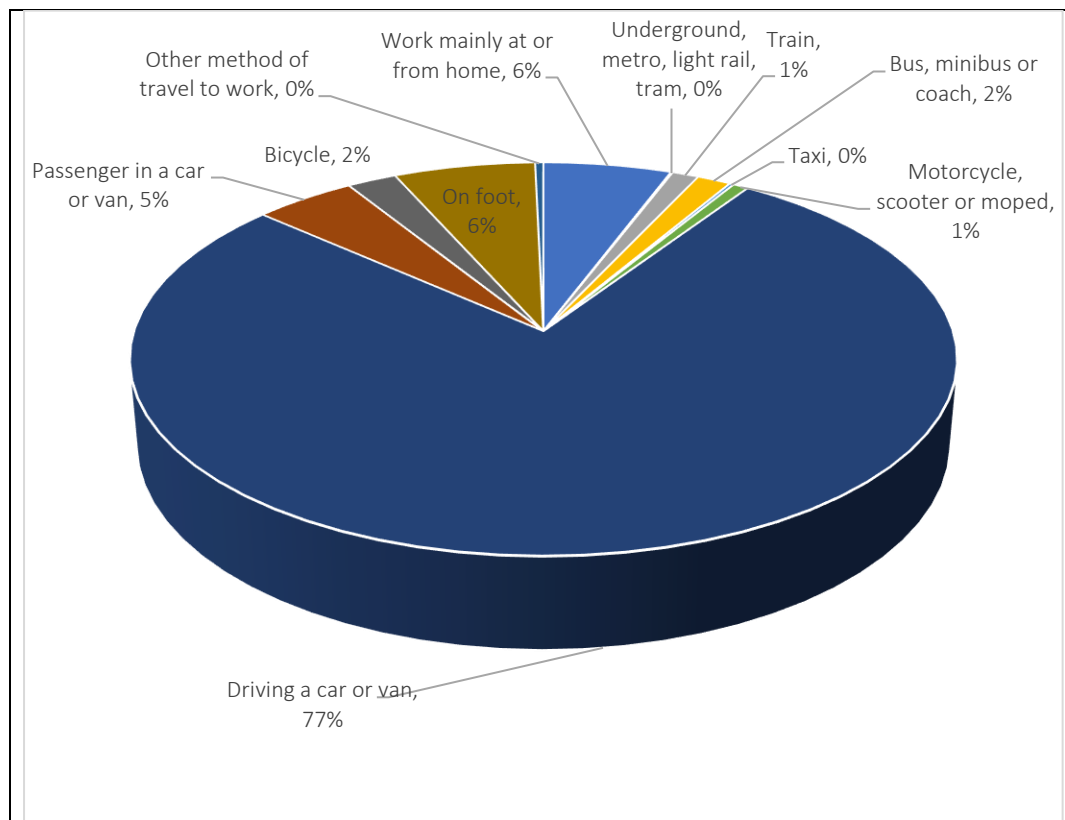
**Table 2.2: Car Ownership Per Dwelling**

	2011 Census Data
No. Households - Burbage, Sketchley and Stretton Ward	3,867
Total number of cars owned	3774
Average Car Ownership Per Household	0.97

## Travel to Work Characteristics

- 2.6 The 2011 Census 'Method of Travel to Work' (main mode) for the Burbage, Sketchley and Stretton Ward identifies that 8 per cent of residents walk or cycle, 3 per cent of residents use public transport and 82 percent travel by car. **Figure 2** below details the modal splits for journeys to work for the Burbage, Sketchley and Stretton Ward.

**Figure 2: Modal Split – Method of Travel to Work**



## Existing Highway Network

### Workhouse Lane

- 2.7 Workhouse Lane runs on a broadly north to south alignment between Britannia Road to the north and the M69 to the south where it terminates. In the vicinity of the site Workhouse Lane is subject to a 30mph speed limit with no street lighting or footway provision. The width of Workhouse Lane adjacent to the site is approximately 3.8m.
- 2.8 A footway is provided on the western side of Workhouse Lane that runs from the north eastern corner of the site and connects to the footway provision on Britannia Road. Workhouse Lane also benefits from a system of street lighting to the north of the proposed development site. A priority working for southbound vehicles is provided on Workhouse Lane to the north of the junction with Frezenberg Close.

### Britannia Road

- 2.9 Britannia Road runs between the priority junction with the B578 Lutterworth Road to the east and the priority junction with Windsor Street / Coventry Road to the north west and provides access to Workplace Lane to the south.

- 2.10 Britannia Road is subject to a 30mph speed limit and benefits from the provision of a system of street lighting. Britannia Road is provided with footways on both sides of the carriageway
- 2.11 Britannia Road provides access to Freemans's Lane that connects to Windsor Street via a priority junction to the north.

### **B578 Lutterworth Road**

- 2.12 The B578 Lutterworth Road runs between the east of Burbage and the A5 to the south. It also provides access to the B4669 that connects to the M69 via junction 2. Britannia Road connects to the B578 Lutterworth Road via a priority junction to the north east of the site.

### **B4109 Rugby Road**

- 2.13 The B4109 Rugby Road runs to the west of Burbage between Coventry to the south and Hinckley to the north. The B4109 provides access to the A5 and the M69 via junction 1. The western end of Coventry Road connects to the B4109 via a priority junction approximately 1.4km to the west of the site.

## **Road Traffic Collision Analysis**

- 2.14 A review has been undertaken of road traffic collision data involving personal injury that have occurred on the road network near the site over the past five years. Collision data has been obtained from LCC for the period 01 January 2014 to 17 June 2019. A copy of this data is provided at **Appendix C**.
- 2.15 The area covered includes the following roads and junctions:
- Workhouse Lane between Britannia Road and the M69;
  - Britannia Road including junctions with the B578 Lutterworth Road and Windsor Street / Coventry Road;
  - Freeman's Lane including junctions with Britannia and Windsor Street; and
  - B578 Lutterworth Road / Windsor Street / Lychgate Lane junction.
- 2.16 The collision data indicates there have been no personal injury collisions at the following junctions and links in the period under consideration.
- Workhouse Lane between Britannia Road and the M69;
  - Britannia Road junction with B578 Lutterworth Road; and
  - B578 Lutterworth Road / Windsor Street / Lychgate Lane junction.
- 2.17 The review of the collision data indicates that 4 collisions have occurred in the study area on Windsor Street, Freemans Lane and Britannia Road and these are summarised below:



## Windsor Street / Freemans Lane

**Table 2.3: Collision Data – Windsor Street / Freemans Lane**

Location	Date / Time	Severity	Conditions	Summary
Windsor Street Burbage J/W Freeman Lane	20 July 2019 2300	Slight	Fine Dry carriageway	Car going ahead with south to north collided with car travelling east to west.
Windsor Street Burbage at Church Car Park Entrance	09 April 2018 1515	Slight	Fine Wet / damp carriageway	Car travelling west to north turned left and collided with pedestrian
Windsor Street Burbage J/W Freemans Lane	17 June 2018 0044	Slight	Fine Dry carriageway	Car going ahead south to north collided with car travelling west to east

**Table 2.4: Britannia Road**

Location	Date / Time	Severity	Conditions	Summary
Britannia Road Burbage J/W car park entrance to Millennium Hall	09 November 2016 0835	Slight	Fine Wet / damp carriageway	Car turning right collided with pedestrian.

## Summary

- 2.18 The review of the collision data indicates no common patterns of collisions due to the characteristics of the local road network near the development site.

## Existing Traffic Flows

- 2.19 The establish the baseline conditions on the local road network traffic surveys have been undertaken at the following junctions:
- Britannia Road / B578 Lutterworth Road – priority junction;
  - Britannia Road / Coventry Road – priority junction;
  - Freeman's Lane Windsor Street / Windsor Court – priority junction; and
  - B578 Lutterworth Road / Windsor Street / Lychgate Lane – priority junction.

- 2.20 Traffic surveys were undertaken at the above junctions on behalf of RPS by 360 Traffic Surveys Limited on Wednesday 26 June 2019. The turning count data was collected in 15-minute intervals for the morning and afternoon weekday peak periods (07:00-10:00 and 16:00-19:00). Queue length surveys were also undertaken at the junction every five minutes. The queue length surveys have been used to validate the base models.
- 2.21 The traffic surveys identified the following peak for hours:
- 08:00-09:00 morning peak hour; and
  - 17:00-18:00 evening peak hour.
- 2.22 The Britannia Road / Coventry Road priority junction is the exception to the above and the morning peak hour occurs between 08:15 – 09:15.
- 2.23 A radar speed survey has been undertaken on Workhouse Lane in the vicinity of the proposed access arrangement on Thursday 27 June 2019. The survey was undertaken between the hours of 07:00 – 19:00 and all speeds were recorded from free-flowing vehicles. The results of the radar speed survey have been used to aid the design of the site access arrangement.
- 2.24 A copy of the 2019 traffic count data and radar speed survey is contained in **Appendix D**.

## Future Year Assessment and Traffic Growth

- 2.25 Assuming planning permission is granted in 2019, the first year of occupation is likely to be 2021, with full occupancy by 2024.
- 2.26 The now rescinded DfT Guidance on Transport Assessments indicated that the future assessment year should normally be five years after the date of the planning application. However, the current National Planning Policy Framework – Planning Guidance for Transport Assessments and Transport Statements simply states that the future year assessment should be agreed with the Local Highway Authority.
- 2.27 The impact assessment on the local highway will be based on five years post planning, so 2024. Therefore, the DfT traffic growth methodology has been applied to the 2019 observed flows using forecasts from TEMPRO Version 7.2 and the NTM for Hinckley and Bosworth MSOA area 14 that covers Burbage.
- 2.28 The proposed residential development is likely to account for a proportion of the growth on the local highway network near the site. The inclusion of the proposed development flows and traffic growth would lead to an element of double counting. However, the proposed 40 dwellings have not been removed from TEMPRO to ensure a robust assessment. The proposed growth rates are as follows:
- 2019 – 2024 Morning Peak = 1.065; and
  - 2019 – 2024 Evening Peak = 1.069.

## 3 ACCESSIBILITY

### Introduction

- 3.1 This section of the report considers the sustainability of the site in terms of the opportunities for accessible travel, walking and cycling and public transport.

### Existing Walking and Cycling Connectivity

- 3.2 The proposed development will be served by an internal network of footways, with a new vehicular access onto Workhouse Lane that can be safely used by pedestrians and cyclists. The development includes a new section of footway to the north of the site access linking with the existing provision to north on the western side of Britannia Road. This footway provision connects to the wider Burbage footway network and local facilities.
- 3.3 **Appendix E** shows indicative walking isochrones from the site, based on a walking speed of 80m per minute (circa 4.8kph), up to a maximum walking distance of 2km from the centre of the site. The walking isochrones demonstrate that the Lutterworth Road bus stops and many local facilities are within a reasonable walking distance of the site.
- 3.4 There are no cycle routes or cycle facilities in the vicinity of the site, although the local highway network lends itself to on road cycling, enabling all local facilities to be within easy cycle distance of the site.
- 3.5 **Appendix F** shows indicative cycle isochrones from the site at 1km (circa 5-minute cycle time) intervals. The cycle isochrones indicate that all local facilities in Burbage are within easy cycle distance and also Hinckley Railway Station is within easy cycling distance (10-15min).

### Public Transport

#### Bus

- 3.6 The nearest bus stops are located to the east of the site on the B578 Lutterworth Road in the vicinity of Orchard Close. These bus stops are accessible via the footway network on Britannia Road and Lutterworth Road. These bus stops are located within an approximate easy 380m walk from the centre of the site.
- 3.7 Additional Bus services are available from Strutt Road bus stop, located on Coventry Road, approximately 500m to the northwest of the site and are served by bus routes 7 and 7A.
- 3.8 **Table 3.1** below summarises the bus routes and frequency of service.

**Table 3.1: Bus Route and Frequency**

Bus Stop.	Route No.	Route	Average Frequency (per hour)				
			Mon - Fri			Saturday	Sunday
			AM Peak	Off Peak	PM Peak		
Orchard Close	8	Hinckley to Lutterworth	1	1	1	1	No service
Strutt Road	7	Burbage to Nuneaton	1	2	2	2	No service
Strutt Road	7A	Burbage to Nuneaton	1	1	1	1	No service

- 3.9 Bus services 7 and 7A provides a reasonable frequency service Monday to Saturday with connections to Hinckley town centre and Nuneaton. Bus service 7 and 7A also provides connections to Hinckley rail station.
- 3.10 Bus service 8 provides a good service Monday to Saturday with connections to Hinckley town centre, Hinckley Bus Station and Lutterworth Village. Hinckley is the largest settlement near the development site and is likely to provide employment, retail, leisure and educational opportunities for future residents.
- 3.11 In addition, the bus service 8 provides links to a large logistics distribution centre called Magna Park, which is the main source of employment in the Lutterworth area.

## Rail

- 3.12 Hinckley Rail Station is located approximately 2.8 kilometres (9min cycle) to the northwest of the site. Hinckley Rail Station is managed by Cross-country. The station contains 16 secure cycle storage spaces as well as 70 car parking spaces.
- 3.13 Hinckley Rail Station provides services to a range of locations including; Leicester, Birmingham New Street, Cambridge, Stanstead Airport and Gloucester. **Table 3.2** outlines the frequency of services from Hinckley Rail Station.

**Table 3.2: Hinckley Rail Station Services Frequency**

Route	Average Frequency (per hour)				
	Mon - Fri			Saturday	Sunday
	AM Peak	Off Peak	PM Peak		
Leicester	2	2	3	1	1
Birmingham New Street	2	1	2	1	1
Cambridge	2	1	2	1	1

Route	Average Frequency (per hour)				
	Mon - Fri			Saturday	Sunday
	AM Peak	Off Peak	PM Peak		
Stansted Airport	1	1	1	1	1
Gloucester	1	1	2	2	2

- 3.14 **Table 3.2** demonstrates that there is a regular service operating from Hinckley Rail Station throughout the day. This allows residents of the proposed development to be able to reach areas such as Leicester, Birmingham, Cambridge and Gloucester.

## Local Facilities

- 3.15 Current transport planning policy seeks to locate new developments in areas where there is a choice of transport modes to local facilities, particularly where people can travel by sustainable modes.
- 3.16 Manual for Streets (Paragraph 4.4.1) states the following:
- “Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas which residents may access comfortably on foot.”
- 3.17 Furthermore, Local Transport Note 1/04a (Department for Transport 2004), considers acceptable walking and cycling distances at Paragraph 3.10.3, stating:
- “There are limits to the distances generally considered acceptable for utility walking and cycling. The mean average length for walking journeys is approximately 1 km (0.6 miles)’ and for cycling, it is 4 km (2.4 miles)’ although journeys of up to three times these distances are not uncommon for regular commuters. The distances people are prepared to walk, or cycle depend on their fitness and physical ability, journey purpose, settlement size, and walking/cycling conditions. Useful guidance on desirable, acceptable and preferred maximum walking distances for different purposes is included in Tables 3.2 and 3.3 of Providing for Journeys on Foot, IHT 2000.”
- 3.18 The Institution of Highways and Transportation (IHT) ‘Guidelines for Providing Journeys on Foot’ (2000) suggests acceptable, desirable and maximum walking distances. **Table 3.3** below replicates the IHT suggested walking distances for pedestrians without mobility impairment for some common trip purposes.

**Table 3.3: Acceptable, Desirable and Maximum Walking Distances**

Definition	Walking Distances (m)		
	Town Centres	Commuting / Schools	Elsewhere
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

- 3.19 It is evident from **Table 3.3** that walking offers a great potential to replace short car trips, particularly, but not exclusively, for trips less than 2 kilometres.
- 3.20 **Table 3.4** identifies the walking and cycle distance and time to local facilities and amenities measured from the centre of the proposed development. This table is not meant to provide an exhaustive list but rather an example of distances and travel time to local facilities and amenities.

**Table 3.4: Walking / Cycling Distance to Local Facilities from the Centre of the Site**

Facility	Distance from the Site Centre	Approximate Journey Time (Mins)	
		Walking	Cycling
Educational Facilities			
Sketchley Hill Primary School	1.7 km	20	5
Burbage C of E Infant School	700 m	8	2
Burbage Junior School	900 m	12	4
Sketchley School	2.3 km	28	7
Hastings High School	1.6 km	20	6
Local Facilities			
Burbage Methodist Church	550 m	7	3
Burbage Post Office	400 m	5	2
SPAR Supermarket	400 m	5	2
Chequers Inn Pub	350 m	4	2
Co-op Food & Grocery Store	1.4 km	17	4
Lloyds Pharmacy	1.4 km	17	4
Hinckley and District Hospital	2.7 km	34	11
Recreational Facilities			
Juvenate Health & Leisure Club	2.8 km	34	9
Burbage & District Constitutional Club	850 m	11	3
Public Transport			
Orchard Close Bus Stop	350 m	4	2
Strutt Road Bus Stop	500 m	6	2
Hinckley Rail Station	2.8 km	33	8

3.21 **Table 3.4** demonstrates that a range of key facilities within Burbage and the wider area are easily accessible by foot or cycle.

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## Residential Framework Travel Plan

- 3.22 The site is within easy walking and cycling distance of local facilities and access to local bus services. The location of the development will provide residents with the opportunity to travel by alternative modes to the private car.
- 3.23 To further encourage the use of alternative modes of transport to the private car a Framework Residential Travel Plan has been produced as a separate document.
- 3.24 The Framework Travel Plan aims to:
- Encourage the use of sustainable modes of transport, such as walking, cycling and using public transport;
  - Reduce unnecessary travel; and
  - Encourage the use of sustainable travel by improving facilities and providing information.
- 3.25 The information within the Residential Travel Plan will help introduce residents to alternative modes and enable them to consider the trips to be made and the modes of transport they can use. It is intended that the Residential Travel Plan will encourage a change in perceptions and attitudes and therefore the desired change in travel behaviour, i.e. less unnecessary car use.

## Accessibility Summary

- 3.26 The site benefits from good accessibility to two bus services with bus route 8 providing connections with Hinckley town centre, Hinckley Bus Station and Lutterworth. Hinckley is the largest settlement near the development site and is likely to provide employment, retail, leisure and educational opportunities for future residents. In addition, bus service 8 provides links to a large logistics distribution centre called Magna Park, which is the main source of employment in the Lutterworth area.
- 3.27 Hinckley Rail Station provides access to regular services operation from Hinckley Rail station throughout the day. This allows residents of the proposed development with opportunities to access Birmingham, Cambridge Gloucester and Leicester for employment, retail and leisure opportunities.
- 3.28 The local shops and facilities available within Burbage village centre are within easy walk and cycle distance. It is considered that future residents would be likely to walk or cycle to access local facilities. The site also offers excellent accessibility to local schools.



## 4 PLANNING POLICY

### Introduction

4.1 This section of the report evaluates the development proposal against the appropriate national and local land use and transport planning policies:

- National Planning Policy Framework (NPPF);
- Planning Practice Guidance;
- Leicestershire County Council – Local Transport Plan 3 (2011-2026);
- Leicestershire Highways Design Guide (July 2018);
- Hinckley and Bosworth Borough Council – Local Development Framework Core Strategy; and
- Hinckley and Bosworth Borough Council – Local Plan 2006 – 2026 – Site Allocations and Development Management Policies DPD.

### National Planning Policy Framework (NPPF)

4.2 National policy in relation to the transport planning of developments is set out in the National Planning Policy Framework (NPPF) (February 2019). Section 9 ‘Providing Sustainable Transport – considering development proposals’ states the following:

4.3 Paragraph 108 states that:

“In assessing site that may be allocated for development in plans, or specific applications for development, it should be ensures that:

- a) Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- b) Safe and suitable access to the site can be achieved for all users; and
- c) Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.”

4.4 Paragraph 109 states that:

“Development should only be prevented or refuse on highway grounds if there would be an unacceptable impact on highway safety or residual cumulative impacts on the road network would be severe.”

4.5 Paragraph 111states that:

“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement of transport assessment so that the likely impacts of the proposal can be assessed.”

4.6 Regarding parking, Paragraph 105 of the NPPF states that:

"If setting local parking standards for residential and non-residential development, policies should take into account:

- The accessibility of the development;
- The type, mix and use of the development;
- The availability of and opportunities for Public Transport;
- Low car ownership levels; and
- the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles."

4.7 Paragraph 106 states that:

"Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network, or for optimising the density of development in city and town centres and other locations that are well served by public transport (in accordance with Chapter 11 of this Framework). In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists."

## **Leicestershire County Council – Local Transport Plan 3 (2011-2026)**

4.8 The Leicestershire Local Transport Plan 3 (LTP3) outlines the long-term vision for transport in Leicestershire over a 15-year period (2011-2026). The document also has a short-term implementation plan on a rolling 3-year period. The key aims of the plan include the following:

- "Efficient, easy and affordable access to key services, particularly by walking, cycling and public transport;
- More consistent, predictable and reliable journey times for people and goods;
- Improved satisfaction with our transport system;
- More people walking, cycling and using public transport as part of their daily journeys;
- A reduction in the number of road casualties;
- An effectively managed and well-maintained transport system and assets;
- Improved resilient of our transport system to the effects of climate change; and
- Reduced impact from the transport system on the environment and individuals."

4.9 Several strategic transport goals have also been outlined:

- "1) A transport system that supports a prosperous economy and provides successfully for population growth;
- 2) An efficient, resilient and sustainable transport system that is well managed and maintained;
- 3) A transport system that helps to reduce the carbon footprint of Leicestershire;
- 4) An accessible and integrated transport system that helps promote equality of opportunity for

all our residents;

- 5) A transport system that improves the safety, health and security of our residents; and
- 6) A transport system that helps to improve the quality of life for our residents and makes Leicestershire a more attractive place to live, work and visit.”

## Leicestershire Highway Design Guide

- 4.10 Leicestershire’s Highway Design Guide builds on the 6 C’s Design Guide previously used by the County. In clarifying the purpose of the guidance, the forward to this document states: -

“Leicestershire is currently facing many challenges, including population growth, health and obesity issues, climate change and changes to government policies for example the planning system. We must deal with these challenges whilst ensuring that their impact on our transport system, communities, individuals and the environment is minimised.

A highways design guide helps to respond to these issues – it provides clear and common guidance to developers across the county, whilst allowing flexibility to meet local requirements. It assists in the delivery of housing growth, encourages sustainable development and minimises the impact of development on the highway. It also plays a vital role in the highway development management process.”

- 4.11 The key paragraphs are as follows:

“Section IN4: Our highways development management policy

1.22 We will work with developers and planning authorities to make sure new development is only permitted:

- in areas where there is a choice of safe and accessible methods of transport for all road users (including pedestrians and cyclists);
- on roads suitable for the type of development; and
- if the environment is not harmed, including through increased congestion.

1.23 Any highway or transport infrastructure required to support the development must integrate with the existing infrastructure and be built in a way that enhances the quality of a development and does not place a burden on our resources.

1.24 We aim to meet the following specific policy objectives.

Road and personal safety: To achieve developments that:

- are safe for all users;
- promote road safety; and
- reduce personal safety risks (whether real or imagined).

Accessibility: To achieve developments accessible to all vehicles and people, including those with sensory and mobility impairments.

**Sustainability:** To promote sustainable, high-quality alternatives to the private car and to encourage using sustainable materials wherever possible.

**The impact on highways and transportation infrastructure:** To make sure the:

- highways and transportation infrastructure are not adversely affected by developments, including safety and congestion; and
- impact on people and the environment is minimised.”

**4.12** Turning to section IN5 “Our access to the road network policy” states:

“1.28 To maintain safety and the free flow of traffic, policy in the past has discouraged new accesses onto A and B-class roads and avoided increasing the use of existing accesses. For the future, and in line with an integrated transport policy, we will adopt a flexible policy on new connections to the road network. We will severely restrict access to the most important high-standard routes. Elsewhere, particularly in urban locations, in principle we will apply a more flexible approach. Please see paragraph 1.29 onwards for full details.

