West Lancashire Route Management Strategy

Lancashire County Council

Stage 2 Report

OD-1 | Rev2.2

02 August 2017

West Lancashire Route Management Strategy

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Contents

Executive Summary

Lancashire County Council's (LCC) West Lancashire Highways and Transport Masterplan (2014) proposed the development of a West Lancashire Route Management Strategy (WLRMS). This proposal built on previous work examining the West Lancashire road network and most notably the A570 corridor linking the M58 with Southport; which ultimately led to LCC withdrawing proposals for an Ormskirk bypass in favour of developing a strategy to reduce traffic flows within Ormskirk and to better manage that traffic which could not be removed.

This document forms Stage 2 of the WLRMS and builds upon data collection and problem identification completed by LCC as Stage 1 (February 2016). This document provides a strategic assessment of transport issues within West Lancashire, and identifies interventions aimed at improving the performance of West Lancashire's key routes and wider road network. In doing this it gives particular attention to significant locations where the need for intervention has been identified, including the key settlements of Ormskirk and Burscough, and two further areas of interest; Derby Street Bridge in Ormskirk and Bank Bridge in Tarleton. Subsequently, the WLRMS provides a platform for the identification of transport issues within Ormskirk, and the development of a package of measures to best compliment any decision made on the future of Derby Street Bridge.

Whilst the WLRMS considers sustainable transport solutions to ensure a holistic approach it is primarily a highways oriented report with the options focused around improvements to the local highway network.

The study area of the WLRMS was identified as part of Stage 1 and includes most of the principal road network within West Lancashire west of the M6 between Junctions 26 and 28 and north of the M58 between the M6 Junction 26 at Orrell and the Switch Island Junction south-west of Maghull. In addition, a number of routes crossing the County boundary with Sefton were also considered.

The methodology adopted for the development of WLRMS is based on Route Management Strategy guidance produced by Jacobs on behalf of LCC in 2012. In line with this guidance LCC, as part of Stage 1, carried out data collation and quantified transport issues and problems within the study area. Building upon Stage 1 Jacobs, as part of Stage 2, has undertaken network functions and performance analysis using an adopted Lancashire Movement and Place matrix and developed a list of bespoke network objectives which have been subsequently agreed with LCC, West Lancashire Borough Council, and other stakeholders in a workshop held in Preston in January 2017.

Network Objectives

- **NO1 - Improve the quality of life for residents affected by traffic using inappropriate routes, particularly heavy goods vehicles**
- **NO2 - Ensure the transport network supports long-term economic success and facilitates growth**
- **NO 3 - Improve journey time reliability for all modes of transport on Key Route Network**
- **NO 4 Improve safety for all highway users**
- **NO 5 Ensure the route network is well maintained and resilient to the impacts of incidents and the environment**
- **NO 6 Reduce the negative impacts of traffic on local communities**

The agreed network objectives provided a framework for the development of a long list of intervention options which was generated through site visits, policy review, and stakeholder engagement.

This long list was sifted against deliverability, feasibility, and perceived value for money to provide a shortlist of better performing options. Finally, the options which made the shortlist were ranked in terms of their overall strategic fit with the network objectives using Jacobs' bespoke Option Appraisal Tool (OAT).

This process led to the defined WLRMS which included preferred options for Derby Bridge and Bank Bridge along with the list of priority interventions for consideration through LCC's Capital Programme. All the appraised interventions have been grouped into four key components, which when taken as a whole provide a holistic approach to the existing and future management of the network.

1. Introduction

1.1 Background

Lancashire County Council's (LCC) West Lancashire Highways and Transport Masterplan (2014) proposed the development of a West Lancashire Route Management Strategy (WLRMS) as a way of identifying potential network improvements, including maximising the benefits of improvements elsewhere, including in neighbouring authorities and on the Strategic Road Network.

The West Lancashire Highways and Transport Masterplan also outlines a vision for Ormskirk to have a town centre that is not clogged by traffic, allowing it to function effectively as West Lancashire's market town and principal service centre. Previous work to date has focused primarily on the A570 corridor linking the M58 with Southport; which ultimately led to LCC withdrawing proposals for an Ormskirk bypass in favour of developing a strategy to reduce traffic flows within Ormskirk and to better manage that traffic which could not be removed. Subsequently, the WLRMS was identified as a means of undertaking a strategic assessment of potential interventions in West Lancashire's network in order to inform local decision making.

LCC undertook data collection, stakeholder engagement, and problem identification as Stage 1 of the WLRMS which was finalised in February 2016. Following this LCC commissioned Jacobs to develop Stage 2 of the WLRMS building upon Stage 1. The scope and purpose of Stage 2 was agreed between Jacobs and LCC in the Inception meeting held on 2nd December 2016.

1.2 Report Purpose

This report forms Stage 2 of the WLRMS and sets out the methodology adopted for WLRMS development. It builds upon Stage 1 to provide a strategic assessment of West Lancashire's network and identify favourable interventions to take forward across West Lancashire's main network and in particular for Derby Street Bridge in Ormskirk and Bank Bridge in Tarleton. In doing this it will provide LCC with a consistent framework for the management of West Lancashire's network and inform future investment decisions.

Derby Street Bridge is located in central Ormskirk on the A570 gyratory and as such any future traffic management decisions in terms of bridge operation have the potential to impact local and sub-regional traffic flows. This report undertakes a strategic assessment of Derby Street Bridge and potential future interventions. In this way it provides a platform from which to develop a package of measures for Ormskirk which will be taken forward outside of this report and commission through the development of an Ormskirk Town Centre Movement Strategy which will include a fundamental review of traffic management, and propose a package of interventions for Ormskirk aimed at balancing local and regional requirements.

1.3 Scope and Study Area

1.3.1 Report Scope

The WLRMS investigates and details the functions and performance of West Lancashire's highway network. This includes assessment of the function and operation of the network comprising assessment of traffic, Non-Motorised Users (NMUs), and public transport to ensure a holistic approach which addresses all aspects of network operation and connectivity. It identifies locations where intervention is required, and details a long list of potential interventions based upon policy review, stakeholder engagement, and site visits. A high level prioritisation exercise has been completed to produce a short list of better performing options for potential future implementation.

Through data analysis and engagement with LCC and stakeholders it has become apparent that the efficient operation of Ormskirk's highway network is a main priority for West Lancashire. As such this report gives specific attention to Ormskirk and in particular Derby Street Bridge. However, it does not provide a holistic transport strategy for Ormskirk or indeed West Lancashire. Instead the WLRMS will feed into the development of a planned Ormskirk Town Centre Movement Strategy as discussed above.

1.3.2 Study Area

The network which was identified for consideration in the WLRMS (as identified within Stage 1) is shown below in Figure 1.1.

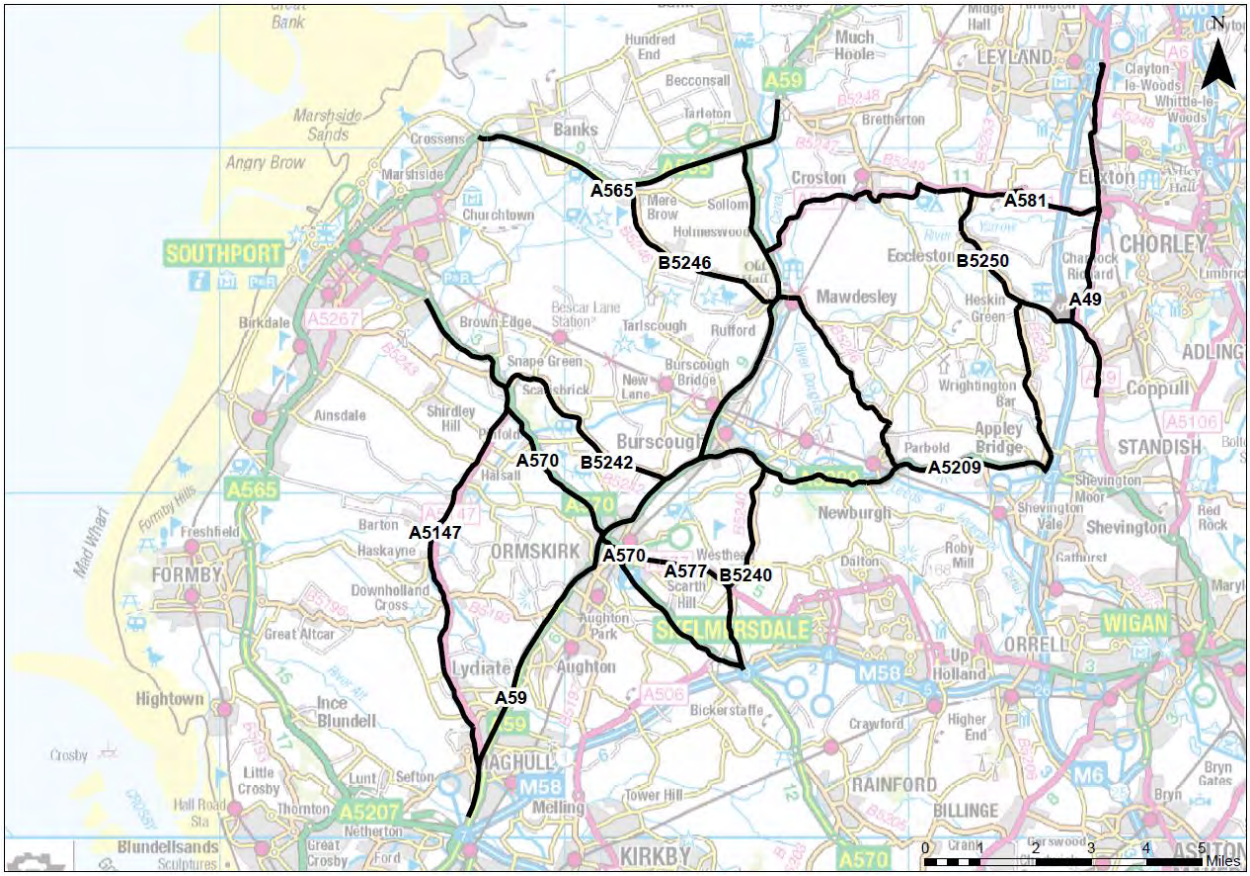


Figure 1.1: WLRMS Network

The identified network includes most of the principal road network within West Lancashire west of the M6 between Junctions 26 and 28 and north of the M58 between the M6 Junction 26 at Orrell and the Switch Island Junction south-west of Maghull. In addition, a number of routes crossing the County boundary with Sefton were also considered.

Skelmersdale is outside of the scope of the WLRMS, as agreed with LCC. This is due to the fact that a local strategy focusing on Skelmersdale is planned in connection with proposed major rail and town centre improvements. As such, Skelmersdale is discussed in passing in this report, but does not form a major focus.

Due to the large number of routes included in this study it was agreed with LCC that the strategy should focus on the functioning of the overall highway network rather than individual routes as a means of ensuring a proportionate approach.

1.4 Sources of Information

The following sources of information were used to inform this report:

- Route Management Strategy Guidance, Jacobs, 2012
- Department for Transport, Transport Analysis Guidance: WebTAG
- Report of the Corporate and Environmental Overview & Scrutiny Committee A Market Town Strategy for Ormskirk, West Lancashire Borough Council, 2016

- West Lancashire Route Management Strategy Stage 1 – Data Collection and Problem Identification, Lancashire County Council, 2016
- West Lancashire Local Plan 2012-2027, West Lancashire Borough Council
- West Lancashire Local Plan Annual Monitoring Report, 2016, West Lancashire Borough Council
- Sefton Local Plan 2015-2030, Sefton Borough Council
- West Lancashire Highways and Transport Masterplan, Lancashire County Council, 2014
- West Lancashire Highways and Transport Masterplan Consultation Report – Lancashire County Council, 2014
- Final Masterplan SPD, Yew Tree Farm, West Lancashire Borough Council, 2015
- Cuerden Strategic Site Masterplan Report, 2015
- Liverpool City Region Long Term Rail Strategy, Liverpool City Region, 2014
- Local Transport Plan 2011-2021, Delivering our Priorities: Implementation Plan for 2012/13 – 14/15, Lancashire County Council, 2012

1.5 Report Structure

The remainder of this report is structured as follows:

- Chapter 2 - Methodology
- Chapter 3 - Stakeholder Engagement
- Chapter 4 - Network Problem Identification
- Chapter 5 – Future Growth and Development
- Chapter 6 – Highway Functions and Performance Analysis
- Chapter 7 – Network Objectives
- Chapter 8 – Option Development and Sift
- Chapter 9 - Option Appraisal
- Chapter 10 - West Lancashire Route Management Strategy: Priority Interventions
- Chapter 11 - West Lancashire Route Management Strategy
- Chapter 12 - Summary and Conclusions

2. Methodology

2.1 Introduction

The methodology used for the WLRMS is based on Route Management Strategy guidance produced by Jacobs on behalf of LCC in 2012. The methodology was designed to conclude with the identification of a programme of interventions and investment priorities for the area of focus. The process, including Stage 1 (partially completed by LCC outside of this commission) and Stage 2 is schematically shown in Figure 2.1 below.

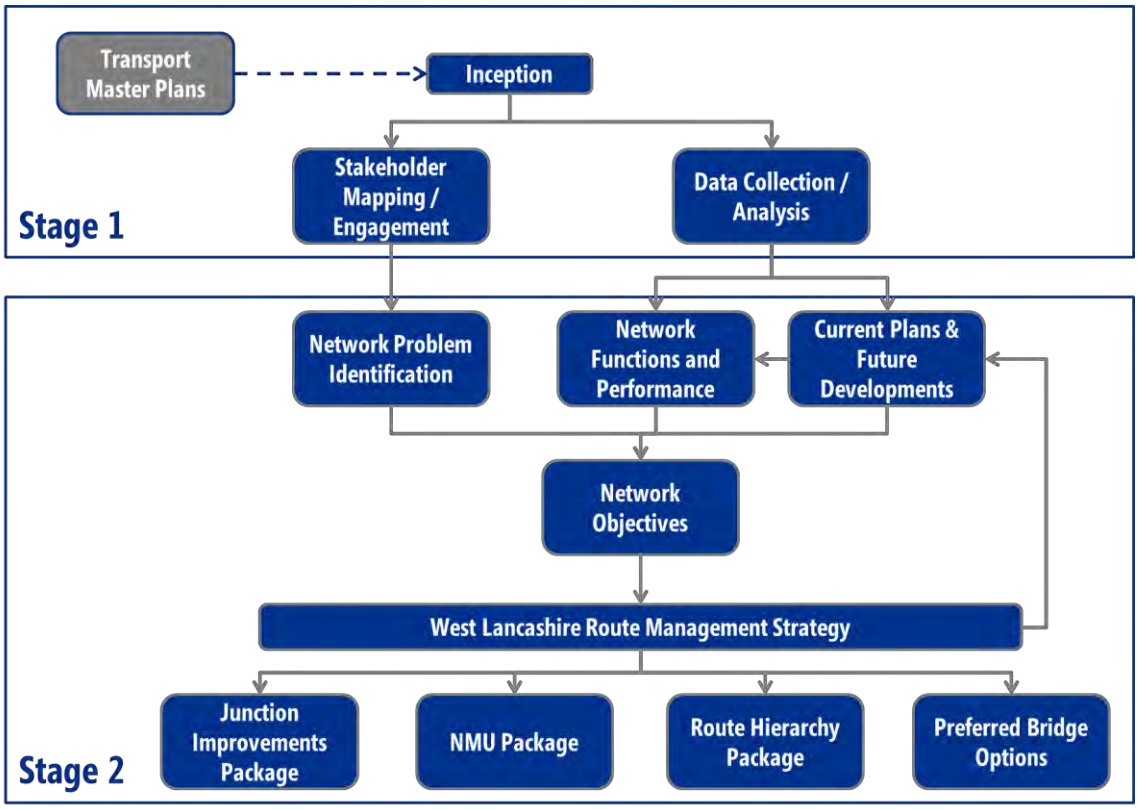


Figure 2.1: WLRMS Methodology

Whilst stakeholder engagement and data collection and analysis were included in Stage 1 it was agreed with LCC that additional work would be required on those methodology steps during Stage 2 to reinforce the evidence base informing the WLRMS. This included additional data collation and analysis with regards to public transport, congestion, safety, and signal operation; and further stakeholder engagement, including the conduction of a stakeholder engagement workshop on 20th January 2017 to inform the development of network objectives and the generation of potential interventions.

2.2 Network Problem Identification

The identification of network problems and opportunities at an early stage of Stage 2 WLRMS development allowed a better understanding of the main areas requiring focus informing future work.

A long list of network problems and opportunities was developed through stakeholder engagement and analysis of available data, including that contained in Stage 1. Additionally, Jacobs' project team undertook a West Lancashire site visit on 10th January 2017, which was used to build background knowledge, investigate areas of potential interest, and take site photos.

2.3 Network Functions and Performance

In order to identify and prioritise interventions in West Lancashire it is important to understand the main functions that different areas of the network support as well as their performance.

Individual routes, and separate sections of these routes, were assessed to establish their current roles and to inform future highway management decisions. Route functions were assessed in terms of the importance of the route to movement and place. To facilitate this Jacobs in partnership with LCC developed a movement place matrix tool specifically for Lancashire using the Transport for London Street type matrix as a basis. This tool allows routes to be assessed depending on the nature of all journeys which take place (not just motorised users) as well as the relationship between the route, other parts of the local and strategic network, and land use.

Network performance was assessed through the analysis of data relating to safety, traffic delay, and wider connectivity to identify locations of network weakness where intervention may be required. Network performance was also considered within the context of the likely impacts of proposed future development and major transport schemes.

2.4 Network Objectives

Network problems, functions, and performance were used as the framework for the development of the Network Objectives. This ensured that the WLRMS is objective driven, responds to the needs of highway users, and is underpinned by a robust evidence base.

The Network Objectives were discussed with key stakeholders in the workshop led by Jacobs on 20th January 2017, and agreed with LCC following minor alterations.

2.5 West Lancashire Route Management Strategy

2.5.1 Option Generation

Informed by the identified network problems, functions, performance, and objectives, a broad range of potential interventions were identified for consideration as part of the strategy. These included interventions of all sizes and considered all modes of transport.

Potential interventions were generated through close liaison with LCC Officers and key stakeholders, including at the workshop led by Jacobs on 20th January 2017. This allowed the project team to make use of local knowledge and experience. A thorough policy review provided additional interventions which had been proposed historically; with further options generated at a Jacobs's internal optioneering workshop on 2nd February 2017, using the project team's professional judgement and input from specialist highway engineering colleagues.

2.5.2 Early Sifting

Potential options were collated through the generation exercises outlined above to form an initial 'long list' of options. These included a range of possible schemes which could be implemented across the network. Option development sheets were produced for each option, specifying all information currently available on the proposed intervention.

Each option was then put through an initial screening process to produce a list of better performing options. A RAG analysis was carried out against the following criteria with options which failed to meet one or more of the criteria excluded from further review in this commission.

- Feasibility (physical constraint, land availability, and design standards)
- Deliverability (political, planning, timescale, or third party issues)

- Value for Money (perceived)

This initial option sifting process accords with guidance set out in TAG Unit 2.1.1, and was agreed with LCC. From this, a list of all options considered, and a shorter list of better performing options warranting further analysis in the next stage of appraisal were developed.

2.5.3 Option Appraisal

The early sifting exercise resulted in a list of potentially better performing options to be taken forward for further consideration as part of the WLRMS, including the proposed interventions at both Derby Street and Bank Bridges.

Individual interventions were explored in more detail and assessed using a bespoke Option Appraisal Tool (OAT) developed specifically by Jacobs for the RMS process. The OAT is based on previous experience on similar studies and uses an approach that is 'objective-led' and 'problem-driven' in line with best practice guidance on scheme appraisal.

The OAT allowed interventions to be initially scored against each Network Objective. Higher scoring options scoring were then assessed against LCC's Local Transport Plan objectives (secondary criteria) giving an overall assessment of each options potential to meet both local and County wide objectives.

Interventions were grouped into four separate but supporting packages: Junction Improvement, NMU, Route Hierarchy, and Preferred Bridge Options. Estimated scheme cost ranges were produced by the project team utilising expert highway engineering input. These cost estimates were used to identify a prioritised investment programme estimated in the region of £1,000,000 to inform investment of LCC's agreed Capital Programme for 2017/18.

3. Stakeholder Engagement

3.1 Introduction

As part of Stage 1, completed internally by LCC, an initial stakeholder engagement workshop was held on 9th October 2015. Following this it was decided to conduct three further workshops within Stage 1 focusing on Derby Street Bridge, Bank Bridge, and the Burscough A5209.

As discussed in Chapter 2, it was decided that additional stakeholder engagement was required in Stage 2 to further inform development of the WLRMS. This provided an opportunity to engage with key organisations within the local area and utilise local knowledge, expertise, and experience to inform the development of network objectives and the generation of potential interventions.

Views expressed during the stakeholder engagement process form a key evidence base for defining existing problems and opportunities and ultimately the need for the development of local transport improvements. The evidence collected as part of the stakeholder engagement exercise is supplemented by data analysis which is then used to underpin the appraisal of network performance. This chapter provides a summary of the key stakeholders consulted as part of the RMS.

3.2 Key Stakeholders

The Route Management Strategy guidance produced for LCC by Jacobs identifies the importance of stakeholder engagement as a means of ensuring that local expertise and knowledge is fully utilised. LCC Officers directly supported delivery of the WLRMS, on an on-going basis whilst external stakeholders were engaged during completion of Stage 1, and following project inception of Stage 2 to ensure that all views were captured at an early stage.

Table 3.1 identifies key stakeholder organisations

Table 3.1 Key Stakeholder Organisations

Organisation	Organisation
Lancashire County Council	Holmeswood Coaches
West Lancashire Borough Council	Transport for Greater Manchester
Transport for the North	Sefton Borough Council
Edge Hill University	Rotala Preston Bus
Stagecoach	Police
Arriva	Highways England
Huyton Travel	Freight Transport Association
Confederation of Passenger Transport	

3.3 Problems and Opportunities Workshop

All of the key stakeholders were invited to attend a stakeholder engagement workshop at County Hall on 20th January 2017. The workshop provided an important opportunity for the RMS project team to brief others on the RMS process, the aims and objectives of the study and to seek their views regarding the way forward. This

ensured stakeholder 'buy-in' at an early stage and facilitated on-going engagement throughout the process. The Minutes of the workshop are included in Appendix A.

A key focus of discussion at the workshop was the identification of existing transport problems, issues, and opportunities on the local highway network; the identification of priority issues to be tackled as part of the RMS process; and the generation of potential interventions options.

The key points discussed in the workshop are summarised in Table 3.2.

Table 3.2 Key Points Raised in Workshop

Topic	Area	Key Points
Key Route Network	Lancashire	A Northern Key Route Network is currently in the process of being identified. Whilst the WLRMS will predate this work it is important that it aligns wherever possible.
Congestion	Maghull (A59); Ormskirk (A59, A570, A577, B5240); Burscough (A59, A5209); Tarleton (A59, A565); M6 J26 (M59) and M6 J27 (A5209)	Key corridors suffering congestion in peak hours at strategic / urban locations
Bridges	Derby Street Bridge, Ormskirk	Resilience issues linked to issues with structural integrity and proximity to rail line. Safety risk linked to poor NMU facilities as a result of insufficient footway width. The Bridge is a Grade II listed structure in a conservation area and currently has an 18 tonne weight restriction in place. The Police identified enforcement concerns related to the long-term application of the weight restriction at this location. Concerns were also raised about the impact of HGV re-routing as a result of the weight restriction, particularly in reference to the A5209 and the B5240.
	Bank Bridge, Tarleton	Resilience issue linked to poor accident history and associated structural damage, high traffic flows, and strategic nature of river crossing.
Limited alternative travel modes to the car	West Lancashire	Insufficient alternatives to car travel contribute to rural isolation, poor connectivity, and congestion.
Inappropriate HVG routing	Ormskirk (A570); Parbold (A5209); Tarleton; B5240 (potentially linked to Derby St Bridge 18T restriction)	A number of routes were considered by stakeholders to be unsuitable for current levels of HGV traffic
Safety	Bank Bridge, Tarleton; Five Ways Junction, Ormskirk	These two locations were identified as suffering from poor accident history / perceptions of safety.

4. Network Problem Identification

4.1 Introduction

West Lancashire is predominately rural in nature. The detailed review of data included in Stage 1 coupled with stakeholder engagement undertaken as part of Stage 2 allowed the identification of a number of strategic network problems. Key network problems which were identified and are discussed in this chapter include:

- Network Resilience
- HGV Routing
- Public Transport
- NMU Facilities
- Derby Street Bridge, Ormskirk (safety and resilience)
- Bank Bridge, Tarleton (safety and resilience)

Key Observation: The impact of identified network problems tends to be higher in West Lancashire's urban areas.

4.2 Network Resilience

4.2.1 Lack of East-West Connectivity

A key network concern which has been identified during WLRMS development, including during engagement with LCC officers and in discussion with stakeholders, was a lack of east-west strategic connectivity supporting long-term network resilience, particularly in the north of the district. East-west connectivity is important locally but also supports the wider sub-region with many of the transport links running through West Lancashire acting as gateways between Southport, Central Lancashire, and Liverpool as well as the wider North West.

There is a lack of alternative east-west routes in the study area particularly linking Southport and wider Sefton with the strategic road network. This report focuses on smaller scale interventions which can boost efficiency and operation of the current network. However, in the longer term east-west highway connectivity within West and Central Lancashire and the strategic highway network should be considered.

Key Observation: Consideration should be given to improving long-term strategic east-west connectivity within West Lancashire and between neighbouring sub-regions and the strategic road network. The provision of additional east-west highway connectivity in the northern half of West Lancashire may reduce pressure on the Switch Island Link, A570, A5209, and A565.

4.2.2 Highway Directional Signage

Through analysis of data collated in Stage 1 and stakeholder engagement it has been established that signage between the M6 and Southport is inconsistent with designated routes differing depending on the direction of travel.

From the M6, signs direct traffic to Southport at three junctions J21A, J23, and J26. From these three junctions traffic is directed through Ormskirk on two out of three routes. Stage 1 of the RMS identified that there is very little difference in journey time between the three signed routes to Southport, with the marginally quickest off-peak route being the longest via the A59 (Figure 4.1: Route 1). From Southport to the motorway all traffic is first

directed to Scarisbrick where there are signs for traffic travelling to the M57 to turn onto the A5147. All other motorway traffic is routed through Ormskirk.

Additionally, during Jacobs' site visit it was observed that the 18 tonne weight restriction on Derby Street Bridge in Ormskirk which restricts HGV traffic south-east on the A570 is not identified on advanced signage within Sefton. This potentially impacts the ability of HGV drivers to plan their routes in advance.

Figure 4.1 shows the signed routes linking the M6 to Southport.

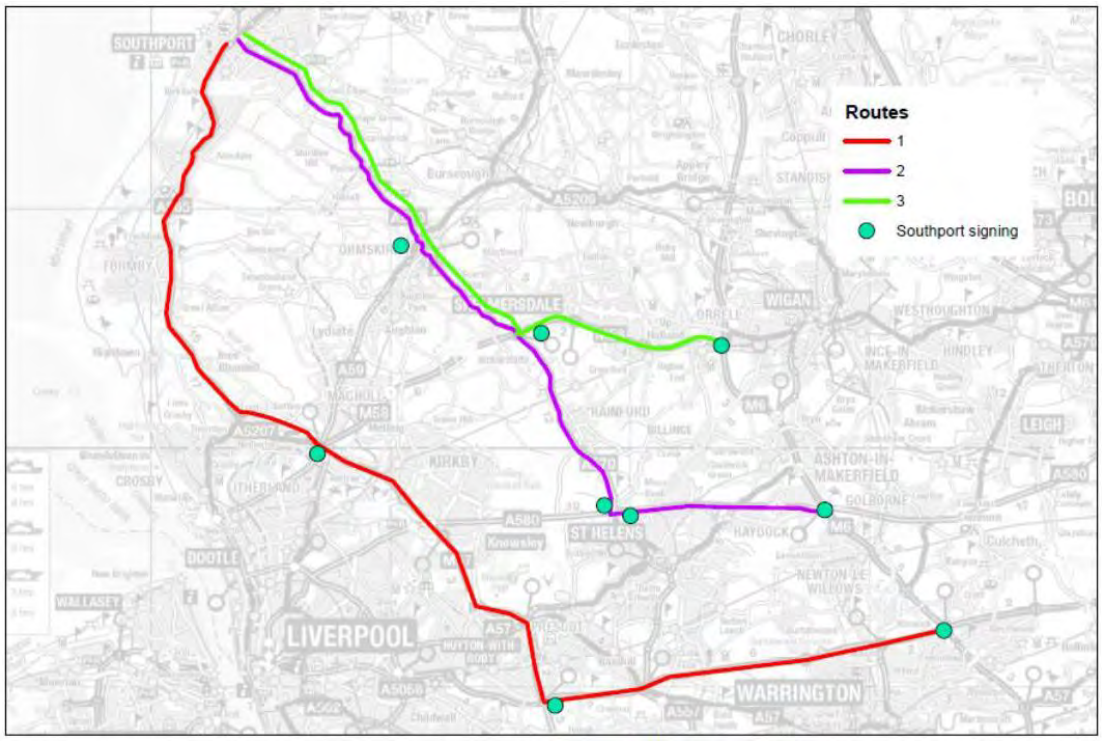


Figure 4.1: Signing to Southport from the M6

Figure 4.2 shows the signed routes linking Southport with the Motorway network.

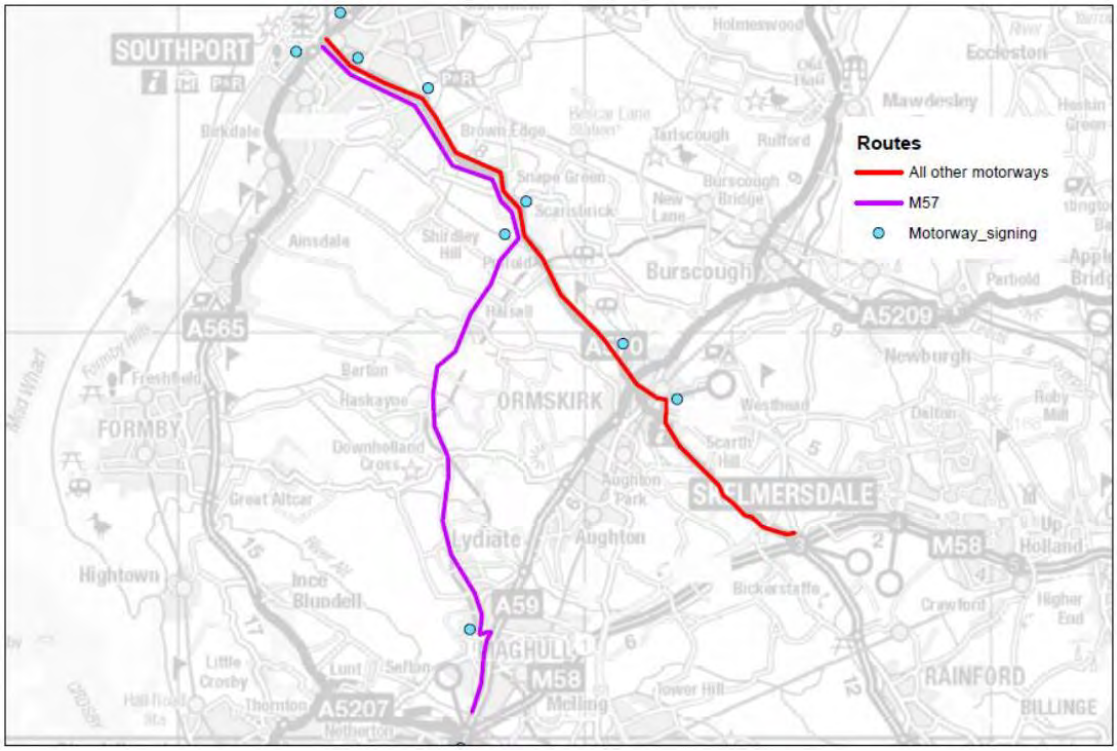


Figure 4.2: Signing to the Motorway Network

Key Observation: Signage between Southport and the motorway network is inconsistent. Rationalisation may bring benefits to areas of population e.g. Ormskirk but would require partnership with Highways England and Sefton Metropolitan Borough Council potentially including promotion of the Switch Island Link if appropriate.

4.2.3 Hospital Access

There is a lack of alternative routes between the two local hospitals. Ormskirk & District General Hospital and Southport & Formby District General Hospital are part of the same NHS trust and work together to provide services. Therefore, travel between the two sites is essential to providing efficient care. The locations of both hospitals can be seen in Figure 4.3. As shown, the A570 is the only viable route between the two hospital sites. Public transport between the two hospitals is provided by the commercially run 375/385 service which runs from Southport to Wigan passing outside both hospital sites. There is no dedicated hospital to hospital bus service.

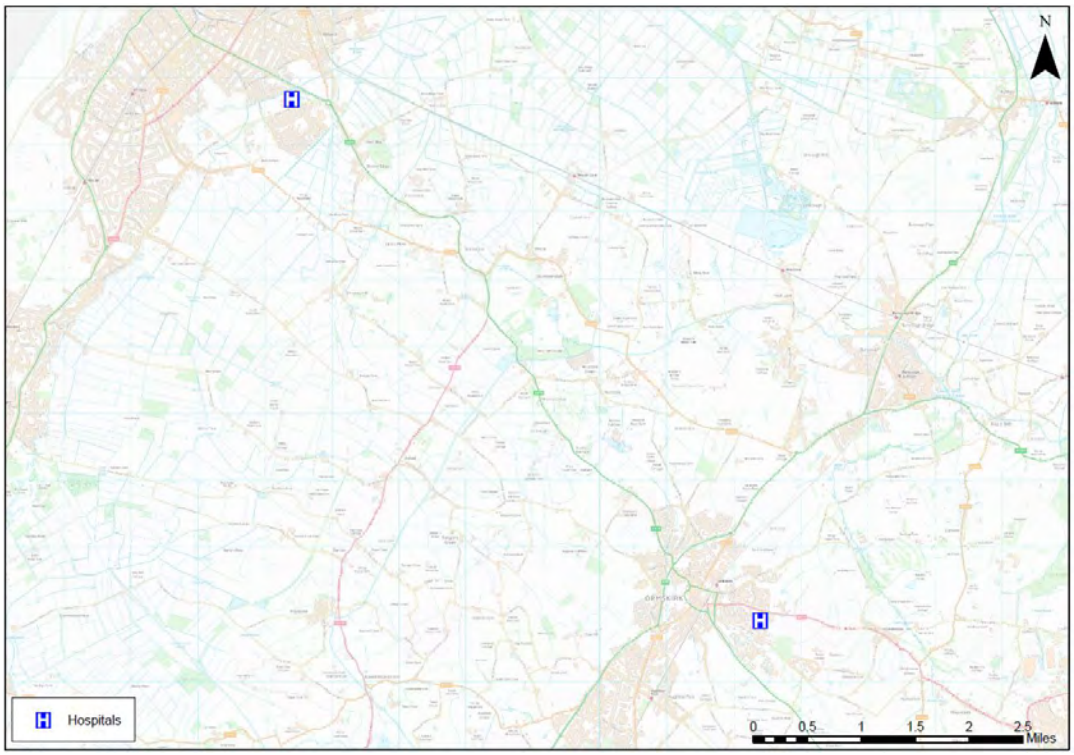


Figure 4.3: Location of Hospitals in West Lancashire

4.2.4 Strategic Road Network Emergency Diversion Routes

Highways England in conjunction with the relevant local highway authorities has devised a number of Strategic Road Network Emergency Diversion Routes (EDRs). These are used to divert all traffic from a section of the strategic road network in response to a major closure. There are a number of EDRs which are of significant relevance to West Lancashire's route network; the EDRs listed below are shown in Figure 4.4.

- M6 J27 – J28
- M58 J3 – J4
- M58 J4 – M57 J7

Whilst major closures do not arise often, they have the potential to place a significant volume of traffic on key sections of the local network. This would include routing traffic through Ormskirk along the A570 and through Maghull on the A59 to enable travel between the M58 and M57 in times of closure. This would further exacerbate the congestion and safety issues currently experienced in these areas.

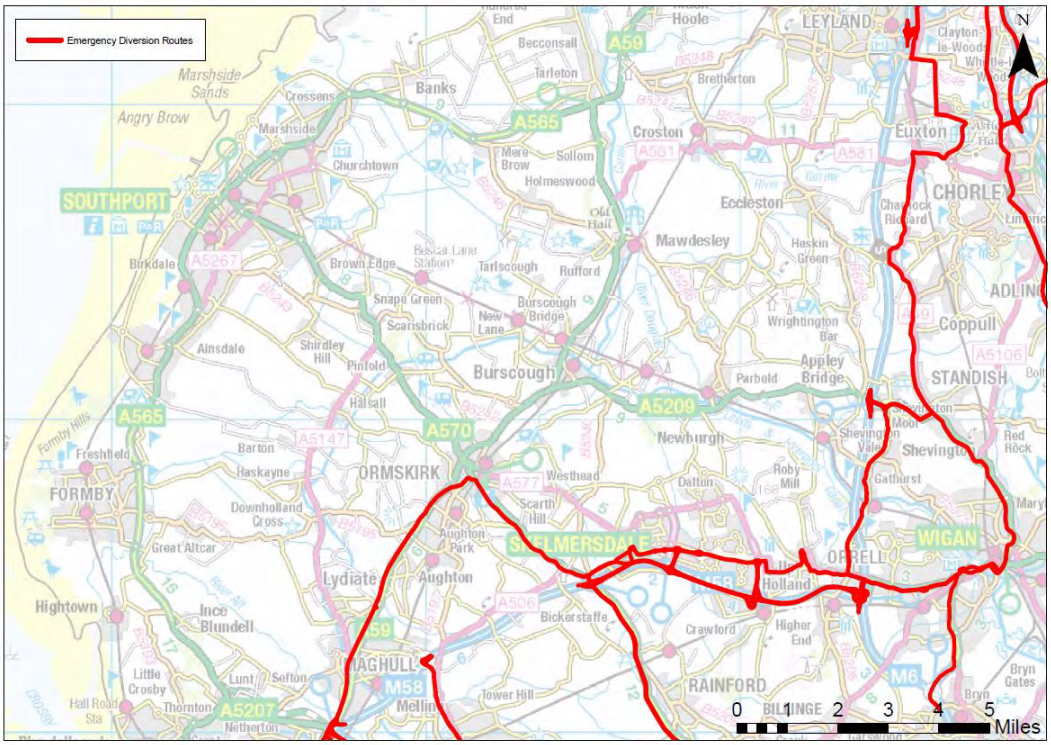


Figure 4.4: Strategic Network Emergency Diversion Routes

Key Observation: Emergency Diversion Routes have the potential to place additional pressure on parts of the local highway network which may not be well suited for this purpose due to the presence of population centres.

4.3 HGV Routing

4.3.1 Inappropriate Routing

HGVs are integral to businesses and the local economy. However, there is a perception that many HGVs using West Lancashire's network make use of inappropriate routes. A key issue identified in Stage 1, through liaison with LCC, and during stakeholder engagement, and the site visit undertaken for Stage 2 was the impact of HGV routing through local population centres.

In particular a number of locations were identified which are perceived to suffer particularly negative impacts from HGV traffic:

- Ormskirk A570 gyratory – whilst forming part of the Primary Route Network sections of Ormskirk's A570 gyratory may be deemed unsuitable for large HGV flows, particularly on Derby Street Bridge and in the vicinity of Ormskirk Parish Church
- A5209 – concerns were raised about the suitability of the A5209 to act as an east-west link providing access to the M6
- Tarleton – The road configuration at Tarleton combining with a number of market garden and agricultural enterprises in the area has caused local concern regarding HGV routing through Tarleton to access the A565
- B5240 – concerns have been raised about the use of the B5240 by HGVs, particularly following implementation of the Derby Street Bridge weight restriction as discussed below

4.3.2 Current Mitigation

Currently within Ormskirk there is an 18 tonne weight limit across Derby Street Bridge, this has successfully reduced the numbers of HGVs crossing the structure but has done little to impede the overall number of HGVs travelling through the gyratory from the south.

A 13 tonne weight limit was initially proposed, but this would have compromised the effective operation of the town centre gyratory as it would exclude buses, emergency vehicles, and gritters from the bridge. The temporary traffic regulation order (TTRO) stipulating an 18 tonne weight limit, including relevant signing, was implemented as of 27/05/2016 as a 5 year fix agreement

Key Observation: A number of routes or route sections forming part of West Lancashire's network appear to see disproportionate quality of life dis-benefits from HGV traffic.

4.4 Public Transport

4.4.1 Bus Network

Figure 4.5 shows the bus network within the study area.

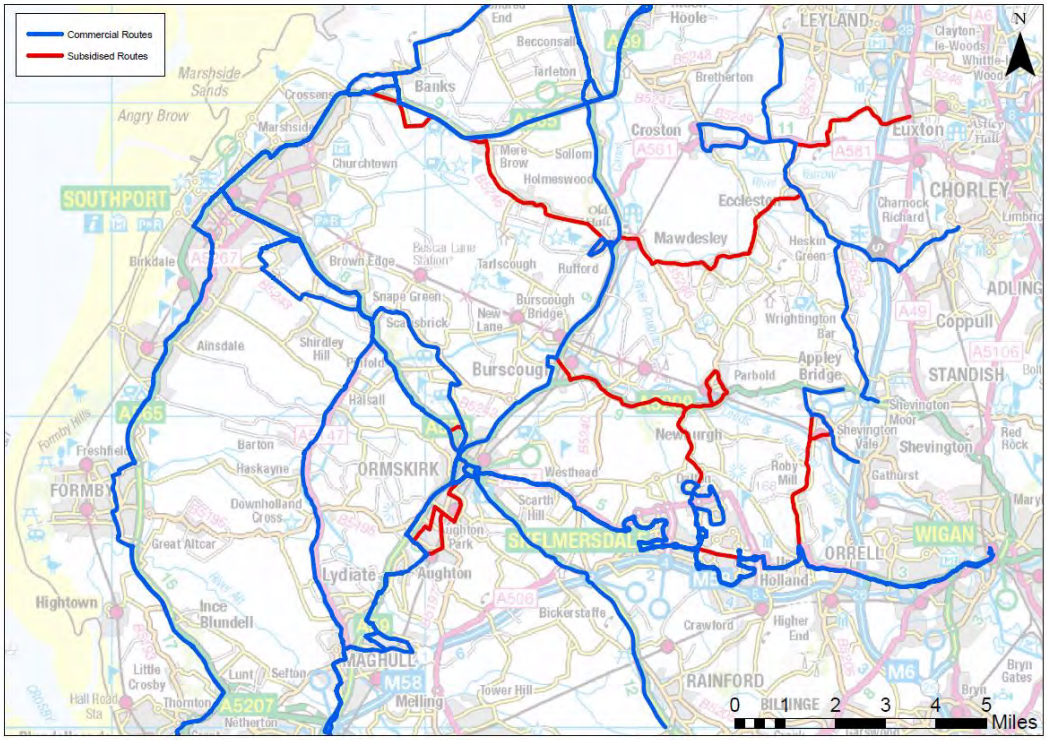


Figure 4.5 West Lancashire's Bus Network

Table 4.1 shows the frequency of buses to Ormskirk. As can be seen, the frequency of buses from these origins to Ormskirk is relatively low (e.g. only one or two buses per hour). In addition, Ormskirk's bus station is outdated and lacks modern facilities such as real time information provision.

Table 4.1 Frequency of Direct Bus Services to Ormskirk (Monday - Friday AM Peak)

Origin	Bus Number	Frequency
Skelmersdale	385	60 minutes
Southport	375/385	30 minutes
Burscough	2A	60 minutes
Preston	2A	60 minutes
St. Helens	152	Approx. every 2 hours (5 services per day)
Wigan	385	60 minutes
Chorley	No direct service	-
Liverpool	310	30 minutes

As a result of budget cuts LCC has reduced revenue support for bus services by around £5m as of April 2016. This has resulted in bus service reductions, including the loss of 45 bus services countywide. West Lancashire's bus services have been impacted by these changes as shown in Table 4.2.

Table 4.2 Withdrawn Bus Services (from April 2016)

Bus Number	Route
2C	Banks – Hesketh Bank – Holmeswood – Ormskirk
12A	Preston – Broadgate – New Longton – Tarleton – Ormskirk
315	Haskeyne – Halsall – Ormskirk
337	Chorley – Eccleston – Mawdsley – Ormskirk

The bus services that have been withdrawn mostly operated in rural areas. Table 4.3 shows the bus services to West Lancashire's rural areas which are still operating. As can be seen, whilst these areas are still accessible by bus the frequency of services in most cases is low (1 or 2 buses per hour) with more limited services in the evenings and weekends.

Table 4.3: Bus Services Through Rural Areas

Rural Area	Bus Number	Route	Mon-Fri	Mon-Friday	Saturday	Sunday
			Daytime	Evening	Daytime	Daytime
Hesketh Bank	2	Preston – Longton – Tarleton – Hesketh Bank – Banks – Southport	2 per hour	1 per hour. No service after 23.00	1 per hour	1 per hour
Banks	2	Preston – Longton – Tarleton – Hesketh Bank – Banks – Southport	2 per hour	1 per hour. No service after 23.00	1 per hour	1 per hour
Tarleton	X2	Liverpool – Southport – Tarleton – Preston	2 per hour	2 per hour. No service after 21.30	2 per hour	2 per hour
	2	Preston – Longton – Tarleton – Hesketh Bank – Banks – Southport	2 per hour	1 per hour. No service after 23.00	1 per hour	1 per hour

Rural Area	Bus Number	Route	Mon-Fri	Mon-Friday	Saturday	Sunday
			Daytime	Evening	Daytime	Daytime
	2A	Ormskirk – Burscough – Tarleton – Longton – Preston	1 per hour	1 per hour. No service after 18.50	1 per hour	No service
Burscough	2A	Ormskirk – Burscough – Tarleton – Longton – Preston	1 per hour	1 per hour. No service after 18.50	1 per hour	No service
	3A	Appley Bridge – Skelmersdale – Burscough	1 per hour	No service after 18.20	1 per hour	No Service
Haskeyne & Halsall	300	Liverpool – Haskayne – Halsall – Southport	2 per hour	2 per hour. No service after 20.30	2 per hour	1 per hour

Key Observation: Reductions in levels of supported bus services have reduced rural public transport connectivity. Overall service levels are not sufficient in many areas, particularly in the evening and weekends, to provide a viable alternative to the car.

4.4.2 Rail Network

There are three rail lines within the study area. These are:

- Ormskirk to Preston line (Northern Rail)
- Southport to Manchester line (Northern Rail)
- Liverpool Central to Ormskirk line (Merseyrail)

Merseyrail offers a frequent (every 15 minutes) electric train service from Liverpool (Liverpool Central) to Ormskirk. The line is well used particularly during peak hours. However, for passengers travelling from Liverpool Central to Preston, a change of trains is required at Ormskirk. Trains between Ormskirk and Preston are relatively infrequent, run to an irregular timetable, and use poor quality diesel rolling stock.

The Southport to Manchester line (via Wigan) offers a regular and relatively frequent service. However, rolling stock on the line is also relatively poor.

Burscough is served by two lines (Ormskirk to Preston and Southport to Manchester) but these do not share a station. The two stations have poor interchange facilities as they are located approximately a 15 min walk or a short bus journey apart. Trains tend to be low frequency using poor quality rolling stock.

Park and ride opportunities are limited in the study area as railway stations either do not have car parking facilities or tend to operate at capacity (e.g. Ormskirk).

It should be noted that some of the above issues are likely to be addressed as part of the Liverpool City Rail Strategy which has an ambition to invest in the sub-regional rail network, including the identification of proposals aimed at improving connectivity within West Lancashire:

- Electrify the Ormskirk to Preston line, with required remodelling, resignalling, and line speed improvements, and extension of Merseyrail operations to Preston

- Reinstate the Burscough curves between Ormskirk / Preston and Southport directions

- Create a two-level interchange station at Burscough Bridge allowing connections between Ormskirk / Liverpool services and Southport / Wigan services

Key Observation: There are limited public transport alternatives offering a frequent and high quality alternative to travelling by car across West Lancashire and the sub-region. However, proposed significant rail improvements will bring substantial benefit.

4.5 NMU Facilities

There are limited NMU facilities located on the wider network within the study area. Narrow footways and high traffic speeds have been identified as deterrent to walkers and cyclists within West Lancashire in addition to the longer distance travel often required as a result of the rural nature of the borough area.

There are limited cycling and walking links between Ormskirk and Skelmersdale, Ormskirk and Burscough, Ormskirk and Up Holland, and between Ormskirk and Edge Hill University.

There are limited cycle storage facilities throughout the area, particularly at railway stations. In Ormskirk town centre, a lack of pedestrian crossings and large traffic flow on the A570 gyratory creates town centre severance. This severance contributes to the feeling of motorised traffic dominance which is experienced in both Ormskirk and Burscough.

Within Ormskirk the active transport link between the bus and rail station is relatively poor with the current path deemed to be insufficiently maintained and overlooked to encourage high levels of use. Likewise the walking and cycling links between Edge Hill University and the town centre require improvement.

Key Observation: NMU facilities in West Lancashire's urban centres are not sufficient to encourage high mode share for walking and cycling.

4.6 Derby Street Bridge, Ormskirk

The bridge is a Grade II Listed structure and lies within the Ormskirk Town Centre Conservation Area. The Bridge carries the A570 over the Liverpool to Ormskirk railway line immediately to the south of Ormskirk station with Figure 4.6 showing its location.

The Bridge has two marked traffic lanes of sub-standard width. Although there are footways on either side, one is very narrow and the bridge parapets are low and do not meet current standards. Alongside this, the Bridge's structural integrity needs to be addressed as successive inspections and specialist investigations have shown that the bridge is in poor condition, including having structural problems with the arches. The Bridge forms part of the A570 Ormskirk town centre gyratory and as such any future decisions in terms of Bridge maintenance or traffic operation have the potential to impact local and sub-regional traffic operation.

A Temporary Traffic Regulation Order (TTRO) implementing an 18 tonne weight restriction, including relevant signing, was implemented as of 27th May 2016. This was introduced on a five year basis to allow LCC the requisite time to study the bridge's structural integrity and traffic function whilst a longer term solution was identified. A 13 tonne weight limit was initially proposed, but this would have compromised the effective operation of the town centre gyratory as it would exclude buses and emergency vehicles from the bridge.

Engagement with the Lancashire Constabulary highlighted issues around weight restriction enforcement potentially leading to opposition to the permanent implementation of a weight restriction. With this in mind thought has been given to alternative enforcement regimes. If a permanent weight restriction is sought then consideration should be given to alternative methods of enforcement e.g. camera or community in partnership with Lancashire Constabulary.

Indicative estimates for remedial works on the bridge range between £0.75m to £2.5m and full bridge replacement estimated between £5m and £7m depending on the solution chosen. Any option needs to consider the uses of the bridge, its prominent location in Ormskirk adjacent to rail station, and Grade II listed nature.

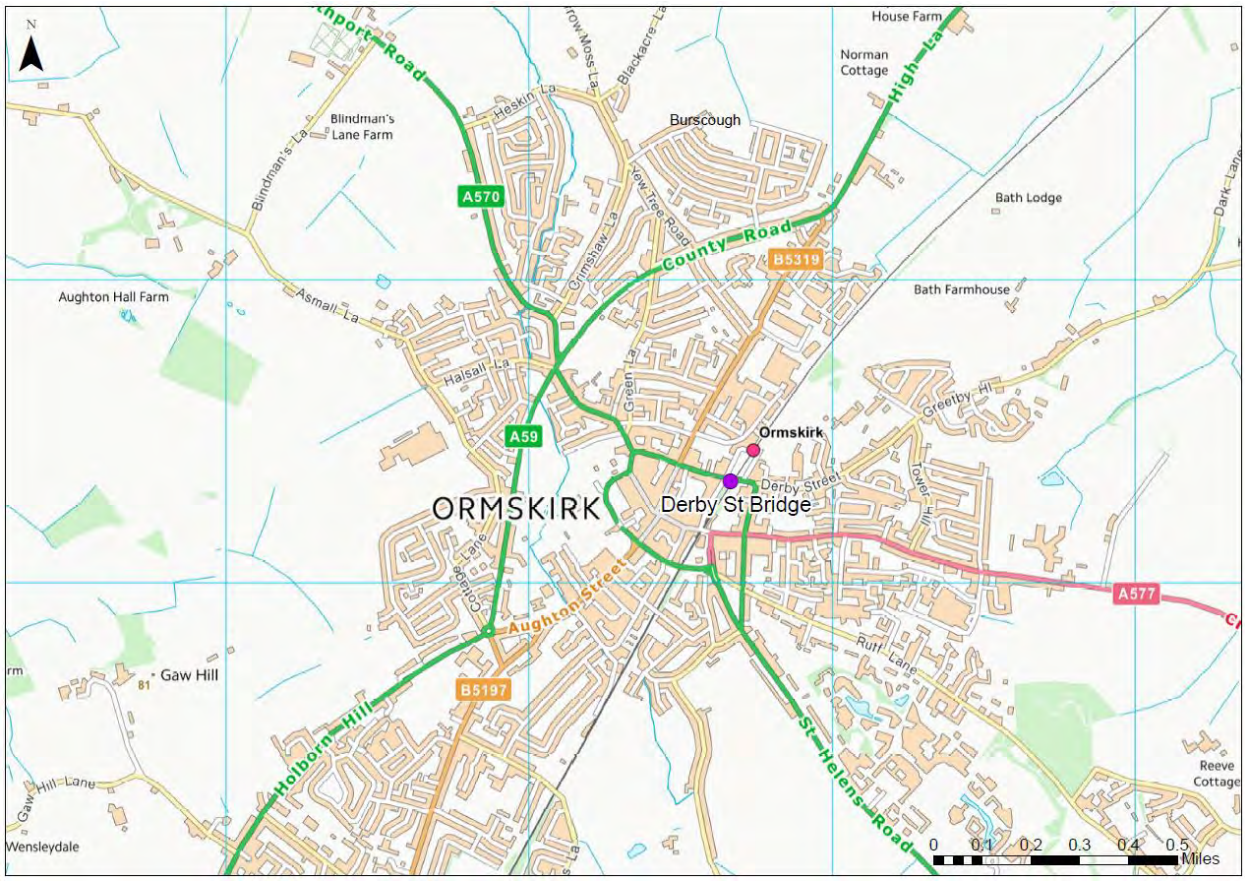


Figure 4.6: Location of Derby St Bridge

Key Observation: Derby Street Bridge suffers from structural defects which will be difficult to remediate due to its Grade II listed nature, location on Ormskirk's A570 gyratory, and position adjacent to Ormskirk rail station. Any longer term solution must consider the impact on local amenity and sub-regional connectivity.

4.7 Bank Bridge, Tarleton

Bank Bridge in Tarleton is a Grade II listed Bridge formed of two separate structures crossing the River Douglas and the Rufford Branch of the Leeds and Liverpool Canal respectively. The Bridge on the A59 supports the primary east-west highway link between Preston and Southport. Figure 4.7: Location of Bank Bridge shows the location of Bank Bridge.

Bank Bridges alignment is poor, with a sharp right-angle bend immediately to the east of the Bridge. The Bridge has a 40mph speed limit with signage relating to a sharp bend and an advisory speed limit of 30mph on the Bridge itself.

Visibility eastwards of the bend is limited by the road layout across the Bridge with the bend obscuring the Bridge crossing from the A59 to the north. Across the Bridge the road narrows with parapets close to the road edge. These factors combine to create a safety hazard requiring extensive traffic warning signs on the Bridge and its approaches and the application of High Friction Surfacing on the Bridge span. Local access at the western end of the Bridge adds to this safety risk. The accident rate for this length of the A59 is higher than the

national average, with the Bridge parapets subject to semi-frequent impacts by vehicles resulting in on-going emergency repairs and traffic management impacting resilience.

The Bridge is also deemed to be potentially susceptible to the negative impacts of weather, including a risk of flooding. The Bridge forms part of key County infrastructure requiring a level of resilience to extreme weather conditions. The strategic importance of the Bridge is highlighted by the fact that a high number of HGVs use the Bridge (HGV Annual Average Daily Flow of just under 1,200).

Analysis of MA14 data which is recorded by Police at the scene of personal injury accidents showed that the alignment of the Bridges and failure to adhere to the speed limit were significant contributing factors in a number of these accidents. The Bridge has narrow road widths and parapets close to the road edge.

The Bridge constitutes a strategic piece of West Lancashire's transport infrastructure and its resilience to events and the environment is important to sub-regional connectivity.