1.29 Where access is acceptable to us in principle, we will normally expect its layout to comply with the design guidance set out in Part 3. We will recommend refusal of any planning application that raises concerns about road safety. Approval for the access (and any associated development) will also depend on the planning authority where planning permission is required. Access to A- and B-class roads .

1.30 We will normally apply restrictions on new accesses for vehicles and the increased use of existing accesses on:

- roads with a speed limit above 40 mph (that is 50mph, 60mph or 70mph) or where measured vehicle speeds are in excess of 40mph;
- roads with a speed limit of 40mph or less which are essentially rural in nature;
- routes where the access would affect bus-corridor or bus-priority measures being put in place;
- roads that are at or near capacity (cannot carry more traffic); and
- roads where there is an existing problem with road safety.

1.31 Elsewhere, we will not normally restrict new accesses for vehicles, if they meet the conditions of paragraph 1.28. Also, where several developments are proposed along a section of road, the risk of accidents occurring will be reduced if they are accessed from a service road with a single point of access on the main road.

1.32 If access to a development can be gained off a minor or side road, you should normally consider this option as preferable (with improvements to the junction of the minor side road with the main road as necessary).”

**4.13** Policy IN6 ‘Sustainability Standards for Residential Developments’ states in part:

“To help deliver our LTP we will seek new development in suitable locations and where the possibility of home-working is considered. These locations will be accessible by walking, cycling and public transport and will also have good access to key service, thereby reducing reliance on the private car. This is particularly necessary in order to:

- Tackle the significant challenges posed by an increasing population
- Meet the statutory CO2 reduction requirements of the Climate Change Act
- Tackle the health and social issues posed by a society that is becoming increasingly obese.

The overall aim of introducing these standards is to reduce the need to travel particularly by car, and to promote more sustainable patterns of development.

We will expect applicant, as part of their planning application, to demonstrate that their proposals are consistent with the approach set out in the LTP.”

## Car and Cycle Parking Standards

4.14 In terms of car and cycle parking, the proposed development will provide policy compliant on-site car parking spaces identified for C3. This will be based on the methodology set out in DCLG paper.

4.15 Parking spaces on site will conform to LCC’s standards which is identified as follows:

- Minimum parking spaces sizes – 2.4m x 5.5m, add 0.5m if bounded by a wall, fence, hedge, line or trees or similar obstructions on 1 side, 1m if bounded on both sides; and
- Cycle Parking must be:
  - “located in a secure, weather protection provided at least for employee parking;
  - be conveniently located at entrances to buildings;
  - be well lit; and
  - be located so it does not obstruct pedestrians and cycle routes.”

4.16 **Table 4.1** below sets out the cycle parking standards that are likely to be applicable to this site:

**Table 4.1: Minimum Provision of Cycle Parking**

Use Class	Description of Land Use	Provision
C3	Dwelling houses	For developments with common facilities, such as flats, one space for every five dwellings. Parking to be under cover and secure. Where spaces are allocated, there should be one space for each dwelling.

---

## **Hinckley and Bosworth Borough Council – Local Development Framework Core Strategy**

- 4.17 The Core Strategy was adopted in 2009 and sets out the overarching strategy and core policies to guide future development of the borough up to 2026. Spatial objective 13 relates transportation and the need to travel and states the following:

“To reduce the high reliance on car travel in the borough and to increase the opportunities for other forms of transport by focussing the majority of development in the Hinckley urban area where there is a range of transport options available and through securing improvement to public transport infrastructure and facilities that promote walking and cycling and through the use of travel plans.”

- 4.18 In relation to development in Burbage the Core Strategy states the following in relation to Transport Infrastructure at paragraph 4.25:

“Whilst the local centres of Burbage, Barwell and Earl Shilton will provide for the day to day needs of the new residents, Hinckley Town Centre will remain the sub regional centre, and as such, the focal point for comparison shopping, leisure provision and higher education. To encourage people to work and shop in the town centre, walking and cycling routes and public transport provision between Burbage, Barwell and Earl Shilton and Hinckley will be improved to ensure that there are real alternatives to car use so that the Hinckley urban area is as self-contained as possible. “

## **Hinckley and Bosworth Borough Council – Local Plan 2006 – 2026 – Site Allocations and Development Management Policies DPD**

- 4.19 The above document includes Development Management Policies which apply across the Borough and which will be used in determining planning applications. Development Management policy 17 covers Highways and Transportation and states the following:

“Development proposal will be supported where they:

- a) Seek to make the best use of existing public transport services and, where appropriate, provide opportunities for improving and sustaining the viability of those services;
- b) Seek to ensure that there is convenient and safe access for walking and cycling to services and facilities;
- c) Demonstrate that there is not a significant adverse impact upon highway safety; and in the case of development that generates significant movement;
- d) That the development is located where the need to travel will be minimised and the use of sustainable transport modes can be maximised;
- e) Where it can be demonstrated that the residual cumulative impacts of development on the transport network are not severe.

Where appropriate, improvements will be required to be undertaken to the highways and transportation network to limit any significant impacts arising from the development (considering cost effectiveness).

All proposals for new development and changes of use should reflect the highway design standards that are set out in the most up to date guidance adopted by the relevant highway authority.”

## Summary

- 4.20 **NPPF:** This document emphasises that developments should not have any significant impact on the highway network in terms of capacity or congestion and any impact is not severe. This is to be demonstrated through the provision of a TA/TS. This TA has been prepared to demonstrate that the development of the proposed residential will not, with mitigation measures in place, have a material impact on the local highway network. NPPF states that a Travel Plan should be provided where a development has significant amounts of movement. A Framework Travel Plan has been produced to accompany this proposal.
- 4.21 **LCC LTP:** The LTP identifies the need to promote sustainable transport particularly walking, cycling and public transport.
- 4.22 **Hinckley and Bosworth LP:** The LP identifies that development will be supported where it makes best use of existing public transport, convenient and safe access for walking and cycling and the development is located where the need to travel will be minimised.
- 4.23 In terms of sustainability, it is clear the site benefits from good accessibility to existing bus and reasonable access to rail services, Local facilities including shops, services and education are accessible by walking and easily by cycling. The use of alternative modes will be promoted through the provision of a Travel Plan. The location of the site will therefore, provide residents with a realistic alternative to the private car.
- 4.24 As such, the site’s location is considered to accord to relevant land use and transport policy.

## 5 DEVELOPMENT PROPOSAL AND ACCESS

### Development Proposal

- 5.1 A full description of the proposed residential development is contained in the planning application's supporting Planning Statement and accompanying plans. The following description is pertinent in transport terms.

### Vehicular Site Access – Workhouse Lane

- 5.2 The vehicular access will be provided with a 5.5m carriageway width into the development site and a 2m footway on the northern side. The width of the access is enough to accommodate large vehicles and consistent with the advice contained within Manual for Streets (MfS). It is proposed that the junction radii are provided at 6m to accommodate the swept path of the largest design vehicle a large refuse vehicle.
- 5.3 The design of the proposed priority junction is provided at **Appendix G** of this report.

### Visibility

- 5.4 Visibility at the proposed vehicle access ensures there is adequate inter-visibility between vehicles on the major and minor arms.
- 5.5 The Department for Transport's 'Manual for Streets' states the following regarding the application of visibility standards:
- “MfS focuses on lightly trafficked residential streets, but many of its key principles may be applied to other types of street, for example high streets and lightly trafficked rural areas.”
- 5.6 Paragraph 1.4.4 of MfS expands on the above and states:
- “The Design Manual for Roads and Bridges is not an appropriate design standard for most streets, particularly those in lightly trafficked residential areas.”
- 5.7 The volume of traffic movements recorded on Workhouse Lane are low, with only 46 two-way weekday movements recorded as part of the radar speed survey between 0700 -1900 hours. This is considered a lightly trafficked rural lane and therefore MfS will apply.
- 5.8 To ensure that proposed access accords to the relevant design standards a radar speed survey has been undertaken on the rural lane in the vicinity of the proposed access to establish the 85<sup>th</sup> percentile speed. The results of the speed survey undertaken are as follows:
- 22.9mph northbound; and
  - 23 mph southbound.
- 5.9 The results of the speed survey indicate that the derived SSD for streets in Table 7.1 of MfS can be applied.
- 5.10 The level of visibility is based on the 85<sup>th</sup> percentile speed measurements and the calculation provided in MfS. The visibility requirements are 2.4m x 29.6m to the right and 2m x 29.8m to the left. A splay of 2.4 x 43m can be achieved at the proposed access arrangement in excess of the



MfS requirements based on the recorded 85<sup>th</sup> percentile speeds. The 43m visibility splay accords with the MfS requirements for a 30mph design speed.

- 5.11 In addition, road users waiting to turn right into the proposed access from the rural lane, can also see more than the 43m stopping sight distance to the south.
- 5.12 The MfS stopping sight distance can be achieved at the access arrangement based on a 2m X distance. The distance back along the access which visibility is measured is known as the X distance. It is generally measured back from the 'give-way line'. An X distance of 2.4m should normally be used in most residential situations, as this represents a reasonable maximum distance between the front of the car and driver's eye.
- 5.13 The Y-distance represents the distance that a driver who is about to exit from the minor arm can see to the left and right of the main alignment. For simplicity it is has previously been measured along the nearside kerb line of the main arm, although vehicles will normally be travelling at a distance from the edge of the kerb line.
- 5.14 The visibility splay at the proposed access arrangement on Warehouse Lane are indicated on the site access drawing provided at **Appendix G**.

## Pedestrian and Cycle Access

- 5.15 Workhouse Lane vehicular access – this access will also provide for cyclists (on-road) and pedestrians via the 2m footway. The development will also provide a new section of footway to the north of the vehicular access to tie into the existing provision on the western side of Britannia Road.

## Servicing

- 5.16 The proposed access has been designed to accommodate refuse vehicles and fire tenders as shown by the swept path analysis attached at **Appendix G**.

## Stage 1 Road Safety Audit

- 5.17 As part of this application a Stage 1 Road Safety Audit will be undertaken at the proposed access arrangement. The Stage 1 Road Safety Audit has been carried out by Taylor Bowie Ltd an independent Safety Auditor.
- 5.18 Details of the Audit and Designer's Response are provided at **Appendix H**.

## Parking Provision

- 5.19 In terms of car and cycle parking, the proposed development will provide policy compliant on-site car parking spaces identified for C3. This will be based on the methodology set out in DCLG paper and LCC's standards.

## 6 TRIP GENERATION AND DISTRIBUTION

### Introduction

- 6.1 This section of the report considers the likely traffic generation of the development of up to 40 residential dwellings. In determining the predicted trip generation for the site, the TRICS database has been used, and to ascertain the trip distribution / assignment for the residential development, travel to work data from the 2011 Census has been used.

### Residential Trip Generation

- 6.2 The residential trip generation for up for 40 residential dwelling has been based on the TRICS database for other similar developments, in terms of size and location. To ensure the sites selected are comparable to the proposed residential development the following selection parameters are proposed:
- Land Use: Residential;
  - Category: House privately owned;
  - Number of Dwellings Range: 50 -250; and
  - Location: Edge of town and suburban.
- 6.3 The selection based upon mixed private housing sites will represent a robust case scenario in terms of traffic generation for the site as private flats and rented accommodation generally have a lower trip rate than private housing. A copy of the TRICS output is provided at **Appendix I** of this report.

**Table 6.1: TRICS Residential Trip Rates and Predicted Trip Generation for up to 40 Dwellings**

	AM Peak 08:00-09:00			PM Peak 17:00-18:00		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
<b>Trip Rate</b>	0.170	0.443	0.613	0.416	0.232	0.648
<b>Vehicle Movements</b>	7	17	24	16	9	25

Source: TRICS

- 6.4 The proposed residential development of up to 40 residential dwellings has the potential to result in 24 two-way trips during the morning peak hour and 25 two-way trips during the afternoon peak hour, which is low movements.

### Traffic Distribution

- 6.5 The distribution / assignment of the residential trips has been based on the 2011 Census database for Hinckley and Bosworth MSOA area 14 that covers Burbage and provides details of where residents currently drive for work. Whilst it is accepted that other trips will be made during

the peak periods the primary trip purpose will be work place trips and such trips tend to have the highest car mode. As such, it is proposed that this trip distribution is used for all purposes.

6.6 Trips from the development and the likely route choice have been established using 'Google Maps', taking the base point from Workhouse Lane in the vicinity of the proposed access.

- B578 Lutterworth Road North = 54%;
- Coventry Road West = 32%; and
- B578 Lutterworth Road South = 14%.

6.7 The base and proposed traffic flow diagrams are provided at **Appendix J** of this report.

## 7 TRAFFIC IMPACT

### Introduction

- 7.1 This section of the report considers the transport impact of the proposed development on the local highway network in the vicinity of the site.

### Assessment Parameters

#### Study Area

- 7.2 The proposed residential development of up to 40 dwellings has the potential to result in 24 two-way trips during the morning peak hour and 25 two-way trips during the afternoon peak hour. The impact of the traffic will be negligible on the local highway network.
- 7.3 Notwithstanding the above the traffic distribution detailed in section 6 predicts 68% of the proposed development traffic will route via the B578 Lutterworth Road (54% to the north and 14% to the south). Therefore, it is proposed that the impact of the proposed residential development is tested at the following key local junction:
- Britannia Road / B578 Lutterworth Road – priority junction.
- 7.4 The impact of the development beyond the above junction will be imperceptible to other road users as it disperses through the local road network.

### Committed Development

- 7.5 The following nearby committed developments that have received planning permission, have been included in the junction assessments:
- Planning Application Reference 15/01292/OUT – development of up to 80 residential dwellings on land to the south west of Lutterworth Road.

### Assessment Scenarios

- 7.6 The above junction has been tested for the following scenarios during the morning and evening peak hours:
- 2019 observed – weekday AM and PM peak hours;
  - 2024 Base – weekday AM and PM peak hours;
  - 2024 Base + Committed Development + Proposed Development – weekday AM and PM peak hours; and
  - 2024 Base + Proposed Development – weekday AM and PM peak hours.

### Assessment Methodology

- 7.7 The junction analysis has been undertaken using industry standard Junctions 9.

- 7.8 The results of the Junctions 9 assessment for the priority and roundabout junctions provide an RFC (Ratio of flow to capacity) figure and a Queue (Q) length (number of vehicles). The RFC determines how the particular arm of the junction is operating and if the RFC is 0.85 or less the relevant arm of the junction is considered to be within its design capacity with minimal queues. An RFC greater than 0.85 and less than 1.0 shows that the junction is operating close to its design capacity and as such some queues and delays may start to occur. When an RFC is greater than 1.0 the arm of the junction is operating at or exceeding its design capacity and as a result longer delays / queues will start to form. On this basis a maximum RFC of 1 will be used as the absolute capacity of a junction. Should the level of traffic at a junction exceed this threshold then mitigation may be required.
- 7.9 The Junctions 9 assessment is provided in **Appendix K** of this report. The following assessment has been undertaken.

## Britannia Road / B578 Lutterworth Road – Priority Junction

- 7.10 Britannia Road / B578 priority junction has been test using Junctions 9.
- 7.11 The tables below provide the summary results of the capacity assessment undertaken for the 2019 observed, 2024 base, 2024 base and committed, and 2024 base and committed and proposed scenarios.

**Table 7.1: 2019 Observed**

Arm	2019 Observed AM Peak		2019 Observed PM Peak	
	RFC	Queue	RFC	Queue
Britannia Rd to Lutterworth Rd	0.05	0.0	0.03	0.0
Lutterworth Rd to Britannia Rd	0.01	0.0	0.03	0.0

**Table 7.2: 2024 Base**

Arm	2024 Base AM Peak		2024 Base PM Peak	
	RFC	Queue	RFC	Queue
Britannia Rd to Lutterworth Rd	0.05	0.1	0.03	0.0
Lutterworth Rd to Britannia Rd	0.01	0.0	0.03	0.0

**Table 7.3: 2024 Base and Committed Development**

Arm	2024 Base and Committed Development AM Peak		2024 Base and Committed Development PM Peak	
	RFC	Queue	RFC	Queue
Britannia Rd to Lutterworth Rd	0.05	0.1	0.03	0.0
Lutterworth Rd to Britannia Rd	0.01	0.0	0.03	0.0

**Table 7.4: 2024 Base and Committed Development and Proposed**

Arm	2024 Base and Committed and Proposed Development AM Peak		2024 Base and Committed and Proposed Development PM Peak	
	RFC	Queue	RFC	Queue
Britannia Rd to Lutterworth Rd	0.11	0.1	0.06	0.1
Lutterworth Rd to Britannia Rd	0.02	0.0	0.07	0.1

- 7.12 The above results show that the existing junction will operate within its design capacity with minimal delays experienced. It is clear the additional traffic associated with the proposed development will not materially affect the operation of the priority junction and will be imperceptible to other road users.

## Summary

- 7.13 The traffic analysis undertaken as part of this TA calculates the proposed residential development trip generation and resultant vehicular movements in the future year against the base scenario.
- 7.14 The results of the analysis demonstrate that the proposed residential development will not have a severe impact on the local highway network.
- 7.15 The NPPF states in paragraph 109 states that:
- “Development should only be prevented or refuse on highway grounds if there would be an unacceptable impact on highway safety or residual cumulative impacts on the road network would be severe.”
- 7.16 The analysis undertaken has demonstrated that the proposed development will not have a ‘severe’ impact on the road network, and that the means of access is safe for all road users.

## 8 SUMMARY AND CONCLUSION

- 8.1 This TA has been prepared in support of a planning application for up to 40 residential dwellings located at Workhouse Lane, Burbage, Leicestershire.
- 8.2 The TA has been prepared in accordance with national local guidance as well as taking on pre-app scoping discussions made with LCC.
- 8.3 The site is located to the south of the village of Burbage and falls within the local planning authority (LPA) administration area of Hinckley and Bosworth Borough, with the local highway authority (LHA) being Leicestershire County Council (LCC). The site is currently used for agricultural purposes, with Workhouse Lane running along the eastern boundary of the site and the existing residential properties along the north of the site.
- 8.4 It is proposed that the site's vehicular access will be via a new priority junction with Workhouse Lane. The visibility at the vehicular access is provided in accordance with the advice contained within Manual for Streets.
- 8.5 The Workhouse Lane vehicular access will also provide for cyclists (on-road) and pedestrians via a 2m wide footway. The development will also provide a new section of footway to the northwest of vehicular access to tie into the existing provision on the western side Britannia Road.
- 8.6 To accommodate two-way traffic movement, it is proposed to widen Workhouse Lane in the vicinity of the proposed vehicular access.
- 8.7 In terms of car and cycle parking, the proposed development will provide policy compliant on-site car parking spaces identified for C3. This will be based on the methodology set out in DCLG paper and LCC's standards.
- 8.8 In terms of sustainability, it is clear the site benefits from good accessibility to existing bus and reasonable access to rail services, Local facilities including shops, services and education are accessible by walking and easily by cycling. The use of alternative modes will be promoted through the provision of a Travel Plan. The location of the site will therefore, provide residents with a realistic alternative to the private car.
- 8.9 The proposed residential development of up to 40 residential dwellings has the potential to result in 24 two-way trips during the morning peak hour and 25 two-way trips during the afternoon peak hour.
- 8.10 The impact of the proposed residential development has been tested at the following local junction:
  - Britannia Road / B578 Lutterworth Road – priority junction.
- 8.11 The results of the capacity assessment demonstrate that the proposed development will not cause a 'severe' impact, when compared to the existing traffic flows on the highway network.
- 8.12 In conclusion, the site can achieve safe and suitable means of access for all modes and the development, will not materially impact on the operation of the local highway network. As such there are no transport reasons why the development should not be permitted.

## Appendices



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## Appendix A – LCC Pre-app Scoping Response

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**PRE-APPLICATION DETAILS:**

District Reference Number:

Highway Reference Number: 2019/7400/04/HEN

Location: Land to the southwest of Workhouse Lane, Burbage

Proposal: Enquiry - scoping for circa 80 dwellings

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**GENERAL DETAILS**

Planning Case Officer:

Applicant: RPS Consulting

Parish: Burbage

Road Classification: Adopted Unclassified

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**Please note that the contents of this report including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter.**

**The following comments are based on a desktop exercise; no site visit is undertaken for pre-application advice.**

This document is provided in response to an email from RPS Group dated 18 September 2019 seeking feedback in relation to the scope of assessment required in support of a residential development of 80 dwellings on land off Workhouse Lane, Burbage. The request is supported by

- Location Plan
- Proposed site access arrangements
- TRICS outputs

For this application the Local Highway Authority (LHA) agrees with the applicant that a Transport Assessment (TA) and Travel Plan (TP) will be required.

**Proposed Development**

The location plan shows that the site is on Workhouse Lane halfway between Sketchley Road and the M69. The applicant should provide a description of the previous and proposed use for the site and include a site location. Whilst the type of planning application is not known at this time if the internal layout of the site is likely to be adopted as part of this Application the LHA would expect the internal layout of the site to be designed in accordance with the Leicestershire Highway Design Guide (LHDG).

**Policy Details**

Summary of relevant planning policies for the local district and national guidance including the new

NPPF (February 2019). Consideration should also be given to highway policy documents including the LHDG and LTP3.

#### Highway Network

The LHA confirms that the applicant should include details of local highway network in the vicinity of the site and a review of local sustainable transport facilities eg walking including any PROWs, cycling, bus and rail), Details of walking and cycling catchments (2.0km for walking and 5.0km for cycling) should also be included.

#### Site Access

The site access arrangements are shown on drawing number: JNY10215-01 Rev A. The details of the site access should be justified and designed in accordance with the LHDG for the quantum of development served. Tracking should be provided and based on the size of refuse vehicle which will serve the site. Further details can be obtained from Hinckley and Bosworth Borough Council.

Finally the site access should be subject to Stage 1 Road Safety Audit and Designer's response on any issues identified.

#### Road Safety Considerations

The applicant should contact [NDI@leics.gov.uk](mailto:NDI@leics.gov.uk) to obtain Personal Injury Collision (PIC) data from Leicestershire County Council for the most recently available 5 year period. The LHA will not accept Crashmap data as the only source of PIC data.

#### Trip Generation and Distribution

The approach to trip generation and distribution is noted and agreed. The trip rates will be checked as part of any future planning application.

#### Traffic Flows / Surveys

The list and date of existing and proposed traffic counts is noted. To enable traffic flow scenarios to be checked, the applicant should include full traffic survey results as well as summary diagrams. The LHA will need a full explanation of all calculations and all other committed developments that have been taken into account. The applicant may wish to contact [NDI@leics.gov.uk](mailto:NDI@leics.gov.uk) to see if the Highway Authority already has count data in the area.

#### Future Year Assessments

Future assessment years should consider the weekday AM and PM highway peak hours. Traffic for 5 years after the date of the planning application should be provided and be based on TEMPRO growth factors for the local area and be NTM adjusted.

#### Committed Developments

The applicant should contact the LPA for details of any relevant applications in the area and include traffic flows and any mitigation measures from those applications.

#### Highway Impact Assessment

Notwithstanding the submitted information the TA study area (scope of junctions to be assessed) will need to be informed following consideration of the operation of the existing network and due

consideration to the anticipated impact of the development proposal as identified by the Census data. For any 'Junction' models, the following information will be required:

- Models should be validated against observed conditions;
- Scale plans of junction geometries used for model input should be provided for review;
- Details of any signal specifications used;
- Full model outputs in PDF format;
- Actual model files provided for review;

#### Off site mitigation

The LHA has reviewed the proposed widening of Workhouse Lane and would advise the applicant that based on the low volumes of traffic expected from the development 4.8m would appear to be acceptable. Due to the nature of Workhouse Lane the applicant may also wish to investigate if the current layout/priority for Britannia Road North/Britannia Road East/Workhouse Lane junction is appropriate. However any mitigation measures should be deliverable within highway land (please contact [hre@leics.gov.uk](mailto:hre@leics.gov.uk)) or the applicant's land. The mitigation scheme(s) should also be subject to Stage 1 Road Safety Audit and Designer's response on any issues identified.

#### Hinckley Area Project

Leicestershire County Council's Local Transport Plan 2011-2026 (LTP3) identified Hinckley as a key area of focus for investment. The evidence base which was taken from various sources including the Census, the Hinckley and Bosworth Borough Council (HBBC) Core Strategy and the Leicester and Leicestershire Economic Assessment indicated that the Hinckley priority area:

- Needs to develop further economically and attract more inward investment;
- Would benefit from wider travel choice and the HBBC Core Strategy (2009) states that real travel choice in the area by public transport, cycling and walking is limited.
- Experiences transport problems as a result of congestion on the local road network and incidents on the A5, will be accommodating future growth e.g. through Sustainable Urban extensions and significant employment developments.

The Hinckley Area Project aims to support the local economy by tackling congestion and improving access to jobs and education in the wider Hinckley area.

To this end the combination of Hinckley Area Project Zone 1, 2, 3 and 4 measures contribute greatly to reducing overall levels of congestion, monitoring air quality, enhancing public health and the efficient operation of the network.

Therefore when the impact of this development is established a contribution to the Hinckley Zone 4 package of works may be required.

**Date Received**  
**18 September 2019**

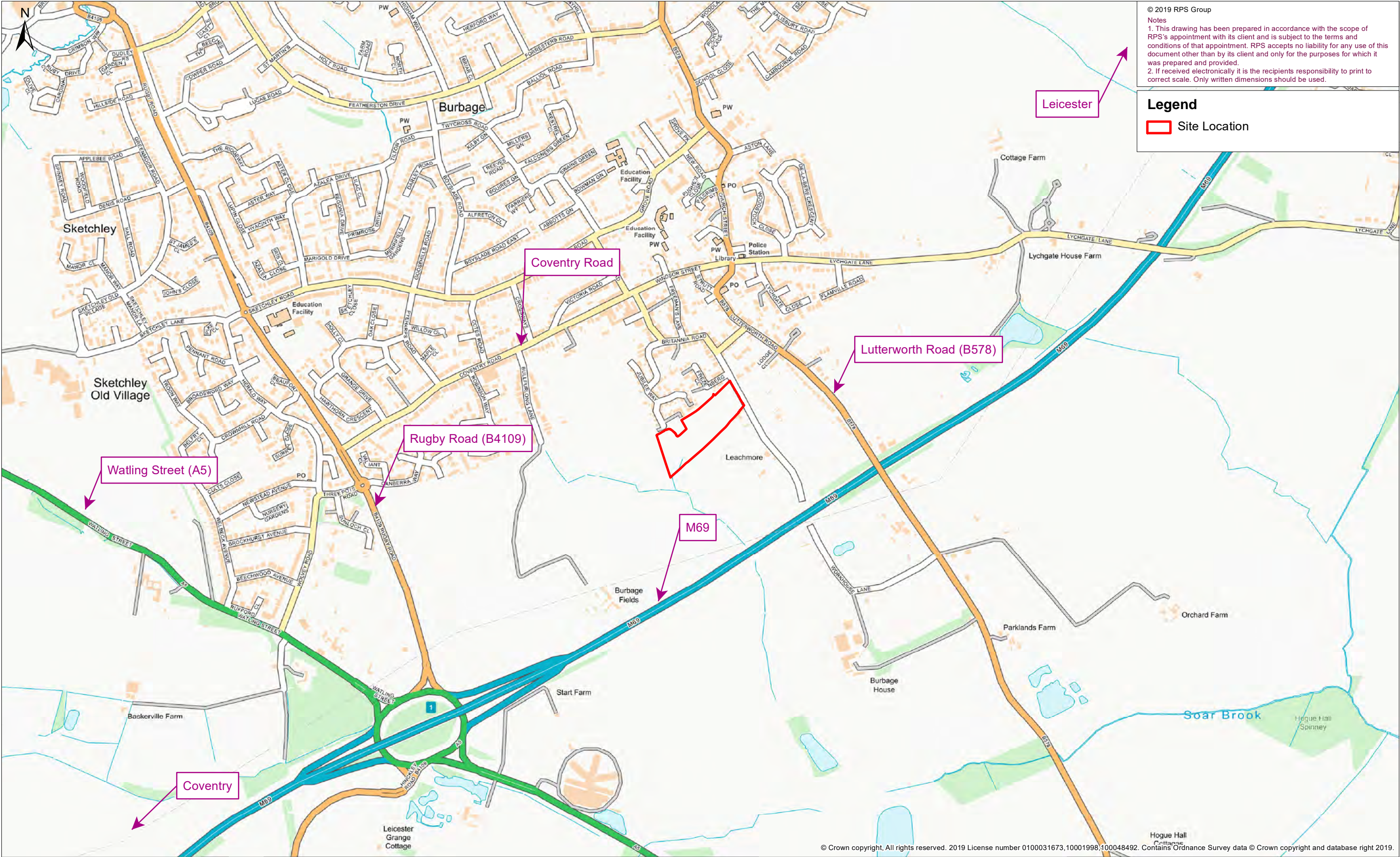
**Case Officer**  
**David Hunt**

**Reviewer**  
**BD**

**Date issued**  
**1 October 2019**

## Appendix B – Site Location Plan





Rev	Description	By	CB	Date
Figure Number				Rev
1				-
rpsgroup.com				

Client	Mather Jamie Ltd
Project	Workhouse Lane, Burbage
Title	Site Location Plan

0125250m

Status	FINAL	Drawn By	BG	PM/Checked By	CM
Project Number	JNY10215	Scale @ A3	1:10,000	Date Created	JUL 2019

20 Western Avenue, Milton Park,  
Abingdon, Oxfordshire, OX14 4SH  
T: +44(0)1235 821 888  
E: rps@rpsgroup.com



MAKING  
COMPLEX  
EASY

O:\\_TRANSPORT\JNY10215\TechDrawings\10215-0001-02.mxd



## Appendix C – Collision Data

Accidents between dates 01/01/2014 and 17/06/2019 (66) months

Selection: Notes:

; Refined using Accidents within selected Polygons -Data request polygons ("RPS Burbage 15.07.2019")

Selected Polygon:RPS Burbage 15.07.2019

Police_ref	Date	Easting	Northing	Weather	Road_cond	Visibility	Severity
201601213	20/07/2016	444135	292280	Fine without high winds	Dry	Darkness: street lights present and lit	Slight

Location: WINDSOR STREET BURBAGE JW FREEMANS LANE.

Vehicles:

Type	Junct_Locn	Manvres	Movef	Movet
Car	Entering main road	Going ahead other	S	N
Taxi/Private hire car	Mid Junction - on roundabout or main road	Going ahead other	E	W

Casualties:

Class	Severity
Driver / Rider	Slight

Police_ref	Date	Easting	Northing	Weather	Road_cond	Visibility	Severity
201601877	09/11/2016	444071	292179	Fine without high winds	Wet/Damp	Daylight	Slight

Location: BRITANNIA ROAD BURBAGE JW CAR PARK ENTRANCE TO MILLENIUM HALL.

Vehicles:

Type	Junct_Locn	Manvres	Movef	Movet
Car	Leaving main road	Turning right	NW	SW

Casualties:

Class	Severity
Pedestrian	Slight



Accidents between dates 01/01/2014 and 17/06/2019 (66) months

Selection: Notes:

; Refined using Accidents within selected Polygons -Data request  
polygons ("RPS Burbage 15.07.2019")

Police_ref	Date	Easting	Northing	Weather	Road_cond	Visibility	Severity
201800434	09/04/2018	444165	292300	Raining without high winds	Wet/Damp	Daylight	Slight

Location: WINDSOR STREET BURBAGE AT CHURCH CAR PARK ENTRANCE.

Vehicles:				
Type	Junct_Locn	Manvres	Movef	Movet
Car	Leaving main road	Turning left	W	N

Casualties:	
Class	Severity
Pedestrian	Slight

Police_ref	Date	Easting	Northing	Weather	Road_cond	Visibility	Severity
201800677	17/06/2018	444135	292285	Fine without high winds	Dry	Darkness: street lights present and lit	Slight

Location: WINDSOR STREET BURBAGE JW FREEMANS LANE.

Vehicles:				
Type	Junct_Locn	Manvres	Movef	Movet
Car	Entering main road	Going ahead other	S	N
Car	Mid Junction - on roundabout or main road	Going ahead other	W	E

Casualties:	
Class	Severity
Vehicle Passenger	Slight
Vehicle Passenger	Slight

Number of records in selection: 4

Accidents between dates 01/01/2014 and 17/06/2019 (66) months

Selection: Notes:

; Refined using Accidents within selected Polygons -Data request  
polygons ("RPS Burbage 15.07.2019")

Table 1 - Accidents by Month

	2014	2015	2016	2017	2018	2019	Total
January	-	-	-	-	-	-	0
February	-	-	-	-	-	-	0
March	-	-	-	-	-	-	0
April	-	-	-	-	1	-	1
May	-	-	-	-	-	-	0
June	-	-	-	-	1	-	1
July	-	-	1	-	-	-	1
August	-	-	-	-	-	-	0
September	-	-	-	-	-	-	0
October	-	-	-	-	-	-	0
November	-	-	1	-	-	-	1
December	-	-	-	-	-	-	0
TOTAL	0	0	2	0	2	0	4

Table 2 - Casualties by Month

	2014	2015	2016	2017	2018	2019	Total
January	-	-	-	-	-	-	0
February	-	-	-	-	-	-	0
March	-	-	-	-	-	-	0
April	-	-	-	-	1	-	1
May	-	-	-	-	-	-	0
June	-	-	-	-	2	-	2
July	-	-	1	-	-	-	1
August	-	-	-	-	-	-	0
September	-	-	-	-	-	-	0
October	-	-	-	-	-	-	0
November	-	-	1	-	-	-	1
December	-	-	-	-	-	-	0
TOTAL	0	0	2	0	3	0	5

Table 3 - All Accidents by Severity

	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	0	0	0	0	0
Slight	0	0	2	0	2	0	4
TOTAL	0	0	2	0	2	0	4

Table 4 - Casualties by Severity

	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	0	0	0	0	0
Slight	0	0	2	0	3	0	5
TOTAL	0	0	2	0	3	0	5

Accidents between dates 01/01/2014 and 17/06/2019 (66) months

Selection: Notes:

; Refined using Accidents within selected Polygons -Data request  
polygons ("RPS Burbage 15.07.2019")

Police Ref.	Date	Cas.	Sev.	Cycs	Peds	Ch	OAPs	Vis.	Manv.	Road Cond.	Time	Location
Selected Polygon:RPS Burbage 15.07.2019												
201601213	20/07/2016	1	Slight	0	0	0	0	Dark	No turn	Dry	2300	WINDSOR STREET BURBAGE JW FREEMANS LANE.
201601877	09/11/2016	1	Slight	0	1	1	0	Light	Right	Wet/Damp	0835	BRITANNIA ROAD BURBAGE JW CAR PARK ENTRANCE TO MILLENI
201800434	09/04/2018	1	Slight	0	1	0	1	Light	Left	Wet/Damp	1515	WINDSOR STREET BURBAGE AT CHURCH CAR PARK ENTRANCE.
201800677	17/06/2018	2	Slight	0	0	0	0	Dark	No turn	Dry	0044	WINDSOR STREET BURBAGE JW FREEMANS LANE.
Column Totals		5		0	2	1	1					
No. of Accidents				0	2	1	1					
Total number of accidents listed:		4										

## Appendix D – Traffic Surveys

# Workhouse Lane, Burbage - Radar Speed Survey



Speed Limit 60mph

Weather

Thursday 27th June 2019

All speeds are recorded from free flowing vehicles

Warm/Sunny

0700-1900

Northbound				Southbound			
Speeds(mph)		Speeds(mph)		Speeds(mph)		Speeds(mph)	
1	17	51		1	22	51	
2	18	52		2	14	52	
3	18	53		3	22	53	
4	26	54		4	16	54	
5	29	55		5	20	55	
6	16	56		6	16	56	
7	20	57		7	24	57	
8	18	58		8	23	58	
9	17	59		9	17	59	
10	14	60		10	22	60	
11	21	61		11	18	61	
12	23	62		12	23	62	
13	19	63		13	22	63	
14	21	64		14	17	64	
15	14	65		15	24	65	
16	19	66		16	21	66	
17	20	67		17	19	67	
18	17	68		18	22	68	
19	16	69		19	23	69	
20	22	70		20	19	70	
21	18	71		21	17	71	
22	24	72		22	15	72	
23		73		23	17	73	
24		74		24	18	74	
25		75		25		75	
26		76		26		76	
27		77		27		77	
28		78		28		78	
29		79		29		79	
30		80		30		80	
31		81		31		81	
32		82		32		82	
33		83		33		83	
34		84		34		84	
35		85		35		85	
36		86		36		86	
37		87		37		87	
38		88		38		88	
39		89		39		89	
40		90		40		90	
41		91		41		91	
42		92		42		92	
43		93		43		93	
44		94		44		94	
45		95		45		95	
46		96		46		96	
47		97		47		97	
48		98		48		98	
49		99		49		99	
50		100		50		100	

ROAD SURFACE - DRY

Average Northbound	19.4	Average Southbound	19.6
85th%ile Northbound	22.9	85th%ile Southbound	23.0
% > Speed Limit Northbound	0%	% > Speed Limit Southbound	0%
% > 15mph over Speed Limit Northbound	0%	% > 15mph over Speed Limit Southbound	0%



## Burbage, Wednesday 26th June 2019

Junction: (1) Salem Road / Windsor Street / Britannia Road / Coventry Road

Approach: Salem Road

TIME	Left to Windsor Street				Ahead to Britannia Road				Right to Coventry Road			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	6	0	0	6	2	0	0	2	5	0	0	5
0715 - 0730	9	0	1	10	2	0	0	2	3	0	0	3
0730 - 0745	9	0	0	9	2	0	0	2	4	0	0	4
0745 - 0800	8	0	0	8	3	0	0	3	8	0	0	8
Hourly Total	32	0	1	33	9	0	0	9	20	0	0	20
0800 - 0815	15	0	0	15	3	0	0	3	5	0	0	5
0815 - 0830	13	0	0	13	5	0	0	5	3	0	0	3
0830 - 0845	15	0	0	15	8	0	0	8	3	0	0	3
0845 - 0900	18	0	0	18	2	0	0	2	8	0	0	8
Hourly Total	61	0	0	61	18	0	0	18	19	0	0	19
0900 - 0915	12	0	0	12	1	0	0	1	7	0	0	7
0915 - 0930	9	0	0	9	2	0	0	2	3	0	0	3
0930 - 0945	6	0	0	6	2	0	0	2	4	0	0	4
0945 - 1000	3	0	0	3	3	0	0	3	2	0	0	2
Hourly Total	30	0	0	30	8	0	0	8	16	0	0	16

Session Total	123	0	1	124	35	0	0	35	55	0	0	55
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1600 - 1615	6	0	0	6	1	0	0	1	0	0	0	0
1615 - 1630	9	0	0	9	3	0	0	3	0	0	0	0
1630 - 1645	5	0	0	5	1	0	0	1	2	0	0	2
1645 - 1700	11	0	0	11	0	0	0	0	1	0	0	1
Hourly Total	31	0	0	31	5	0	0	5	3	0	0	3
1700 - 1715	10	0	0	10	3	0	0	3	0	0	0	0
1715 - 1730	6	0	0	6	6	0	0	6	3	0	0	3
1730 - 1745	14	0	0	14	2	0	0	2	1	0	0	1
1745 - 1800	9	0	0	9	1	0	0	1	2	0	0	2
Hourly Total	39	0	0	39	12	0	0	12	6	0	0	6
1800 - 1815	7	0	0	7	4	0	0	4	1	0	0	1
1815 - 1830	7	0	0	7	2	0	0	2	2	0	0	2
1830 - 1845	3	0	0	3	1	0	0	1	1	0	0	1
1845 - 1900	5	0	0	5	2	0	0	2	0	0	0	0
Hourly Total	22	0	0	22	9	0	0	9	4	0	0	4

Session Total	92	0	0	92	26	0	0	26	13	0	0	13
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Queues Measured as Stationary Vehicles (Maximum Observed in Period)

TIME	Queue Lengths (Vehicles)
	Stationary
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	2
810	0
815	0
820	0
825	0
830	3
835	0
840	2
845	0
850	2
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
	Stationary
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	2
1700	0
1705	0
1710	0
1715	0
1720	2
1725	0
1730	0
1735	0
1740	0
1745	0
1750	3
1755	0
1800	2
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

## Burbage, Wednesday 26th June 2019

Junction: (2) Windsor Court / Windsor Street / Freeman's Lane

Approach: Windsor Court

TIME	Left to Windsor Street (East)				Ahead to Freeman's Lane				Right to Windsor Street (West)			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0	0	0	0	0	0
0730 - 0745	0	0	0	0	0	0	0	0	1	0	0	1
0745 - 0800	1	0	0	1	0	0	0	0	0	0	0	0
Hourly Total	1	0	0	1	0	0	0	0	1	0	0	1
0800 - 0815	0	0	0	0	0	0	0	0	0	0	0	0
0815 - 0830	1	0	0	1	0	0	0	0	0	0	0	0
0830 - 0845	1	0	0	1	0	0	0	0	2	0	0	2
0845 - 0900	0	0	0	0	0	0	0	0	1	0	0	1
Hourly Total	2	0	0	2	0	0	0	0	3	0	0	3
0900 - 0915	0	0	0	0	0	0	0	0	1	0	0	1
0915 - 0930	0	0	0	0	1	0	0	1	0	0	0	0
0930 - 0945	0	0	0	0	0	0	0	0	1	0	0	1
0945 - 1000	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	1	0	0	1	2	0	0	2

Session Total	3	0	0	3	1	0	0	1	6	0	0	6
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1600 - 1615	0	0	0	0	0	0	0	0	1	0	0	1
1615 - 1630	1	0	0	1	0	0	0	0	0	0	0	0
1630 - 1645	0	0	0	0	0	0	0	0	1	0	0	1
1645 - 1700	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	1	0	0	1	0	0	0	0	2	0	0	2
1700 - 1715	1	0	0	1	0	0	0	0	0	0	0	0
1715 - 1730	0	0	0	0	0	0	0	0	0	0	0	0
1730 - 1745	1	0	0	1	0	0	0	0	2	0	0	2
1745 - 1800	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	2	0	0	2	0	0	0	0	2	0	0	2
1800 - 1815	1	0	0	1	0	0	0	0	0	0	0	0
1815 - 1830	0	0	0	0	0	0	0	0	0	0	0	0
1830 - 1845	0	0	0	0	0	0	0	0	0	0	0	0
1845 - 1900	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	1	0	0	1	0	0	0	0	0	0	0	0

Session Total	4	0	0	4	0	0	0	0	4	0	0	4
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Queues Measured as Stationary Vehicles (Maximum Observed in Period)

TIME	Queue Lengths (Vehicles)
	Stationary
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
	Stationary
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

## Burbage, Wednesday 26th June 2019

Junction: (3) Lutterworth Road / Britannia Road

Approach: Lutterworth Road (North)

TIME	Ahead to Lutterworth Road (South)				Right to Britannia Road			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	80	0	0	80	0	0	0	0
0715 - 0730	90	0	0	90	0	0	1	1
0730 - 0745	96	0	0	96	1	0	0	1
0745 - 0800	101	2	0	103	1	0	0	1
<b>Hourly Total</b>	<b>367</b>	<b>2</b>	<b>0</b>	<b>369</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>
0800 - 0815	93	0	0	93	0	0	0	0
0815 - 0830	66	1	0	67	1	0	0	1
0830 - 0845	62	0	0	62	1	0	0	1
0845 - 0900	53	1	0	54	2	0	0	2
<b>Hourly Total</b>	<b>274</b>	<b>2</b>	<b>0</b>	<b>276</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
0900 - 0915	54	0	0	54	2	0	0	2
0915 - 0930	47	0	0	47	1	0	0	1
0930 - 0945	45	0	0	45	1	0	0	1
0945 - 1000	36	0	0	36	2	0	0	2
<b>Hourly Total</b>	<b>182</b>	<b>0</b>	<b>0</b>	<b>182</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>

<b>Session Total</b>	<b>823</b>	<b>4</b>	<b>0</b>	<b>827</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>13</b>
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1600 - 1615	33	0	0	33	2	0	0	2
1615 - 1630	36	1	0	37	1	0	0	1
1630 - 1645	32	1	0	33	2	0	0	2
1645 - 1700	38	0	1	39	0	0	0	0
<b>Hourly Total</b>	<b>139</b>	<b>2</b>	<b>1</b>	<b>142</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>
1700 - 1715	44	1	0	45	5	0	0	5
1715 - 1730	49	0	0	49	3	0	0	3
1730 - 1745	61	0	0	61	2	0	0	2
1745 - 1800	48	0	0	48	5	0	0	5
<b>Hourly Total</b>	<b>202</b>	<b>1</b>	<b>0</b>	<b>203</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
1800 - 1815	37	1	0	38	4	0	0	4
1815 - 1830	46	0	0	46	2	0	0	2
1830 - 1845	33	0	0	33	2	0	0	2
1845 - 1900	33	0	0	33	1	0	0	1
<b>Hourly Total</b>	<b>149</b>	<b>1</b>	<b>0</b>	<b>150</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>

<b>Session Total</b>	<b>490</b>	<b>4</b>	<b>1</b>	<b>495</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>29</b>
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Queues Measured as Stationary Vehicles (Maximum Observed in Period)

TIME	Queue Lengths (Vehicles)
	Stationary
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
	Stationary
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0



## Burbage, Wednesday 26th June 2019

Junction: (4) B578 / Lynchgate Lane / Windsor Street

Approach: B578 (North)

TIME	Left to Lynchgate Lane				Ahead to B578 (South)				Right to Windsor Street			
	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL	LIGHT	HEAVY	BUS	TOTAL
0700 - 0715	1	0	0	1	65	1	0	66	27	0	0	27
0715 - 0730	3	0	0	3	73	0	0	73	24	0	0	24
0730 - 0745	4	0	0	4	81	0	0	81	36	0	0	36
0745 - 0800	5	0	0	5	84	2	0	86	33	0	0	33
Hourly Total	13	0	0	13	303	3	0	306	120	0	0	120
0800 - 0815	6	0	0	6	69	0	1	70	37	0	0	37
0815 - 0830	8	0	0	8	48	3	0	51	26	0	1	27
0830 - 0845	7	0	0	7	47	0	0	47	33	0	0	33
0845 - 0900	5	0	0	5	42	1	0	43	44	0	0	44
Hourly Total	26	0	0	26	206	4	1	211	140	0	1	141
0900 - 0915	4	0	0	4	37	0	0	37	41	0	0	41
0915 - 0930	3	0	0	3	33	0	0	33	31	0	0	31
0930 - 0945	2	0	0	2	30	1	0	31	23	0	0	23
0945 - 1000	3	0	0	3	27	0	0	27	18	0	0	18
Hourly Total	12	0	0	12	127	1	0	128	113	0	0	113