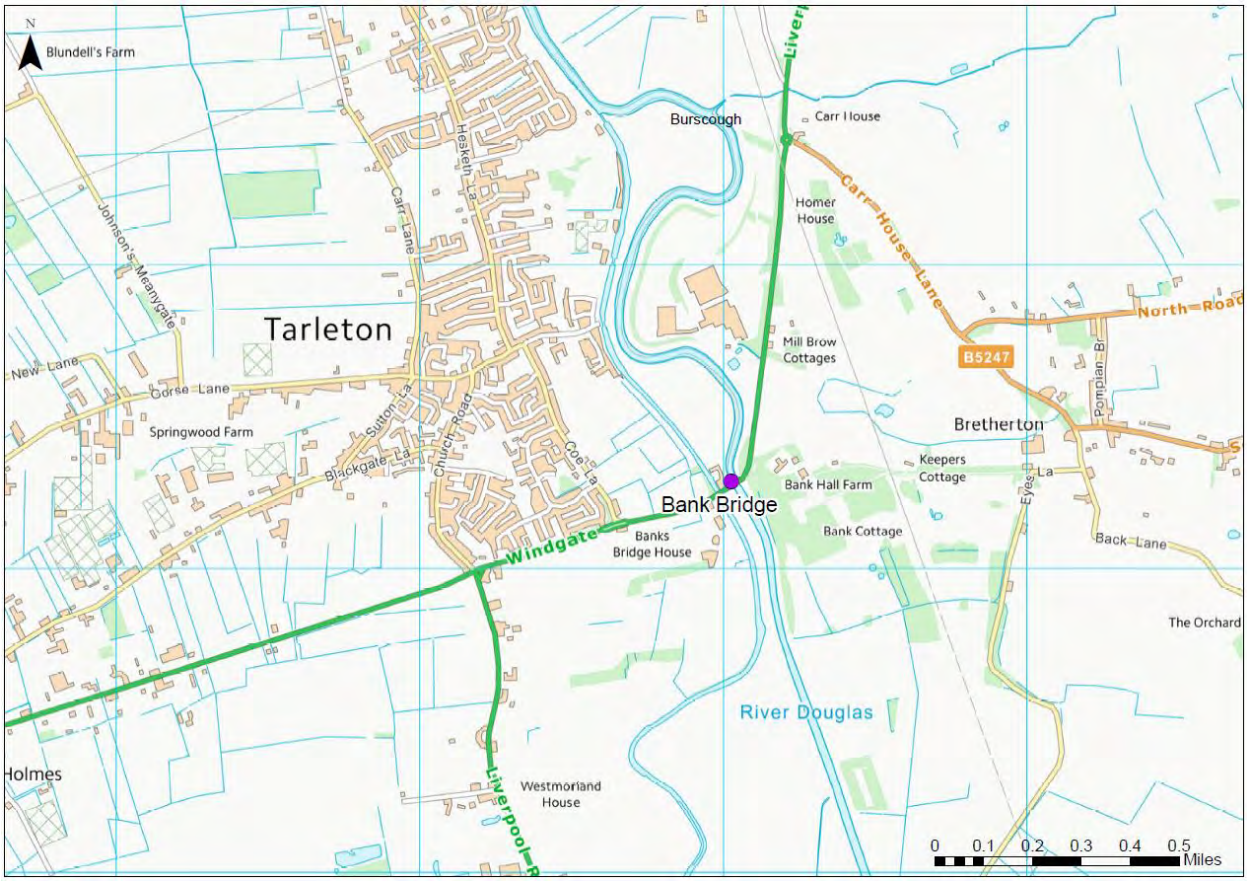


Figure 4.7: Location of Bank Bridge

Key Observation: Bank Bridge is a Grade II listed Bridge supporting strategic sub-regional connectivity. It is an accident black spot suffering due to its poor alignment and has been identified as a weak point in terms of resilience due to its potential vulnerability to the impacts of accidents and weather and lack of alternative routes.

5. Future Growth and Development

5.1 Future Development Impacts

To establish the potential impact of future developments on the network, an assessment was carried out on the likely future traffic flows resulting from future development. Consideration has been given to background growth and also development sites identified within both West Lancashire's and Sefton's Local Plans as shown below in Figure 5.1.

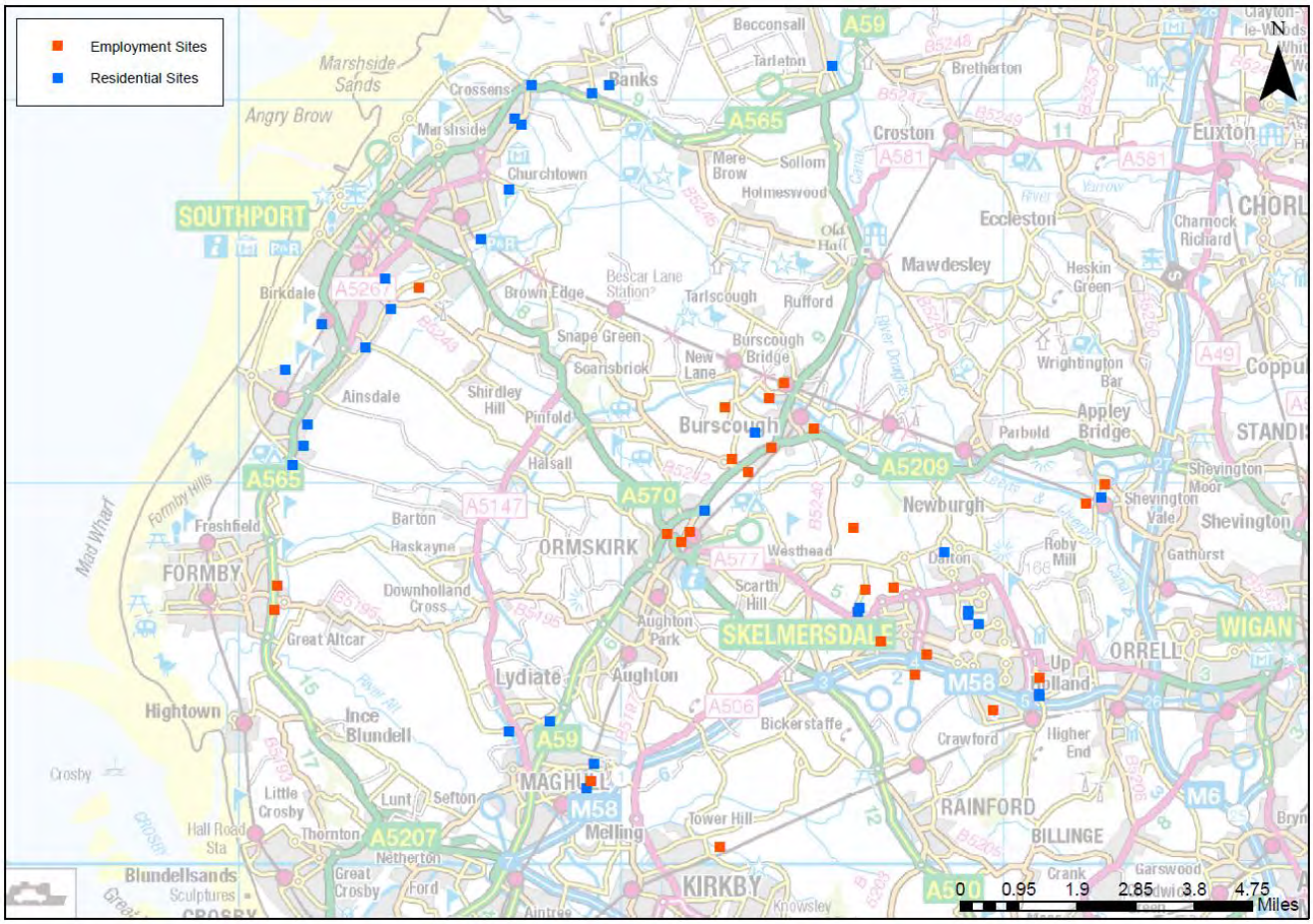


Figure 5.1 Proposed Development Locations

To determine the likely traffic associated with proposed development in West Lancashire and neighbouring Sefton, using Census 2011 travel to home and travel to work data origin-destination parings for commuting trips was established. TEMPro was used to determine potential traffic growth to the end of the current Local Plan period with Google journey planner was used to assign traffic movements on to the highway network based on likely vehicle routing between origin and destination zones.

Figure 5.2 shows the forecast increase in commuting trips on West Lancashire's main network as a result of traffic growth as per TEMPro per day with the width of the line corresponding to the forecast increase in trips numbers over the period. Direction is shown as per driving position with the location of the line to the left of the relevant highway section.

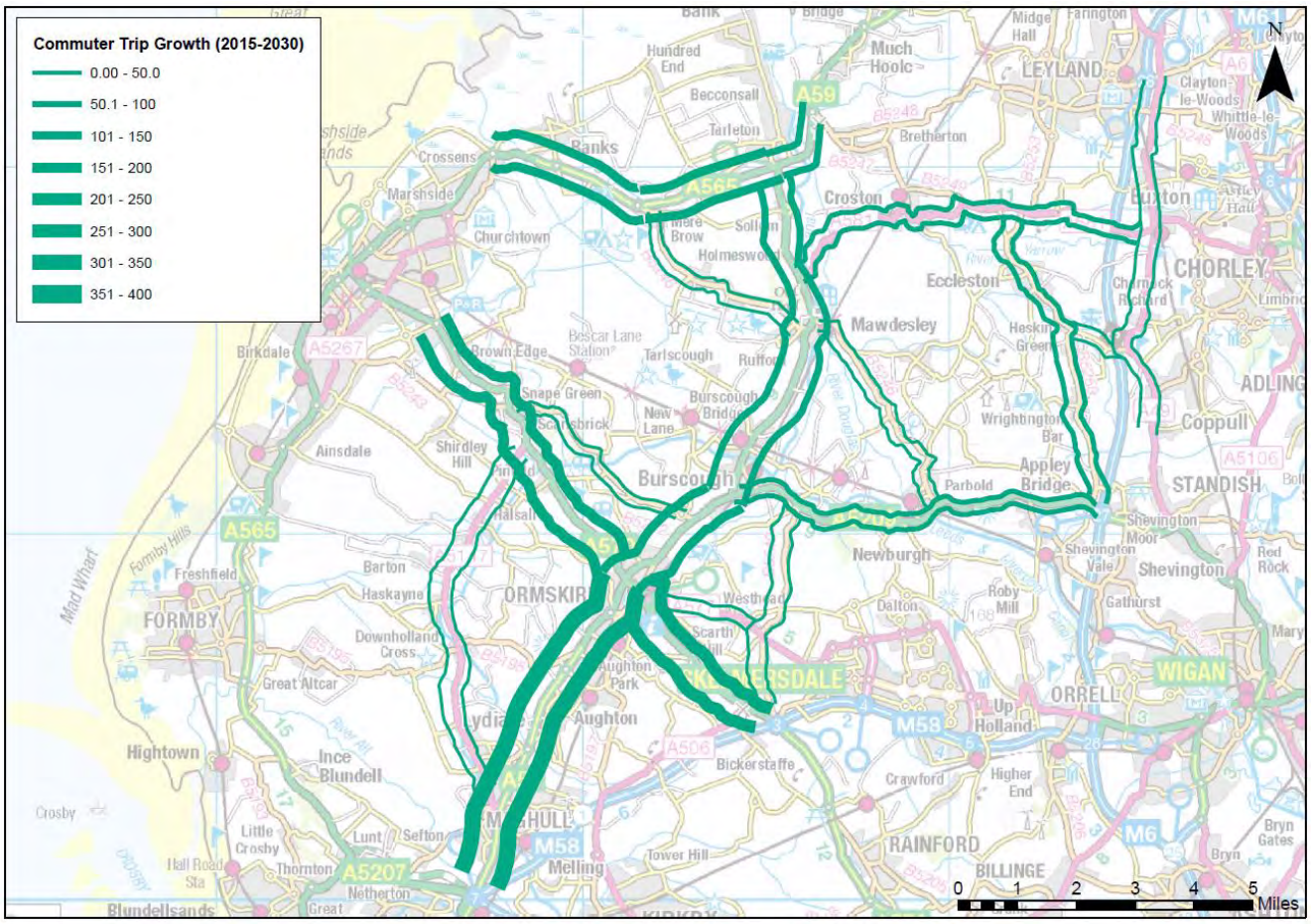


Figure 5.2 Network Development Impact - Travel to Work (2015 - 2030)

Figure 5.2 shows commuter traffic of up to 400 2-way daily commuter trips expected along the A59 between Ormskirk and the M58. Southport is identified as a significant trip generator with an additional 200 2-way daily trips routing south towards Ormskirk and east along the A585 towards Preston, highlighting the sensitivity of the network with regards to east-west connectivity.

A site-by site assessment, using development sites referenced in the relevant Local Plans has been included as Appendix B showing proposed trip generation by development site with trip rates extracted for all relevant land uses as per TRICs 7.3.4. The results of this are presented in Table 5.1. Full details of the extracted TRICS outputs, including the parameters used to filter the survey results are provided in Appendix C.

Table 5.1 Trip Rates

Land Use	Trip Rate Unit	12hr Trip Rate (07:00-19:00)
Residential	Per dwelling	4.598
Office	Per 100sqm GFA	15.636
Industrial	Per 100sqm GFA	6.193

Key Observation: The routes forecast to see the greatest growth in trips as a result of local proposed development are the A59, A565, and A570. Delivery of mitigation associated with specific development sites will be important as will an assessment of overall future network performance.

5.2 Strategic Developments

5.2.1 Yew Tree Farm, Burscough

Yew Tree Farm in Burscough is identified as a strategic development site (SP3) in the West Lancashire Local Plan 2012-2027. This site will help meet some of the Borough's housing and employment needs over the Local Plan period to 2027.

The 74ha greenfield site is located to the south west of Burscough. The site is bounded to the east and south by the residential area of Liverpool Road South, to the north by the Truscott Estate and Higgins Lane, and to the west by the Burscough Industrial Estate, as shown below in Figure 5.3.

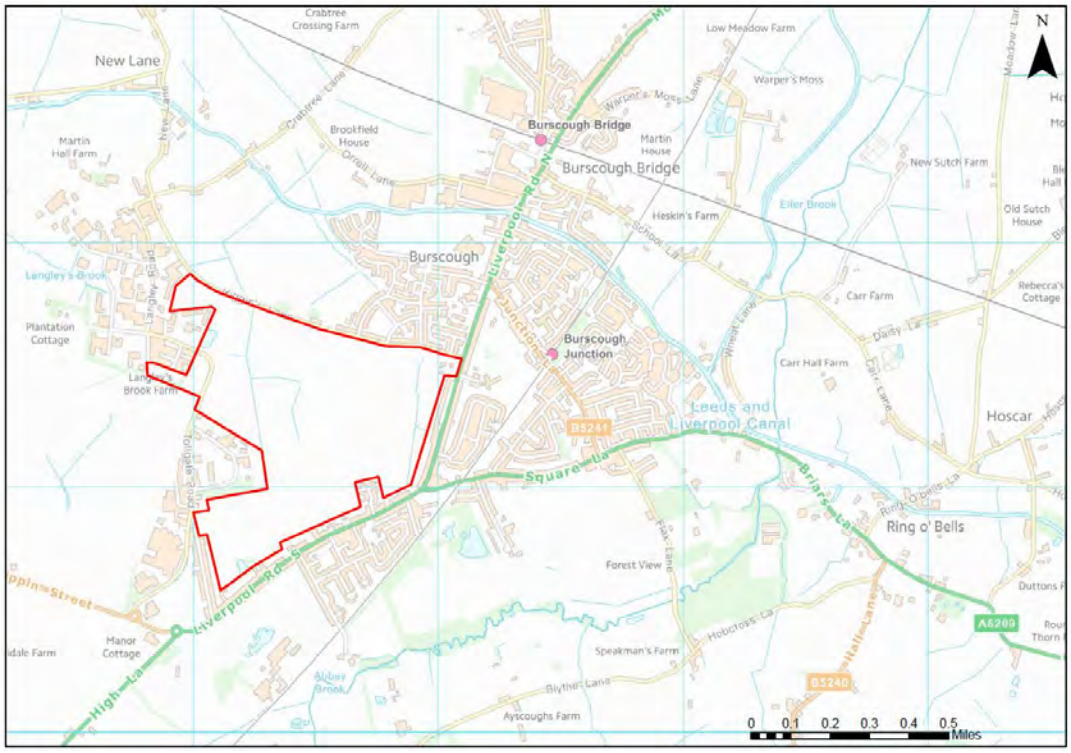


Figure 5.3: Yew Tree Farm Development

The site will deliver:

- 10ha of land for employment uses
- At least 500 new homes which should include a mix for all local needs including affordable homes to rent and buy, homes to meet the needs of the increasingly elderly population and high quality housing to complement the Burscough housing market. The site has been safeguarded for a further 500 dwellings post 2027
- Community services, facilities and infrastructure

The site is located close to the following primary routes in the study area:

- A59 north-east from Switch Island to Carr House (B5247 junction)
- A5209 west from M6 Junction 27 to A59 at Burscough

The Yew Tree Farm Masterplan (2015) identified that the current transport network would not be sufficient to accommodate the proposed future growth and identified a number of mitigation measures. These should be considered prior to any development build out to minimise wider network impacts.

5.2.2 Cuerden, South Ribble

Cuerden in South Ribble is identified as major site for development (C4) in the South Ribble Borough Council Local Plan (adopted 2015).

The site presents considerable opportunities to deliver a range of development to enhance its profile, helping to build critical mass. This is supported by the LEP's Strategic Economic Plan which intends to achieve strong and substantial growth across the sub-region.

The 65ha site is located to the south of Preston. The site is bounded to the north by the A582 Lostock Lane and the M65, to the east by the M6, to the south by the A5083 Lydiate Lane and to the west by the A5083 Stanifield Lane. The Cuerden site is situated at a key gateway location within Central Lancashire between Leyland and the City of Preston, immediately adjacent to the intersection of the M6 and M65 motorways.

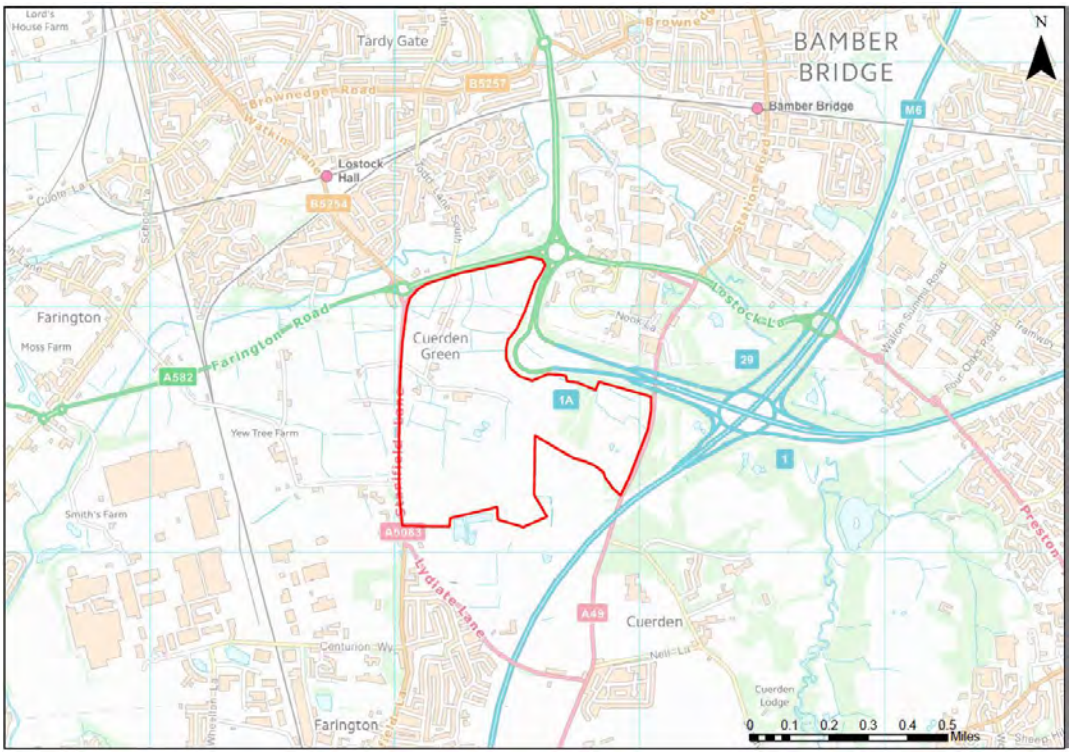


Figure 5.4: Cuerden Development

The site will deliver:

- More than 4,500 new jobs
- 80,000 sqm of new industrial space (a range of separate unite with ancillary offices)
- Circa 26,000 sqm of new office and business space
- Retail development
- Mixed use development (120 bedroom hotel, car showroom, family pub and restaurants)
- Up to 210 new homes
- Green infrastructure and landscaping
- Significant highway improvements on the local road network, along with new public transport provision
- New pedestrian, cycling and jogging paths throughout the site

The site is located out of the study area but is close to the M6, M61, M65, A6, A59, and the A582 Farrington Road. The Cuerden Strategic Site Masterplan Report (2015) identified that the current transport network would not be sufficient to accommodate the proposed future growth and identified a number of mitigation measures, which included improvements to the A59 in West Lancashire. If these proposals are implemented there is the potential for impact on West Lancashire's network, including possible traffic diversion from the M6 to the A59. There is also the potential for increased commuting from and through West Lancashire to this strategic site. These potential impacts should be considered during any development build out and mitigation to minimise wider network impacts.

Key Observation: Yew Tree Farm and Cuerden will generate significant levels of traffic which has the potential to exacerbate identified transport problems in West Lancashire and reduce network performance.

5.3 Major Highway Improvements

Four major highway improvements are planned in the Preston, South Ribble, and Lancashire City Deal which have the potential to impact traffic flows in West Lancashire. The Preston, South Ribble, and Lancashire City Deal (which is a ten year strategic regeneration framework agreed by the Lancashire Enterprise Partnership, Local Authority partners and government) is the delivery vehicle for the acceleration of the Local Plan. Likewise other major sub-regional highway improvements are either planned or underway and their potential impact should be monitored over the medium to longer term.

5.3.1 Highway Improvements: Ribble Crossing bypass

This scheme proposes delivery of a new crossing of the River Ribble to complete the Western Distributor between the M55 near Bartle and the M65 at Cuerden providing substantial relief to Preston's road network in and around Riversway. These roads already experience peak hour congestion caused by commuting movements between West Lancashire and South Ribble and the Fylde Coast (including major employers such as Westinghouse UK Ltd at Springfields and BAE Systems at Warton) as well as Preston City Centre.

Initial strategic transport modelling shows there is the potential for the Ribble Crossing to increase traffic on the A59, including through diversion from the M6. The potential impacts of this scheme on A59 traffic flows and West Lancashire's wider highway network should be further assessed if the scheme is progressed.

5.3.2 Highway Improvements: Preston Western Distributor (PWD)

The PWD scheme proposes construction of a new 4.5km dual carriageway to support delivery of the North West Preston strategic housing location (more than 5,000 dwellings) and improve access to the Strategic Road Network from the Enterprise Zone at Warton.

The scheme includes a new junction with the M55 (Junction 2). It also provides direct links into Cottam development areas, Cottam Parkway Rail Station, and direct connection to the East West Link. As part of the scheme several minor roads (e.g. Lea Road, Sidgreaves Lane) will be altered with the provision of a new roundabout to connect north/south and to/from the East West Link. This will connect the PWD scheme directly with Lightfoot way and Eastway.

5.3.3 Highway Improvements: Penwortham Bypass

This scheme proposes completion of Penwortham Bypass between the Broad Oak roundabout and Howick Cross, creating a direct link between the A582 at Broad Oak roundabout and the A59 west of Penwortham.

The Central Lancashire Highways and Transport Masterplan states that the scheme will:

- Support economic development through travel reliability and convenience, and provide congestion relief to Penwortham along the A59 corridor

- Improve access from the A59 to the motorway network without passing through Penwortham or Preston city centre
- Reduce traffic in Penwortham, which experiences very significant peak hour congestion

5.3.4 Highway Improvements: A582 South Ribble Western Distributor Road

This scheme proposes capacity improvement on the existing A582 between Cuerden/Moss Side and Preston City Centre to support delivery of the South of Penwortham/North of Farington strategic housing location and major housing sites at Croston Road and Moss Side.

Upgrading the A582 to dual carriageway along its full length between Cuerden and Preston city centre and the B5253 south to Longmeanygate will significantly increase road capacity. Improvements will include alterations to, and closures at, existing junctions along the route. The scheme will also support the completion of the Penwortham Bypass, and looking further ahead, the linking of the two Western Distributor Roads in Preston and South Ribble with the construction of a new crossing of the River Ribble.

5.3.5 Highway Improvements: Other sub-regional proposals

There are a number of major sub-regional highway proposals with the potential to impact on West Lancashire's highway network. Two which were identified during stakeholder engagement are listed below and their potential impact on West Lancashire should be assessed in the medium to longer term. This is in no way a comprehensive list and the potential impacts of these schemes have not been assessed in any detail.

- A5036 Port of Liverpool Access
- M6 Orrell Interchange to M61 Westhoughton Link Road

Key Observation: Apart from the delivery of the proposed Ribble Crossing it is not expected that the delivery of the major highway investment identified above will have significant impact on West Lancashire's network.

The impact of the Ribble Crossing on West Lancashire's highway network requires further investigation as high level model tests in the Central Lancashire Traffic Model show the potential for traffic to shift from the M6 to the A59 once delivered.

6. Network Functions and Performance Analysis

6.1 Introduction

To reflect the network nature of the WLRMS, and also the direction of national policy development, Jacobs in partnership with LCC developed a Movement and Place Matrix tool (building upon Transport for London's (TFL) Street Type Matrix) as a means of categorising route sections in terms of their multiple functions relating to both movement and place.

The Movement and Place Matrix is informed by the appreciation of the multiple and competing functions which roads perform. This tool was not used as part of previous Route Management Strategies where instead route sections were assigned a non-standardised text description depending on their specific function. The use of the Movement and Place Matrix standardises this process adding rigour and providing value by allowing the grouping of different route sections which perform similar functions aiding the identification of interventions. This tool can be applied countywide and has been adopted on a number of other LCC and Jacobs commissions providing wider legacy benefits and ensuring countywide consistency.

6.2 Movement and Place Matrix

The LCC Movement and Place matrix combines the primary philosophy of TfL Street Type Matrix whilst reflecting the nature and naming conventions of the highway network in West Lancashire. Figure 6.1 shows the LCC Movement and Place matrix tool.

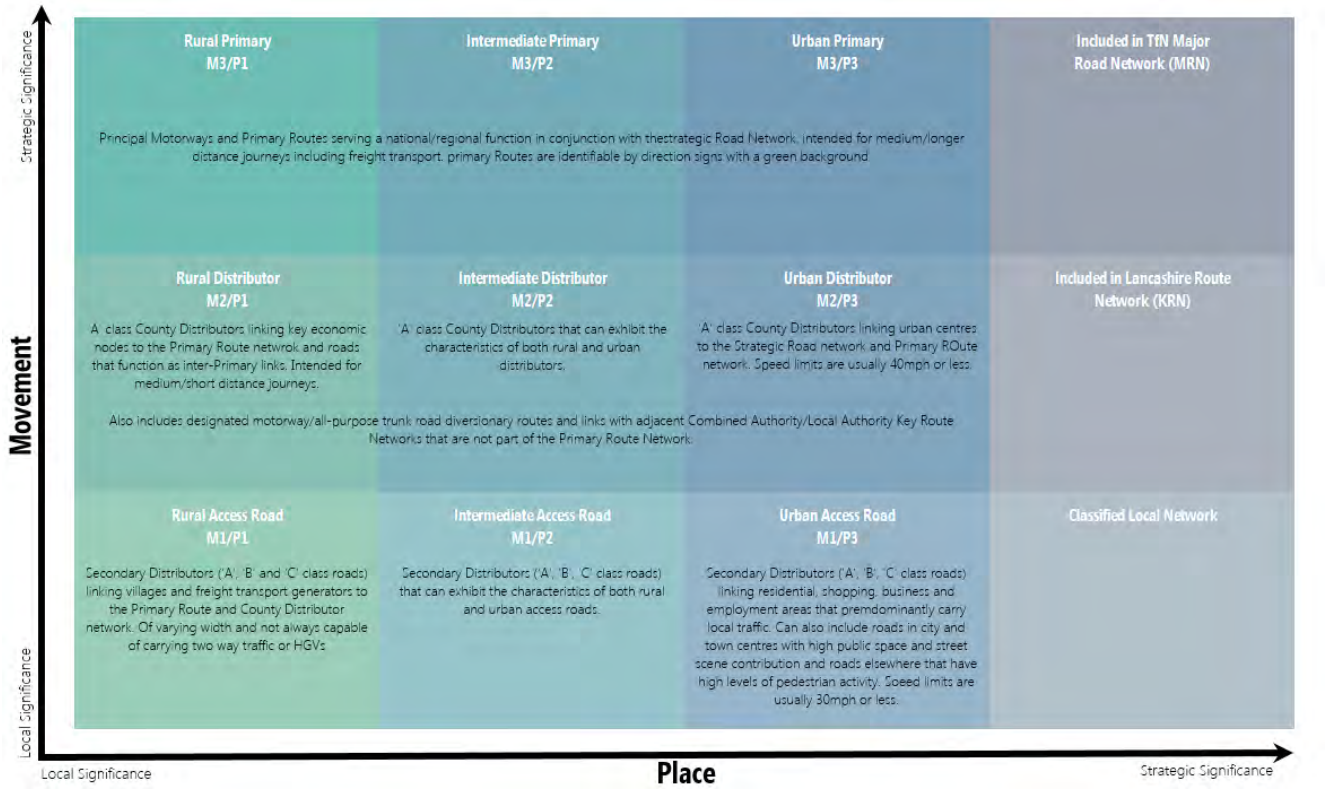


Figure 6.1: LCC Movement & Place Matrix Tool

6.2.1 The Movement Axis

The roads within West Lancashire perform a variety of movement functions, with strategically important roads carrying relatively large volumes of people daily and others performing only local movement functions e.g. suburban residential streets.