Session Total	51	0	0	51	636	8	1	645	373	0	1	374
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1600 - 1615	5	0	0	5	25	1	0	26	19	0	1	20
1615 - 1630	8	0	0	8	19	1	0	20	22	0	0	22
1630 - 1645	10	0	0	10	22	0	0	22	16	0	0	16
1645 - 1700	7	0	0	7	26	0	0	26	23	0	1	24
Hourly Total	30	0	0	30	92	2	0	94	80	0	2	82
1700 - 1715	13	0	0	13	31	0	1	32	24	0	0	24
1715 - 1730	9	0	0	9	33	0	0	33	23	0	0	23
1730 - 1745	11	0	0	11	37	1	0	38	24	0	0	24
1745 - 1800	7	0	0	7	38	1	0	39	24	0	0	24
Hourly Total	40	0	0	40	139	2	1	142	95	0	0	95
1800 - 1815	12	0	0	12	30	0	0	30	26	0	1	27
1815 - 1830	7	0	0	7	28	0	0	28	23	0	0	23
1830 - 1845	7	0	0	7	22	0	0	22	24	0	0	24
1845 - 1900	6	0	0	6	24	0	0	24	18	0	0	18
Hourly Total	32	0	0	32	104	0	0	104	91	0	1	92

Session Total	102	0	0	102	335	4	1	340	266	0	3	269
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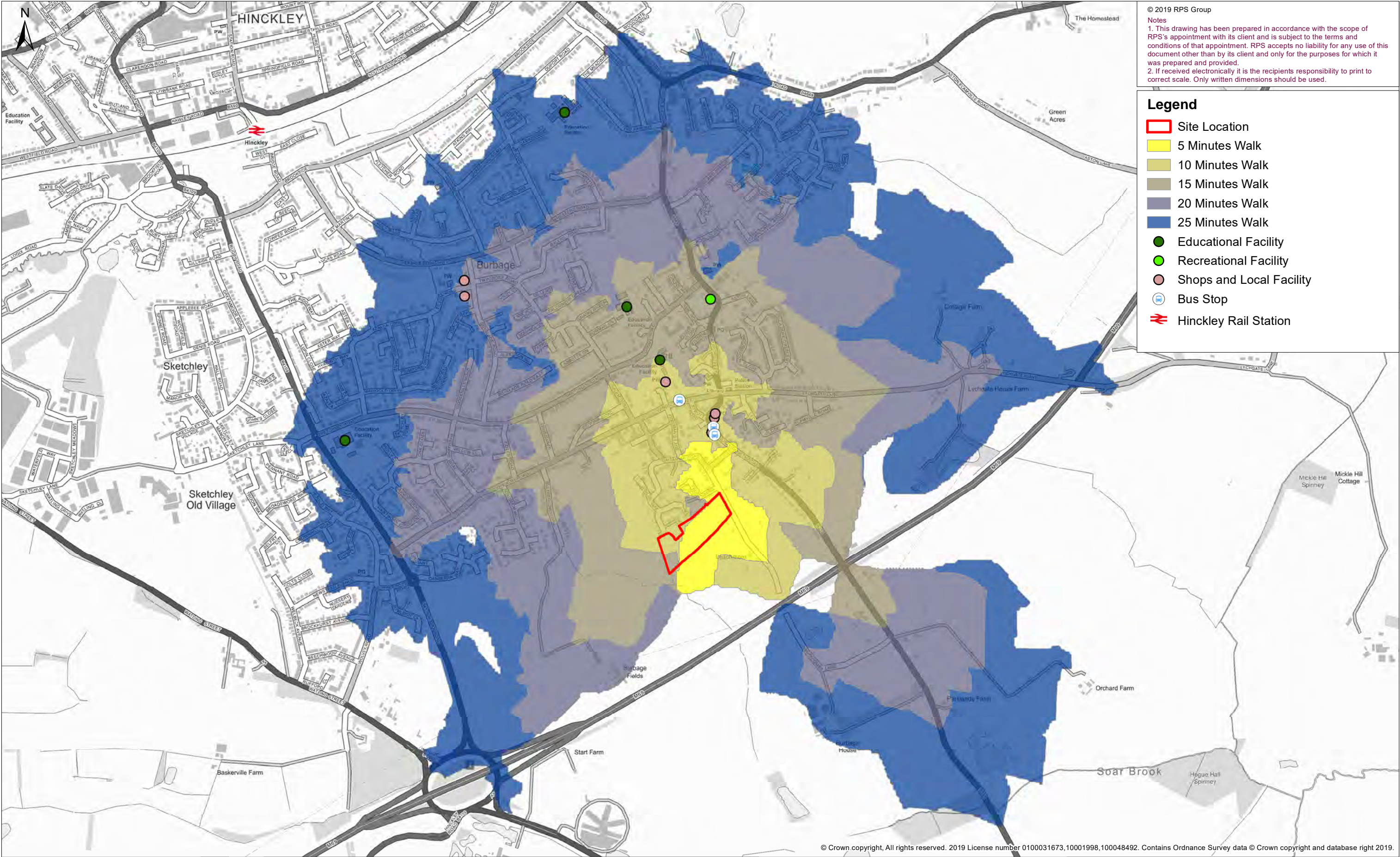
Queues Measured as Stationary Vehicles (Maximum Observed in Period)

TIME	Queue Lengths (Vehicles)
	Stationary
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	2
745	0
750	0
755	0
800	2
805	0
810	0
815	3
820	2
825	0
830	0
835	0
840	0
845	2
850	0
855	2
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
	Stationary
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	2
1640	0
1645	0
1650	0
1655	2
1700	0
1705	0
1710	2
1715	0
1720	0
1725	0
1730	0
1735	0
1740	2
1745	0
1750	0
1755	2
1800	2
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

## Appendix E – Walking Isochrones





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Notes

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2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

**Legend**

- Site Location
- 5 Minutes Walk
- 10 Minutes Walk
- 15 Minutes Walk
- 20 Minutes Walk
- 25 Minutes Walk
- Educational Facility
- Recreational Facility
- Shops and Local Facility
- Bus Stop
- Hinckley Rail Station

Rev	Description	By	CB	Date
Figure Number				Rev
2				-
rpsgroup.com				

Client

Mather Jamie Ltd

Project

Workhouse Lane, Burbage

Title

Walk Isochrone and Local Facility Plan

0

250

500 m

Note:

Total end to end journey time using Basemap TRACC with Walk speed of 1.33m/s (4.8km/hr)

Status

FINAL

Drawn By

BG

PM/Checked By

CM

Project Number

JNY10215

Scale @ A3

1:12,000

Date Created

JUL 2019

20 Western Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4SH

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E: rps@rpsgroup.com

rps

MAKING COMPLEX EASY

O:\\_TRANSPORT\JNY10215\TechDrawings\10215-0002-02.mxd



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## Appendix F – Cycle Isochrones



O:\\_TRANSPORT\JNY10215\TechDrawings\10215-0003-02.mxd



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2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

**Legend**

- Site Location
- 5 Minutes Cycle
- 10 Minutes Cycle
- 15 Minutes Cycle
- 20 Minutes Cycle
- 25 Minutes Cycle
- Hinckley Rail Station

Rev	Description	By	CB	Date
Figure Number				Rev
3				-
rpsgroup.com				

Client Mather Jamie Ltd

Project Workhouse Lane, Burbage

Title Cycle Isochrone Plan

Note:  
Total end to end journey time using  
Basemap TRACC  
with Cycle speed of 16km/hr

0 750 1,500 m

Status FINAL

Drawn By BG

PM/Checked By CM

Project Number JNY10215

Scale @ A3 1:45,000

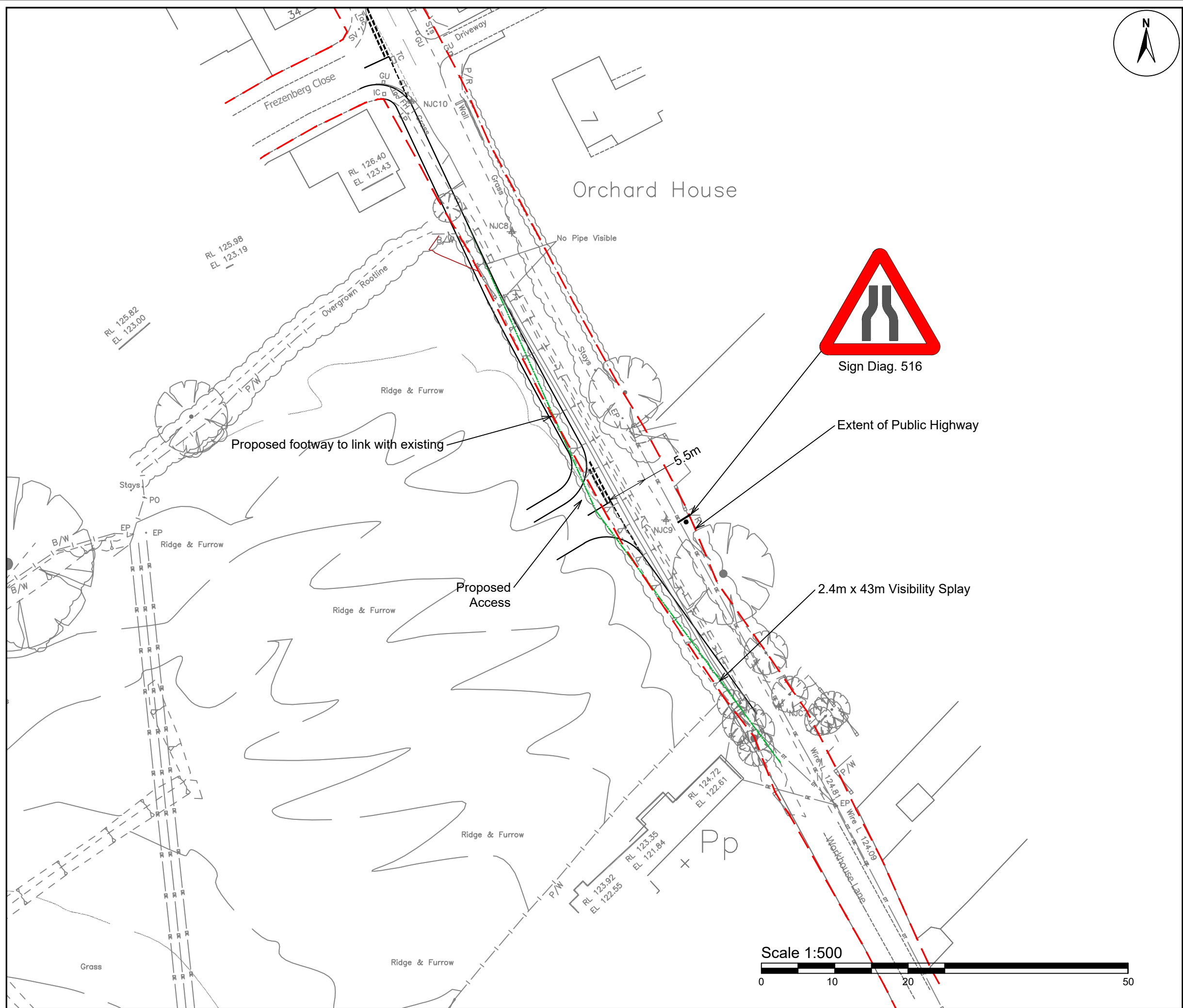
Date Created JUL 2019

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## **Appendix G – Proposed Access Arrangement and Swept Path Analysis**



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  2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
  3. This drawing is to be read in conjunction with all relevant scheme drawings.

B	Road Markings and Signage added in respect to RSA.	HN	MA	12/11/19
A	Layout amended, Highway Boundary added & additional notes	HN	MA	18/09/19
Rev	Description	By	CB	Date



20 Farringdon Street, London EC4A 4AB  
T: +44(0)20 3691 0500 E: transport@rpsgroup.com

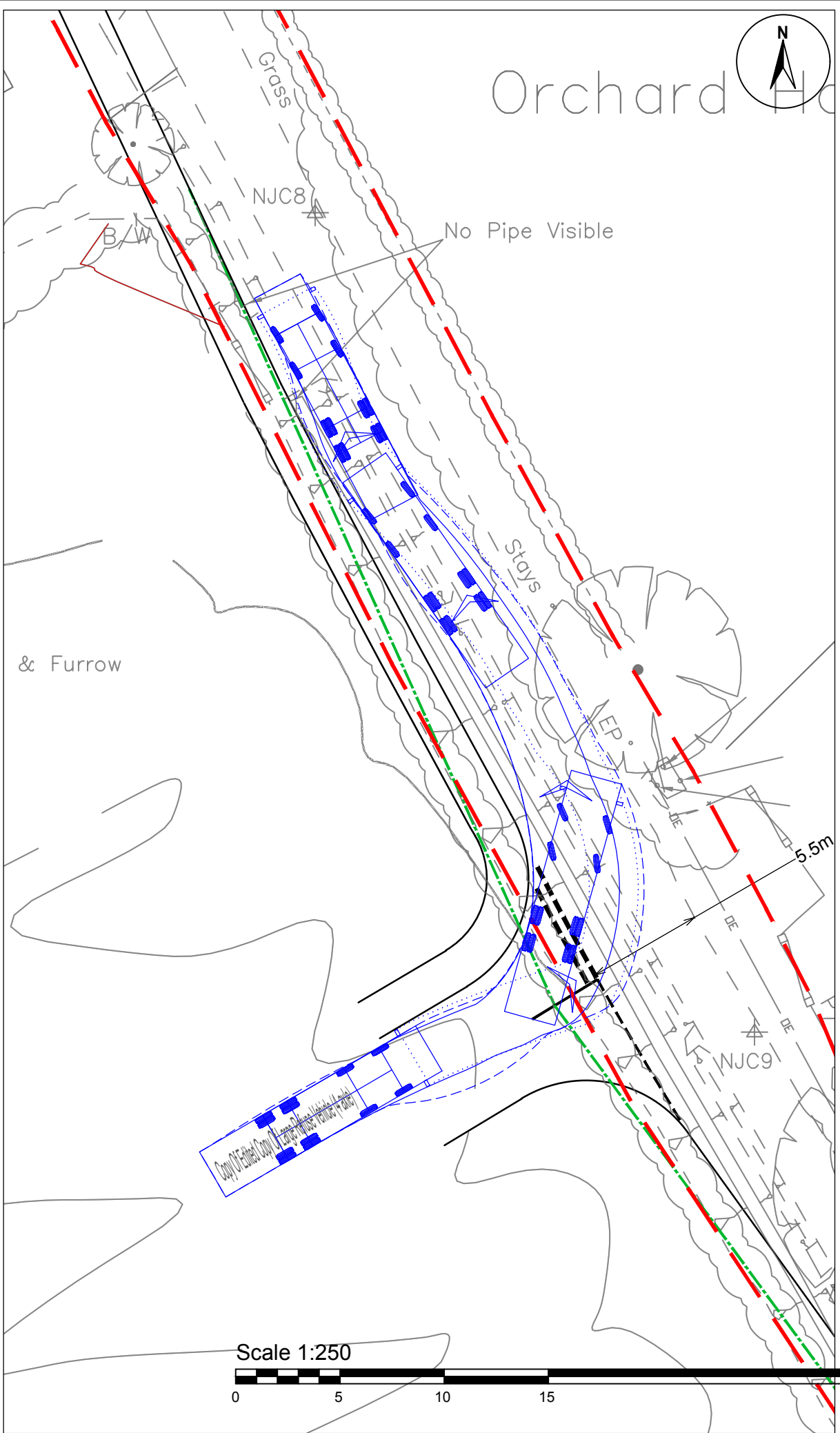
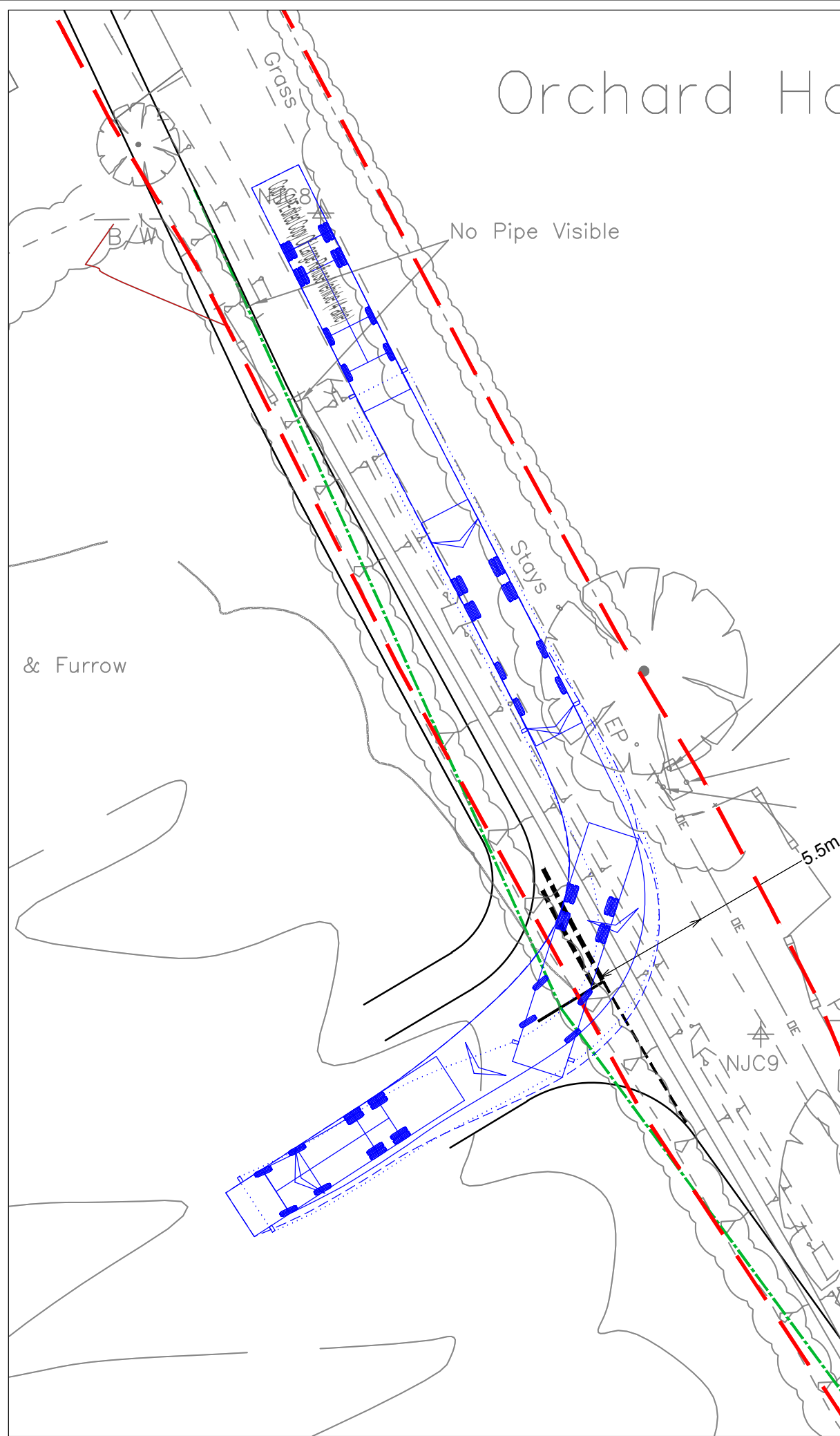
Client Central England Co-Operative

Project Workhouse Lane, Burbage

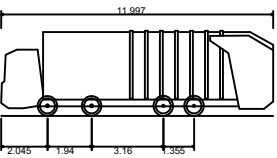
Title Proposed Access Arrangement

Status	Drawn By	PM/Checked by
PRELIMINARY	AJ	MSB
Project Number	Scale @ A3	Date Created
JNY10215	1:500	05.08.19
RPS Drawing/Figure Number		Rev
JNY10215-01		B

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  2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
  3. This drawing is to be read in conjunction with all relevant scheme drawings.



Copy Of Edited Copy Of Large Refuse Vehicle (4 axle)  
Overall Length 11.997m  
Overall Width 2.500m  
Overall Body Height 3.750m  
Min Body Ground Clearance 0.303m  
Max Track Width 2.500m  
Lock to lock time 4.00s  
Kerb to Kerb Turning Radius 10.800m

A	Layout amended, Highway Boundary added & additional notes	HN	MA	18/09/19
Rev	Description	By	CB	Date



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Client Central England Co-Operative

Project Workhouse Lane, Burbage

Title Proposed Access Arrangement  
Large Refuse Collection Vehicle  
Swept Path Analysis

Status	Drawn By	PM/Checked by
PRELIMINARY	AJ	MA
Project Number	Scale @ A3	Date Created
JNY10215	1:250	21.10.19

RPS Drawing/Figure Number  
JNY10215-02

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## **Appendix H – Stage 1 Road Safety Audit and Designer's Response**

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**WORKHOUSE LANE,  
BURBAGE, LEICESTER**  
**Proposed Access Arrangements**

---

**Road Safety Audit - Stage 1**

---

**Final Report**

---

**November 2019**

**Document Reference: TBL19/130**

# REPORT APPROVAL

## Project Details

Project Title	Workhouse Lane, Burbage, Leicester		
Project Sub Title	Proposed Access Arrangements		
Road Safety Audit	Stage 1		
Document Reference	TBL19/130 Rev 0	Audit Brief Date	21 <sup>st</sup> October 2019
Overseeing Organisation	Leicestershire County Council		
Design Organisation	Melanie A'Lee	RPS	
Client	-	-	
Maintaining Agent Details	-	-	

## Approvals

This document requires the following approvals:

Name	Title
Sarah Bowie	Audit Team Leader
Mario Gatti	Audit Team Member

## Distribution

This document has also been distributed to:

Name	Title & Organisation
Melanie A'Lee	Associate Director - RPS

# 1 INTRODUCTION

## 1.1 The Scheme and its Purpose

The proposals are associated with a residential development located off Workhouse Lane, Burbage, Leicester. Access is proposed via a priority junction arrangement.

## 1.2 Terms of Reference & Audit Report

The Road Safety Audit Brief was approved and issued by Melanie A'Lee of the Design Organisation. The RSA team has been approved by Melanie A'Lee of the Design Organisation.

**Table 1** - Audit Team Membership

Membership	Name	Details
Audit Team Leader	Sarah Bowie	IEng, MICE, FIHE, MCIHT, MSoRSA, HE RSA Cert Comp
Audit Team Member	Mario Gatti	BSc Civ Eng, MCIHT, MSoRSA, HE RSA Cert Comp

The Road Safety Audit was undertaken in accordance with the requirements of GG 119. No additional audit requirements were requested. The audit comprised of an examination of the brief and the documents provided to the Audit Team, listed in **Appendix A**.

The audit took place at Taylor Bowie Ltd Cambridgeshire office during October and November 2019 and both Audit Team Members examined the site together in daylight hours on the morning of Tuesday 29<sup>th</sup> October 2019 between the times of 0730 and 0830hrs. The weather during the site visit was fine. The carriageway surface was dry. Traffic flows at all times within the site extents were light. One pedestrian and no cyclists were observed during the site visit.

The scheme has been examined, and this report compiled only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

No Departures from Standards (DfS) have been provided to the Audit Team. It is important that if there are any DfS, then they are submitted to the Overseeing Authority (OA) as soon as possible with appropriate mitigating measures for the OA to approve.

The Audit Team were not provided with any information regarding street lighting signage, or drainage for this stage of audit, however it is important that these provisions are sensitive to the needs of non-motorised users facilities and will not unduly create obstruction hazards along the pedestrian routes.

All Problems and Recommendations are referenced to the design drawings and the locations have been indicated on the A4 plan supplied for use by the Audit Team in **Appendix B**.

### 1.3 Audit Administration

Issues identified during the audit and site visit which the Terms of Reference exclude from this report, but which the audit team wishes to draw to the attention of the Overseeing Organisation, will be set out in a separate letter. These issues could include maintenance items and operational issues.

The Audit Team has not identified any issues during this Stage 1 Road Safety Audit and site visit that are considered to be outside the Terms of Reference.

## 2 ITEMS RAISED AT PREVIOUS ROAD SAFETY AUDITS

No previous Road Safety Audits have been undertaken on these proposals.

### 3 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

#### 3.1 Local Alignment

<b>PROBLEM</b>	1
Location	Proposed tie-in to the south of the development access (Drwg No. JNY10215-01 Rev A)
Summary	Kerb protrusion into carriageway may increase the risk of vehicle strikes.
It is unclear from the drawing how the proposed kerb will tie into the residential access to the south of the Development Site access. If the end of the kerb protrudes into the carriageway there may be a risk of vehicle strikes and possible single vehicle loss of control type collisions.	
<b>RECOMMENDATION</b>	
The Audit Team recommends that for the detailed design, a smooth kerb transition is provided at the residential access.	

<b>PROBLEM</b>	2
Location	Proposed Development Site Access (Drwg No. JNY10215-01 Rev A)
Summary	Carriageway narrowing to the south of the Development Site Access may increase the risk of vehicle to vehicle head on type collisions.
The scheme proposals include carriageway widening over a distance of approximately 50m. The carriageway width then narrows abruptly to the south of the Development Site Access without any warning to drivers. This may increase the risk of vehicle to vehicle head on type collisions.	
<b>RECOMMENDATION</b>	
The Audit Team recommends that appropriate warning signage is safely provided to highlight the road narrowing in the vicinity of the Development Site Access.	

### 3.2 General

No Problems identified in this category at this Stage 1 Road Safety Audit.

### 3.3 Junctions

No Problems identified in this category at this Stage 1 Road Safety Audit.

### 3.4 Walking, Cycling and Horse Riding

No Problems identified in this category at this Stage 1 Road Safety Audit.

### 3.5 Traffic Signs, Carriageway Markings and Lighting

No Problems identified in this category at this Stage 1 Road Safety Audit.

**END OF PROBLEMS IDENTIFIED & RECOMMENDATIONS OFFERED IN THIS STAGE 1 ROAD SAFETY AUDIT**



## 4 AUDIT TEAM STATEMENT

We certify that this Road Safety Audit has been carried out in accordance with GG 119.

AUDIT TEAM LEADER	
Name	Sarah Bowie - IEng, MICE, FIHE, MCIHT, MSoRSA, HE RSA Cert Comp
Signed	
Position	Director
Organisation	Taylor Bowie Ltd
Date	11 <sup>th</sup> November 2019

AUDIT TEAM MEMBER	
Name	Mario Gatti - BSc Civ Eng, MCIHT, MSoRSA, HE RSA Cert Comp
Signed	
Position	Associate Consultant
Organisation	Taylor Bowie Ltd
Date	11 <sup>th</sup> November 2019

# APPENDIX A

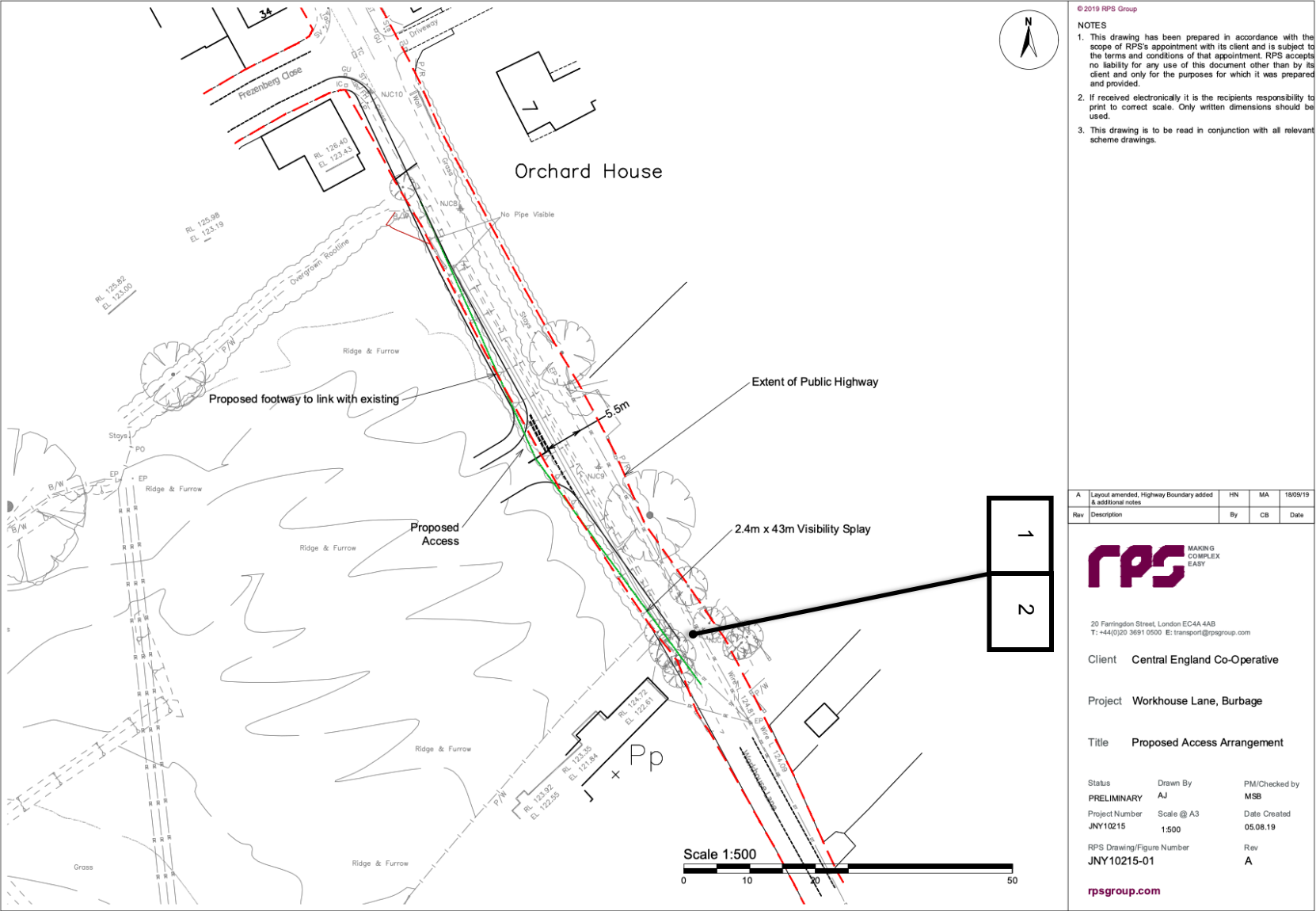
## Documents Forming the Audit Brief

**Drawings:**

<b>DRAWING NO.</b>	<b>TITLE</b>
JNY10215-01 Rev A	Proposed Access Arrangements
JNY10215-02 Rev A	Proposed Access Arrangements – Large Refuse Collection Vehicle Swept Path Analysis

# APPENDIX B

## Problem Location Plan



Taylor Bowie Ltd

ROAD SAFETY & TRANSPORTATION CONSULTANCY

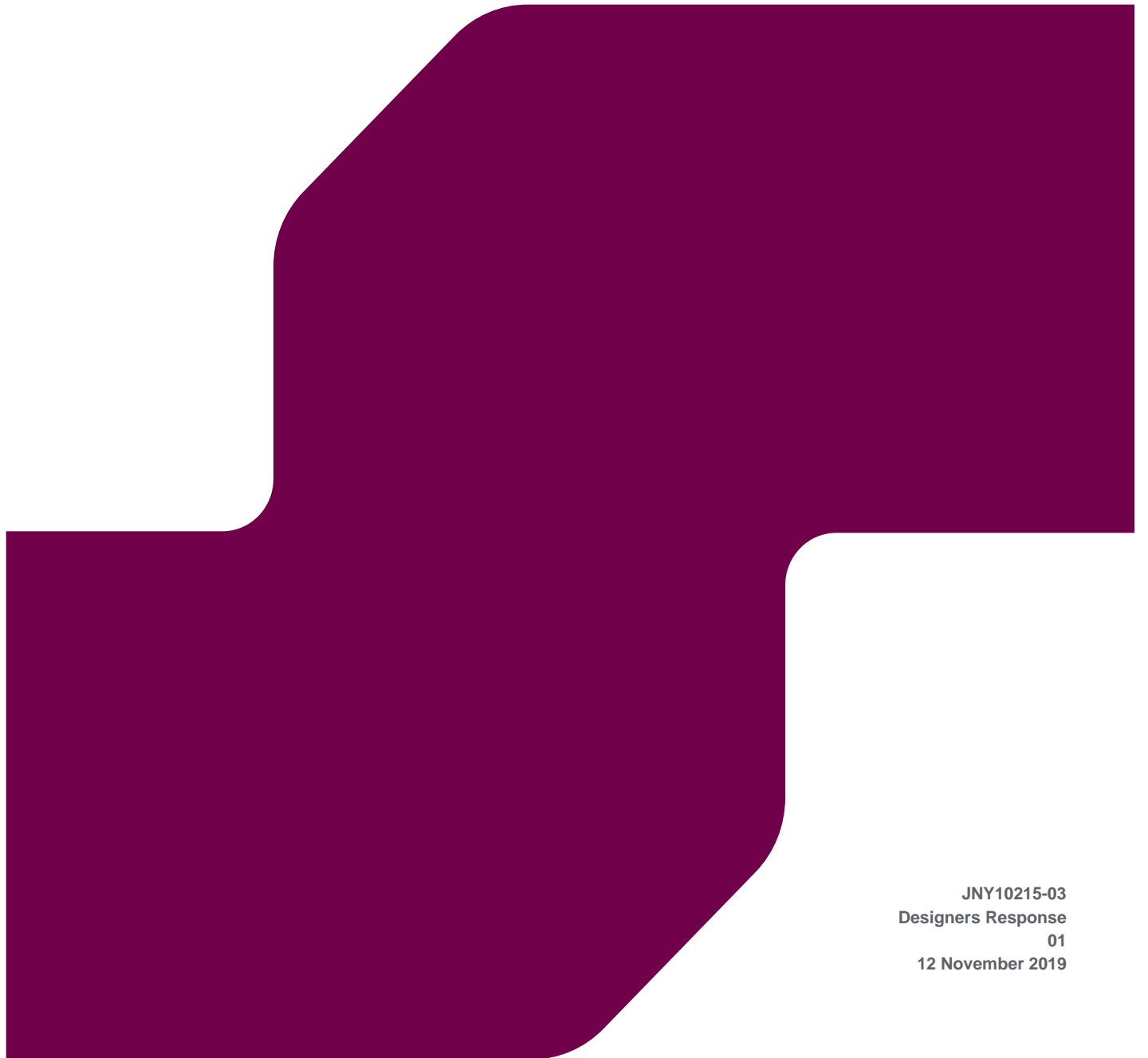
E: [info@taylorbowie.co.uk](mailto:info@taylorbowie.co.uk)

W: [www.taylorbowie.co.uk](http://www.taylorbowie.co.uk)

M: 07810 712985

# WORKHOUSE LANE, BURBAGE

## Stage 1 Road Safety Audit – Designers Response



JNY10215-03  
Designers Response  
01  
12 November 2019

## Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
01	Information	M. A'Lee	M A'Lee	M A'Lee	12/11/19

## Approval for issue

Melanie A'Lee

2019-11-12

This report was prepared by **RPS Consulting Services Ltd** ('RPS') within the terms of its engagement and in direct response to a scope of services. This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and must not be used for any other application, purpose, use or matter. In preparing the report, RPS may have relied upon information provided to it at the time by other parties. RPS accepts no responsibility as to the accuracy or completeness of information provided by those parties at the time of preparing the report. The report does not take into account any changes in information that may have occurred since the publication of the report. If the information relied upon is subsequently determined to be false, inaccurate or incomplete then it is possible that the observations and conclusions expressed in the report may have changed. RPS does not warrant the contents of this report and shall not assume any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report howsoever. No part of this report, its attachments or appendices may be reproduced by any process without the written consent of RPS. All enquiries should be directed to RPS.

Prepared by:

Prepared for:

**RPS Consulting Services Ltd**

**Central England Co-Operative**

Melanie A'Lee  
**Associate Director**

20 Farringdon Street, London EC4A 4AB



AUDIT REF:	Problem Summary and Recommendation	Designers Response
1	<p><b>Summary:</b> Kerb protrusion into the carriageway may increase risk of vehicle strikes</p> <p><b>Recommendation:</b> The Audit Team recommends that for the detailed design, a smooth kerb transition is provided at the residential access</p>	The road markings will be amended to ensure that vehicles are guided away from the kerb.
2	<p><b>Summary:</b> Carriageway narrowing to the south of the Development Site Access may increase the risk of vehicle to vehicle head on type collisions.</p> <p><b>Recommendation:</b> The Audit Team recommends that appropriate warning signage is safely provided to highlight the road narrowing in the vicinity of the Development Site Access.</p>	Appropriate 'road narrowing' signage will be provided at the detail design stage.

---

## Appendix I – TRICS Output

Calculation Reference: AUDIT-515501-161102-1112

# TRIP RATE CALCULATION SELECTION PARAMETERS:

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

## Selected regions and areas:

02	SOUTH EAST	
	BD BEDFORDSHIRE	2 days
	SC SURREY	2 days
	WS WEST SUSSEX	2 days
03	SOUTH WEST	
	CW CORNWALL	1 days
	DC DORSET	1 days
	DV DEVON	2 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	2 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	1 days
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	2 days

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

## Filtering Stage 2 selection:

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

Parameter: Number of dwellings  
Actual Range: 51 to 230 (units: )  
Range Selected by User: 50 to 250 (units: )

## Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 28/09/15

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

## Selected survey days:

Monday	5 days
Tuesday	5 days
Wednesday	1 days
Thursday	7 days
Friday	3 days

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

## Selected survey types:

Manual count	20 days
Directional ATC Count	1 days

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

## Selected Locations:

Suburban Area (PPS6 Out of Centre)	11
Edge of Town	9
Neighbourhood Centre (PPS6 Local Centre)	1

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

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

Filtering Stage 3 selection:

Use Class:

C3

21 days

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

Population within 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	2 days
75,001 to 100,000	6 days
100,001 to 125,000	4 days
125,001 to 250,000	5 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

1.1 to 1.5	21 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:

Not Known	3 days
Yes	1 days
No	17 days

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

LIST OF SITES relevant to selection parameters

1	BD-03-A-01 SEMI DETACHED NEW BEDFORD ROAD  LUTON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 131 Survey date: THURSDAY 08/07/04	BEDFORDSHIRE	Survey Type: MANUAL
2	BD-03-A-02 SEMI DETACHED RIDDY LANE  LUTON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 82 Survey date: TUESDAY 06/07/04	BEDFORDSHIRE	Survey Type: MANUAL
3	CW-03-A-02 SEMI D./DETACHED BOSVEAN GARDENS  TRURO Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 73 Survey date: TUESDAY 18/09/07	CORNWALL	Survey Type: MANUAL
4	DC-03-A-01 DETACHED ISAACS CLOSE  POOLE Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 51 Survey date: WEDNESDAY 16/07/08	DORSET	Survey Type: MANUAL
5	DV-03-A-02 HOUSES & BUNGALOWS MILLHEAD ROAD  HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 116 Survey date: FRIDAY 25/09/15	DEVON	Survey Type: MANUAL
6	DV-03-A-03 TERRACED & SEMI DETACHED LOWER BRAND LANE  HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 70 Survey date: MONDAY 28/09/15	DEVON	Survey Type: MANUAL
7	LN-03-A-01 MIXED HOUSES BRANT ROAD BRACEBRIDGE LINCOLN Edge of Town Residential Zone Total Number of dwellings: 150 Survey date: TUESDAY 15/05/07	LINCOLNSHIRE	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	LN-03-A-02	MIXED HOUSES		LINCOLNSHIRE
	HYKEHAM ROAD			
	LINCOLN			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		186	
	Survey date: MONDAY		14/05/07	Survey Type: MANUAL
9	NF-03-A-02	HOUSES & FLATS		NORFOLK
	DEREHAM ROAD			
	NORWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		98	
	Survey date: MONDAY		22/10/12	Survey Type: MANUAL
10	SC-03-A-03	DETACHED		SURREY
	A3050 HURST ROAD			
	HURST PARK			
	EAST MOLESEY			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		54	
	Survey date: TUESDAY		12/11/02	Survey Type: MANUAL
11	SC-03-A-04	DETACHED & TERRACED		SURREY
	HIGH ROAD			
	BYFLEET			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		71	
	Survey date: THURSDAY		23/01/14	Survey Type: MANUAL
12	SF-03-A-02	SEMI DET./TERRACED		SUFFOLK
	STOKE PARK DRIVE			
	MAIDENHALL			
	IPSWICH			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		230	
	Survey date: THURSDAY		24/05/07	Survey Type: MANUAL
13	SH-03-A-04	TERRACED		SHROPSHIRE
	ST MICHAEL'S STREET			
	SHREWSBURY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		108	
	Survey date: THURSDAY		11/06/09	Survey Type: MANUAL
14	SH-03-A-05	SEMI-DETACHED/TERRACED		SHROPSHIRE
	SANDCROFT			
	SUTTON HILL			
	TELFORD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		54	
	Survey date: THURSDAY		24/10/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	ST-03-A-03 QUEENSVILLE	MIXED HOUSES	STAFFORDSHIRE
	STAFFORD		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	224	
	Survey date: TUESDAY	04/07/00	Survey Type: MANUAL
16	WL-03-A-01 MAPLE DRIVE	SEMI D./TERRACED W. BASSETT	WILTSHIRE
	WOOTTON BASSETT		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	99	
	Survey date: MONDAY	02/10/06	Survey Type: MANUAL
17	WM-03-A-03 BASELEY WAY ROWLEYS GREEN COVENTRY	MIXED HOUSING	WEST MIDLANDS
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	84	
	Survey date: MONDAY	24/09/07	Survey Type: MANUAL
18	WO-03-A-03 BLAKEBROOK BLAKEBROOK KIDDERMINSTER	DETACHED	WORCESTERSHIRE
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	138	
	Survey date: FRIDAY	05/05/06	Survey Type: MANUAL
19	WO-03-A-05 ST GODWALDS ROAD ASTON FIELDS BROMSGROVE	TERRACED/DET.	WORCESTERSHIRE
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	215	
	Survey date: THURSDAY	23/05/02	Survey Type: MANUAL
20	WS-03-A-03 A266 MID LAVANT NEAR CHICHESTER	SEMI DET. & TERRACED	WEST SUSSEX
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Number of dwellings:	90	
	Survey date: FRIDAY	24/11/00	Survey Type: DIRECTIONAL ATC COUNT
21	WS-03-A-04 HILLS FARM LANE BROADBRIDGE HEATH HORSHAM	MIXED HOUSES	WEST SUSSEX
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	151	
	Survey date: THURSDAY	11/12/14	Survey Type: MANUAL

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

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

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	1	90	0.022	1	90	0.000	1	90	0.022
01:00 - 02:00	1	90	0.000	1	90	0.000	1	90	0.000
02:00 - 03:00	1	90	0.000	1	90	0.000	1	90	0.000
03:00 - 04:00	1	90	0.011	1	90	0.022	1	90	0.033
04:00 - 05:00	1	90	0.000	1	90	0.000	1	90	0.000
05:00 - 06:00	1	90	0.011	1	90	0.033	1	90	0.044
06:00 - 07:00	1	90	0.011	1	90	0.111	1	90	0.122
07:00 - 08:00	21	118	0.087	21	118	0.314	21	118	0.401
08:00 - 09:00	21	118	0.170	21	118	0.443	21	118	0.613
09:00 - 10:00	21	118	0.175	21	118	0.229	21	118	0.404
10:00 - 11:00	21	118	0.149	21	118	0.186	21	118	0.335
11:00 - 12:00	21	118	0.191	21	118	0.178	21	118	0.369
12:00 - 13:00	21	118	0.204	21	118	0.188	21	118	0.392
13:00 - 14:00	21	118	0.186	21	118	0.185	21	118	0.371
14:00 - 15:00	21	118	0.192	21	118	0.186	21	118	0.378
15:00 - 16:00	21	118	0.283	21	118	0.204	21	118	0.487
16:00 - 17:00	21	118	0.312	21	118	0.198	21	118	0.510
17:00 - 18:00	21	118	0.416	21	118	0.232	21	118	0.648
18:00 - 19:00	21	118	0.309	21	118	0.239	21	118	0.548
19:00 - 20:00	1	90	0.133	1	90	0.200	1	90	0.333
20:00 - 21:00	1	90	0.144	1	90	0.144	1	90	0.288
21:00 - 22:00	1	90	0.133	1	90	0.056	1	90	0.189
22:00 - 23:00	1	90	0.122	1	90	0.022	1	90	0.144
23:00 - 24:00	1	90	0.056	1	90	0.033	1	90	0.089
Total Rates:			3.317			3.403			6.720

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

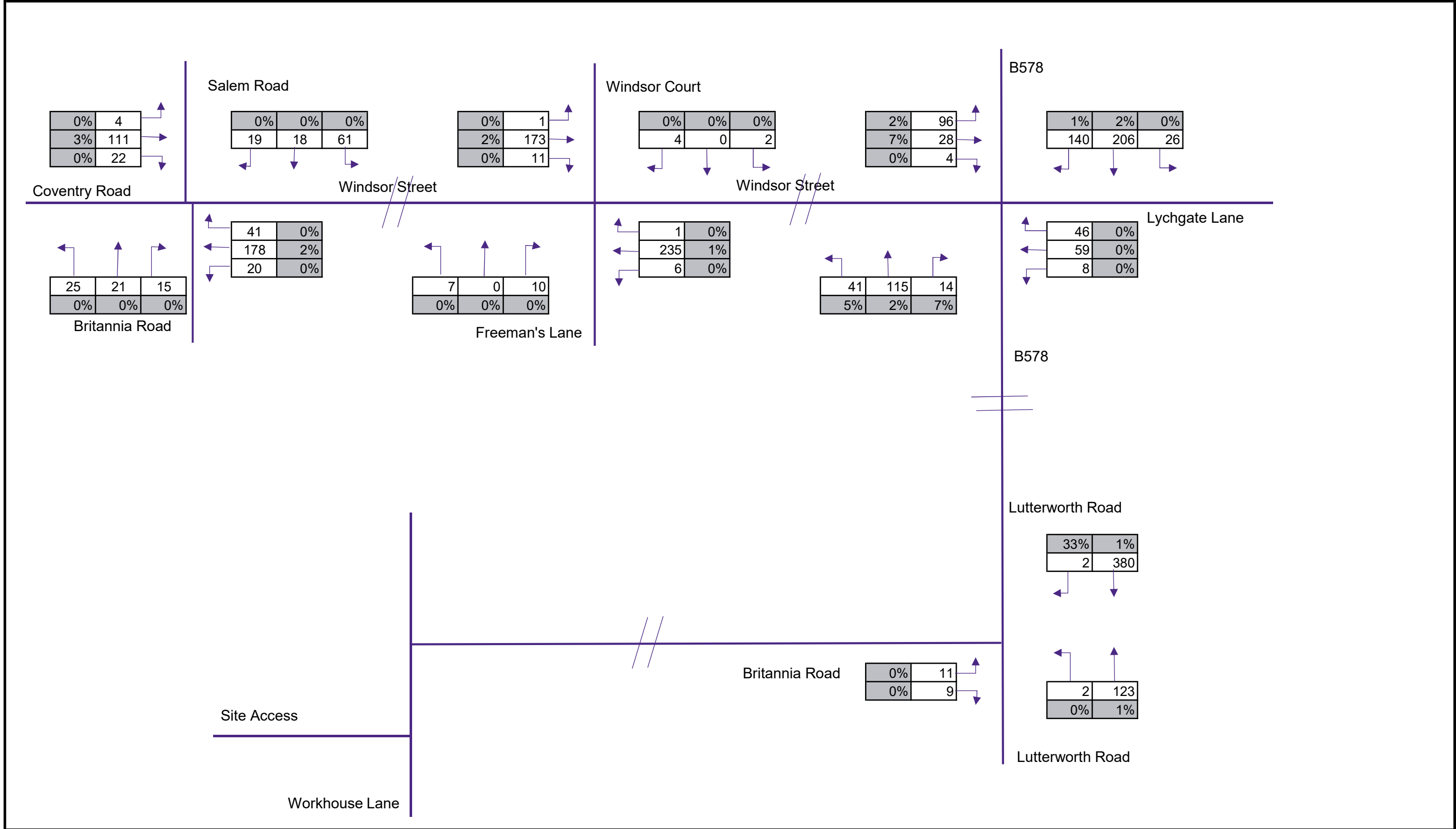
Trip rate parameter range selected: 51 - 230 (units: )  
 Survey date range: 01/01/00 - 28/09/15  
 Number of weekdays (Monday-Friday): 25  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys automatically removed from selection: 0  
 Surveys manually removed from selection: 0