A number of roads within West Lancashire also act as part of longer distance corridors and the wider transport network supporting different types of movement. Regardless of the mode of travel, people share similar objectives in terms of direct, safe, quick journeys with minimum disruption. However, different modes often compete for space and priority, which can in turn cause conflict. Subsequently, all travel modes were considered when assessing the function of the identified route network in terms of movement e.g.:

- Pedestrians
- Cycles
- Buses
- Cars
- Freight and servicing vehicles
- Others e.g. coaches, different seasonal uses etc.

The position of a road along the movement axis is determined by the strategic importance of that route (its impact on the overall resilience and performance of the network, the proportion of longer distance trips and the overall volume of movement, as well as its role in particular networks e.g. Strategic Road, Major Road, Primary Route, bus, and cycle etc.). At the lower end of the axis roads perform more local functions and have less overall network effect.

6.2.2 The Place Axis

The public realm constitutes the publically accessible urban landscape, including footpaths, cycleways, parks, open spaces, and public buildings. The road network forms the largest element of the public realm and as such supports a wide variety of place functions.

Research has consistently shown that the quality and design of the public realm has a significant impact on how people interact with each other and their surroundings. Subsequently, the place functions of roads have significant economic and quality of life impacts.

At the strategic (higher) end of the place axis are roads which play a district, county, or national role in terms of place and have wide catchment areas. The mid-range of the axis will include roads with a range of community and commercial facilities. At the lower end of the axis are roads which have less strategic significance but which are still important to local people, e.g. local residential roads.

6.3 Lancashire's Road Types

Whilst the Movement and Place Matrix is a useful classification tool it does have a number of limitations which must be noted to ensure that it is used effectively and accurately. This includes appreciation that all roads will have an element of variation, and consideration of how the purpose of a road may vary along its length or throughout the day.

In terms of identifying the need for an intervention, and the type of intervention once the need has been established the following guiding principles have been adopted:

- A light-touch approach has been adopted for road types along the bottom row of the matrix (local movement functions only) due to their limited network impact

- For arterial roads, those in the upper left hand corner of the matrix (strategically significant movement function), the focus is improving journey time reliability and efficiency whilst seeking to mitigate the impact of motorised traffic on local communities e.g. severance, air quality, noise etc.

- For roads with strategic place functions, those categorised towards the right hand side of the matrix, the focus is on improving the quality of the built and natural environments as a means of delivering quality of life and economic benefits, whilst seeking to balance this against unnecessary delays and poor journey time reliability for through movements

In this way the Road Type Matrix can inform maintenance, management, and investment decisions, whilst helping to balance competing demands. Ideally highway investment will benefit all users with the key aim of maximising the flexibility and resilience of West Lancashire's road space, particularly in roads with significant movement and place pressures. However this is not always possible and it is important to recognise where trades-off are made in terms of different transport modes and movement and place

6.4 West Lancashire's Network Functions

The routes specified by LCC for inclusion in the WLRMS have been categorised in sections using the Movement and Place Matrix. This categorisation was informed by a project team site visit, LCC officer input and ratified with key stakeholders in the workshop held on 20th January 2017.

Figure 6.2 shows the identified route functions across the WLRMS identified network.

Key observation: Across West Lancashire the routes within the Primary Route Network (A59, A570, A5209, and A565) support the most significant movement functions. This highlights their strategic importance supporting travel internally within West Lancashire and between key economic centres such as Southport, Preston, Liverpool, and Manchester.

The network supports more significant place functions in urban areas particularly Ormskirk and Burscough. However, it is recognised that the design and current uses of the A570 gyratory in Ormskirk and the A59 Burscough High Street does not currently reflect the sub-regional place functions performed in these locations.

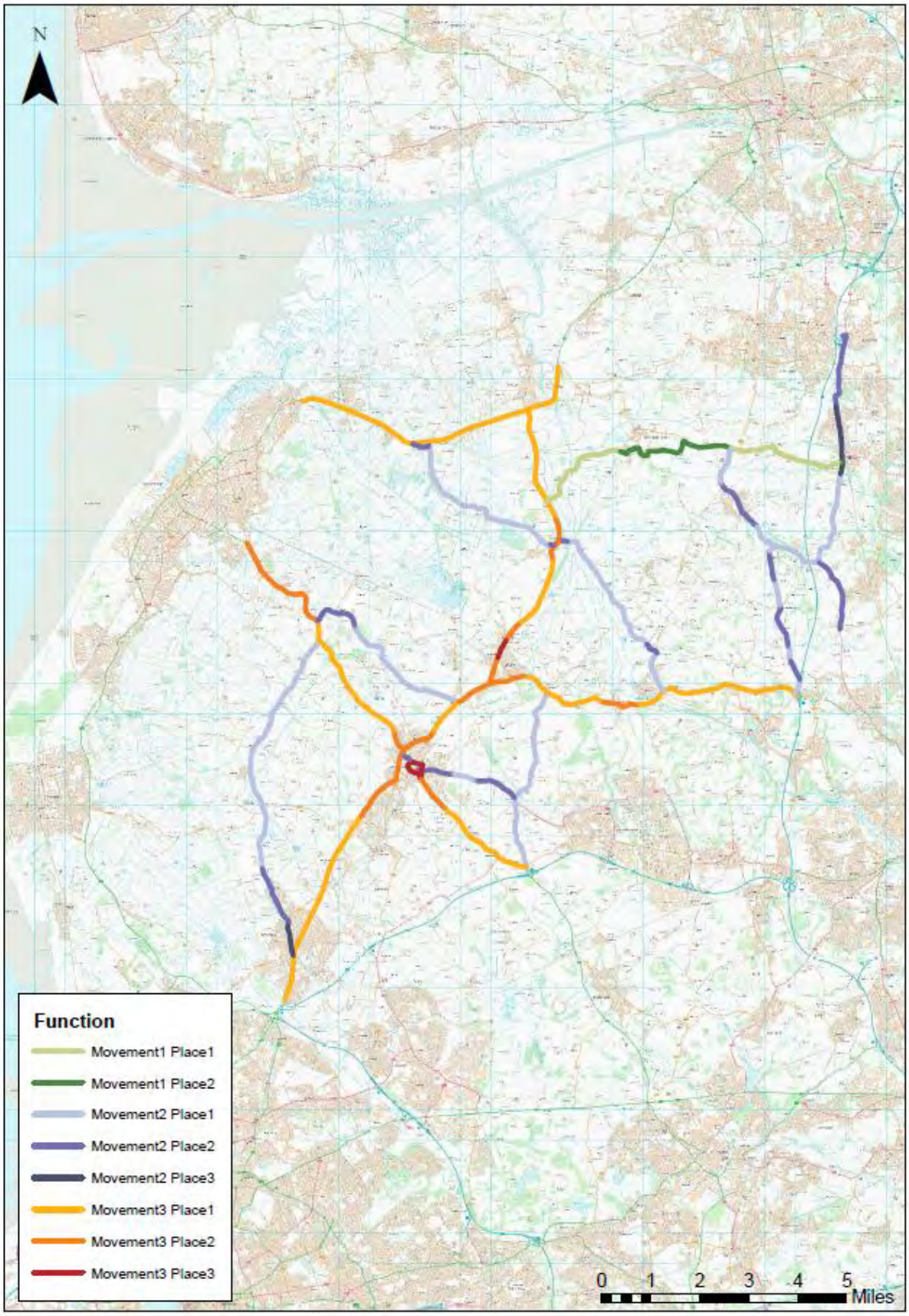


Figure 6.2: Route Function - West Lancashire

6.5 Network Performance

Following the identification of network functions the performance of the network, in terms of congestion and safety, was assessed to further develop the WLRMS knowledge base.

6.6 Congestion

In order to assess journey times on the network, network delay, and its cost, Traffic Master Data and Traffic Count Data provided by LCC were analysed.

6.6.1 Traffic Delay

Traffic delay was assessed using the most recent Traffic Master Data LCC provided which was for 2012 / 2013. With delay calculated as the difference between observed times for each period (AM, Inter-peak, PM) and average observed speeds between 00:00 and 06:00 for the entire data set period (2008 to 2013).

Figure 6.3 to 6.5 show the delay across the identified routes in West Lancashire's in the AM, inter-peak, and PM. Percentage delay was calculated as the percentage of journey time which was deemed to be delay i.e. exceeded average free flow conditions observed between 00:00 and 06:00. This ensures that the length of observed link would not impact identified delay.

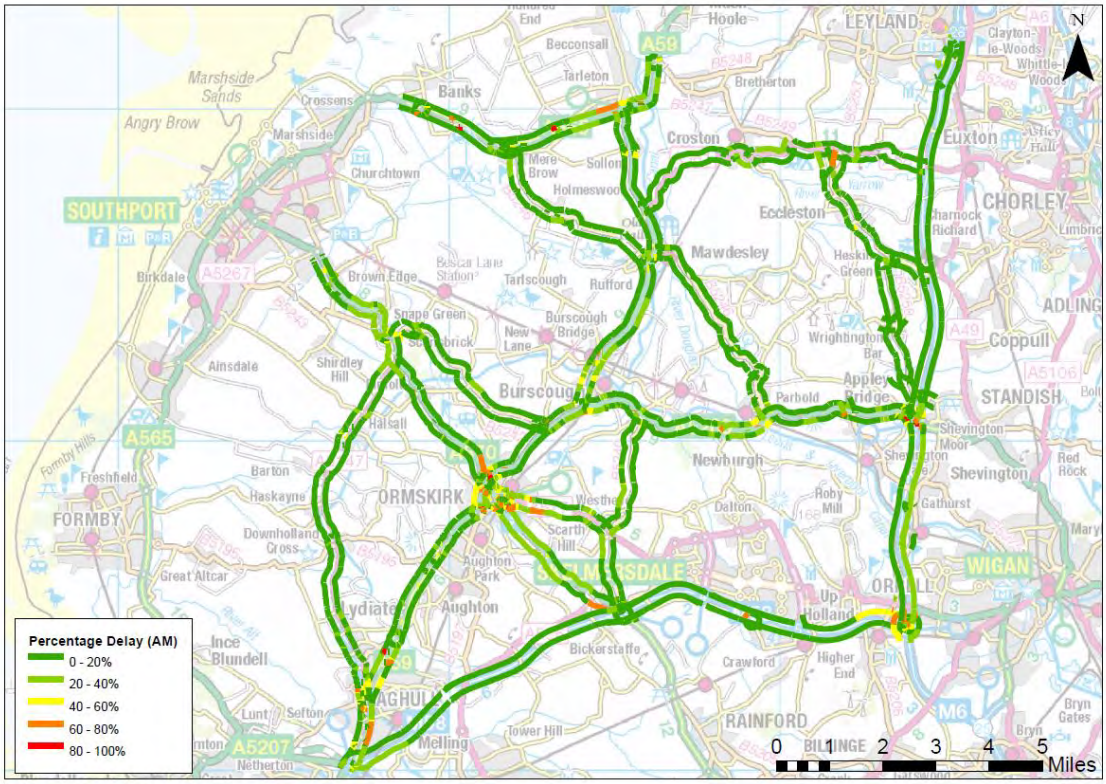


Figure 6.3 West Lancashire Highway Delay 2012/13 - AM

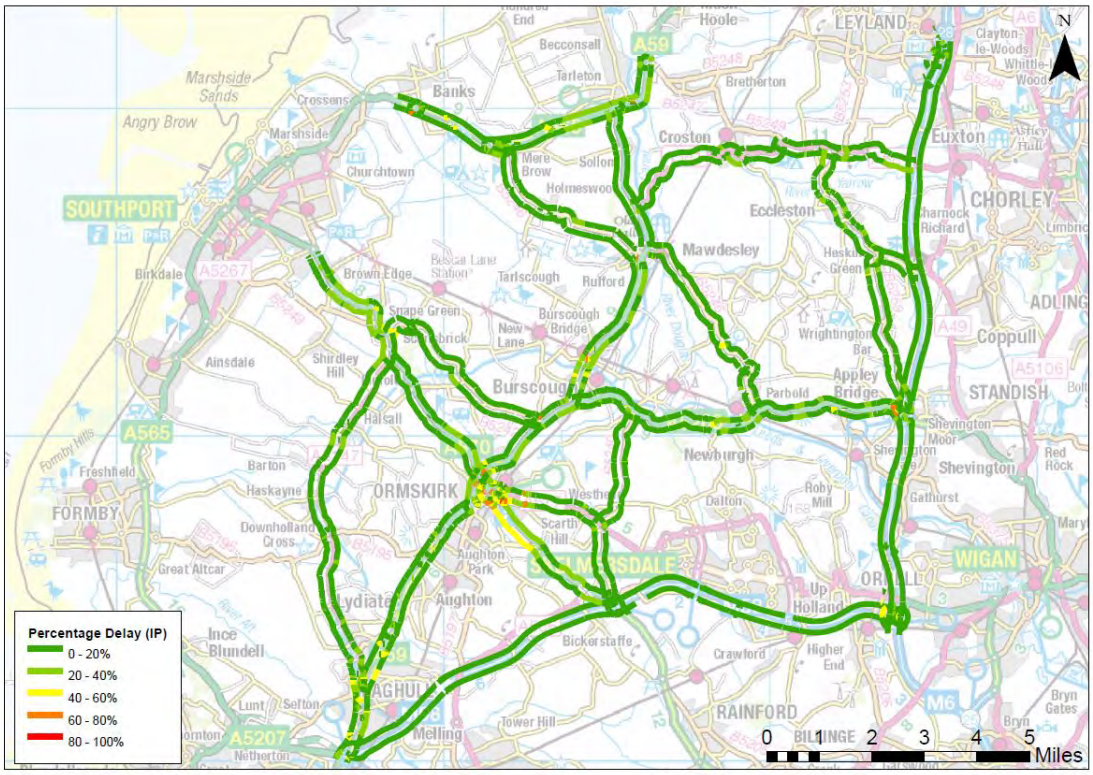


Figure 6.4 West Lancashire Highway Delay 2012/13 - Inter-peak

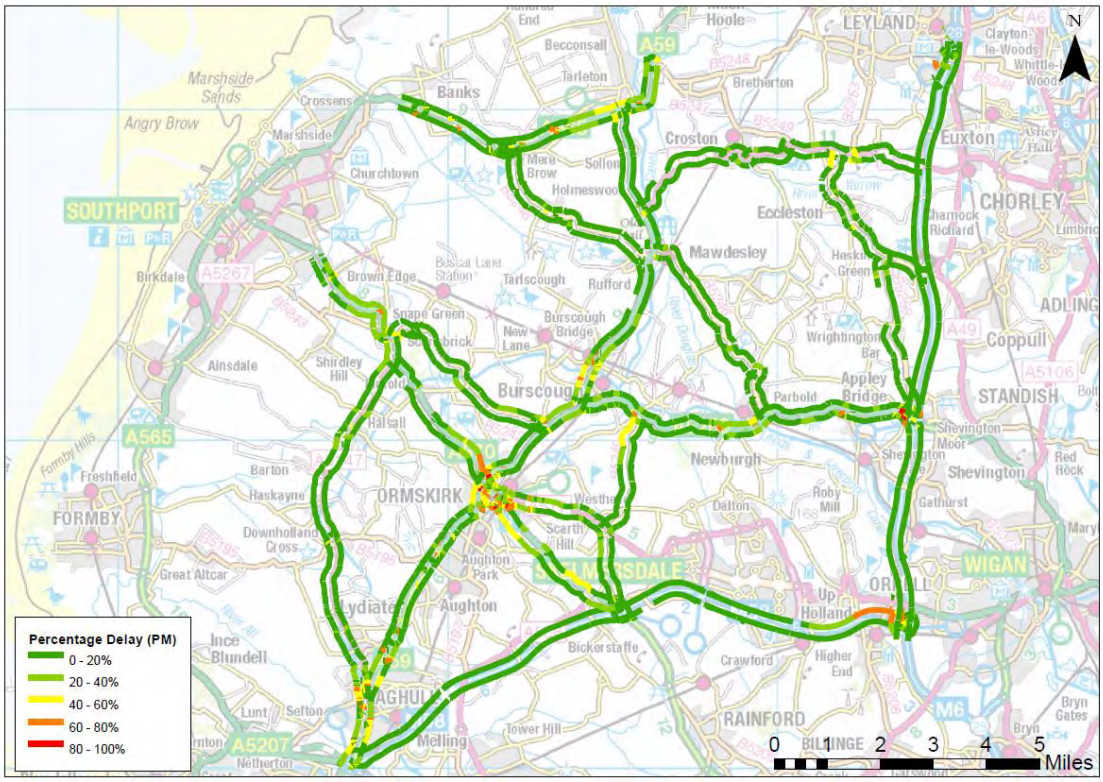


Figure 6.5 West Lancashire Highway Delay 2012/13 - PM

Key Observation: Network delay is higher in the AM and PM than the inter-peak. In all three time periods delay is highest in the urban areas of Ormskirk, Burscough, Maghull, and M6 Junction 26.

6.6.2 Cumulative Delay

In order to further quantify the network delay identified in Figures 6.3 to 6.5 above cumulative delay was calculated along the following routes on the network which had been identified as suffering from congestion:

- A59 between Maghull and Bank Bridge, Tarleton
- A565 between Southport and Bank Bridge, Tarleton
- A570 between Southport and M58 J3
- A5209 between Burscough and M6 J27

This allowed delay to be plotted onto axis to determine specific locations of high delay by direction. These figures are included as Appendix D with a brief commentary included below where specific points of interest in terms of network performance were identified.

- The A59 outside of Ormskirk and Burscough showed similar levels of delay in all time periods indicating a degree of journey time reliability
- The urban areas of Maghull, Ormskirk, and Burscough show greater variance in terms of delay between the three time periods
- The A59/A565 junction showed significant levels of delay relative to the overall journey between Bank Bridge in Tarleton and Southport. Westbound movements through this junction show significantly less

delay than eastbound movements which could potentially be the result of a left hand filter lane assisting southbound traffic entering the A59. No right hand filter lane is currently provided and the east bound approach is marked as a wide single lane with no specific right turn facility accessing the A59

- Areas of the A570 within Ormskirk itself are relatively poor performing in all three time periods
- The Five Ways junction of the A59/A570 in Ormskirk is identified as a location of significant delay for southbound traffic on the A570 in AM and PM periods but not in the inter-peak

Key Observation: Areas of greater urbanisation such as Ormskirk, Burscough and Tarleton show a greater variance in highway delay than their rural counterparts.

Two key junctions experience significant delay:

- **A59/A565 junction**
- **Five Ways Junction (A59/A570)**

6.6.3 Vehicle Delay and Flow

In line with the methodology specified in the Route Management Strategy guidance produced for LCC by Jacobs in 2012 the Traffic Master Data and vehicle count data supplied by LCC was used to determine the potential benefit of intervention at selected locations, in terms of the numbers of vehicles travelling through particular congested locations. This has been completed to understand the potential economic impact of delays on the network and thus identify key locations for targeted investment.

Count site data from the locations shown in Figure 6.6 below were used for this purpose. All count site data complies with WebTAG guidance which states that surveys should be carried out during a 'neutral' or representative month avoiding main and local holiday periods, local school holidays and half terms, and other abnormal traffic periods. In addition to avoiding count data collected during these periods Jacobs carried out an analysis of the West Lancashire area to establish any times of year where unusual traffic flows could be expected and where time periods should subsequently be avoided. These included the following:

- Edge Hill University - One of the main trip generators in Ormskirk which causes of seasonal variation as a result of term dates. Peak traffic flows generated from the University are normally in late September and early October as a result of new and existing student returning to campus. For example on the A570 south of the gyratory traffic volume can fluctuate by 17% peaking in October. Furthermore, lower traffic counts often coincide with the summer months when university students are on holiday.
- The Southport visitor economy - The Southport Flower Show in late August attracts an estimated 70,000 visitors. In addition, the Southport Air Show in September also attracts large crowds as do other events organised throughout the year. It is also recognised that on individual days in the summer months with fair weather the traffic flow may be higher. As a result of which the A565 shows a significant increase in traffic volume of 22% in the summer months of July and August.

All traffic data used was for 2015, as this was the most up to date data available following completion of the construction of the Switch Island Link, which may have impacted route choice and traffic flows. Traffic count data were then standardised to a single neutral month utilising conversion factors derived from a full year of traffic count data collected by a permanent traffic counter located on the A577.

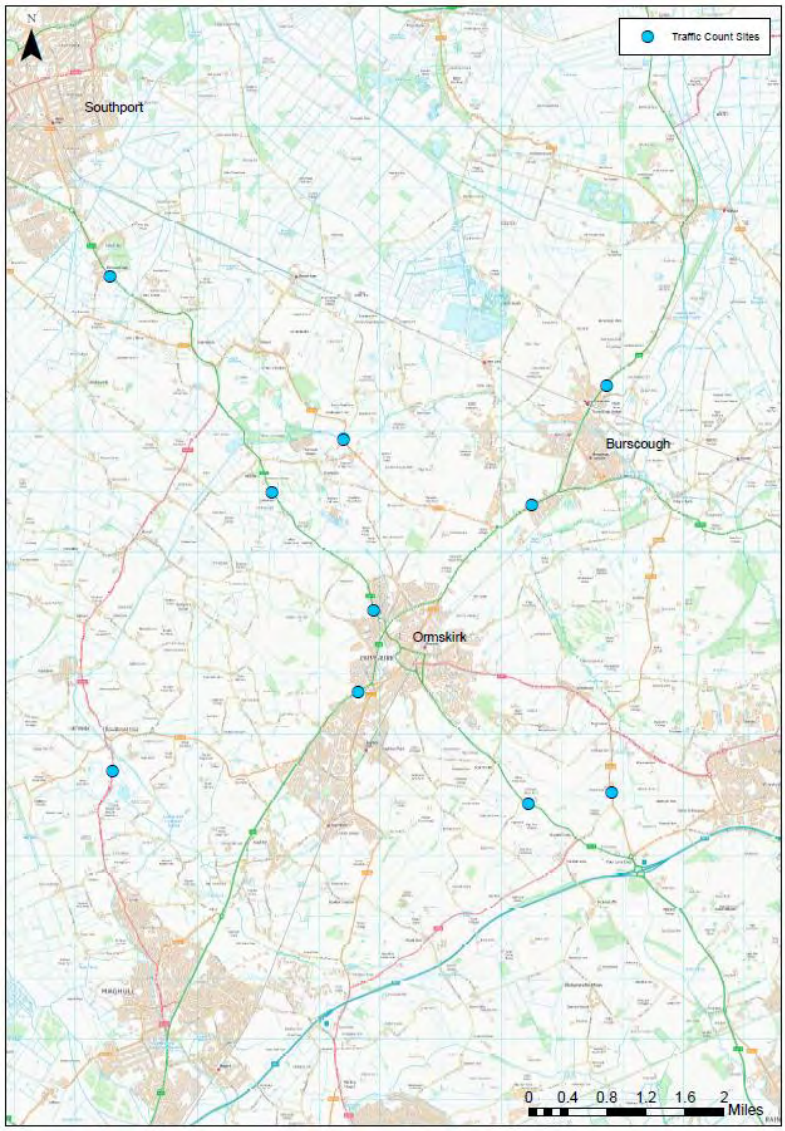


Figure 6.6: Traffic Count Sites

Figures 6.7 to 6.9 below show the two-way impact of localised delay by severity per metre in the AM, inter-peak, and PM periods for a standardised day. This is based upon Traffic Master Data which has been standardised for link length and traffic count data based on the count sites identified in Figure 6.6.

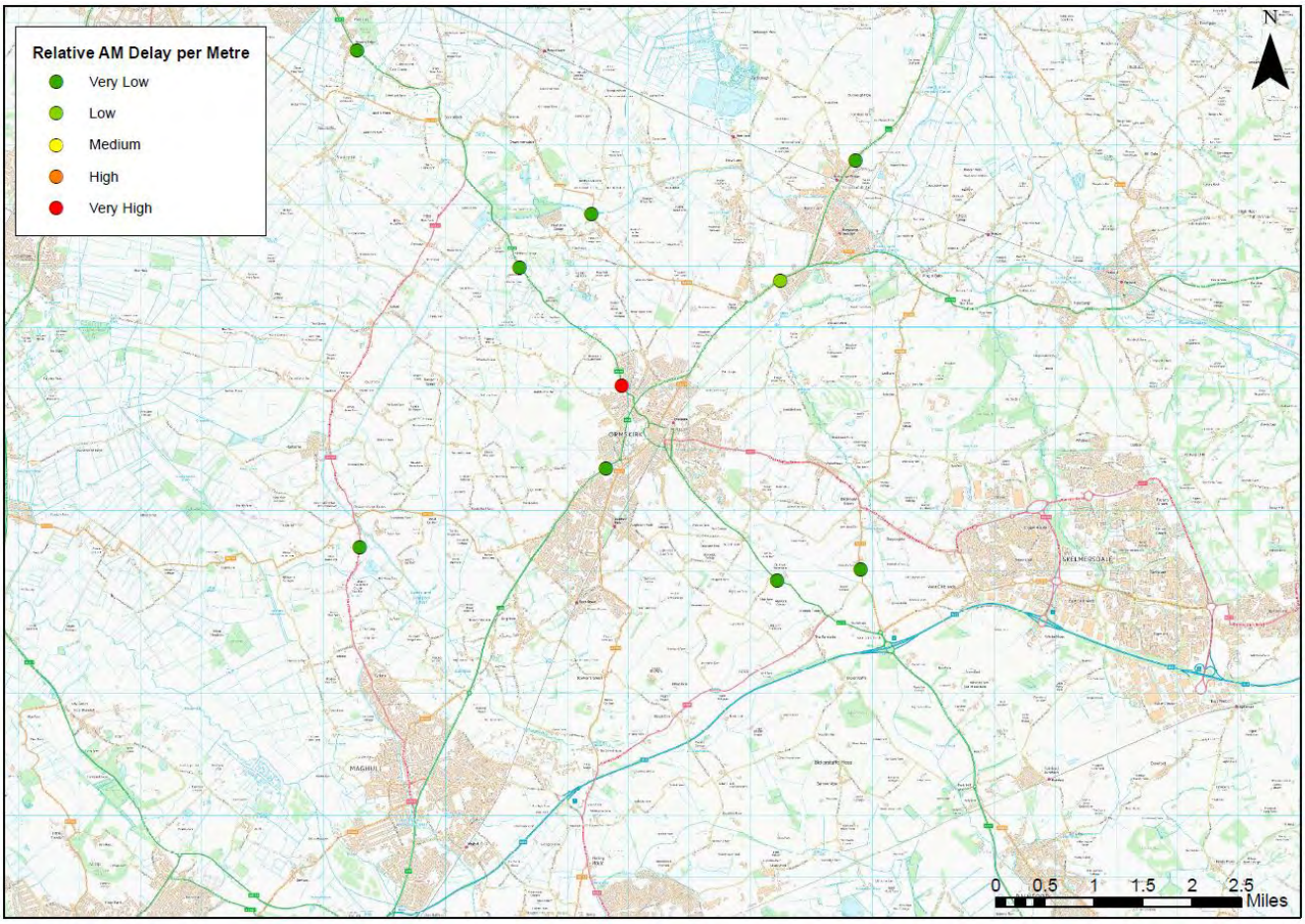


Figure 6.7: Relative Two-Way Delay (Average AM period)

There is a significant variance in delay across the time period, as shown in Figure 6.7. The greatest delay can be seen on the A570, on the north west outskirts of Ormskirk. The site to the south of Burscough was found to have the next highest levels of delay, but not of the same magnitude as the site to the north west of Ormskirk. This may be the result of the urban nature of this part of the network increasing the likelihood of junction and signal/junction impedances e.g. from the adjacent Five Ways Junction.