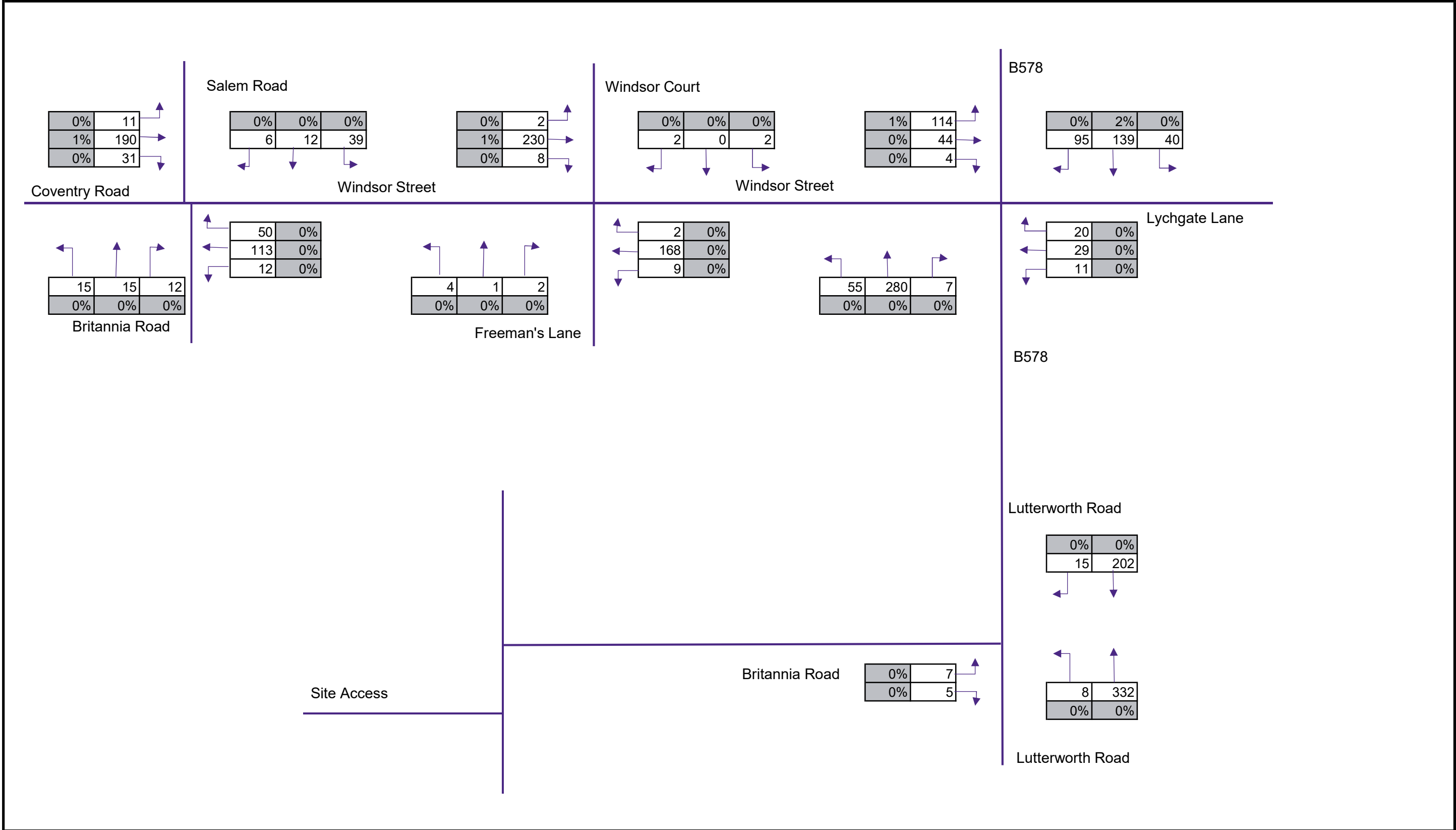
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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

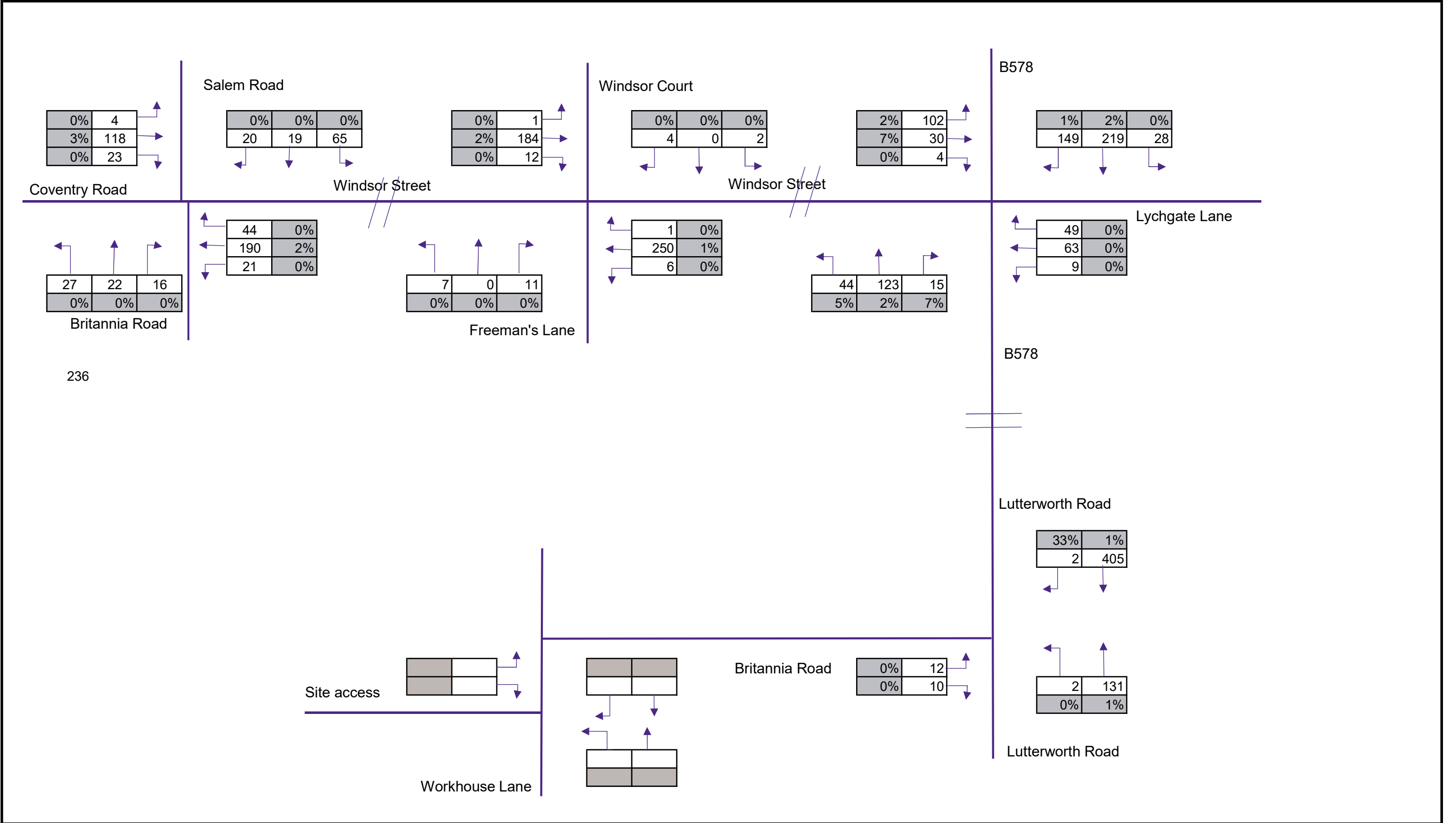


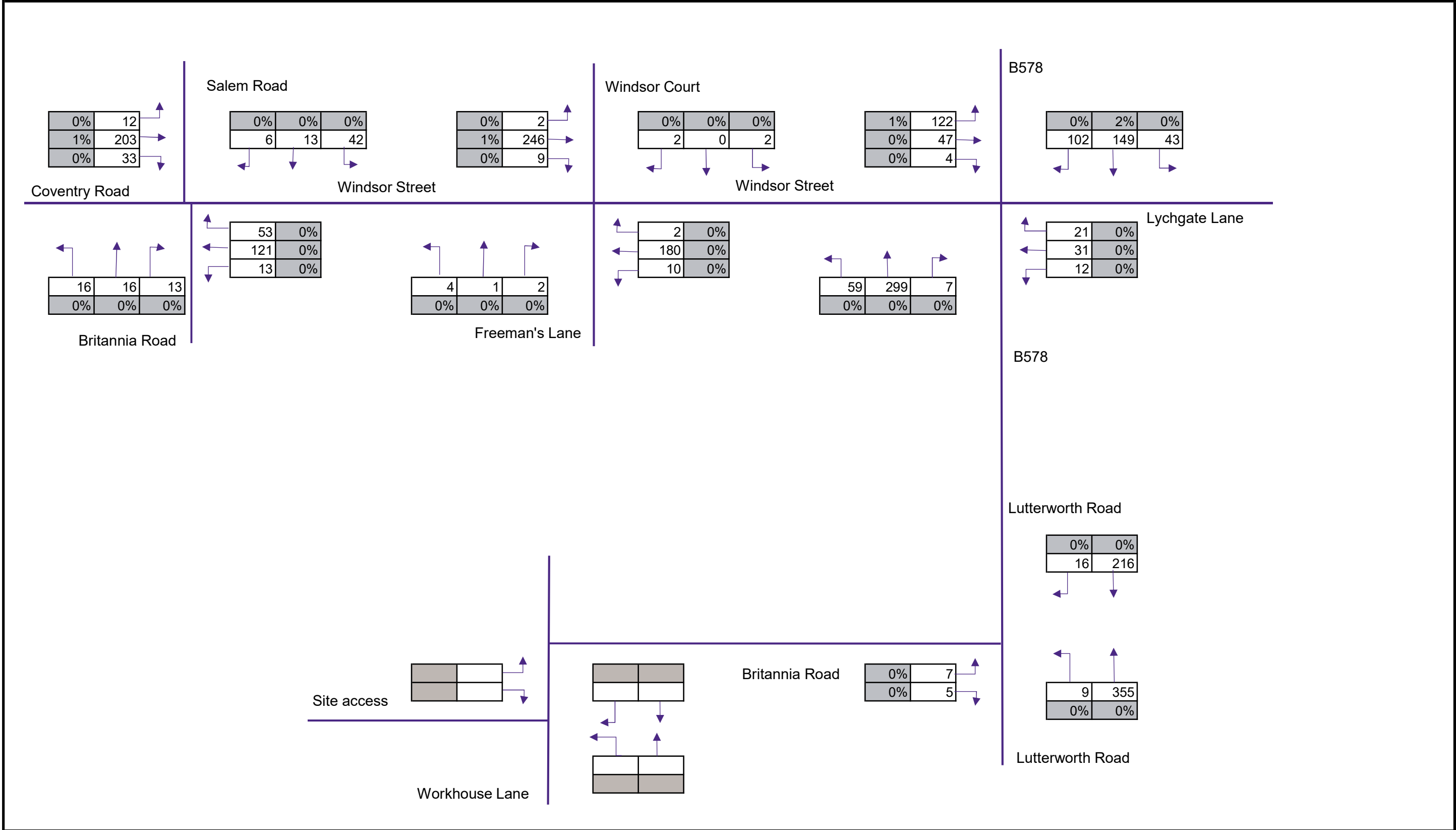
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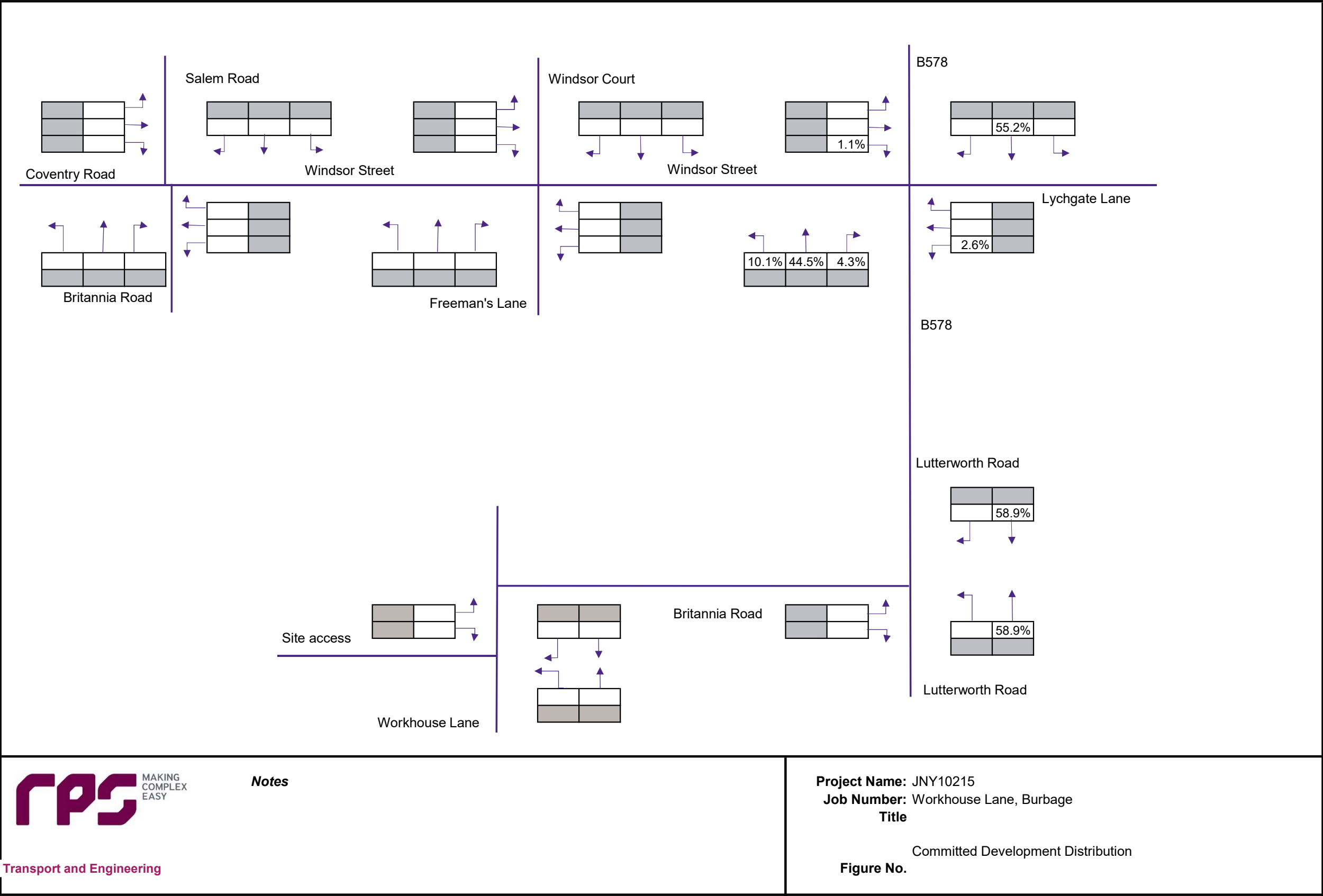
## Appendix J – Base and Proposed Traffic Flows