The two sites to the north and south of Burscough are also shown to have high levels of delay. Again this is likely due to the significance of this road and large traffic volumes passing through a more urbanised environment.

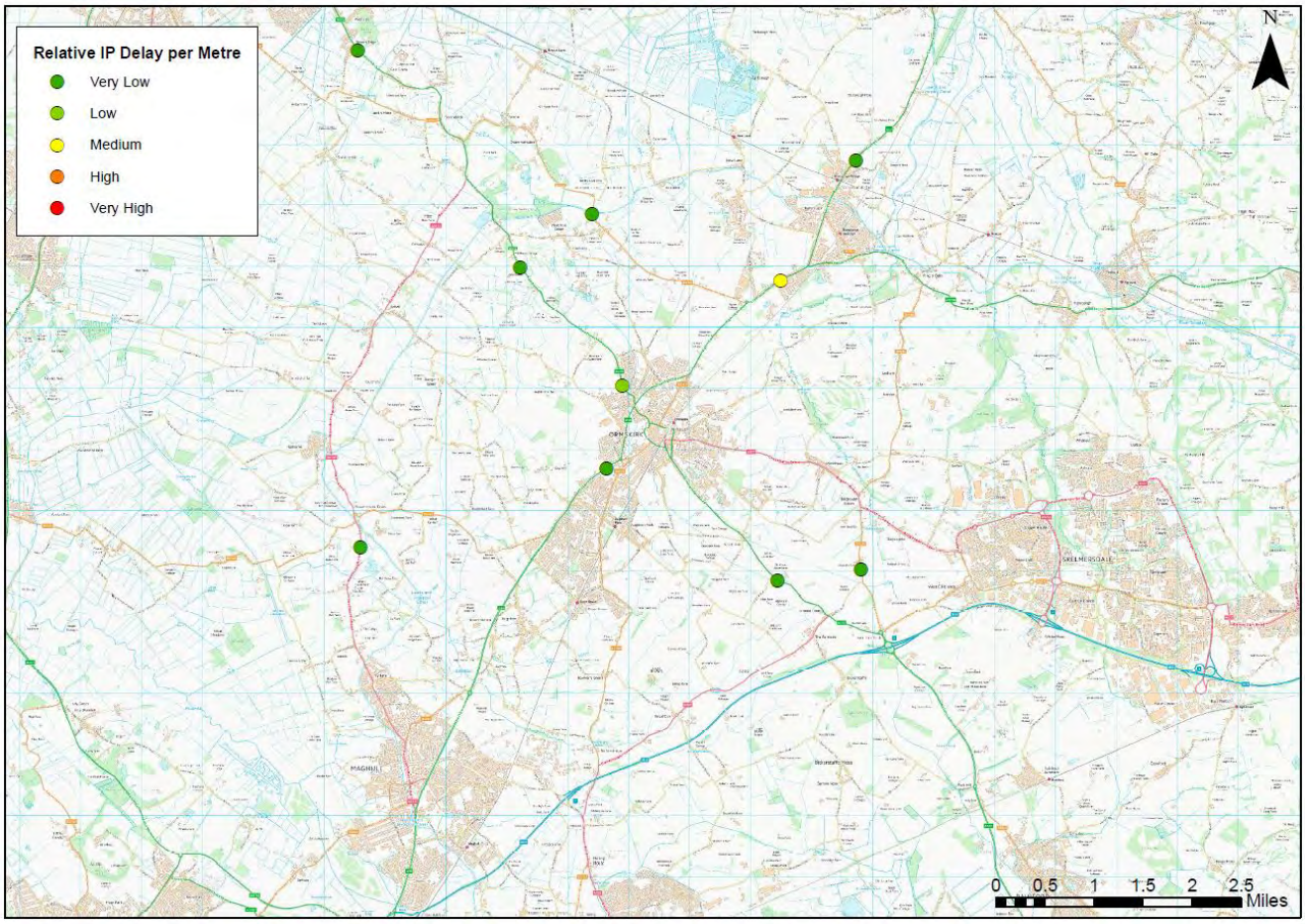


Figure 6.8: Relative Two-Way Delay (Average inter-peak period)

As shown in Figure 6.8 the site to the south of Burscough generates the highest delay, relative to both the AM and PM time periods the network in the inter-peak is the best performing time period as expected.

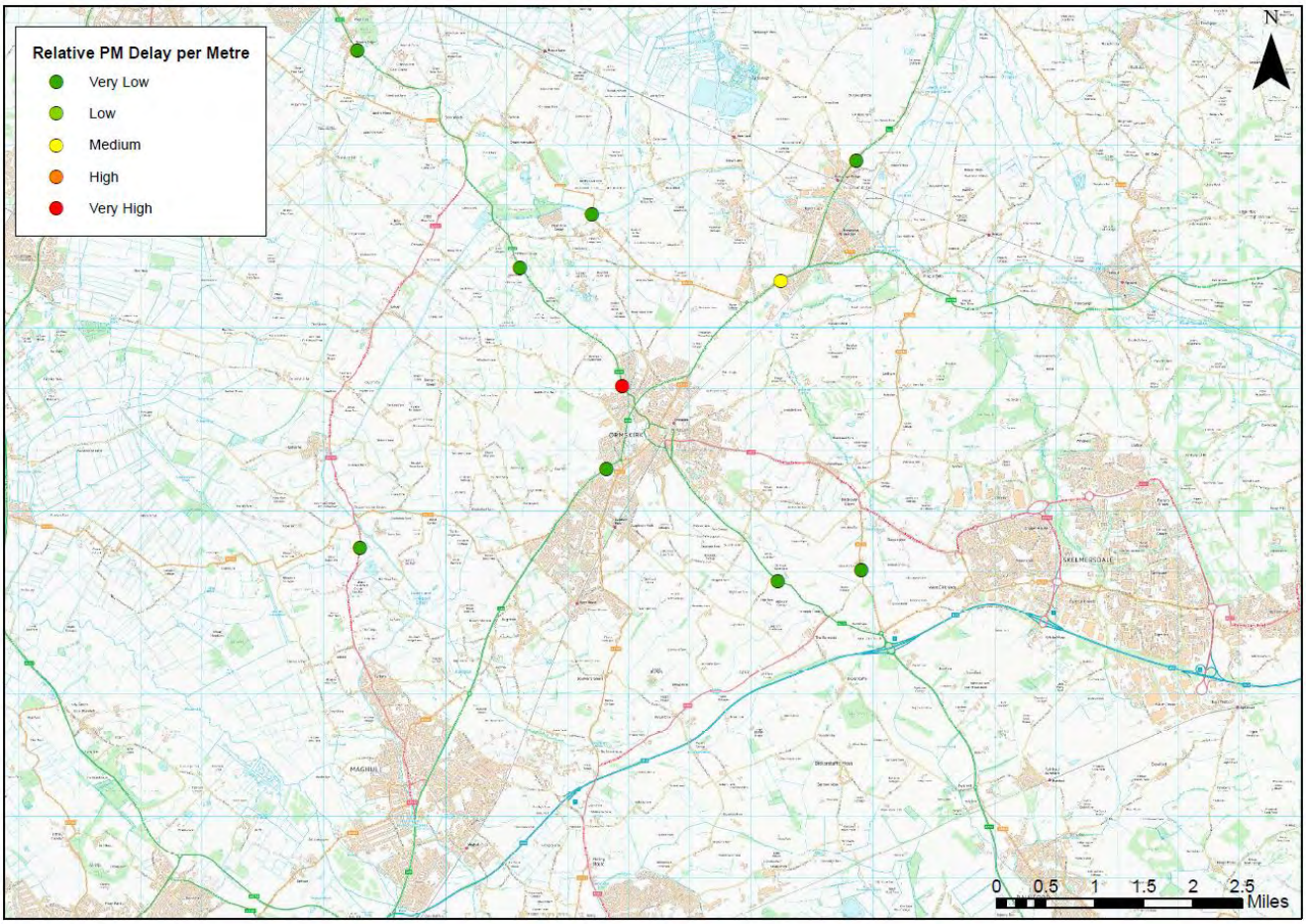


Figure 6.9: Relative Two-Way Delay (Average PM period)

Figure 6.9 shows similarities to the AM analysis, with locations showing corresponding levels of delay. The junction to the north west of Ormskirk is once again the worst performing.

Key Observation: Overall, the majority of the network appears to operate reasonably well, however there are key locations which show significant delay which when extrapolated over an extended period has the potential to impose significant costs on West Lancashire's economy.

West Lancashire's urban areas consistently show higher levels of delay than their rural counterparts, with Ormskirk and Burscough particularly affected. Junctions on the A570 to the north-west of Ormskirk consistently show the highest levels of vehicle delay. Levels of delay are also relatively high on the A59 in the vicinity of Burscough indicating the impact of congestion.

6.7 Safety

Highway safety was highlighted within Stage 1 and the Stakeholder Workshop as a key concern within West Lancashire. STATS19 accident data from 2011 to 2015 has been used to identify accident clusters across the network. Personal Injury Accidents (PIA) were mapped onto the network showing the location and severity of these incidents. Analysis of these plots showed that a relatively high number of accidents occur at junctions. Junction accident blackspots include:

- Five Ways Junctions (A59/A570)
- A565/Moss Hey Lane junction

- A570/A5147
- Derby Street/Stanley Street
- A570 South Junction Gyratory (where Park Road and Knowsley Road meet).

In addition it was also found that there is a notable concentration of PIAs and vulnerable casualties (pedestrian and cyclist) within Ormskirk town centre (particularly the A570 gyratory) and Burscough.

Key Observation: A significant proportion of PIAs occur at junctions.

In Ormskirk, 22% of causalities are pedestrians. This is more than three times the percentage of pedestrian causalities found in the wider study area (6.9%) but is likely to be a factor of increased pedestrian footfall within Ormskirk for which data is not available.

6.7.1 Bridge Safety Concerns

Both Derby Street Bridge and Bank Bridge were identified as key areas of concern by LCC Officers and stakeholders.

LCC Bridge Engineers consider Derby Street Bridge to be in relatively poor condition, although detailed structure surveys are still awaited being scheduled for summer 2017, with a potential risk of masonry falling onto the rail tracks and overhead electrified lines below. The Bridge also has very narrow pedestrian footpaths increasing the chances of pedestrian related accidents.

Bank Bridge also has narrow pedestrian footways but due to its rural location is assumed to have low pedestrian footfall. However, Bank Bridge is an accident blackspot; these accidents can also cause damage to the Bridge parapets. Analysis of Police crash reports shows that the alignment of the Bridge, and potentially also poor speed limit adherence may have contributed to these accidents.

Key Observation: West Lancashire's network is deemed to be performing worst in terms of congestion and safety in the urban areas of Ormskirk and Burscough. These two locations support the most significant movement and place functions indicating that these areas of the network are underperforming in terms of their identified network functions. This indicates a significant change potential for these two parts of the network.

Generally rural areas of the primary network support strategic movement functions and are performing well in terms of congestion, apart from a number of key junctions. As such, the majority of the rural network is performing adequately in terms of its identified function.

6.8 Ormskirk

Analysis of the network problems, functions, and performance in Ormskirk along with relevant background and the identified prioritised interventions across all the packages for Ormskirk is available as Appendix E.

7. Network Objectives

7.1 Introduction

Following the identification of network problems, functions, and performance it was necessary to define overarching network objectives to guide the WLRMS going forward.

In line with best practice guidance, the network objectives were defined based upon a range of evidence collated as part of the study, including analysis of available data, stakeholder engagement, and professional judgement. This process ensures a robust audit trail underpinning the development and prioritisation of potential interventions. The network objectives will then be used to form the framework for the development of the WLRMS and assessment of potential interventions.

The network objectives were developed to focus on the alleviation of existing and future problems and issues across West Lancashire's network, including:

- **Network resilience** – West Lancashire's network was not deemed to be sufficiently resilient to the impact of events, accidents, weather, and growth
- **HGV routing** – HGV routing has a detrimental impact on quality of life for some of West Lancashire's communities
- **Public transport** – public transport connectivity is not sufficient to offer a high quality alternative to use of the private car across West Lancashire
- **NMU facilities** – NMU facilities in West Lancashire's urban areas are not sufficient to support significant walking and cycling mode share
- **Derby Street Bridge, Ormskirk** – the long-term vision for Derby Street Bridge needs to be agreed in light of identified issues with structural integrity, safety, and traffic management
- **Bank Bridge, Tarleton** – Bank Bridge suffers from a poor safety record and is identified as a weak spot in terms of network resilience
- **Growth and development** – significant levels of proposed growth will place additional pressure on the network in the future
- **Congestion** – parts of the urban network suffer from congestion and poor journey time reliability
- **Safety** – parts of the network suffer from a poor safety record

7.2 West Lancashire Network Objectives

The key themes identified above were then distilled to identify the following six network objectives. These were agreed with wider stakeholders and through close liaison with LCC and will be used as the framework for the development of the WLRMS and the identification of potential interventions going forward.

The network objectives are shown below in Table 7.1.

Table 7.1 Network Objectives

Ref	Network Objective
NO1	Improve the quality of life for residents affected by traffic using inappropriate routes, particularly heavy goods vehicles
NO2	Ensure the transport network supports long-term economic success and facilitates growth
NO3	Improve journey time reliability for all modes of transport on Key Route Network
NO4	Improve safety for all highway users
NO5	Ensure the route network is well maintained and resilient to the impacts of incidents and the environment
NO6	Reduce the negative impacts of traffic on local communities

7.3 Lancashire Local Transport Plan Objectives

The following seven priorities are listed in the Lancashire Local Transport Plan (LTP) and have been used as supporting objectives during later option appraisal to ensure the county wide applicability of the process:

- Improving access into areas of economic growth and regeneration
- Providing better access to education and employment
- Improving people's quality of life and wellbeing
- Improving the safety of our streets for our most vulnerable residents
- Providing safe, reliable, convenient and affordable transport alternatives to the car
- Maintaining our assets
- Reducing carbon emissions and its effects

7.4 Evaluation of WLRMS Implementation

It is important that a framework is established for the evaluation of the outturn benefits of the WLRMS and to assess network operation in West Lancashire more generally. Subsequently, previous Route Management Strategies have developed a set of bespoke route Key Performance Indicators (KPIs) aimed at evaluating the impact of interventions upon local highway users.

There are many advantages to committing resources to the evaluation of impacts of an intervention or strategy. Key advantages include but are not limited to:

- Benefits are clearly documented
- Value for Money can be established
- User needs are understood
- User satisfaction is measured

- Failures and lessons learned are identified
- Evidence can be used to inform future decision making
- Allows performance measurement across different projects

However, it is recognised that the measurement of network / route specific KPIs could place a significant burden on LCC. Alongside development of the WLRMS LCC have been involved in work, in partnership with Transport for the North (TfN) aiming to jointly development a Key Route Network for the North. This brings opportunities for the standardisation of monitoring of the WLRMS with that of the wider Key Route Network bringing efficiency benefits and Pan-Northern alignment. Whilst the Key Route Network has not yet been formally announced it is expected that parts of West Lancashire's network will be included.

TfN in partnership with Northern highway authorities have identified a set of Conditional Outputs which will be used to measure performance of the Key Route Network. Performance metrics are currently being identified for each Conditional Output which will be available in the near future. Using these performance metrics, the aspiration is that parts of West Lancashire's highway network will be monitored against the identified Conditional Outputs at regular intervals as appropriate.

Table 7.2 identifies the TfN Conditional Outputs and shows the alignment between each Conditional Output and relevant WLRMS network objectives; demonstrating that they are fit for use.

Table 7.2 Conditional Outputs and Alignment with Network Objectives

TfN Key Route Network Conditional Outputs	Network Objectives					
	1	2	3	4	5	6
Safety	✓			✓		✓
Journey Quality			✓			
Reliability			✓		✓	
Efficiency		✓				
Resilience		✓			✓	
Multi-modal opportunity			✓			
Place	✓					✓

Network Objectives:

NO1: Improve the quality of life for residents affected by traffic using inappropriate routes, particularly heavy goods vehicles.

NO2: Ensure the transport network supports long-term economic success and facilitates growth

NO3: Improve journey time reliability for all modes of transport on Key Route Network.

NO4: Improve safety for all highway users.

NO5: Ensure the route network is well maintained and resilient to the impacts of incidents and the environment.

NO6: Reduce the negative impacts of traffic on local communities.

8. Option Development and Sift

8.1 Option Identification

8.1.1 Stage 1

During Stage 1, a number of workshops were held with stakeholders to identify potential options for key areas where the requirement for intervention had been identified. These covered the following three areas:

- Derby St Bridge, Ormskirk
- Bank Bridge, Tarleton
- A5209 Burscough

The workshops provided an opportunity to utilise the knowledge and experience of key stakeholders and to gather their thoughts on the key issues affecting the study area. The workshop was attended by a variety of Lancashire County Council (LCC) internal partners as well as West Lancashire Borough Council officers and other key stakeholders. The options identified in these sessions were taken forward as part of the WLRMS Stage 2 option assessment process as outlined in this chapter.

8.1.2 LCC Identified Options

Jacobs completed a policy review focusing on key documents including the West Lancashire Masterplan, M58 to Southport Corridor Study, Stage 1 of the WLRMS, LCC's Local Transport Plan 3, and West Lancashire Borough Council's Report of the Corporate and Environmental Overview & Scrutiny Committee A Market Town Strategy for Ormskirk. Detailed review of these documents allowed the identification of potential options which were taken forward through the WLRMS where they responded to an identified need.

8.1.3 Stakeholder Engagement Workshop

A workshop was held with LCC and key stakeholders as part of WLRMS Stage 2 on 20th January 2017, as described in Chapter 3. This was arranged with the aim of agreeing issues and the long list of options, and also to seek suggestions around additional options for appraisal through the WLRMS. Whilst discussion around the bridge options was highly informative and stakeholders had the opportunity to raise key concerns around specific areas of the network, there were limited new interventions suggested during this process suggesting that the option long list that had been produced was comprehensive.

8.1.4 Internal Jacobs Workshop

An additional optioneering workshop was held internally with Jacobs's staff utilising expert transport planning and highway engineering input. This provided a number of additional options for consideration.

Key Observation: 41 potential interventions covering all highway modes were initially identified, based on identified network problems, function, and performance in response to the defined network objectives.

8.2 Early Sift Process

8.2.1 Option Sift

Following discussion with LCC officers and in line with guidance set out within TAG Unit 2.1.1, an early sifting process was applied to the initial list of 41 potential interventions to filter out any that were not deemed appropriate for further appraisal as part of the WLRMS. The early sifting process focused on the following broad criteria:

- Deliverability – consideration of political issues, planning issues, third parties and deliverability
- Practical Feasibility – a qualitative assessment of engineering feasibility based upon local knowledge, experience from the delivery of similar schemes elsewhere, and engineering experience / expertise
- Perceived value for Money - perceived value for money based upon experience of schemes elsewhere and the outturn cost / benefits delivered as well as consideration of affordability within the constraints of likely funding availability

At this point an initial assessment against the agreed network objectives was also undertaken and particularly low scoring interventions were also sifted out of further consideration in the WLRMS. This scoring process is discussed in more detail later in chapter nine.

The early sifting process resulted in a shorter list of interventions to be taken forward for further consideration as part of the WLRMS. Table 8.1 lists each of the 24 interventions identified to be taken forward for further consideration and Table 8.2 lists each of the interventions which have not been taken forward for further appraisal as part of the WLRMS, together with the criteria by which they have been discounted.

Table 8.1 Interventions Taken Forward for Further Appraisal

Ref	Description
WL5	Improved cycle parking facilities within Ormskirk and Burscough town centres
B3	Public realm and pedestrian improvement on Burscough High Street (A59), including removal of guard rails, side road treatments e.g. side road footway crossings and junction mouth tightening, use of block paving
O2	Upgrade footpath linking Ormskirk railway station and bus station to a dedicated pedestrian and cycle shared use route (assuming sufficient access and ~3metres width can be achieved).
O13	Introduction of single pedestrian crossing phase at Aughton Street / A570 Junction
O19	Provision of PUFFIN type pedestrian crossing facilities across the St Helens Road and Moor Street East approaches (will require updated signal infrastructure). Or potential for a Toucan crossing as part of improved cycle links with the railway station.
O20	Provision of PUFFIN type pedestrian crossing facilities at junction of Wigan Rd, Knowlsley Rd, Stanley Street, and Moor Street
O22	Improve the pedestrian facilities across A570 Park Road near Moorgate through reinstatement of the crossing onto SCOOT network by re-connecting the link cable and allowing SCOOT to determine the most appropriate crossing time.
WL6	Improve West Lancashire's links to Lancashire's wider cycle network, in line with West Lancashire's Green Infrastructure and Cycle Strategy, including the following proposals: - Linking the Trans-Pennine Trail at Lydiate, and RR91 at Aughton - Linking Southport Town Centre eastwards to RR91 on the Leeds and Liverpool Canal at New Lane, including upgrading the canal towpath between there and Burscough Wharf - East from the north end of Southport to RR91 at Mere Brow

	- Linear Park proposal between Ormskirk and Burscough
WL7	Upgrade the footways on the A59 and A570 (between Ormskirk and Burscough, and between Ormskirk and Edge Hill University) to shared use (pedestrian and cyclist). This will be considered in conjunction with the Ormskirk to Burscough Linear Park.
O4	Improved pavement and facilities for cyclists and pedestrians on St Helen's Road from the junction of Moor Street to the junction with Ruff Lane.
O21	Improved signal performance at the junction of the A570 Park Road and Morrisons Store access by use of the DFOF and BIAS commands, on link 3014D with DFOF set at -5 seconds and the BIAS for link 3014D set to 30; encouraging the optimiser to maintain a closer fixed offset for the two junctions
O24	Improved signal performance at the junction of Ruff Lane and Knowsley Road by resolving UTC/SCOOT issue and validating QCMC and STOC values
O25	Five Ways junction (A59/A570) issues could be potentially caused by large gaps in the queues causing the MOVA to identify end of saturation prematurely which could be mitigated through monitoring and review of SATINC and GAMBER values.
T2	Signal junction optimisation at the junction of A59 and the A565 linked to proposed introduction of a right hand filter lane
WL1	Signal optimisation at junction of A570 and B5242 (Morris Dancers)
B2	Staggered signalised junction to be implemented to replace the two mini-roundabouts on the A59 Burscough high Street. Would include pedestrian facilities crossing the Tesco junction and the application of walk with traffic to optimise signal timings.
T1	A new link road between Green Lane and the A565 at Tarleton to relieve the impact of through heavy traffic
WL10	Examine deliveries and servicing arrangements to identify more suitable drop patterns in Ormskirk and Burscough e.g. work with refuse collection etc.
WL2	Improved signing strategy between Southport and the motorway network aimed at reducing traffic on the A570 Ormskirk gyratory
O6	Remove the A570 from the primary route network between its junctions with the M58 and A59 in support of limiting its use by long distance traffic and HGVs
BB01A	Bank Bridge: Remedial works on existing bridge and implementation of appropriate on-going maintenance regime, including maintaining high friction surfacing; implementation of speed enforcement / vehicle activated signage
BB03	Bank Bridge: Implement a new section of road between the Coe Lane junction and the A59 just south of Mill Brow Cottages; include either a single bridge across the Leeds and Liverpool Canal and River Douglas or two separate structures depending on the most appropriate engineering solution.

DS03A	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; implement 18 tonne environmental weight restriction.
DS03B	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; no weight restriction.

Table 8.2 Interventions not Taken Forward

Ref	Description	Criteria for Disregarding
O3	New traffic signals at the A577 Moor Street/A570 St Helens Road junction to improve bus, cyclist, and pedestrian access to bus station	Low scoring against network objectives
O12	Upgrade signals at Aughton Street / A570 junction to PUFFIN type crossing (with detection) and introduce pedestrian countdown timers.	Low scoring against network objectives
O17	Improvements to pedestrian crossing facilities at the junction of St Helens Road and Park Road, including upgrading to PUFFIN type crossing, provision of additional staggered facilities across St Helens Road, and changes to the layout of the staggered facilities across Park Road	Low scoring against network objectives
O10	Amend junction geometry to accommodate HGV swept paths between A570 southbound and A59 northbound at Five Ways junction	Low scoring against network objectives
O18	Increase the length of the left turn filter lane from St Helens Road onto Park Road (A570)	Low scoring against network objectives
WL3	Variable Message Signing Strategy for Ormskirk to react to events and improve car park information	Significant feasibility challenges
WL9	Provide park and ride facilities close to the M58 which could serve Southport and Edge Hill University during term time	Not likely to deliver value for money
WL11	Remove the A5209 from the primary route network	Low scoring against network objectives. However recommend ongoing monitoring of currently identified issues relating to the A5209.
BB02	Bank Bridge: Widen the existing structure but retain the façade	Very difficult to deliver, significant feasibility challenges, not likely to deliver value for money

BB04	Bank Bridge: Implement a new section of road between the Coe Lane junction and the A59 just south of Mill Brow Cottages; include either a single bridge across the Leeds and Liverpool Canal and River Douglas or two separate structures depending on the most appropriate engineering solution. Also implement a new carriageway south of the A59 (in the vicinity of the Coe Lane junction) connecting to the A59 south of Cuerden Farm. This may, or may not, require terminal roundabouts at east end of the carriageway or a variation of this theme.	Not likely to deliver value for money
DS01	Derby Street Bridge: Remedial works on existing bridge to maintain its heritage characteristics but with use restricted to pedestrians and cyclists, raise parapet walls to meet current road over rail standards, and implement an appropriate on-going maintenance regime	Very difficult to deliver, not likely to deliver value for money, given the alternative routes available to service the town centre
DS02	Derby Street Bridge: Remedial works on existing bridge to maintain its heritage characteristics and change use to a single traffic lane restricted to light vehicles with a 3 tonne weight limit, raise parapet walls to meet current road over rail standards and implement an on-going maintenance regime.	Very difficult to deliver
DS04	Derby Street Bridge: Strengthen, repair, and widen existing bridge to accommodate two lanes with additional width for pedestrians and raised parapet walls which meet current road over rail standards. Would require a cantilevered concrete slab over the arch with rebuilt stone faced concrete parapet walls, compromising the heritage characteristics of the bridge.	Significant feasibility challenges, not likely to deliver value for money
DS05	Derby Street Bridge: Replace bridge with a new wider three arch bridge with two lanes able to accommodate all classes of vehicles including HGV's with additional width for pedestrians and raised parapet walls which meet current road over rail standards, significantly compromising the heritage characteristics of the bridge	Very difficult to deliver, significant feasibility challenges, not likely to deliver value for money
DS06	Derby Street Bridge: Replace bridge with a modern, single span bridge with two lanes able to accommodate all classes of vehicles including HGV's with additional width for pedestrians and raised parapet walls which meet current road over rail standards, significantly compromising the heritage characteristics of the bridge.	Very difficult to deliver, given the Grade II status of the structure.
O15	Implement a shared space style scheme in line with the approach taken in Fishergate Hill, Preston on section(s) of the Ormskirk A570 gyratory	To be appraised as part of a focused Ormskirk Movement Strategy
O30	Area wide environmental weight restriction in A570 Ormskirk gyratory and town centre	To be appraised as part of a focused Ormskirk Movement Strategy

Further details on the assessment of each intervention are included in Appendix F.

Key Observation: The early sifting process resulted in 24 interventions being taken forward for further consideration.

9. Option Appraisal

9.1 Introduction

The next stage in the WLRMS development process was to take each of the 24 better performing interventions identified for further consideration forward for more detailed appraisal. In order to achieve this, a bespoke option appraisal tool (OAT) has been developed in line with the approach taken in previous Route Management Studies.