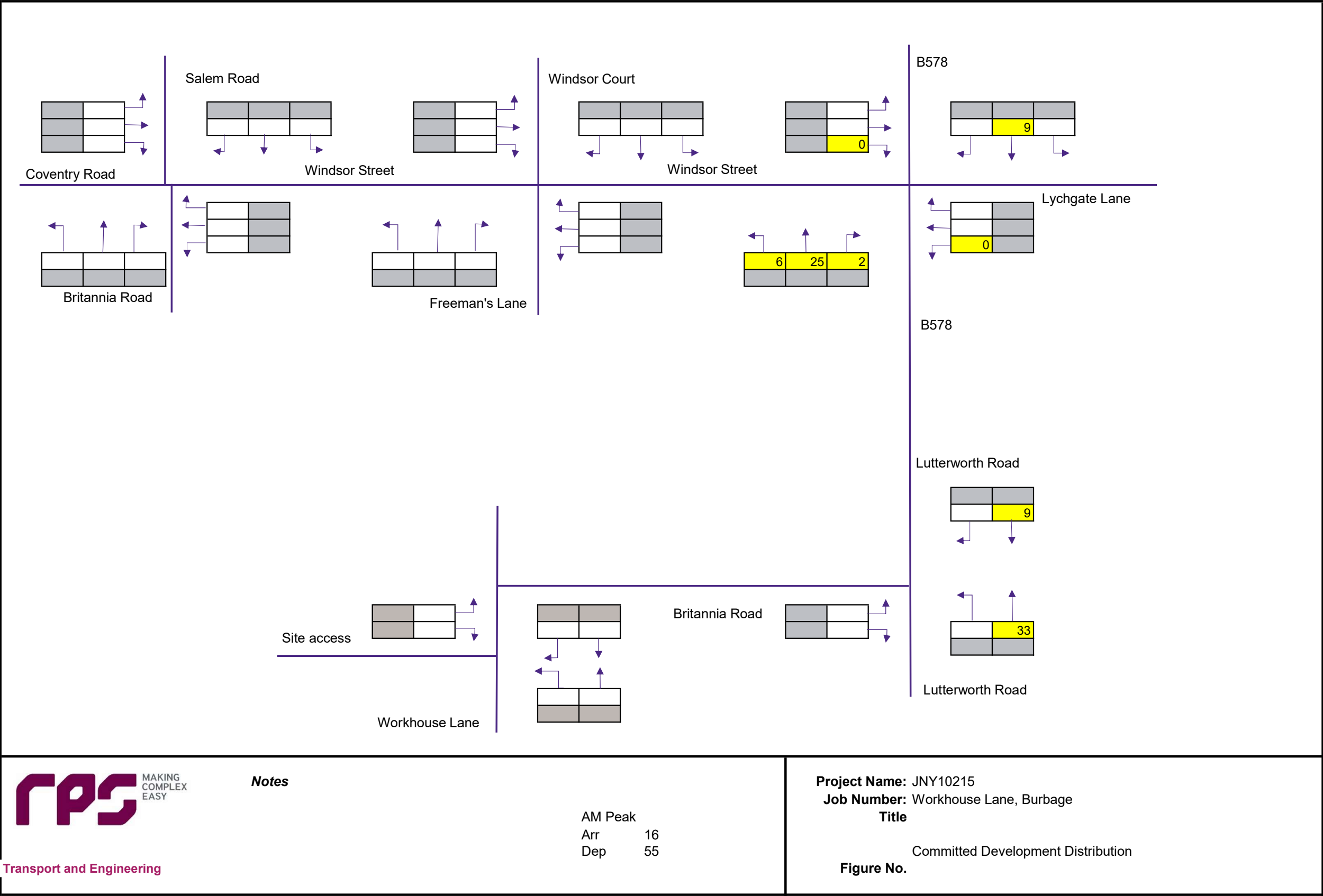










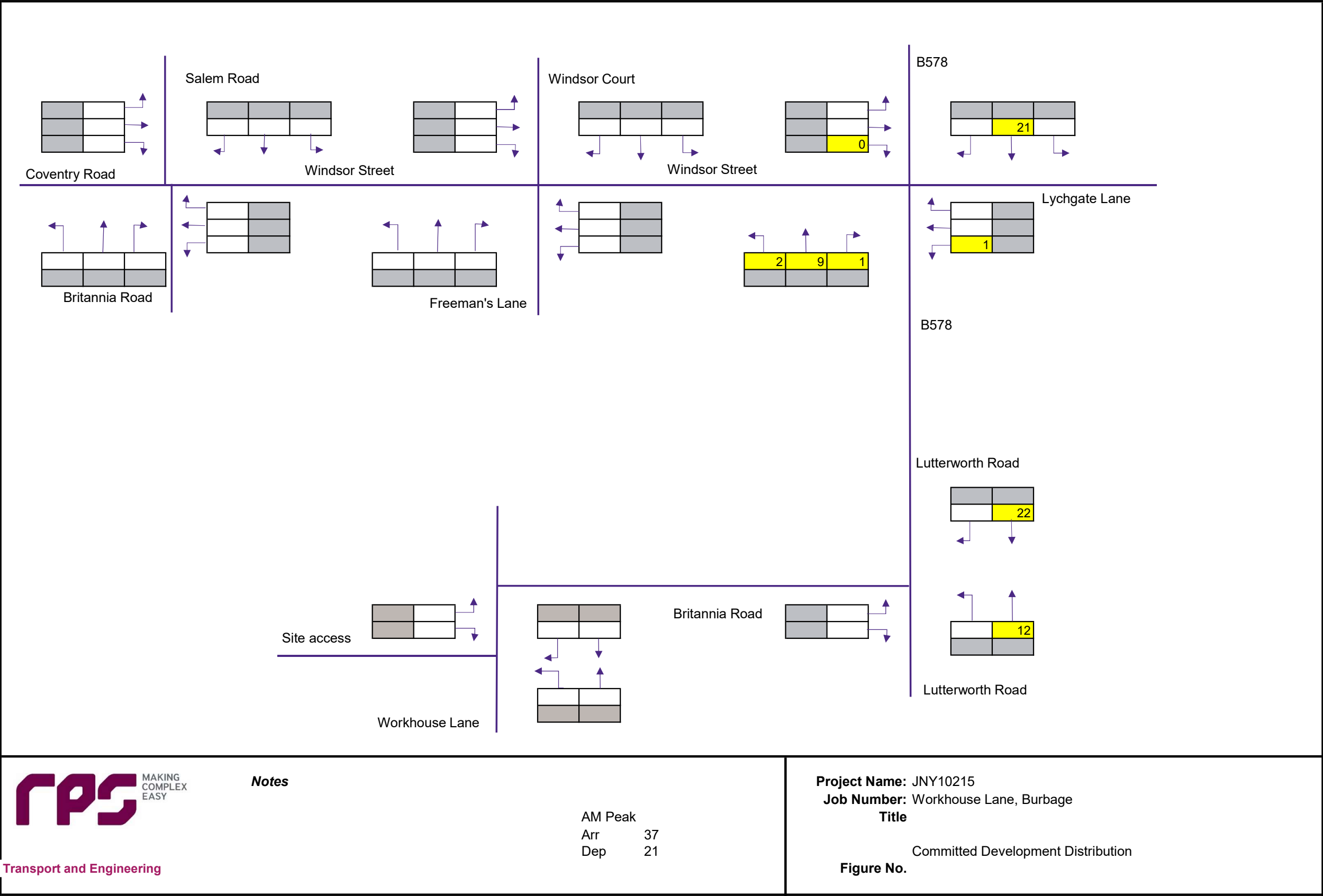


Notes

AM Peak  
Arr 16  
Dep 55

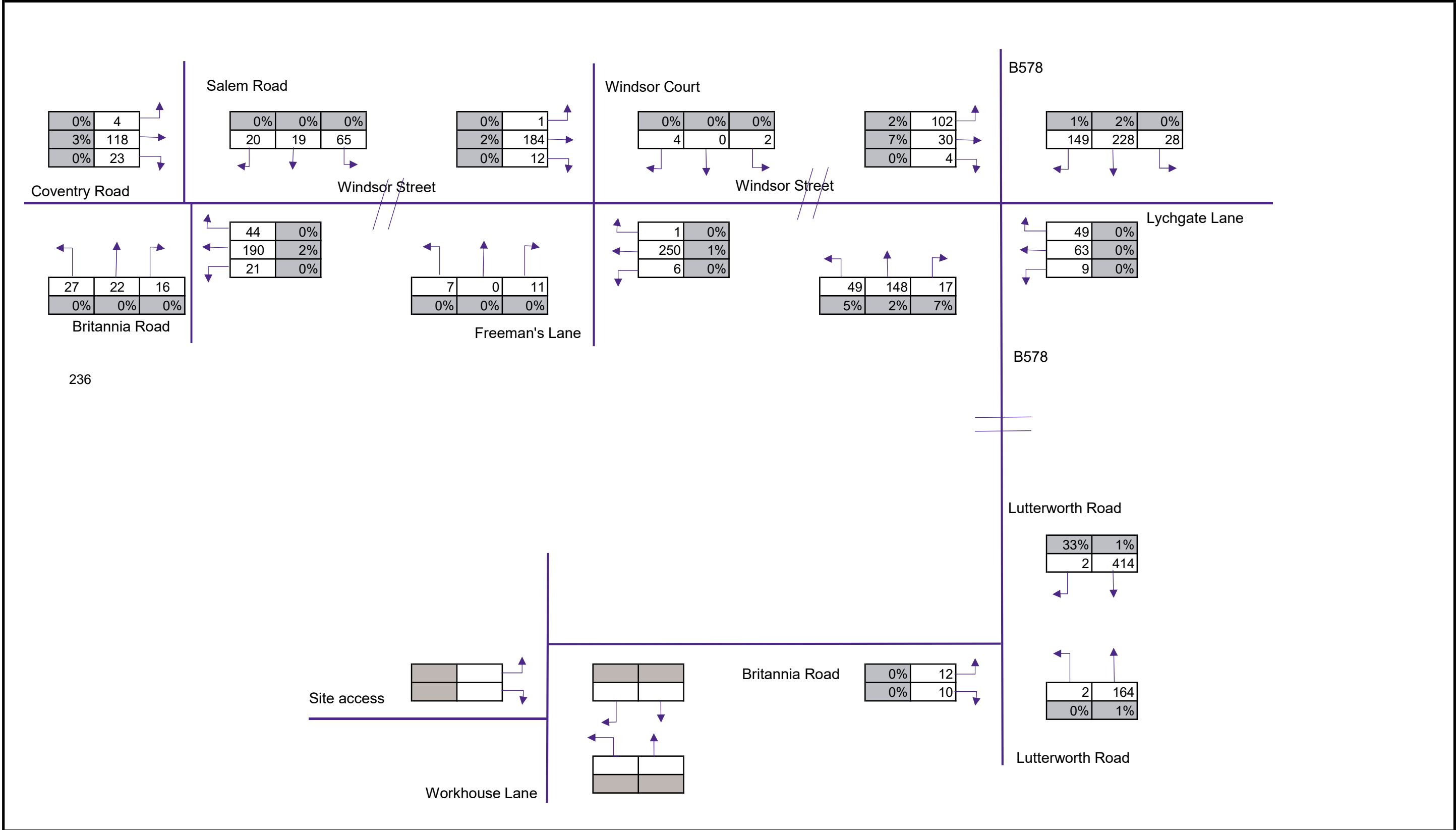
Transport and Engineering

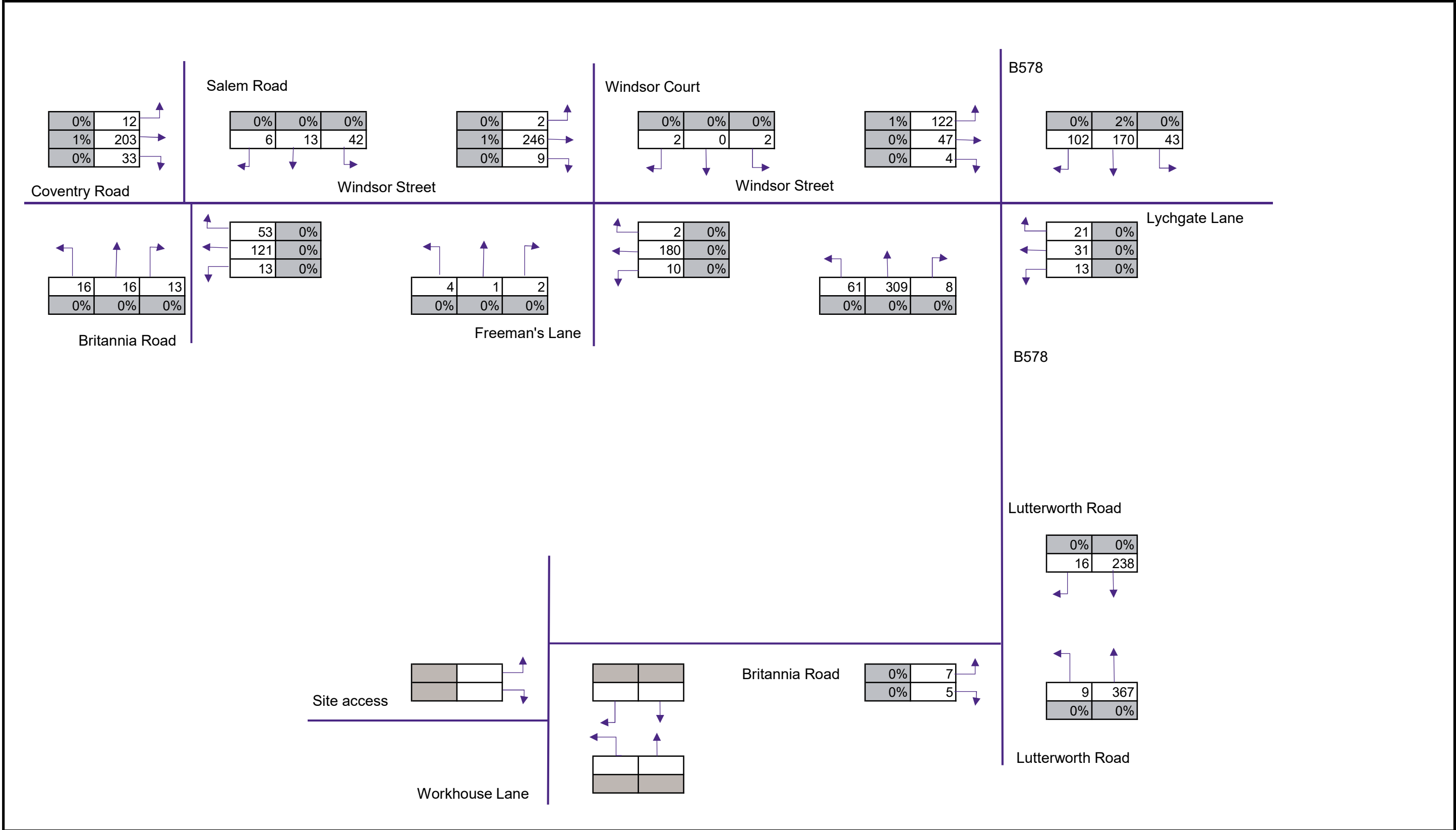
Project Name: JNY10215  
Job Number: Workhouse Lane, Burbage  
Title  
Committed Development Distribution  
Figure No.

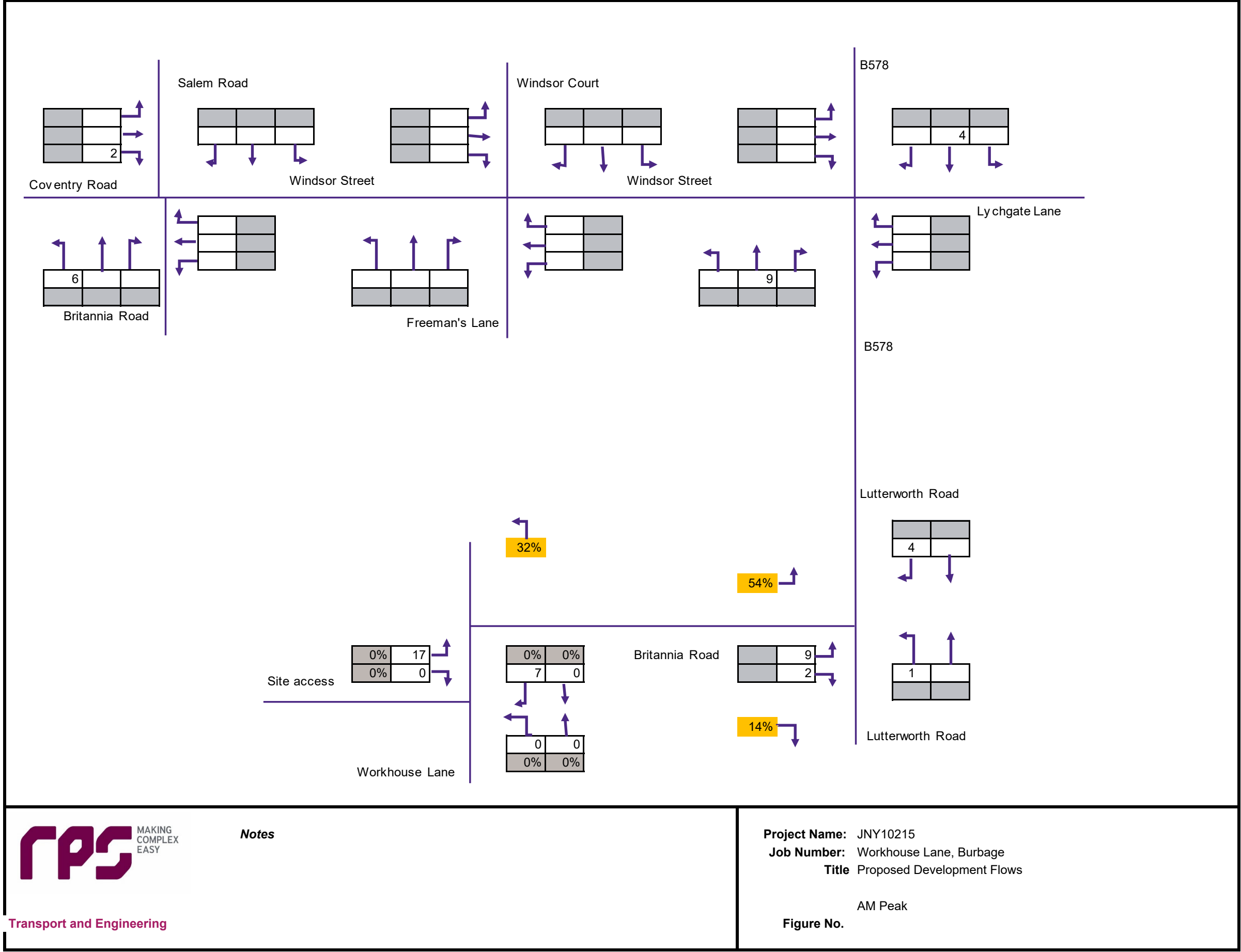


Transport and Engineering





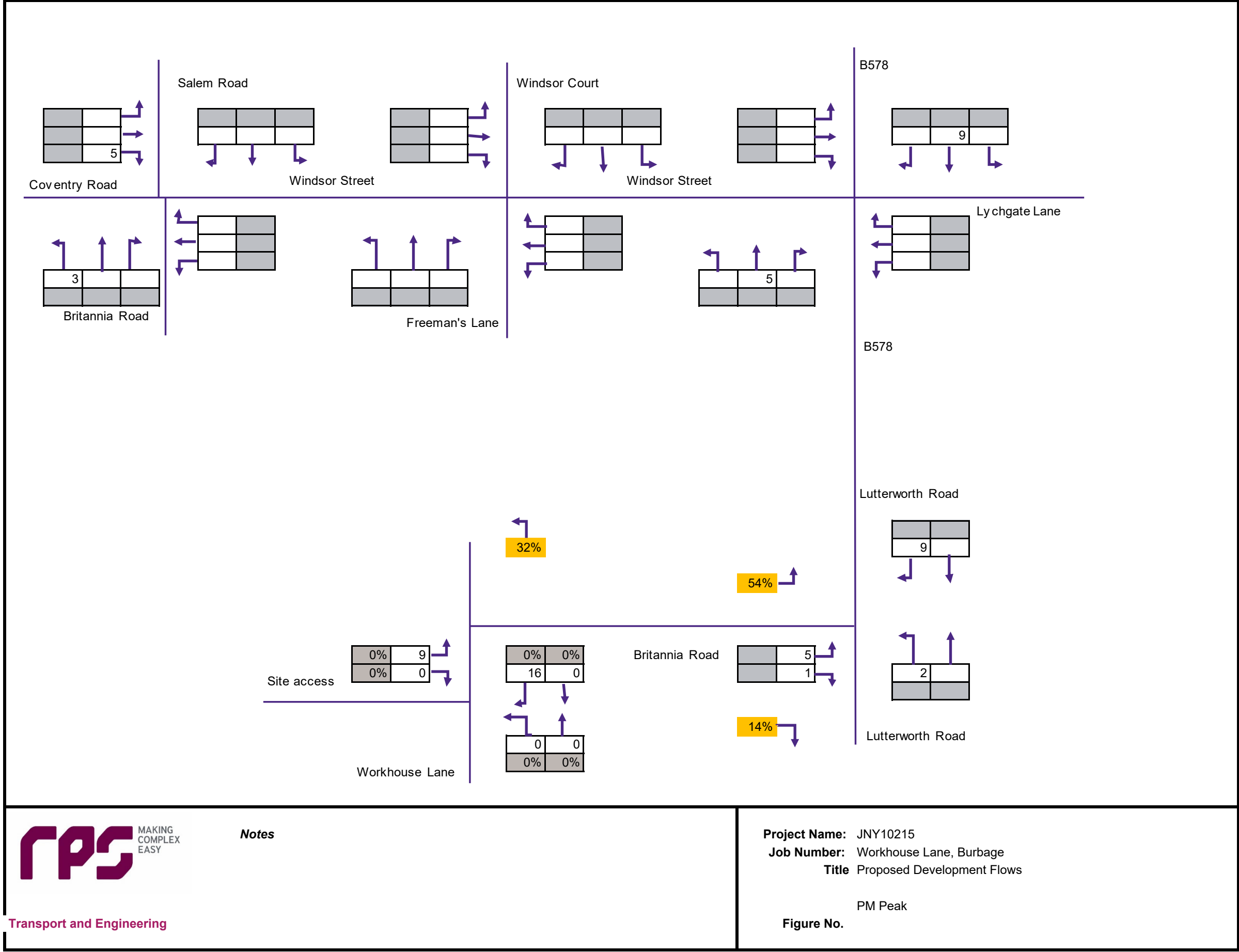


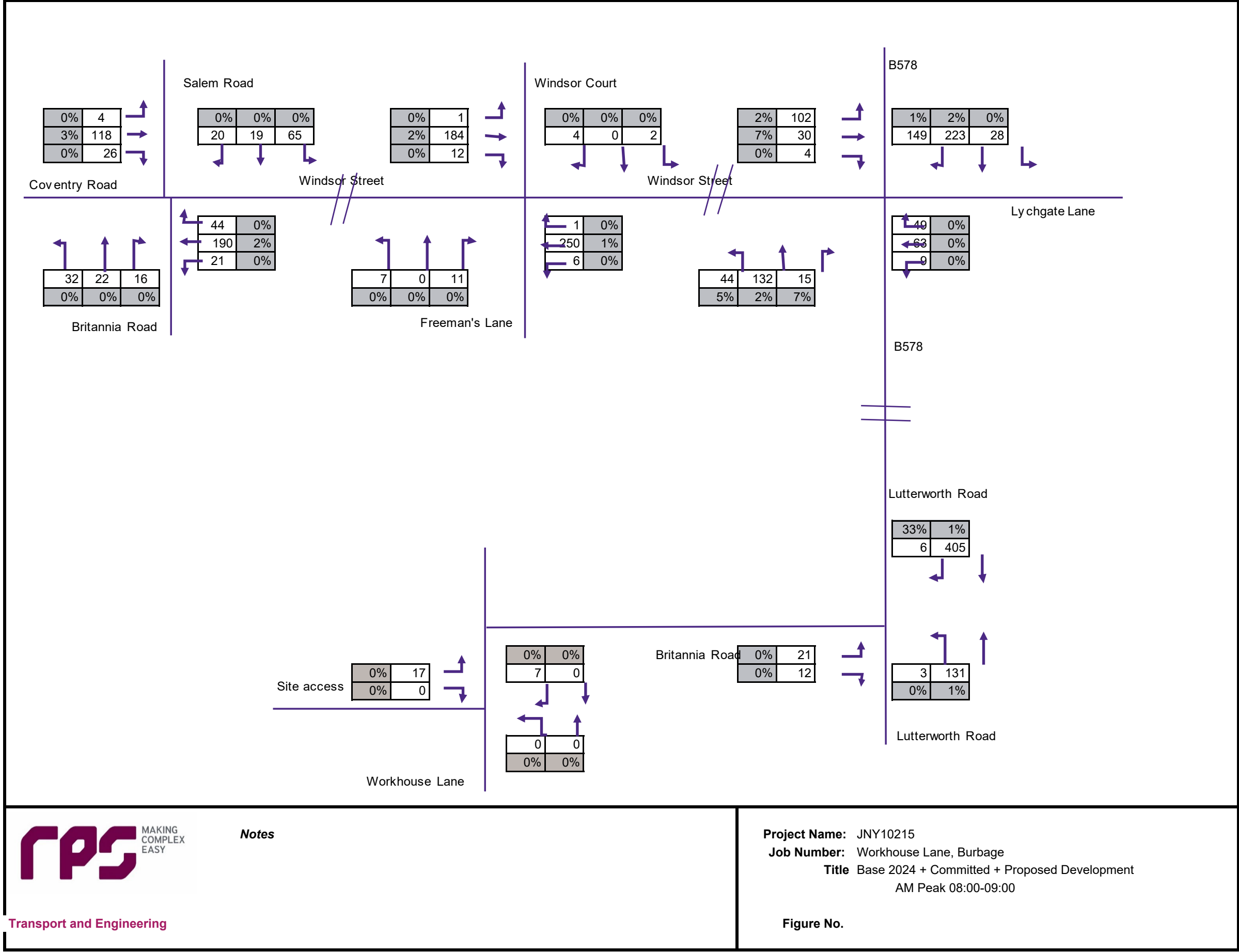


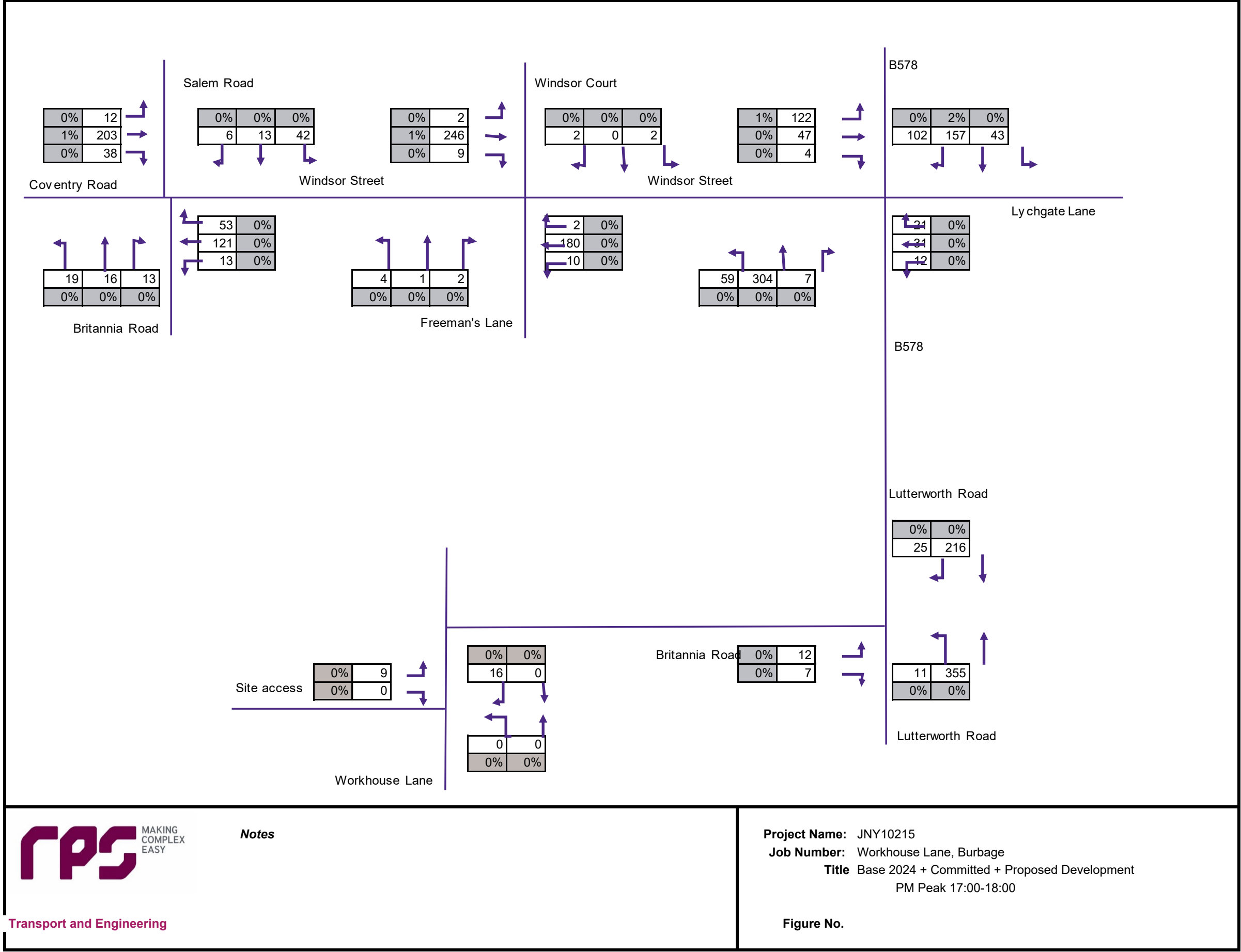
Notes

Transport and Engineering

Project Name: JNY10215  
Job Number: Workhouse Lane, Burbage  
Title: Proposed Development Flows  
AM Peak  
Figure No.







Notes

Transport and Engineering

Project Name: JNY10215  
Job Number: Workhouse Lane, Burbage  
Title Base 2024 + Committed + Proposed Development  
PM Peak 17:00-18:00

Figure No.