9.2 Option Appraisal Tool (OAT)

The OAT was developed to summarise and present evidence on proposed options in a clear and consistent format, providing decision makers with relevant, high level information to help them assess how options perform and compare. As such, OAT can be used to assess and compare options regardless of transport mode, location, or type.

The OAT was designed to be consistent with LCC's LTP Scheme Prioritisation System and the principles set out within the Department for Transports' Early Assessment and Sifting Tool (EAST). However, this bespoke approach offers the scope to score multiple objectives individually compared to the single opportunity to assess objectives in EAST (termed 'Fit with other objectives'). This approach gives greater ability to differentiate between the strategic fit of options in terms of their contribution to identified network objectives.

The OAT has been designed so that it can be applied without having to obtain detailed evidence. This flexibility allows options to be considered at an early stage of development; however, the level of confidence that can be applied to comparisons facilitated by the tool depends entirely on the robustness of the underlying evidence base. As such, options may need to be reappraised at a later date if the availability of scheme information or the engineering / political / economic climate changes significantly.

9.3 Option Scoring

Options passing the initial sift, as described in Chapter 8, were scored against the agreed network objectives to rank the options in terms of best overall fit, with scoring based on local knowledge, professional judgement, and specialist expertise. Each option was scored on a five point scale against each network objective (-2; -1; 0; +1; +2) ranging from large adverse impact to large beneficial impact.

A weighting factor of two was applied against the following two network objectives as agreed with LCC:

- NO2 (Ensure the transport network supports long-term economic success and facilitates growth)
- NO4 (Improve safety for all highway users)

This allowed a scoring range of +16 to -16 against network objectives. Any interventions scoring less than 6 were sifted out of consideration in the WLRMS at this stage and are shown in Table 8.2 above. Any option scoring six or more was then taken through secondary scoring against LCC's LTP objectives. Each option was scored on a five point scale against each LTP objective (-2; -1; 0; +1; +2) ranging from large adverse impact to large beneficial impact, with no weighting applied.

Table 9.1 below provides a summary of each element of the overall appraising score.

Table 9.1 Maximum Overall Appraisal Score

	Weighting Factor	Max Score
Network Objective 1	1	2
Network Objective 2	2	4
Network Objective 3	1	2
Network Objective 4	2	4
Network Objective 5	1	2
Network Objective 6	1	2
Sub Total		**16**
LTP Objective 1	1	2
LTP Objective 2	1	2
LTP Objective 3	1	2
LTP Objective 4	1	2
LTP Objective 5	1	2
LTP Objective 6	1	2
LTP Objective 7	1	2
Sub Total		**14**
Maximum Overall Appraisal Score		**30**

9.4 Appraisal Results

Subsequently, the appraisal exercise resulted in an overall score for each of the interventions identified, in terms of delivery against agreed network and LTP objectives. This allowed a direct comparison between the interventions, and the identification of those judged to provide the highest contribution to local and county wide objectives. As part of this exercise individual interventions which had not been discounted were assigned cost estimate ranges. These were based on scheme benchmarking and professional judgement providing a high level cost estimate only. Detailed investigations have not been taken in the WLRMS.

Table 9.2 below identifies the contribution each intervention is deemed to make to both the network and LTP objectives. Options B3 and O2 score the highest total score of 19 followed by WL7 and BB03 with scores of 18; all four of these options demonstrate considerable contribution to both network and LTP objectives.

Table 9.2 Appraisal Scores

Ref	Description	Network score /16	LTP score / 14	Total / 30	Est. Cost
B3	Public realm and pedestrian improvement on Burscough High Street (A59), including removal of guard rails, side road treatments e.g. side road footway crossings and junction mouth tightening, use of block paving	9	10	19	£300,000 - £400,000
O2	Upgrade footpath linking Ormskirk railway station and bus station to a dedicated pedestrian and cycle shared use route (assuming sufficient access and ~3metres width can be achieved).	9	10	19	£100,000
WL7	Upgrade the footways on the A59 and A570 (between Ormskirk and Burscough, and between Ormskirk and Edge Hill University) to shared use (pedestrian and cyclist). Will be a need to modify kerbs, examine and potentially introduce additional width at pinch points, and introduce side road treatments. This should be considered in conjunction with the Ormskirk to Burscough Linear Park proposals.	10	8	18	<£750,000
WL1	Signal optimisation at junction of A570 and B5242 (Morris Dancers)	10	6	16	<£5,000
O6	Remove the A570 from the primary route network between its junctions with the M58 and A59 in support of limiting its use by long distance traffic and HGVs	9	6	15	<£25,000
WL6	Improve West Lancashire's links to Lancashire's wider cycle network, in line with West Lancashire's Green Infrastructure and Cycle Strategy, including the following proposals: - Linking the Trans-Pennine Trail at Lydiate, and RR91 at Aughton - Linking Southport Town Centre eastwards to RR91 on the Leeds and Liverpool Canal at New Lane, including upgrading the canal towpath between there and Burscough Wharf - East from the north end of Southport to RR91 at Mere Brow - Linear Park proposal between Ormskirk and	7	7	14	Unknown

	Burscough				
O4	Improved pavement and facilities for cyclists and pedestrians on St Helen's Road from the junction of Moor Street to the junction with Ruff Lane.	7	6	13	£75,000
WL10	Examine deliveries and servicing arrangements look for more suitable drop patterns e.g. work with refuse collection etc. in Ormskirk and Burscough	8	5	13	£20,000
WL2	Improved signing strategy between Southport and the motorway network aimed at reducing traffic on the A570 Ormskirk gyratory	7	6	13	£50000
WL5	Improved cycle parking facilities within Ormskirk and Burscough town centres	6	6	12	£50000
O19	Provision of PUFFIN type pedestrian crossing facilities across the St Helens Road and Moor Street East approaches (will require updated signal infrastructure). Or potential for a Toucan crossing as part of improved cycle links with the railway station.	7	5	12	£50,000 - £100,000
O22	Improve the pedestrian facilities across A570 Park Road near Moorgate through reinstatement of the crossing onto SCOOT network by re-connecting the link cable and allowing SCOOT to determine the most appropriate crossing time.	7	5	12	<£5,000
T2	Signal junction optimisation at the junction of A59 and the A565 linked to proposed introduction of a right hand filter lane	7	5	12	<£25,000
O13	Introduction of single pedestrian crossing phase at Aughton Street / A570 Junction	7	4	11	<£5,000
O20	Provision of PUFFIN type pedestrian crossing facilities at junction of Wigan Rd, Knowlsley Rd, Stanley Street, and Moor Street	7	4	11	<£120,000

O21	Improved signal performance at the junction of the A570 Park Road and Morrisons Store access by use of the DFOF and BIAS commands, on link 3014D with DFOF set at -5 seconds and the BIAS for link 3014D set to 30; encouraging the optimiser to maintain a closer fixed offset for the two junctions	6	4	10	<£5,000
O24	Improved signal performance at the junction of Ruff Lane and Knowsley Road by resolving UTC/SCOOT issue and validating QCMC and STOC values	6	4	10	<£5,000
O25	Five Ways junction issues could be potentially caused by large gaps in the queues causing the MOVA to identify end of saturation prematurely which could be mitigated by monitoring and review of SATINC and GAMBER values	6	4	10	<£5,000
B2	Staggered signalised junction to be implemented to replace the two mini-roundabouts on the A59 Burscough high Street. Would include pedestrian facilities crossing Tesco junction and the application of walk with traffic to optimise signal timings. Would need to consider B3	6	4	10	£200,000 - £300,000
T1	A new link road between Green Lane and the A565 at Tarleton to relieve the impact of through heavy traffic	6	4	10	£5,000,000
DS03A	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; implement 18 tonne environmental weight restriction.	8	4	12	£2,500,000
DS03B	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; no weight restriction.	7	4	11	£2,500,000
BB01A	Bank Bridge: Remedial works on existing bridge and implementation of appropriate on-going maintenance regime, including maintaining high friction surfacing; implementation of speed enforcement / vehicle activated signage[1]	3	2	5	£500,000
BB03	Bank Bridge: Implement a new section of road between the Coe Lane junction and the A59 just south of Mill Brow Cottages; include either a single bridge across the Leeds and Liverpool Canal and River Douglas or two separate structures depending on the most appropriate engineering solution.	11	7	18	£15,000,000

[1]BB01A did not score high enough in the primary assessment against network objectives to be taken forward for assessment against LTP objectives. However, following engagement with LCC and stakeholders it was retained in the WLRMS process due to identified need for intervention at this location and the high cost and subsequent probable long lead time of the alternative Bank Bridge intervention (BB03).

Key Observation: A number of potential interventions provide a good contribution to both network and LTP objectives.

10. WLRMS Priority Interventions

10.1 Introduction

LCC requested the identification of a prioritised programme of interventions to inform investment of LCC's agreed Capital Programme for 2017/18.

10.2 Priority Interventions

Given the large geographic area and diversity of problems and issues identified across West Lancashire's network, it is evident that there is not one single intervention that would provide an encompassing solution. Instead, potential improvements must be based upon a range of interventions that when implemented will complement each other and provide the largest overall contribution to the both network and LTP objectives.

The package of measures recommended for priority investment as part of the WLRMS therefore focuses on interventions that are both affordable and provide the largest benefit to the network as a whole. Working down from the highest scoring to the lowest scoring through the appraised intervention list the following conditions have been applied to identify the best performing programme estimated at circa £1,000,000:

- Estimated budget must be known
- Provide a positive contribution to a number of network objectives (>2) to ensure a robust policy fit with local priorities
- Provide a positive contribution to a number of LTP objectives (>2) to ensure a robust policy fit with overarching transport priorities of LCC
- Not relate to either Derby Street Bridge or Bank Bridge as these will be taken forward separately

Table 10.1 provides a summary of the interventions that meet all four conditions and are recommended for priority consideration as part of LCC's capital programme. These are shown on a plan in Appendix G. It is worth noting that the inclusion of these interventions here does not constitute a commitment to delivery.

Table 10.1 WLRMS Priority Interventions

Ref	Description	Est. Cost
B3	Public realm and pedestrian improvement on Burscough High Street (A59), including removal of guard rails, side road treatments e.g. side road footway crossings and junction mouth tightening, and use of block paving where appropriate	£300,000 - £400,000
O2	Upgrade footpath linking Ormskirk railway station and bus station to a dedicated pedestrian and cycle shared use route (assuming sufficient access and ~3metres width can be achieved).	£100,000
WL7	Upgrade the footways on the A59 and A570 (between Ormskirk and Burscough, and between Ormskirk and Edge Hill University) to shared use (pedestrian and cyclist). Will be a need to modify kerbs, examine and potentially introduce additional width at pinch points, and introduce side road treatments. This would be considered in conjunction with the Ormskirk to Burscough Linear Park.	<£750,000
WL1	Signal optimisation at junction of A570 and B5242 (Morris Dancers)	£5,000
O6	Remove the A570 from the primary route network between its junctions with the M58 and A59 in support of limiting its use by long distance traffic and HGVs	£25,000
O4	Improved pavement and facilities for cyclists and pedestrians on St Helen's Road from the junction of Moor Street to the junction with Ruff Lane	£75,000
WL10	Examine deliveries and servicing arrangements to find more suitable drop patterns in Ormskirk and Burscough e.g. work with refuse collection etc.	£20,000
WL2	Improved signing strategy to/from Southport and the motorway network aimed at reducing traffic on the A570 Ormskirk gyratory and promoting its place functions	£50,000

	Total Est. Cost: £825,000 - £1,025,000

11. West Lancashire Route Management Strategy

Following the identification of a prioritised investment programme, the next stage was the development of the WLRMS itself.

The WLRMS aims to bring together all the evidence collated as part of the data collection and stakeholder engagement exercises and uses the defined network objectives to set out a forward looking strategy for the network. The WLRMS will form the framework for future investment on West Lancashire's network and act as a template for future decision making within the area.

All the appraised interventions, including those previously identified for priority intervention, have been grouped into four key packages that, when combined, will provide a holistic approach to the existing and future management of West Lancashire's network in line with the aims set out in the network objectives and LTP. With consideration that the delivery of the interventions within the WLRMS will be subject to available funding and prioritisation against other schemes across Lancashire.

The four key packages of the WLRMS are illustrated in Figure 11.1, and discussed in detail within the remainder of this chapter.

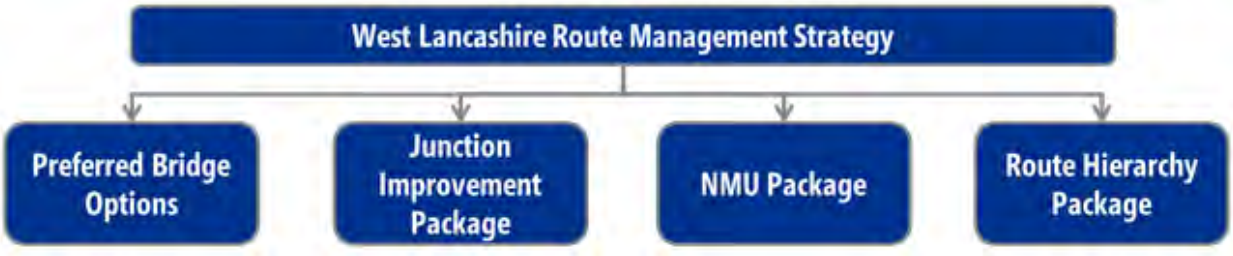


Figure 11.1 West Lancashire Route Management Strategy

11.1 Derby Street and Bank Bridge Preferred Options

Derby Street Bridge in Ormskirk and Bank Bridge in Tarleton were both identified during stakeholder and LCC engagement as key locations requiring intervention. A number of potential interventions were developed as part of Stage 1 and these have been further developed and adapted in consultation with key stakeholders, including LCC's Bridges and Structures Team and West Lancashire Borough Council to produce the preferred options identified below. These are expanded on in detail in Appendix H in an engaging, high level format suitable for informing future stakeholder engagement.

Table 11.1 and 11.2 indicates the preferred options for both Derby Street Bridge and Bank Bridge respectively.

Table 11.1 Derby Street Bridge Preferred Options

Ref	Description	Est. Cost
DS03A	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; implement 18 tonne environmental weight restriction.[1]	£2,500,000
DS03B	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; no weight restriction.[1]	£2,500,000

[1]The only difference between these interventions is that DS03A applies an environmental 18 tonne weight restriction which would continue to restrict use of the bridge by HGVs as is currently the case. Following structural repair there will be no need for the structural weight restriction and as such the applicability of an

environmental weight restriction would need to be taken with a wider view to the operation of the Ormskirk A570 gyratory, potentially in conjunction with option O30 which was excluded from the WLRMS but is proposed for consideration as part of the forthcoming Ormskirk Movement Strategy. Traffic modelling required to assess the operation of a single lane bridge would be considered at a later date, potentially as part of the Ormskirk Movement Strategy.

Table 11.2 Bank Bridge Preferred Options

Ref	Description	Est. Cost
BB01A	Bank Bridge: Remedial works on existing bridge and implementation of appropriate on-going maintenance regime, including maintaining high friction surfacing; implementation of speed enforcement / vehicle activated signage[1]	£500,000
BB03	Bank Bridge: Implement a new section of road between the Coe Lane junction and the A59 just south of Mill Brow Cottages; include either a single bridge across the Leeds and Liverpool Canal and River Douglas or two separate structures depending on the most appropriate engineering solution.	£15,000,000

[1]BB01A did not technically score high enough against the network objectives to be retained in the WLRMS for further consideration. However, following discussions with LCC it was decided to retain this option in light of the identified need for intervention at this location and the high cost and long lead-in time associated and with alternative option BB03 making it a longer term consideration.

11.2 Junction Improvements Package

This package focuses on improving the operation of signalised junctions within West Lancashire; in terms of congestion, journey time reliability, and safety. In response to the data analysis and stakeholder engagement undertaken the focus is on the primary route network and main urban areas which have more significant movement functions.

Table 11.3 indicates the prioritised interventions that will form the basis of the package.

Table 11.3 Junctions Improvement Package

Ref	Description	Est. Cost
WL1	Signal optimisation at junction of A570 and B5242 (Morris Dancers)	<£5,000
O21	Improved signal performance at the junction of the A570 Park Road and Morrisons Store access by use of the DFOF and BIAS commands, on link 3014D with DFOF set at -5 seconds and the BIAS for link 3014D set to 30; encouraging the optimiser to maintain a closer fixed offset for the two junctions	<£5,000
O24	Improved signal performance at the junction of Ruff Lane and Knowsley Road by resolving UTC/SCOOT issue and validating QCMC and STOC values	<£5,000
O25	Five Ways junction (A59/A570) issues could be potentially caused by large gaps in the queues causing the MOVA to identify end of saturation prematurely which could be mitigated by monitoring and review of SATINC and GAMBER values.	<£5,000
T2	Signal junction optimisation at the junction of A59 and the A565 linked to proposed introduction of a right hand filter lane[1]	£25,000
B2	Staggered signalised junction to be implemented to replace the two mini-roundabouts on the Burscough High Street (A59). Would include pedestrian facilities crossing Tesco junction and the application of walk with traffic to optimise signal timings. Would need to consider B3[2]	£200,000 - £300,000

[1]LCC currently has a proposal to develop a right hand filter lane at this location which should reduce impedance.

[2] *Should be considered within the context of B3*

11.3 Non-Motorised User Package

The NMU package focuses on providing a safer and more attractive environment for cyclists and pedestrians as a means of increasing the mode share for active travel across West Lancashire with specific focus on the urban areas of Ormskirk and Burscough.

Increased walking and cycling mode share brings many benefits, including improved air quality, reduced congestion, improved public health, and reductions in isolation for those who do not have a car. The inclusion of a NMU package here aligns with LCC's recent Cycling and Walking Strategy and the LCC vision for '*More people walking and cycling for every day and leisure journeys in Lancashire'*.

Table 11.4 indicates the prioritised interventions that will form the basis of the package.

Table 11.4 Non-Motorised User Package

Ref	Description	Est. Cost
WL5	Improved cycle parking facilities within Ormskirk and Burscough town centres	£50,000
B3	Public realm and pedestrian improvement on Burscough High Street (A59), including removal of guard rails, side road treatments e.g. side road footway crossings and junction mouth tightening, use of block paving (would need to consider B2)[1]	£300,000 - £400,000
O2	Upgrade footpath linking Ormskirk railway station and bus station to a dedicated pedestrian and cycle shared use route (assuming sufficient access and ~3metres width can be achieved).	£100,000
O13	Introduction of single pedestrian crossing phase at Aughton Street / A570 Junction	<£5,000
O19	Provision of PUFFIN type pedestrian crossing facilities across the St Helens Road and Moor Street East approaches (will require updated signal infrastructure). Or potential for a Toucan crossing as part of improved cycle links with the railway station.	£50,000 - £100,000
O20	Provision of PUFFIN type pedestrian crossing facilities at junction of Wigan Rd, Knowlsley Rd, Stanley Street, and Moor Street	<£120,000
O22	Improve the pedestrian facilities across A570 Park Road near Moorgate through reinstatement of the crossing onto SCOOT network by re-connecting the link cable and allowing SCOOT to determine the most appropriate crossing time	<£5,000
WL6	Improve West Lancashire's links to Lancashire's wider cycle network, in line with West Lancashire's Green Infrastructure and Cycle Strategy, including the following proposals: - Linking the Trans-Pennine Trail at Lydiate, and RR91 at Aughton - Linking Southport Town Centre eastwards to RR91 on the Leeds and Liverpool Canal at New Lane, including upgrading the canal towpath between there and Burscough Wharf - East from the north end of Southport to RR91 at Mere Brow	Unknown

	- Linear Park proposal between Ormskirk and Burscough	
WL7	Upgrade the footways on the A59 and A570 (between Ormskirk and Burscough, and between Ormskirk and Edge Hill University) to shared use (pedestrian and cyclist). Will be a need to modify kerbs, examine and potentially introduce additional width at pinch points, and introduce side road treatments. This would be considered in conjunction with the Ormskirk to Burscough Linear Park.	<£750,000
O4	Improved pavement and facilities for cyclists and pedestrians on St Helen's Road from the junction of Moor Street to the junction with Ruff Lane.	£75,000

[1] *Should be considered within the context of B2*

11.4 Route Hierarchy Package

The route hierarchy package focuses on network operation as a whole, in terms of identified functions and performance, future aspirations, and change potential. As such, the identification and assessment of proposed interventions has been informed by use of the Lancashire Movement and Place Matrix.

Key strategic network issues identified as part of this study e.g. lack of strategic east-west connectivity ensuring future network efficiency and resilience in light of development and background growth pressures, will require further analysis outside of the WLRMS. Two potential interventions which fall outside the scope of the WLRMS and relate particularly to Ormskirk are listed within Appendix E.

Table 11.5 indicates the prioritised interventions that fall within the scope of the WLRMS and form the basis of the package.

Table 11.1 Route Hierarchy Package

Ref	Description	Est. Cost
T1	A new link road between Green Lane and the A565 at Tarleton to relieve the impact of through heavy traffic	£5,000,000
WL10	Examine deliveries and servicing arrangements to find more suitable drop patterns in Ormskirk and Burscough e.g. work with refuse collection etc.	£20,000
WL2	Improved signing strategy between Southport and the motorway network aimed at reducing traffic flows through Ormskirk on the A570[1]	£50,000
O6	Remove the A570 from the primary route network between its junctions with the M58 and A59 in support of limiting its use by long distance traffic and HGVs[2]	£25,000

[1] *Would require input and partnership with Highways England and Sefton Metropolitan Borough Council*

[2]*Would require agreement from the Department for Transport and would likely require engagement with Highways England and Sefton Metropolitan Borough Council*

12. Summary and Conclusions

12.1 Summary

Jacobs has been commissioned by LCC to produce Stage 2 of the West Lancashire Route Management Strategy.

Based upon the outcomes from the Stakeholder Workshop and identified problems, functions, performance and objectives of the West Lancashire road network, a long list of potential interventions of all sizes was developed for early consideration.

The long list was then screened using sifting criteria of feasibility, deliverability, and perceived value for money.

The early sifting exercise resulted in a focused list of potential interventions to be taken forward for further consideration as part of the WLRMS.

Individual interventions were then explored in more detail and assessed using a bespoke appraisal framework developed specifically for the RMS process.

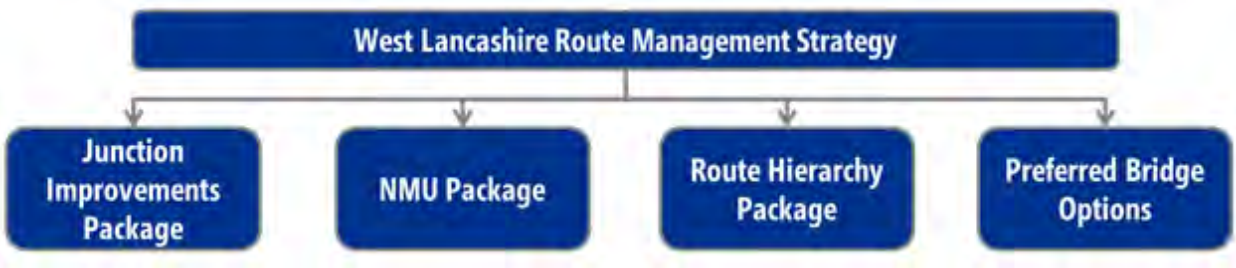
The appraisal exercise resulted in an overall appraisal score for each of the interventions identified. This allowed a direct comparison between the individual attributes of each potential option and the identification of those that provide the highest contribution to the overarching objectives of the WLRMS and LCC. This included the identification of a prioritised investment programme estimated in the region of £1,000,000 to inform LCC's agreed capital expenditure budget for 2017/18.

12.2 Conclusion

The resultant WLRMS is made up of four key intervention packages that, when combined, form a common strategy for future investment in West Lancashire's network. The delivery of all interventions proposed as part of this WLRMS will be subject to available funding and prioritisation against other schemes within Lancashire.

The key components of the WLRMS are shown in Figure 12.1 with the key interventions of each package listed in Chapter 11.

Table 12.1 West Lancashire Route Management Strategy



12.3 Recommendations and next steps

The prioritised interventions identified in the WLRMS should be taken forward for consideration through LCC's capital programme.

It is also recommended that the evidence base and interventions identified in the WLRMS, particularly in relation to Derby Street Bridge and Ormskirk are considered during the subsequent development of an Ormskirk Town Centre Movement Strategy. Strategy development should be informed by the stakeholder engagement and data collection and analysis which has been undertaken in both Stage 1 and Stage 2 of the WLRMS; in addition to the identification of preferred options for Derby Street Bridge in this document which are expanded

upon in Appendix H. It is also recommended that the Ormskirk Town Centre Movement Strategy considers the potential interventions for Ormskirk which were identified but fell outside the scope of the WLRMS which are identified in Appendix E.

Furthermore a number of strategic issues have been identified across West Lancashire which will need consideration in the near future. This includes a lack of public transport connectivity, network resilience particularly in relation to strategic east-west highway connectivity for West Lancashire and for Sefton, and the potential impacts of ambitious levels of proposed growth and major highway schemes planned for delivery across wider Lancashire.

Appendix B. Local Plan Development Trip Generation

			Employment Site Area		Residential Site Area						Car			OGV			PSV			LGV				
Local Authority	Development Name	Zone	Size (Ha)	Size (GFA)	Size (Ha)	Size (GFA)	Indicative Capacity	Indicative capacity	Potential Use Type	Land Use	Arrivals	Departures	TOTAL	Arrivals	Departures	TOTAL	Arrivals	Departures	TOTAL	Arrivals	Departures	TOTAL	Total Arrivals	Total Departures
West Lancashire	Burscough Employment Areas	24	13	52000	2	7429			A1, B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	936	203	211
	Burscough Employment Areas	24			2	7429			A1, B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	0	203	211
	Orrell Lane, Burscough	24			2	7429			B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	0	203	211
	Red Cat Lane, Burscough	24			2	7429			B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	0	203	211
	Briars Lane, Burscough	24			2	7429			B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	0	203	211
	Platts Lane, Burscough	24			2	7429			B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	0	203	211
	Abbey Lane, Burscough	24			2	7429			B1, B2, B8	Employment	118	126	244	16	15	31	2	2	5	67	67	0	203	211
	Simonswood Industrial Estate	23	7	28000	7	28000			B1, B2, B8	Employment	445	475	920	59	58	117	9	9	18	252	252	504	765	794
	Pimbo Industrial Estate	19	52	208000	10.4	41600			A1, B1, B2, B8	Employment	661	706	1367	88	87	175	13	13	26	375	374	749	1137	1179
	Gillibrands Industrial Estate	19			10.4	41600			A1, B1, B2, B8	Employment	661	706	1367	88	87	175	13	13	26	375	374	749	1137	1179
	Stanley Industrial Estate	23			10.4	41600			A1, B1, B2, B8	Employment	661	706	1367	88	87	175	13	13	26	375	374	749	1137	1179
	XL Business Park	23			10.4	41600			A1, B1, B2, B8	Employment	661	706	1367	88	87	175	13	13	26	375	374	749	1137	1179
	White Moss Business Park	23			10.4	41600			B1, C1, D1	Employment	661	706	1367	88	87	175	13	13	26	375	374	749	1137	1179
	Ormskirk Employment Area	21	5	20000	0.6	2500			B1, C1, D1	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Hattersley Court	21			0.6	2500			A1, B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Chequer Lane, Up Holland	19			0.6	2500			B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Westgate, Skelmersdale	23			0.6	2500			B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Pilkington Technonogy Centre	23			0.6	2500			B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	North Quarry, Appley Bridge	17			0.6	2500			B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Appley Lane North, Appley Bridge	17			0.6	2500			B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Southport Road Green Lane, Ormskirk	21			0.6	2500			B1, B2, B8	Employment	40	42	82	5	5	10	1	1	2	23	22	45	68	71
	Chequer Lane, Up Holland, Phase 1	19					175	87.5		Residential	67	71	138	1	1	2	0	0	0	20	19	39	88	91
	Chequer Lane, Up Holland, Phase 2	19						87.5		Residential	67	71	138	1	1	2	0	0	0	20	19	39	88	91
	Whalleys, Skelmersdale	23					650	650		Residential	498	525	1023	7	7	14	1	1	1	145	142	287	651	675
	Yew Tree Farm, Burscough	24	10	40000	10	40000				Employment	635	679	1314	85	83	168	13	12	25	360	360	720	1093	1134
	Yew Tree Farm, Burscough	24					500	500		Residential	383	404	787	6	6	11	1	1	1	112	110	221	501	520
	Grove Farm, Ormskirk	21					300	300		Residential	230	242	472	3	3	7	0	0	1	67	66	133	300	312
	Fine Jane's Farm, Halsall	13					60	60		Residential	46	48	94	1	1	1	0	0	0	13	13	27	60	62
	New Cut Lane, Halsall	13					150	150		Residential	115	121	236	2	2	3	0	0	0	33	33	66	150	156
	Guinea Hall Lane, Banks	14					115	115		Residential	88	93	181	1	1	3	0	0	0	26	25	51	115	119
	Greaves Hall Hospital, Banks	14					140	140		Residential	107	113	220	2	2	3	0	0	0	31	31	62	140	145
	Tarleton Mill, Tarleton	15					70	70		Residential	54	57	110	1	1	2	0	0	0	16	15	31	70	73
	Alty's Brickworks, Hesketh Bank	15					270	270		Residential	207	218	425	3	3	6	0	0	1	60	59	119	270	281
	East Quarry, Appley Bridge	17					60	60		Residential	46	48	94	1	1	1	0	0	0	13	13	27	60	62
	Firswood Road, Phase 1	23					400	200		Residential	153	162	315	2	2	4	0	0	0	45	44	88	200	208
	Firswood Road, Phase 2	23						200		Residential	153	162	315	2	2	4	0	0	0	45	44	88	200	208
	Firbeck, Skelmersdale	19					730	243		Residential	186	197	383	3	3	5	0	0	0	54	53	108	244	253
	Finden, Skelmersdale	19						243		Residential	186	197	383	3	3	5	0	0	0	54	53	108	244	253
	Delf Clough, Skelmersdale	19						243		Residential	186	197	383	3	3	5	0	0	0	54	53	108	244	253
South Ribble	Cuerden	16	65.28	261120	65.3	261120				Employment	4148	4430	8578	552	543	1095	84	80	163	2351	2349	4700	7135	7401
	Cuerden	16					210	210		Residential	161	170	331	2	2	5	0	0	0	47	46	93	210	218
Sefton	Southport Business Park	11	13.1	52400	13.1	52400			B1	Employment	832	889	1721	111	109	220	17	16	33	472	471	943	1432	1485
	Land North of Formby Business Park	12	8	32000	8	32000			B1, B2, B8	Employment	508	543	1051	68	67	134	10	10	20	288	288	576	874	907
	Land South of Formby Business Park	12	7	28000	7	28000			B1, B2, B8	Employment	445	475	920	59	58	117	9	9	18	252	252	504	765	794
	Land East of Maghull	20	20	80000	20	80000			B1, B2, B8	Employment	1271	1357	2628	169	166	336	26	24	50	720	720	1440	2186	2268
	Land at Turnbridge Road, Maghull	22	1.6	6400	1.6	6400	40	40		Residential	31	32	63	0	0	1	0	0	0	9	9	18	40	42
	Land north of Kenyons Lane, Lydiate	22	9.7	38800	9.7	38800	295	295		Residential	226	238	464	3	3	6	0	0	1	66	65	130	295	307
	Former Prison Site, Park Lane, Maghull	22	13.6	54400	13.6	54400	370	370		Residential	283	299	582	4	4	8	0	0	1	83	81	164	370	384
	Land East of Maghull	20	86	344000	86	344000	1400	1400		Residential	1072	1131	2204	15	15	31	1	1	3	312	307	619	1401	1455
	Land at Moss Lane, Churchtown	10	19.1	76400	19.1	76400	450	450		Residential	345	364	708	5	5	10	0	0	1	100	99	199	450	468
	Land at Crowland Street, Southport	10	25.8	103200	25.8	103200	678	678		Residential	519	548	1067	7	7	15	1	1	1	151	148	300	679	704
	Land adjacent to Dobbies Garden Centre, Benthams Way, Southport	11	8.7	34800	8.7	34800	215	215		Residential	165	174	338	2	2	5	0	0	0	48	47	95	215	223
	Land at Lynton Road, Southport	11	1.5	6000	1.5	6000	25	25		Residential	19	20	39	0	0	1	0	0	0	6	5	11	25	26
	Former Ainsdale Hope School, Ainsdale	11	9.2	36800	9.2	36800	243	243		Residential	186	196	382	3	3	5	0	0	0	54	53	107	243	252
	Land at Southbrook Road, Ainsdale	11	2	8000	2	8000	49	49		Residential	38	40	77	1	1	1	0	0	0	11	11	22	49	51
	Former St John Stone School, Meadowland, Ainsdale	11	1.3	5200	1.3	5200	40	40		Residential	31	32	63	0	0	1	0	0	0	9	9	18	40	42
	Land south of Moor Lane, Ainsdale	11	2.6	10400	2.6	10400	69	69		Residential	53	56	109	1	1	2	0	0	0	15	15	30	69	72
	Bartons Close, Southport	10	1	4000	1	4000	36	36		Residential	28	29	57	0	0	1	0	0	0	8	8	16	36	37
	Former Phillips Factory, Balmoral Drive, Southport	10	6	24000	6	24000	158	158		Residential	121	128	249	2	2	3	0	0	0	35	35	70	158	164
	Land at Bankfield Lane, Southport	10	9	36000	9	36000	220	220		Residential	169	178	346	2	2	5	0	0	0	49	48	97	220	229

Appendix C. TRICS Outputs and Parameters

Calculation Reference: AUDIT-202608-170123-0130

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	NR	NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	HE	HEREFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 2063 to 23480 (units: sqm)
Range Selected by User: 708 to 52400 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/08 to 22/10/15

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	1 days
Tuesday	2 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	3

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

Selected Location Sub Categories:

Industrial Zone	2
Commercial Zone	1
Residential Zone	1
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

B1	4 days
B2	1 days

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

Population within 1 mile:

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

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

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	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	4 days
1.6 to 2.0	1 days

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

Travel Plan:

No	5 days

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

PTAL Rating:

No PTAL Present	5 days

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

LIST OF SITES relevant to selection parameters

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

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

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

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

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

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

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

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

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

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	5	6506	0.006	5	6506	0.006	5	6506	0.012
07:30 - 08:00	5	6506	0.028	5	6506	0.012	5	6506	0.040
08:00 - 08:30	5	6506	0.022	5	6506	0.040	5	6506	0.062
08:30 - 09:00	5	6506	0.022	5	6506	0.034	5	6506	0.056
09:00 - 09:30	5	6506	0.022	5	6506	0.031	5	6506	0.053
09:30 - 10:00	5	6506	0.028	5	6506	0.025	5	6506	0.053
10:00 - 10:30	5	6506	0.022	5	6506	0.037	5	6506	0.059
10:30 - 11:00	5	6506	0.012	5	6506	0.028	5	6506	0.040
11:00 - 11:30	5	6506	0.012	5	6506	0.006	5	6506	0.018
11:30 - 12:00	5	6506	0.009	5	6506	0.012	5	6506	0.021
12:00 - 12:30	5	6506	0.037	5	6506	0.022	5	6506	0.059
12:30 - 13:00	5	6506	0.031	5	6506	0.031	5	6506	0.062
13:00 - 13:30	5	6506	0.037	5	6506	0.022	5	6506	0.059
13:30 - 14:00	5	6506	0.031	5	6506	0.006	5	6506	0.037
14:00 - 14:30	5	6506	0.022	5	6506	0.018	5	6506	0.040
14:30 - 15:00	5	6506	0.018	5	6506	0.012	5	6506	0.030
15:00 - 15:30	5	6506	0.012	5	6506	0.012	5	6506	0.024
15:30 - 16:00	5	6506	0.015	5	6506	0.022	5	6506	0.037
16:00 - 16:30	5	6506	0.003	5	6506	0.003	5	6506	0.006
16:30 - 17:00	5	6506	0.006	5	6506	0.006	5	6506	0.012
17:00 - 17:30	5	6506	0.009	5	6506	0.009	5	6506	0.018
17:30 - 18:00	5	6506	0.003	5	6506	0.006	5	6506	0.009
18:00 - 18:30	5	6506	0.003	5	6506	0.006	5	6506	0.009
18:30 - 19:00	5	6506	0.003	5	6506	0.000	5	6506	0.003
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.413			0.406			0.819

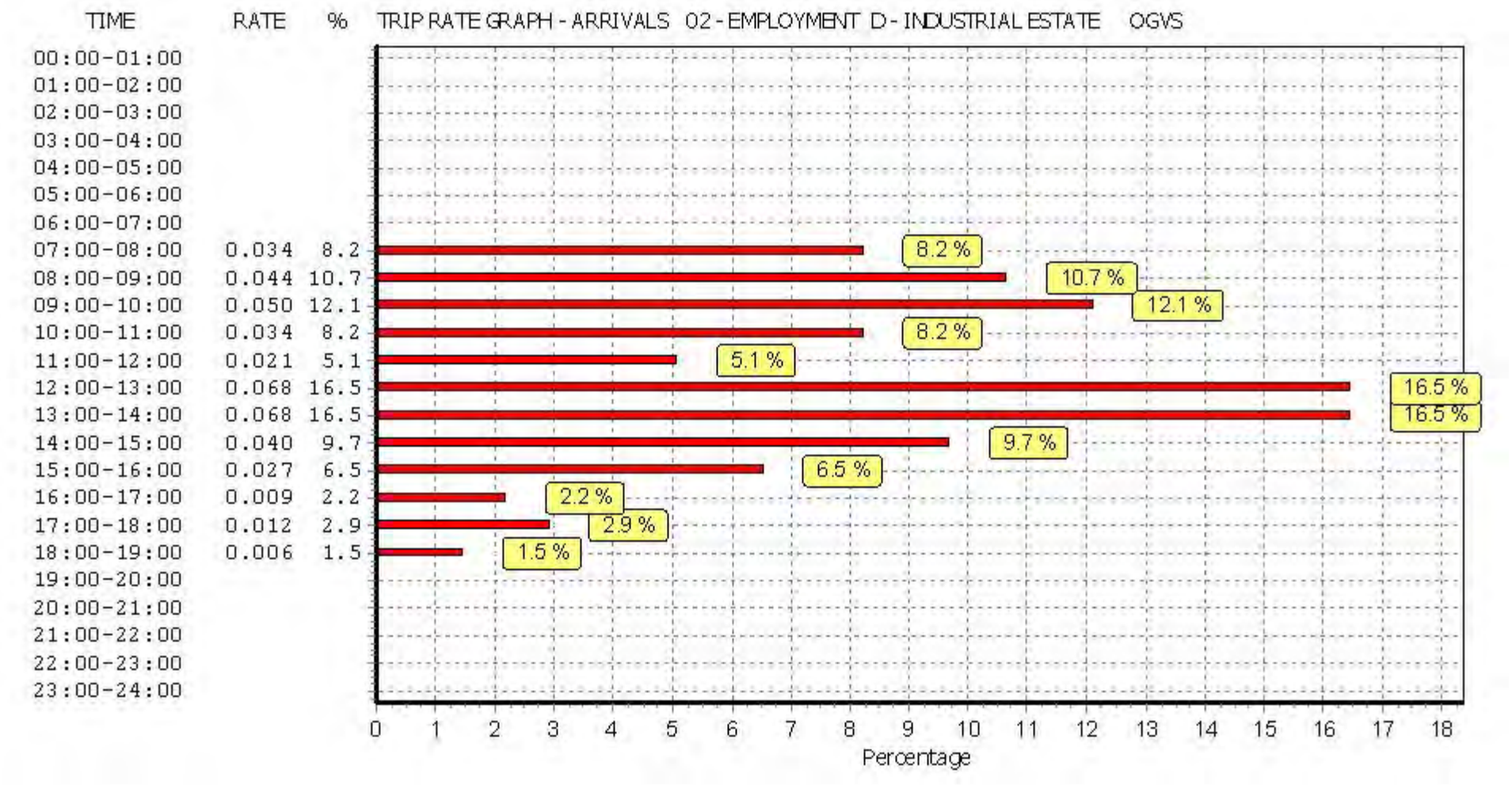
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

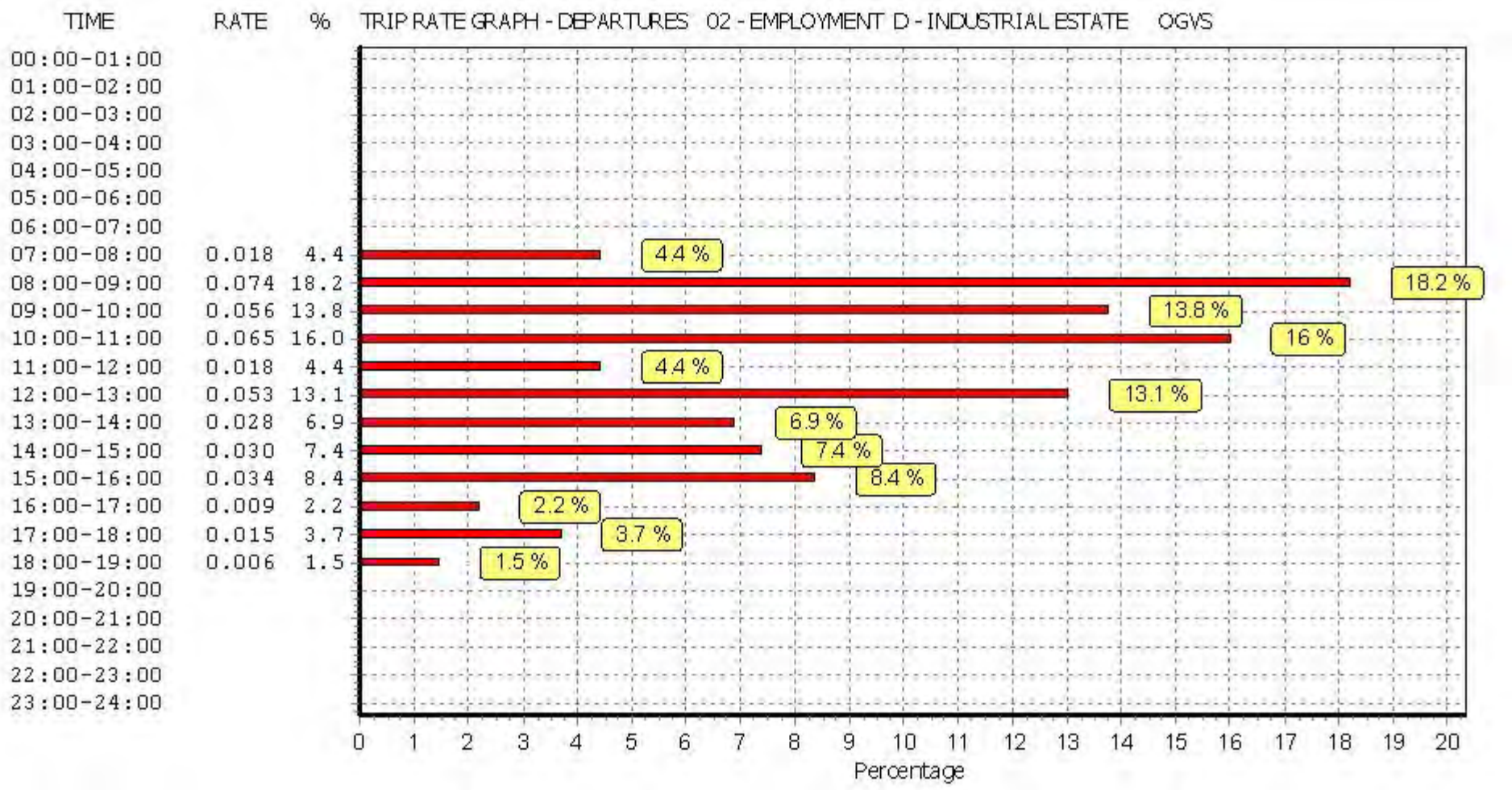
Parameter summary

Trip rate parameter range selected:	2063 - 23480 (units: sqm)
Survey date date range:	01/01/08 - 22/10/15
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	6
Surveys manually removed from selection:	0

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



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



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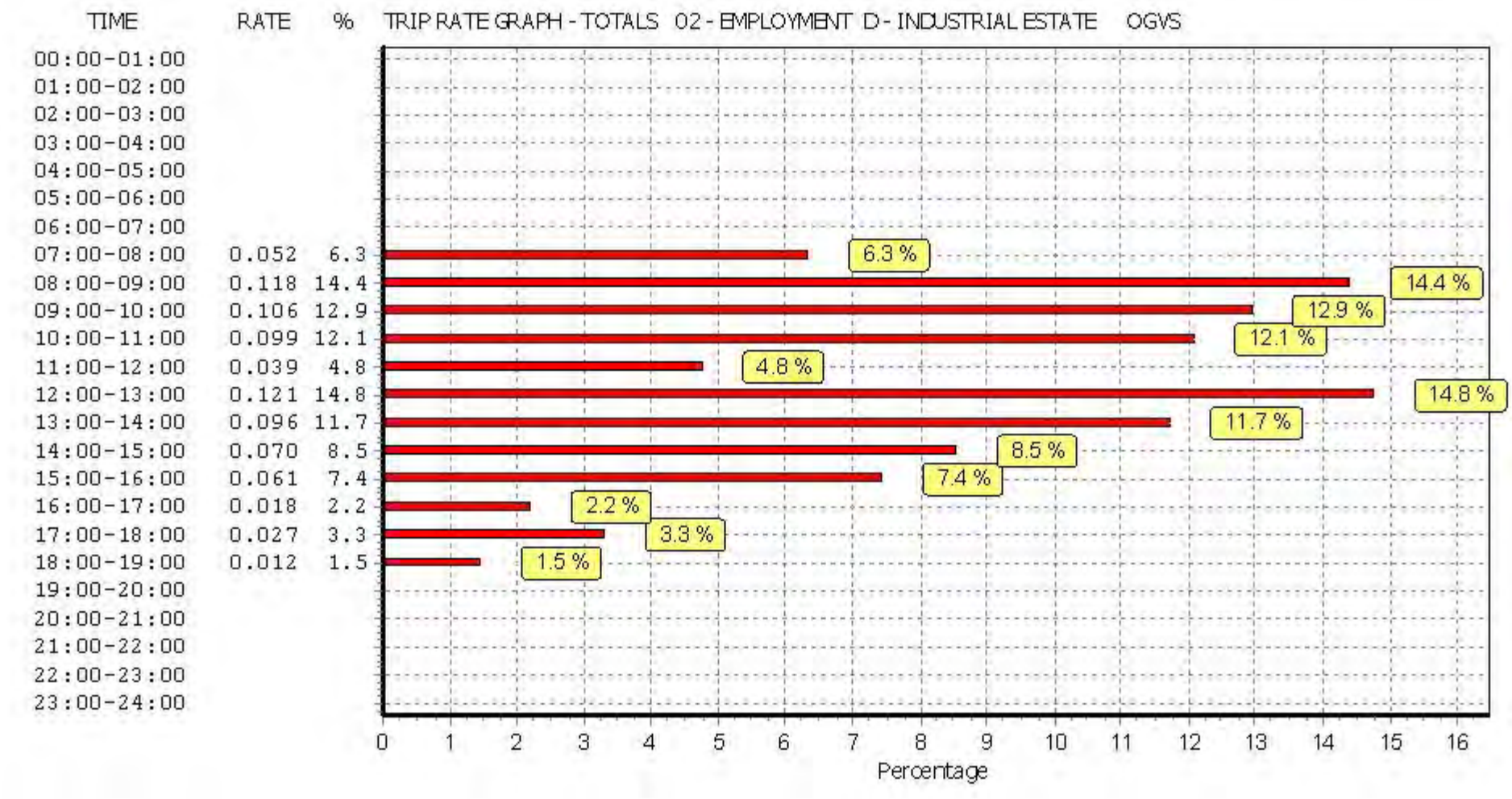

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TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	5	6506	0.000	5	6506	0.009	5	6506	0.009
07:30 - 08:00	5	6506	0.003	5	6506	0.009	5	6506	0.012
08:00 - 08:30	5	6506	0.006	5	6506	0.003	5	6506	0.009
08:30 - 09:00	5	6506	0.006	5	6506	0.009	5	6506	0.015
09:00 - 09:30	5	6506	0.009	5	6506	0.000	5	6506	0.009
09:30 - 10:00	5	6506	0.006	5	6506	0.006	5	6506	0.012
10:00 - 10:30	5	6506	0.006	5	6506	0.003	5	6506	0.009
10:30 - 11:00	5	6506	0.003	5	6506	0.000	5	6506	0.003
11:00 - 11:30	5	6506	0.000	5	6506	0.003	5	6506	0.003
11:30 - 12:00	5	6506	0.003	5	6506	0.000	5	6506	0.003
12:00 - 12:30	5	6506	0.000	5	6506	0.000	5	6506	0.000
12:30 - 13:00	5	6506	0.000	5	6506	0.003	5	6506	0.003
13:00 - 13:30	5	6506	0.000	5	6506	0.000	5	6506	0.000
13:30 - 14:00	5	6506	0.000	5	6506	0.000	5	6506	0.000
14:00 - 14:30	5	6506	0.000	5	6506	0.006	5	6506	0.006
14:30 - 15:00	5	6506	0.000	5	6506	0.009	5	6506	0.009
15:00 - 15:30	5	6506	0.000	5	6506	0.000	5	6506	0.000
15:30 - 16:00	5	6506	0.003	5	6506	0.000	5	6506	0.003
16:00 - 16:30	5	6506	0.006	5	6506	0.000	5	6506	0.006
16:30 - 17:00	5	6506	0.000	5	6506	0.000	5	6506	0.000
17:00 - 17:30	5	6506	0.000	5	6506	0.000	5	6506	0.000
17:30 - 18:00	5	6506	0.000	5	6506	0.000	5	6506	0.000
18:00 - 18:30	5	6506	0.006	5	6506	0.000	5	6506	0.006
18:30 - 19:00	5	6506	0.003	5	6506	0.000	5	6506	0.003
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.060			0.060			0.120

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

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Parameter summary

Trip rate parameter range selected:	2063 - 23480 (units: sqm)
Survey date date range:	01/01/08 - 22/10/15
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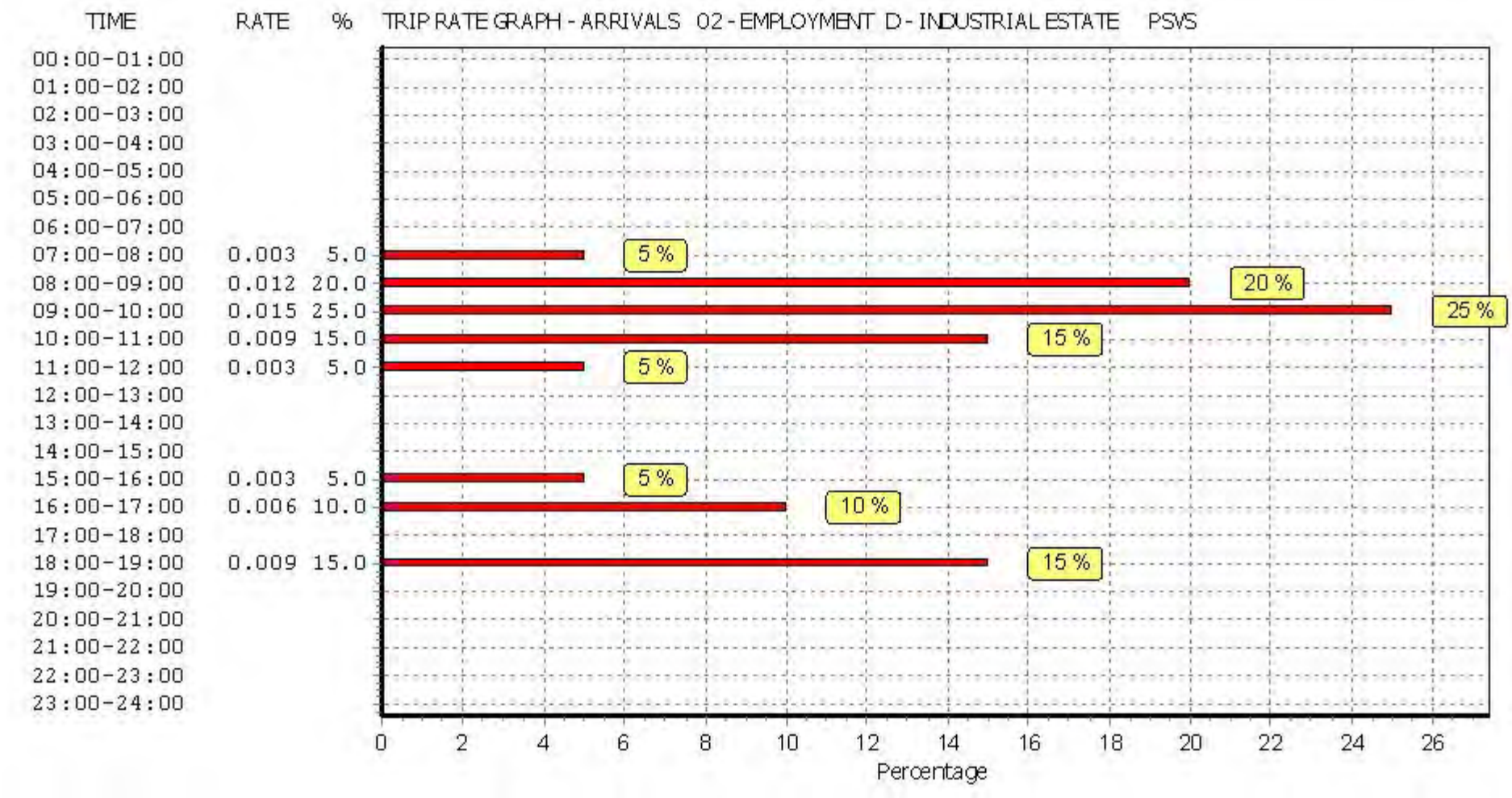
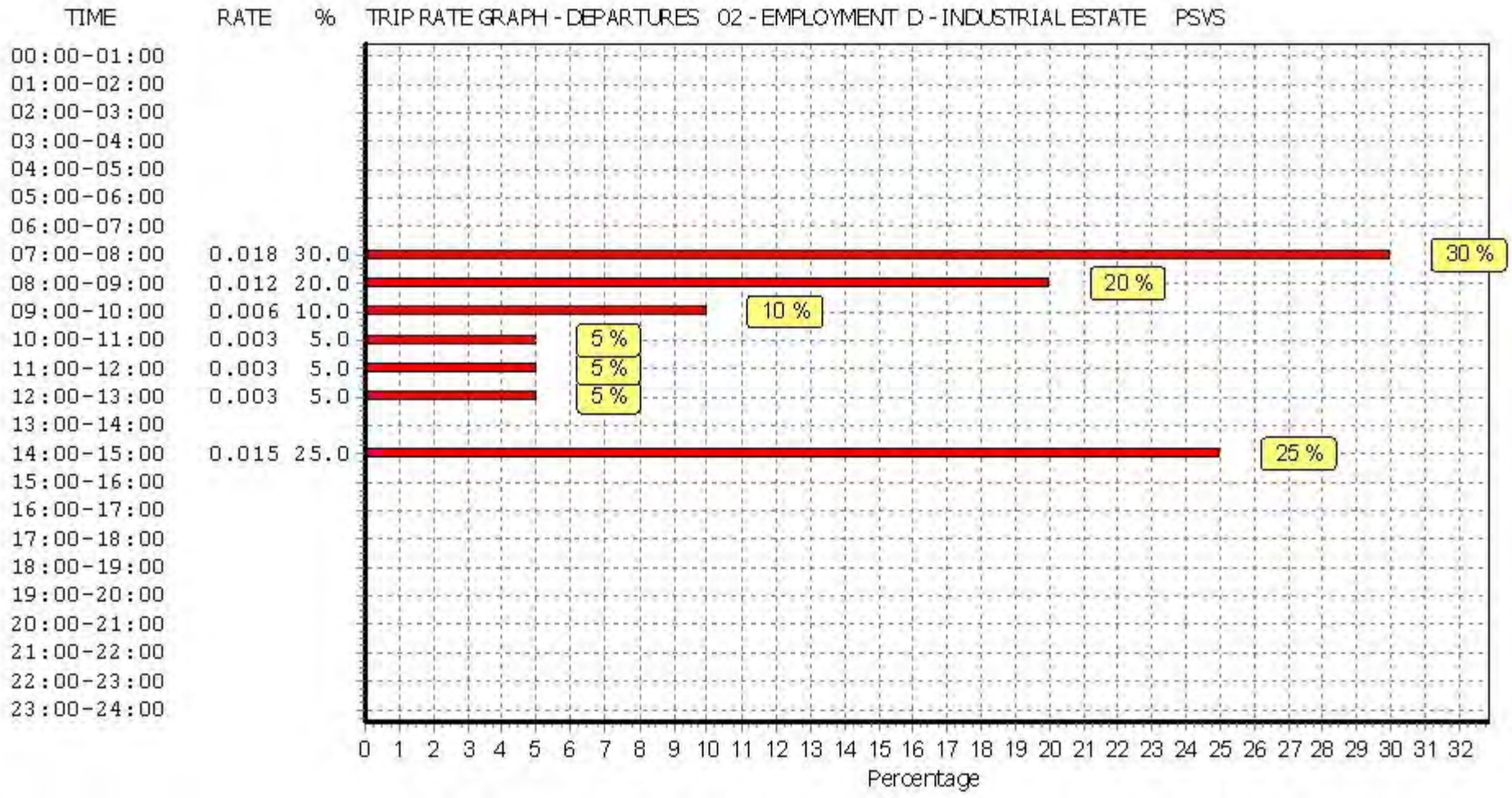
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	6
Surveys manually removed from selection:	0