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## Appendix K – Junctions 9 Output

Junctions 9			
PICADY 9 - Priority Intersection Module			
Version: 9.0.2.5947 © Copyright TRL Limited, 2017			
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558   software@trl.co.uk   www.trlsoftware.co.uk			
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution			

**Filename:** Lutterworth Rd.Britannia Rd.j9  
**Path:** P:\JNY10215 - Workhouse Lane, Burbage\Transport\Picady  
**Report generation date:** 11/10/2019 15:23:26

»2019 , AM  
 »2019, PM  
 »2024 Base, AM  
 »2024 Base, PM  
 »2024 Proposed, AM  
 »2024 Proposed, PM  
 »2024 Base + Committed, AM  
 »2024 Base + Committed, PM  
 »2024 + Committed + Proposed, AM  
 »2024 + Committed + Proposed, PM

### Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2019								
Stream B-AC	0.0	8.20	0.05	A	0.0	8.66	0.03	A
Stream C-AB	0.0	8.09	0.01	A	0.0	6.95	0.03	A
2024 Base								
Stream B-AC	0.1	8.34	0.05	A	0.0	8.82	0.03	A
Stream C-AB	0.0	8.11	0.01	A	0.0	7.03	0.03	A
2024 Proposed								
Stream B-AC	0.1	8.40	0.10	A	0.1	8.73	0.06	A
Stream C-AB	0.0	7.97	0.02	A	0.1	7.20	0.07	A
2024 Base + Committed								
Stream B-AC	0.1	8.53	0.05	A	0.0	8.93	0.03	A
Stream C-AB	0.0	8.23	0.01	A	0.0	7.07	0.03	A
2024 + Committed + Proposed								
Stream B-AC	0.1	8.59	0.11	A	0.1	8.83	0.06	A
Stream C-AB	0.0	8.06	0.02	A	0.1	7.23	0.07	A

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

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

### File summary

#### File Description

Title	(untitled)
Location	
Site number	
Date	19/07/2019
Version	



<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	EUR\Danesh.Aryan
<b>Description</b>	

## 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	Veh	Veh	perHour	s	-Min	perMin

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2019	AM	ONE HOUR	08:00	09:30	15	✓
D2	2019	PM	ONE HOUR	17:00	18:30	15	✓
D3	2024 Base	AM	ONE HOUR	08:00	09:30	15	✓
D4	2024 Base	PM	ONE HOUR	17:00	18:30	15	✓
D5	2024 Proposed	AM	ONE HOUR	08:00	09:30	15	✓
D6	2024 Proposed	PM	ONE HOUR	17:00	18:30	15	✓
D7	2024 Base + Committed	AM	ONE HOUR	08:00	09:30	15	✓
D8	2024 Base + Committed	PM	ONE HOUR	17:00	18:30	15	✓
D9	2024 + Committed + Proposed	AM	ONE HOUR	08:00	09:30	15	✓
D10	2024 + Committed + Proposed	PM	ONE HOUR	17:00	18:30	15	✓

## Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

# 2019 , AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.35	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	Lutterworth Rd south		Major
B	Britannia Rd		Minor
C	Lutterworth Rd north		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 - Lutterworth Rd north	6.00			75.0	✓	1.00

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

### Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Britannia Rd	One lane	2.40	25	16

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	464	0.084	0.214	0.134	0.305
1	B-C	596	0.091	0.231	-	-
1	C-B	617	0.239	0.239	-	-

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)	Run automatically
D1	2019	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	125	100.000
B - Britannia Rd		ONE HOUR	✓	20	100.000
C - Lutterworth Rd north		ONE HOUR	✓	382	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
From	A - Lutterworth Rd south	0	2	123
	B - Britannia Rd	9	0	11
	C - Lutterworth Rd north	380	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
From	A - Lutterworth Rd south	0	0	1
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	1	33	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.05	8.20	0.0	A	18	28
C-AB	0.01	8.09	0.0	A	2	3
C-A					349	523
A-B					2	3
A-C					113	169

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	483	0.031	15	0.0	0.0	7.691	A
C-AB	2	0.38	451	0.003	2	0.0	0.0	8.007	A
C-A	286	72			286				
A-B	2	0.38			2				
A-C	93	23			93				

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS

B-AC	18	4	474	0.038	18	0.0	0.0	7.897	A
C-AB	2	0.45	449	0.004	2	0.0	0.0	8.046	A
C-A	342	85			342				
A-B	2	0.45			2				
A-C	111	28			111				

## 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	22	6	461	0.048	22	0.0	0.0	8.198	A
C-AB	2	0.56	447	0.005	2	0.0	0.0	8.093	A
C-A	418	105			418				
A-B	2	0.55			2				
A-C	135	34			135				

## 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	22	6	461	0.048	22	0.0	0.0	8.200	A
C-AB	2	0.56	447	0.005	2	0.0	0.0	8.093	A
C-A	418	105			418				
A-B	2	0.55			2				
A-C	135	34			135				

## 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	18	4	474	0.038	18	0.0	0.0	7.898	A
C-AB	2	0.45	449	0.004	2	0.0	0.0	8.046	A
C-A	342	85			342				
A-B	2	0.45			2				
A-C	111	28			111				

## 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	483	0.031	15	0.0	0.0	7.695	A
C-AB	2	0.38	451	0.003	2	0.0	0.0	8.009	A
C-A	286	72			286				
A-B	2	0.38			2				
A-C	93	23			93				

# 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	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.37	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)	Run automatically
D2	2019	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	340	100.000
B - Britannia Rd		ONE HOUR	✓	12	100.000
C - Lutterworth Rd north		ONE HOUR	✓	217	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	8	332
	B - Britannia Rd	5	0	7
	C - Lutterworth Rd north	202	15	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	0
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.03	8.66	0.0	A	11	17
C-AB	0.03	6.95	0.0	A	14	21
C-A					185	278
A-B					7	11
A-C					305	457

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	462	0.020	9	0.0	0.0	7.943	A
C-AB	11	3	559	0.020	11	0.0	0.0	6.569	A
C-A	152	38			152				
A-B	6	2			6				
A-C	250	62			250				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	448	0.024	11	0.0	0.0	8.230	A
C-AB	14	3	549	0.025	14	0.0	0.0	6.725	A
C-A	181	45			181				
A-B	7	2			7				
A-C	298	75			298				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	429	0.031	13	0.0	0.0	8.662	A
C-AB	17	4	535	0.031	17	0.0	0.0	6.947	A
C-A	222	56			222				
A-B	9	2			9				
A-C	366	91			366				

#### 17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	429	0.031	13	0.0	0.0	8.662	A
C-AB	17	4	535	0.031	17	0.0	0.0	6.947	A
C-A	222	56			222				
A-B	9	2			9				
A-C	366	91			366				

#### 18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	448	0.024	11	0.0	0.0	8.233	A

<b>C-AB</b>	14	3	549	0.025	14	0.0	0.0	6.729	A
<b>C-A</b>	181	45			181				
<b>A-B</b>	7	2			7				
<b>A-C</b>	298	75			298				

**18:15 - 18:30**

<b>Stream</b>	<b>Total Demand (Veh/hr)</b>	<b>Junction Arrivals (Veh)</b>	<b>Capacity (Veh/hr)</b>	<b>RFC</b>	<b>Throughput (Veh/hr)</b>	<b>Start queue (Veh)</b>	<b>End queue (Veh)</b>	<b>Delay (s)</b>	<b>LOS</b>
<b>B-AC</b>	9	2	462	0.020	9	0.0	0.0	7.947	A
<b>C-AB</b>	11	3	559	0.020	11	0.0	0.0	6.572	A
<b>C-A</b>	152	38			152				
<b>A-B</b>	6	2			6				
<b>A-C</b>	250	62			250				

# 2024 Base, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.36	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)	Run automatically
D3	2024 Base	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	133	100.000
B - Britannia Rd		ONE HOUR	✓	22	100.000
C - Lutterworth Rd north		ONE HOUR	✓	407	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	2	131
	B - Britannia Rd	10	0	12
	C - Lutterworth Rd north	405	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	1
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	1	33	0

## Results



### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.05	8.34	0.1	A	20	30
C-AB	0.01	8.11	0.0	A	2	3
C-A					372	557
A-B					2	3
A-C					120	180

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	479	0.035	16	0.0	0.0	7.777	A
C-AB	2	0.38	450	0.003	2	0.0	0.0	8.022	A
C-A	305	76			305				
A-B	2	0.38			2				
A-C	99	25			99				

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	20	5	469	0.042	20	0.0	0.0	8.007	A
C-AB	2	0.46	448	0.004	2	0.0	0.0	8.062	A
C-A	364	91			364				
A-B	2	0.45			2				
A-C	118	29			118				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	456	0.053	24	0.0	0.1	8.343	A
C-AB	2	0.56	446	0.005	2	0.0	0.0	8.113	A
C-A	446	111			446				
A-B	2	0.55			2				
A-C	144	36			144				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	456	0.053	24	0.1	0.1	8.345	A
C-AB	2	0.56	446	0.005	2	0.0	0.0	8.113	A
C-A	446	111			446				
A-B	2	0.55			2				
A-C	144	36			144				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	20	5	469	0.042	20	0.1	0.0	8.009	A
C-AB	2	0.46	448	0.004	2	0.0	0.0	8.063	A
C-A	364	91			364				
A-B	2	0.45			2				
A-C	118	29			118				

## 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	479	0.035	17	0.0	0.0	7.783	A
C-AB	2	0.38	450	0.003	2	0.0	0.0	8.022	A
C-A	305	76			305				
A-B	2	0.38			2				
A-C	99	25			99				

# 2024 Base, PM

## Data Errors and Warnings

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

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.36	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)	Run automatically
D4	2024 Base	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	364	100.000
B - Britannia Rd		ONE HOUR	✓	12	100.000
C - Lutterworth Rd north		ONE HOUR	✓	232	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	9	355
	B - Britannia Rd	5	0	7
	C - Lutterworth Rd north	216	16	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	0
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.03	8.82	0.0	A	11	17
C-AB	0.03	7.03	0.0	A	15	22
C-A					198	297
A-B					8	12
A-C					326	489

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	457	0.020	9	0.0	0.0	8.032	A
C-AB	12	3	555	0.022	12	0.0	0.0	6.625	A
C-A	163	41			163				
A-B	7	2			7				
A-C	267	67			267				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	442	0.024	11	0.0	0.0	8.344	A
C-AB	15	4	544	0.027	15	0.0	0.0	6.794	A
C-A	194	49			194				
A-B	8	2			8				
A-C	319	80			319				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	421	0.031	13	0.0	0.0	8.819	A
C-AB	18	4	530	0.034	18	0.0	0.0	7.034	A
C-A	238	59			238				
A-B	10	2			10				
A-C	391	98			391				

#### 17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	421	0.031	13	0.0	0.0	8.819	A
C-AB	18	4	530	0.034	18	0.0	0.0	7.034	A
C-A	238	59			238				
A-B	10	2			10				
A-C	391	98			391				

#### 18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	442	0.024	11	0.0	0.0	8.345	A

<b>C-AB</b>	15	4	544	0.027	15	0.0	0.0	6.797	A
<b>C-A</b>	194	49			194				
<b>A-B</b>	8	2			8				
<b>A-C</b>	319	80			319				

**18:15 - 18:30**

<b>Stream</b>	<b>Total Demand (Veh/hr)</b>	<b>Junction Arrivals (Veh)</b>	<b>Capacity (Veh/hr)</b>	<b>RFC</b>	<b>Throughput (Veh/hr)</b>	<b>Start queue (Veh)</b>	<b>End queue (Veh)</b>	<b>Delay (s)</b>	<b>LOS</b>
<b>B-AC</b>	9	2	457	0.020	9	0.0	0.0	8.036	A
<b>C-AB</b>	12	3	555	0.022	12	0.0	0.0	6.628	A
<b>C-A</b>	163	41			163				
<b>A-B</b>	7	2			7				
<b>A-C</b>	267	67			267				

# 2024 Proposed, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.79	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)	Run automatically
D5	2024 Proposed	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	135	100.000
B - Britannia Rd		ONE HOUR	✓	45	100.000
C - Lutterworth Rd north		ONE HOUR	✓	414	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	4	131
	B - Britannia Rd	15	0	30
	C - Lutterworth Rd north	405	9	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	1
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	1	33	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	8.40	0.1	A	41	62
C-AB	0.02	7.97	0.0	A	9	13
C-A					371	557
A-B					4	6
A-C					120	180

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	34	8	500	0.068	34	0.0	0.1	7.718	A
C-AB	7	2	459	0.015	7	0.0	0.0	7.965	A
C-A	305	76			305				
A-B	3	0.75			3				
A-C	99	25			99				

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	40	10	491	0.082	40	0.1	0.1	7.994	A
C-AB	8	2	461	0.018	8	0.0	0.0	7.969	A
C-A	364	91			364				
A-B	4	0.90			4				
A-C	118	29			118				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	50	12	478	0.104	49	0.1	0.1	8.401	A
C-AB	10	3	464	0.023	10	0.0	0.0	7.954	A
C-A	445	111			445				
A-B	4	1			4				
A-C	144	36			144				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	50	12	478	0.104	50	0.1	0.1	8.404	A
C-AB	10	3	463	0.023	10	0.0	0.0	7.954	A
C-A	445	111			445				
A-B	4	1			4				
A-C	144	36			144				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	40	10	491	0.082	41	0.1	0.1	8.001	A
C-AB	8	2	459	0.018	8	0.0	0.0	7.971	A
C-A	364	91			364				
A-B	4	0.90			4				
A-C	118	29			118				

## 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	34	8	500	0.068	34	0.1	0.1	7.731	A
C-AB	7	2	458	0.015	7	0.0	0.0	7.967	A
C-A	305	76			305				
A-B	3	0.75			3				
A-C	99	25			99				



# 2024 Proposed, 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	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.69	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)	Run automatically
D6	2024 Proposed	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	368	100.000
B - Britannia Rd		ONE HOUR	✓	23	100.000
C - Lutterworth Rd north		ONE HOUR	✓	249	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	13	355
	B - Britannia Rd	7	0	16
	C - Lutterworth Rd north	216	33	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	0
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.06	8.73	0.1	A	21	32
C-AB	0.07	7.20	0.1	A	31	46
C-A					198	296
A-B					12	18
A-C					326	489

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	473	0.037	17	0.0	0.0	7.889	A
C-AB	25	6	558	0.045	25	0.0	0.0	6.747	A
C-A	162	41			162				
A-B	10	2			10				
A-C	267	67			267				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	21	5	458	0.045	21	0.0	0.0	8.222	A
C-AB	30	8	549	0.055	30	0.0	0.1	6.939	A
C-A	194	48			194				
A-B	12	3			12				
A-C	319	80			319				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	25	6	438	0.058	25	0.0	0.1	8.728	A
C-AB	37	9	537	0.070	37	0.1	0.1	7.205	A
C-A	237	59			237				
A-B	14	4			14				
A-C	391	98			391				

#### 17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	25	6	438	0.058	25	0.1	0.1	8.729	A
C-AB	37	9	537	0.070	37	0.1	0.1	7.205	A
C-A	237	59			237				
A-B	14	4			14				
A-C	391	98			391				

#### 18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	21	5	458	0.045	21	0.1	0.0	8.225	A

<b>C-AB</b>	30	8	549	0.055	30	0.1	0.1	6.944	A
<b>C-A</b>	194	48			194				
<b>A-B</b>	12	3			12				
<b>A-C</b>	319	80			319				

**18:15 - 18:30**

<b>Stream</b>	<b>Total Demand (Veh/hr)</b>	<b>Junction Arrivals (Veh)</b>	<b>Capacity (Veh/hr)</b>	<b>RFC</b>	<b>Throughput (Veh/hr)</b>	<b>Start queue (Veh)</b>	<b>End queue (Veh)</b>	<b>Delay (s)</b>	<b>LOS</b>
<b>B-AC</b>	17	4	473	0.037	17	0.0	0.0	7.897	A
<b>C-AB</b>	25	6	558	0.045	25	0.1	0.0	6.751	A
<b>C-A</b>	162	41			162				
<b>A-B</b>	10	2			10				
<b>A-C</b>	267	67			267				

# 2024 Base + Committed, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.34	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)	Run automatically
D7	2024 Base + Committed	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	166	100.000
B - Britannia Rd		ONE HOUR	✓	22	100.000
C - Lutterworth Rd north		ONE HOUR	✓	416	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	2	164
	B - Britannia Rd	10	0	12
	C - Lutterworth Rd north	414	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	1
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	1	33	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.05	8.53	0.1	A	20	30
C-AB	0.01	8.23	0.0	A	2	3
C-A					380	570
A-B					2	3
A-C					150	226

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	473	0.035	16	0.0	0.0	7.885	A
C-AB	2	0.38	446	0.003	2	0.0	0.0	8.101	A
C-A	312	78			312				
A-B	2	0.38			2				
A-C	123	31			123				

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	20	5	462	0.043	20	0.0	0.0	8.144	A
C-AB	2	0.46	443	0.004	2	0.0	0.0	8.158	A
C-A	372	93			372				
A-B	2	0.45			2				
A-C	147	37			147				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	446	0.054	24	0.0	0.1	8.527	A
C-AB	2	0.56	440	0.005	2	0.0	0.0	8.230	A
C-A	456	114			456				
A-B	2	0.55			2				
A-C	181	45			181				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	446	0.054	24	0.1	0.1	8.529	A
C-AB	2	0.56	440	0.005	2	0.0	0.0	8.230	A
C-A	456	114			456				
A-B	2	0.55			2				
A-C	181	45			181				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	20	5	462	0.043	20	0.1	0.0	8.147	A
C-AB	2	0.46	443	0.004	2	0.0	0.0	8.159	A
C-A	372	93			372				
A-B	2	0.45			2				
A-C	147	37			147				

## 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	473	0.035	17	0.0	0.0	7.892	A
C-AB	2	0.38	446	0.003	2	0.0	0.0	8.103	A
C-A	312	78			312				
A-B	2	0.38			2				
A-C	123	31			123				

# 2024 Base + Committed, PM

## Data Errors and Warnings

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

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.35	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)	Run automatically
D8	2024 Base + Committed	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	376	100.000
B - Britannia Rd		ONE HOUR	✓	12	100.000
C - Lutterworth Rd north		ONE HOUR	✓	254	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	9	367
	B - Britannia Rd	5	0	7
	C - Lutterworth Rd north	238	16	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	0
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.03	8.93	0.0	A	11	17
C-AB	0.03	7.07	0.0	A	15	22
C-A					218	327
A-B					8	12
A-C					337	505

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	454	0.020	9	0.0	0.0	8.093	A
C-AB	12	3	554	0.022	12	0.0	0.0	6.647	A
C-A	179	45			179				
A-B	7	2			7				
A-C	276	69			276				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	438	0.025	11	0.0	0.0	8.424	A
C-AB	15	4	542	0.027	15	0.0	0.0	6.820	A
C-A	214	53			214				
A-B	8	2			8				
A-C	330	82			330				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	416	0.032	13	0.0	0.0	8.930	A
C-AB	18	4	527	0.034	18	0.0	0.0	7.066	A
C-A	262	65			262				
A-B	10	2			10				
A-C	404	101			404				

#### 17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	416	0.032	13	0.0	0.0	8.930	A
C-AB	18	4	527	0.034	18	0.0	0.0	7.069	A
C-A	262	65			262				
A-B	10	2			10				
A-C	404	101			404				

#### 18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	438	0.025	11	0.0	0.0	8.425	A



<b>C-AB</b>	15	4	542	0.027	15	0.0	0.0	6.821	A
<b>C-A</b>	214	53			214				
<b>A-B</b>	8	2			8				
<b>A-C</b>	330	82			330				

**18:15 - 18:30**

<b>Stream</b>	<b>Total Demand (Veh/hr)</b>	<b>Junction Arrivals (Veh)</b>	<b>Capacity (Veh/hr)</b>	<b>RFC</b>	<b>Throughput (Veh/hr)</b>	<b>Start queue (Veh)</b>	<b>End queue (Veh)</b>	<b>Delay (s)</b>	<b>LOS</b>
<b>B-AC</b>	9	2	454	0.020	9	0.0	0.0	8.097	A
<b>C-AB</b>	12	3	554	0.022	12	0.0	0.0	6.650	A
<b>C-A</b>	179	45			179				
<b>A-B</b>	7	2			7				
<b>A-C</b>	276	69			276				

# 2024 + Committed + Proposed, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.75	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2024 + Committed + Proposed	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	168	100.000
B - Britannia Rd		ONE HOUR	✓	45	100.000
C - Lutterworth Rd north		ONE HOUR	✓	423	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	4	164
	B - Britannia Rd	15	0	30
	C - Lutterworth Rd north	414	9	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	1
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	1	33	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.11	8.59	0.1	A	41	62
C-AB	0.02	8.06	0.0	A	9	13
C-A					380	569
A-B					4	6
A-C					150	226

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	34	8	493	0.069	34	0.0	0.1	7.823	A
C-AB	7	2	455	0.015	7	0.0	0.0	8.038	A
C-A	311	78			311				
A-B	3	0.75			3				
A-C	123	31			123				

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	40	10	483	0.084	40	0.1	0.1	8.130	A
C-AB	8	2	456	0.019	8	0.0	0.0	8.055	A
C-A	372	93			372				
A-B	4	0.90			4				
A-C	147	37			147				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	50	12	469	0.106	49	0.1	0.1	8.586	A
C-AB	11	3	458	0.023	11	0.0	0.0	8.056	A
C-A	455	114			455				
A-B	4	1			4				
A-C	181	45			181				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	50	12	469	0.106	50	0.1	0.1	8.590	A
C-AB	11	3	457	0.023	11	0.0	0.0	8.056	A
C-A	455	114			455				
A-B	4	1			4				
A-C	181	45			181				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	40	10	483	0.084	41	0.1	0.1	8.135	A
C-AB	8	2	454	0.019	8	0.0	0.0	8.056	A
C-A	372	93			372				
A-B	4	0.90			4				
A-C	147	37			147				

## 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	34	8	493	0.069	34	0.1	0.1	7.837	A
C-AB	7	2	454	0.015	7	0.0	0.0	8.042	A
C-A	311	78			311				
A-B	3	0.75			3				
A-C	123	31			123				

# 2024 + Committed + Proposed, 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	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.66	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)	Run automatically
D10	2024 + Committed + Proposed	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lutterworth Rd south		ONE HOUR	✓	380	100.000
B - Britannia Rd		ONE HOUR	✓	23	100.000
C - Lutterworth Rd north		ONE HOUR	✓	271	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	13	367
	B - Britannia Rd	7	0	16
	C - Lutterworth Rd north	238	33	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
From		A - Lutterworth Rd south	B - Britannia Rd	C - Lutterworth Rd north
	A - Lutterworth Rd south	0	0	0
	B - Britannia Rd	0	0	0
	C - Lutterworth Rd north	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.06	8.83	0.1	A	21	32
C-AB	0.07	7.23	0.1	A	31	47
C-A					218	326
A-B					12	18
A-C					337	505

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	470	0.037	17	0.0	0.0	7.943	A
C-AB	25	6	557	0.045	25	0.0	0.0	6.765	A
C-A	179	45			179				
A-B	10	2			10				
A-C	276	69			276				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	21	5	455	0.045	21	0.0	0.0	8.294	A
C-AB	30	8	548	0.055	30	0.0	0.1	6.959	A
C-A	213	53			213				
A-B	12	3			12				
A-C	330	82			330				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	25	6	433	0.058	25	0.0	0.1	8.829	A
C-AB	38	9	536	0.070	38	0.1	0.1	7.226	A
C-A	261	65			261				
A-B	14	4			14				
A-C	404	101			404				

#### 17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	25	6	433	0.058	25	0.1	0.1	8.831	A
C-AB	38	9	536	0.070	38	0.1	0.1	7.226	A
C-A	261	65			261				
A-B	14	4			14				
A-C	404	101			404				

#### 18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	21	5	455	0.045	21	0.1	0.0	8.297	A

<b>C-AB</b>	30	8	548	0.055	30	0.1	0.1	6.961	A
<b>C-A</b>	213	53			213				
<b>A-B</b>	12	3			12				
<b>A-C</b>	330	82			330				

**18:15 - 18:30**

<b>Stream</b>	<b>Total Demand (Veh/hr)</b>	<b>Junction Arrivals (Veh)</b>	<b>Capacity (Veh/hr)</b>	<b>RFC</b>	<b>Throughput (Veh/hr)</b>	<b>Start queue (Veh)</b>	<b>End queue (Veh)</b>	<b>Delay (s)</b>	<b>LOS</b>
<b>B-AC</b>	17	4	470	0.037	17	0.0	0.0	7.950	A
<b>C-AB</b>	25	6	557	0.045	25	0.1	0.0	6.769	A
<b>C-A</b>	179	45			179				
<b>A-B</b>	10	2			10				
<b>A-C</b>	276	69			276				

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