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



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



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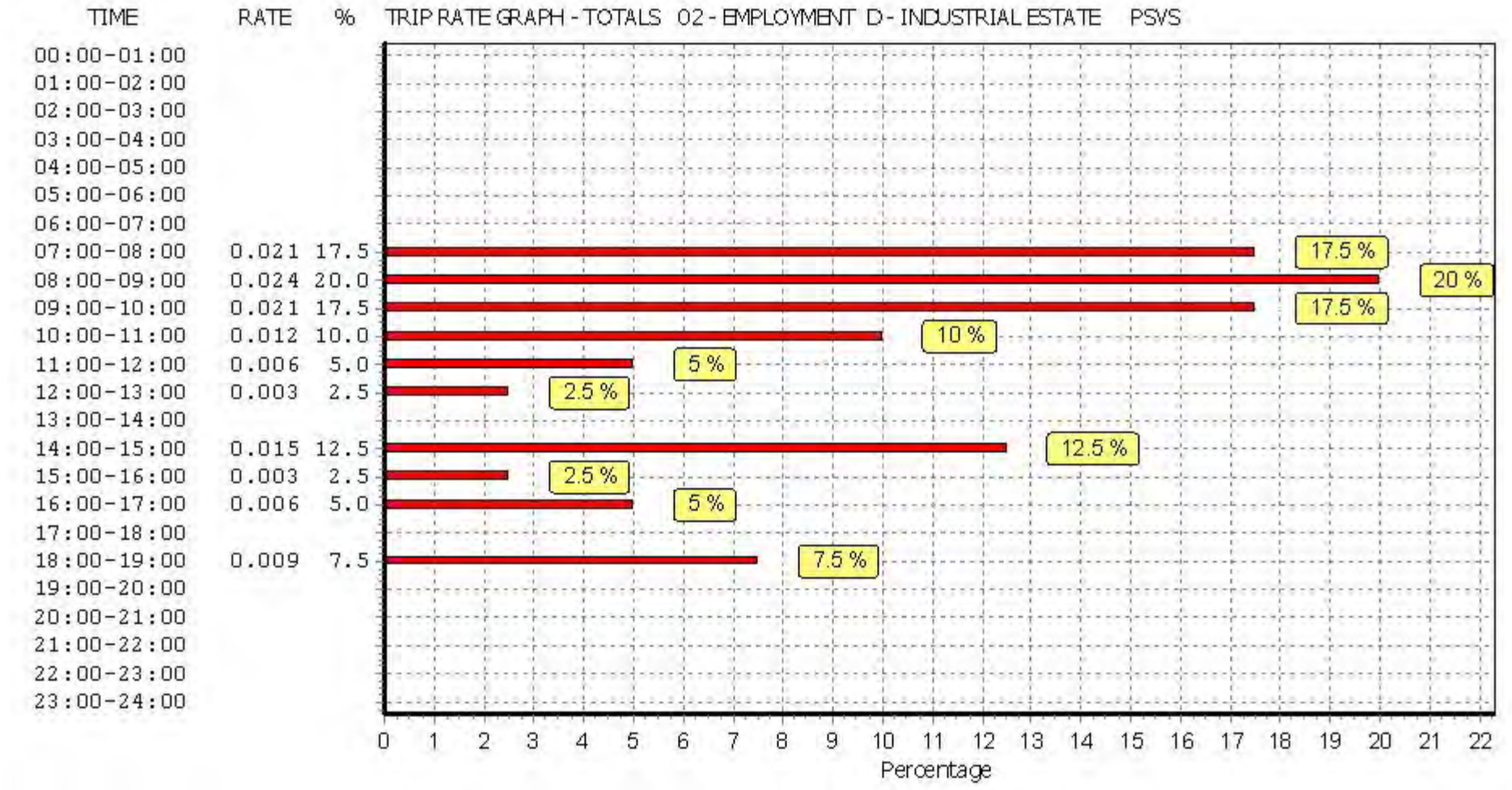

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TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
CARS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	5	6506	0.148	5	6506	0.006	5	6506	0.154
07:30 - 08:00	5	6506	0.209	5	6506	0.022	5	6506	0.231
08:00 - 08:30	5	6506	0.117	5	6506	0.012	5	6506	0.129
08:30 - 09:00	5	6506	0.068	5	6506	0.034	5	6506	0.102
09:00 - 09:30	5	6506	0.080	5	6506	0.046	5	6506	0.126
09:30 - 10:00	5	6506	0.071	5	6506	0.052	5	6506	0.123
10:00 - 10:30	5	6506	0.080	5	6506	0.074	5	6506	0.154
10:30 - 11:00	5	6506	0.080	5	6506	0.074	5	6506	0.154
11:00 - 11:30	5	6506	0.068	5	6506	0.092	5	6506	0.160
11:30 - 12:00	5	6506	0.049	5	6506	0.074	5	6506	0.123
12:00 - 12:30	5	6506	0.077	5	6506	0.089	5	6506	0.166
12:30 - 13:00	5	6506	0.095	5	6506	0.111	5	6506	0.206
13:00 - 13:30	5	6506	0.071	5	6506	0.105	5	6506	0.176
13:30 - 14:00	5	6506	0.071	5	6506	0.068	5	6506	0.139
14:00 - 14:30	5	6506	0.061	5	6506	0.074	5	6506	0.135
14:30 - 15:00	5	6506	0.065	5	6506	0.061	5	6506	0.126
15:00 - 15:30	5	6506	0.052	5	6506	0.129	5	6506	0.181
15:30 - 16:00	5	6506	0.034	5	6506	0.105	5	6506	0.139
16:00 - 16:30	5	6506	0.037	5	6506	0.166	5	6506	0.203
16:30 - 17:00	5	6506	0.025	5	6506	0.138	5	6506	0.163
17:00 - 17:30	5	6506	0.018	5	6506	0.101	5	6506	0.119
17:30 - 18:00	5	6506	0.018	5	6506	0.040	5	6506	0.058
18:00 - 18:30	5	6506	0.009	5	6506	0.037	5	6506	0.046
18:30 - 19:00	5	6506	0.009	5	6506	0.022	5	6506	0.031
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.612			1.732			3.344

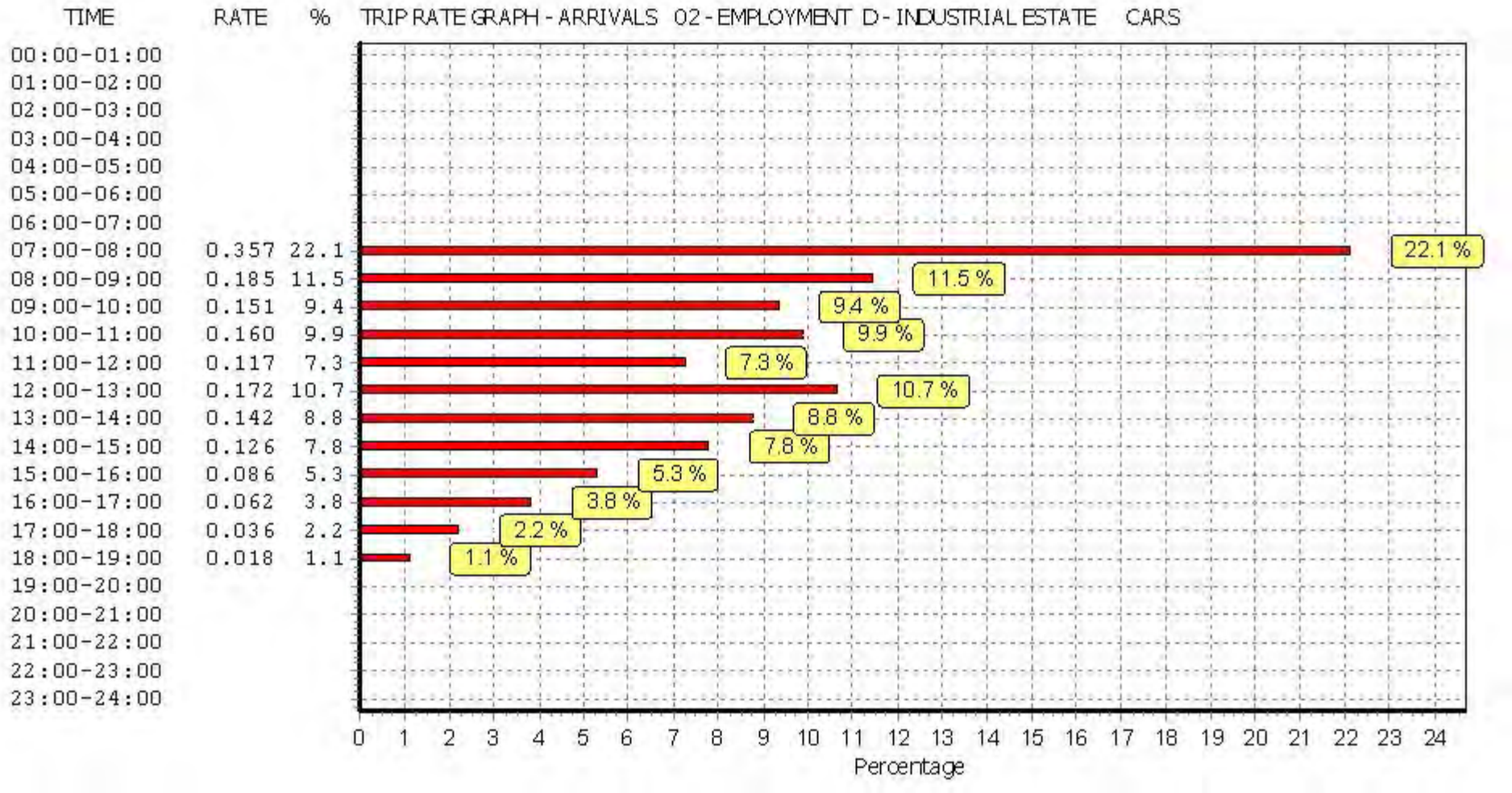
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

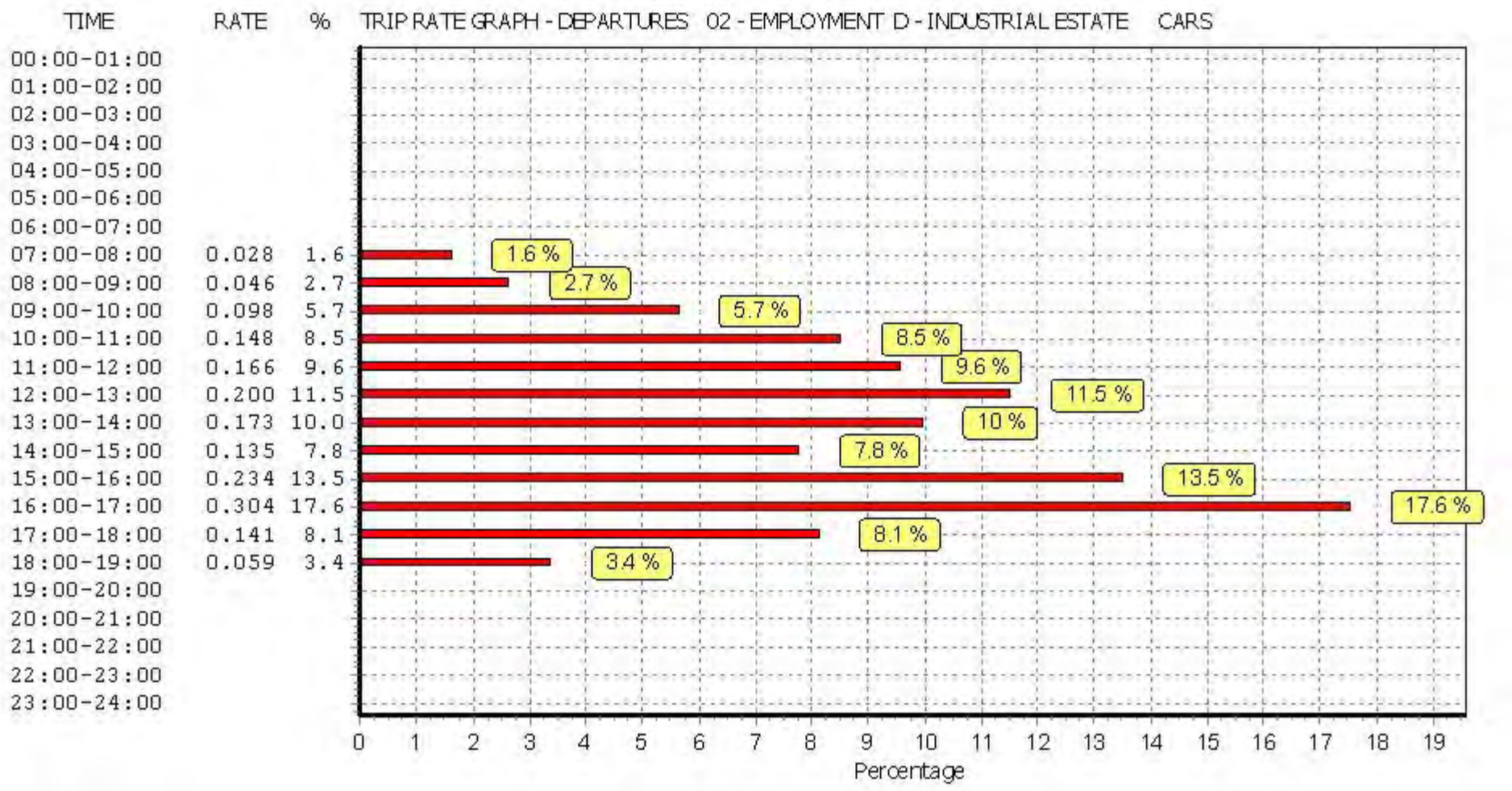
Parameter summary

Trip rate parameter range selected:	2063 - 23480 (units: sqm)
Survey date date range:	01/01/08 - 22/10/15
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	6
Surveys manually removed from selection:	0

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



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



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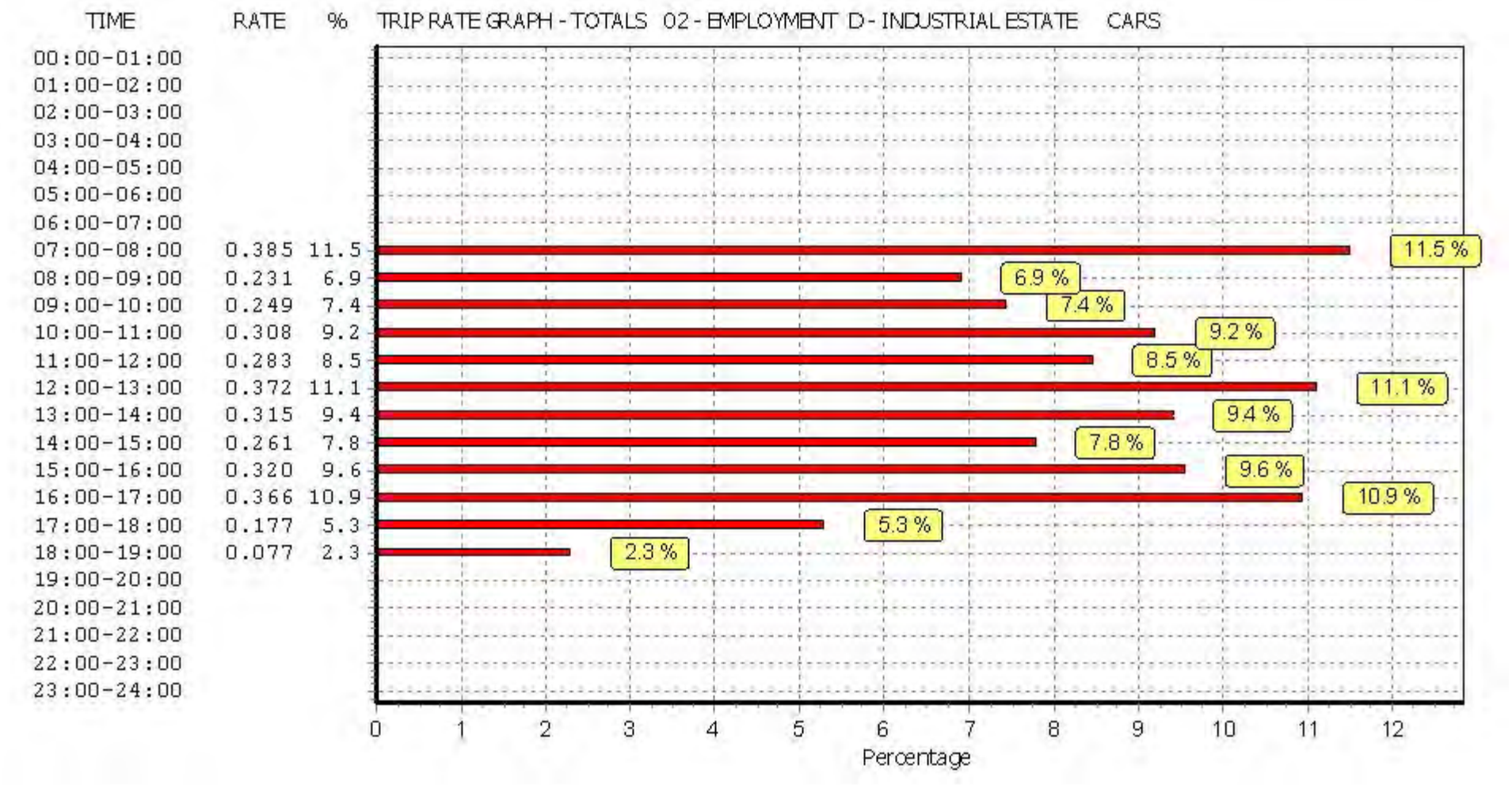

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Calculation Reference: AUDIT-202608-170123-0137

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	DV	DEVON	3 days
	SM	SOMERSET	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
	WK	WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	1 days
	NY	NORTH YORKSHIRE	4 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
	MS	MERSEYSIDE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

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

Secondary Filtering selection:

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

Parameter:	Number of dwellings
Actual Range:	10 to 432 (units:)
Range Selected by User:	6 to 4334 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/04/13 to 13/11/15

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

Selected survey days:

Monday	6 days
Tuesday	1 days
Wednesday	5 days
Thursday	7 days
Friday	2 days

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

Selected survey types:

Manual count	21 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	9
Edge of Town	12

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

Selected Location Sub Categories:

Residential Zone	19
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	6 days
10,001 to 15,000	10 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

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

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	4 days
50,001 to 75,000	3 days
75,001 to 100,000	5 days
100,001 to 125,000	1 days
125,001 to 250,000	2 days
250,001 to 500,000	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	14 days

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

Travel Plan:

Yes	2 days
No	19 days

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

PTAL Rating:

No PTAL Present	21 days

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

LIST OF SITES relevant to selection parameters

1 CH-03-A-09 TERRACED HOUSES CHESHIRE
GREYSTOKE ROAD
HURDSFIELD
MACCLESFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 24
Survey date: MONDAY 24/11/14 Survey Type: MANUAL

2 DV-03-A-01 TERRACED HOUSES DEVON
BRONSHILL ROAD

TORQUAY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 37
Survey date: WEDNESDAY 30/09/15 Survey Type: MANUAL

3 DV-03-A-02 HOUSES & BUNGALOWS DEVON
MILLHEAD ROAD

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

4 DV-03-A-03 TERRACED & SEMI DETACHED DEVON
LOWER BRAND LANE

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 70
Survey date: MONDAY 28/09/15 Survey Type: MANUAL

5 HC-03-A-17 HOUSES & FLATS HAMPSHIRE
CANADA WAY

LIPHOOK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 36
Survey date: THURSDAY 12/11/15 Survey Type: MANUAL

6 MS-03-A-03 DETACHED MERSEYSIDE
BEMPTON ROAD
OTTERSPOOL
LIVERPOOL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 15
Survey date: FRIDAY 21/06/13 Survey Type: MANUAL

7 NE-03-A-02 SEMI DETACHED & DETACHED NORTH EAST LINCOLNSHIRE
HANOVER WALK

SCUNTHORPE
Edge of Town
No Sub Category
Total Number of dwellings: 432
Survey date: MONDAY 12/05/14 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 NF-03-A-03 DETACHED HOUSES NORFOLK
HALING WAY

THETFORD
Edge of Town
Residential Zone
Total Number of dwellings: 10
Survey date: WEDNESDAY 16/09/15 Survey Type: MANUAL

9 NY-03-A-08 TERRACED HOUSES NORTH YORKSHIRE
NICHOLAS STREET

YORK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 21
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

10 NY-03-A-09 MIXED HOUSING NORTH YORKSHIRE
GRAMMAR SCHOOL LANE

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

11 NY-03-A-10 HOUSES AND FLATS NORTH YORKSHIRE
BOROUGHBRIDGE ROAD

RIPON
Edge of Town
No Sub Category
Total Number of dwellings: 71
Survey date: TUESDAY 17/09/13 Survey Type: MANUAL

12 NY-03-A-11 PRIVATE HOUSING NORTH YORKSHIRE
HORSEFAIR

BOROUGHBRIDGE
Edge of Town
Residential Zone
Total Number of dwellings: 23
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

13 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

14 SF-03-A-05 DETACHED HOUSES SUFFOLK
VALE LANE

BURY ST EDMUNDS
Edge of Town
Residential Zone
Total Number of dwellings: 18
Survey date: WEDNESDAY 09/09/15 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15 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

16 SH-03-A-06 BUNGALOWS SHROPSHIRE
ELLESMERE ROAD

SHREWSBURY
Edge of Town
Residential Zone
Total Number of dwellings: 16
Survey date: THURSDAY 22/05/14 Survey Type: MANUAL

17 SM-03-A-01 DETACHED & SEMI SOMERSET
WEMBDON ROAD
NORTHFIELD
BRIDGWATER
Edge of Town
Residential Zone
Total Number of dwellings: 33
Survey date: THURSDAY 24/09/15 Survey Type: MANUAL

18 SY-03-A-01 SEMI DETACHED HOUSES SOUTH YORKSHIRE
A19 BENTLEY ROAD
BENTLEY RISE
DONCASTER
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 54
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

19 TW-03-A-02 SEMI-DETACHED TYNE & WEAR
WEST PARK ROAD

GATESHEAD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 16
Survey date: MONDAY 07/10/13 Survey Type: MANUAL

20 WK-03-A-02 BUNGALOWS WARWICKSHIRE
NARBERTH WAY
POTTERS GREEN
COVENTRY
Edge of Town
Residential Zone
Total Number of dwellings: 17
Survey date: THURSDAY 17/10/13 Survey Type: MANUAL

21 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
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
OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	21	64	0.000	21	64	0.000	21	64	0.000
08:00 - 09:00	21	64	0.001	21	64	0.001	21	64	0.002
09:00 - 10:00	21	64	0.001	21	64	0.001	21	64	0.002
10:00 - 11:00	21	64	0.002	21	64	0.002	21	64	0.004
11:00 - 12:00	21	64	0.002	21	64	0.001	21	64	0.003
12:00 - 13:00	21	64	0.000	21	64	0.001	21	64	0.001
13:00 - 14:00	21	64	0.001	21	64	0.000	21	64	0.001
14:00 - 15:00	21	64	0.001	21	64	0.002	21	64	0.003
15:00 - 16:00	21	64	0.001	21	64	0.001	21	64	0.002
16:00 - 17:00	21	64	0.001	21	64	0.001	21	64	0.002
17:00 - 18:00	21	64	0.001	21	64	0.001	21	64	0.002
18:00 - 19:00	21	64	0.000	21	64	0.000	21	64	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.011			0.011			0.022

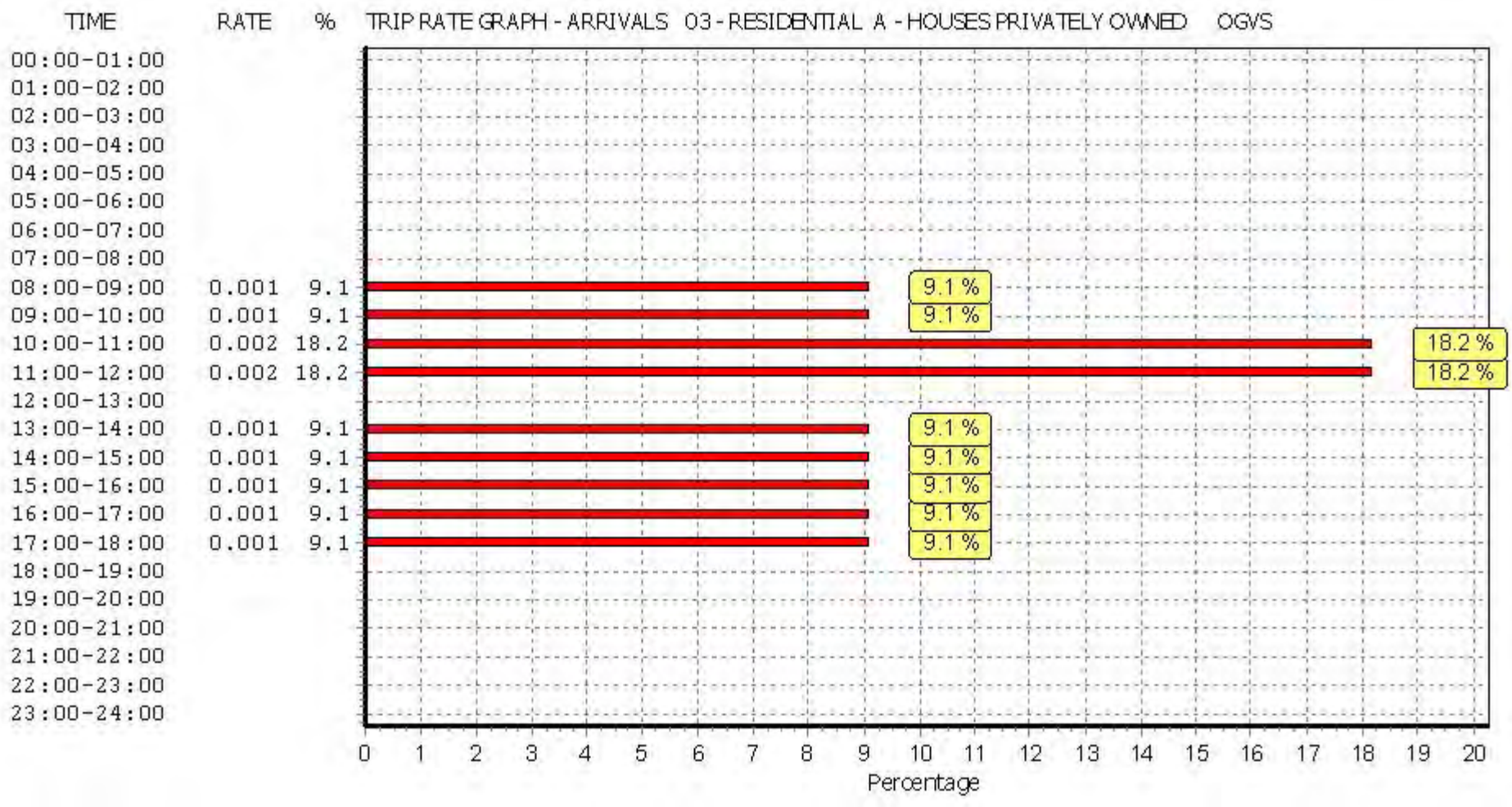
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

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

Parameter summary

Trip rate parameter range selected:	10 - 432 (units:)
Survey date date range:	01/04/13 - 13/11/15
Number of weekdays (Monday-Friday):	21
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



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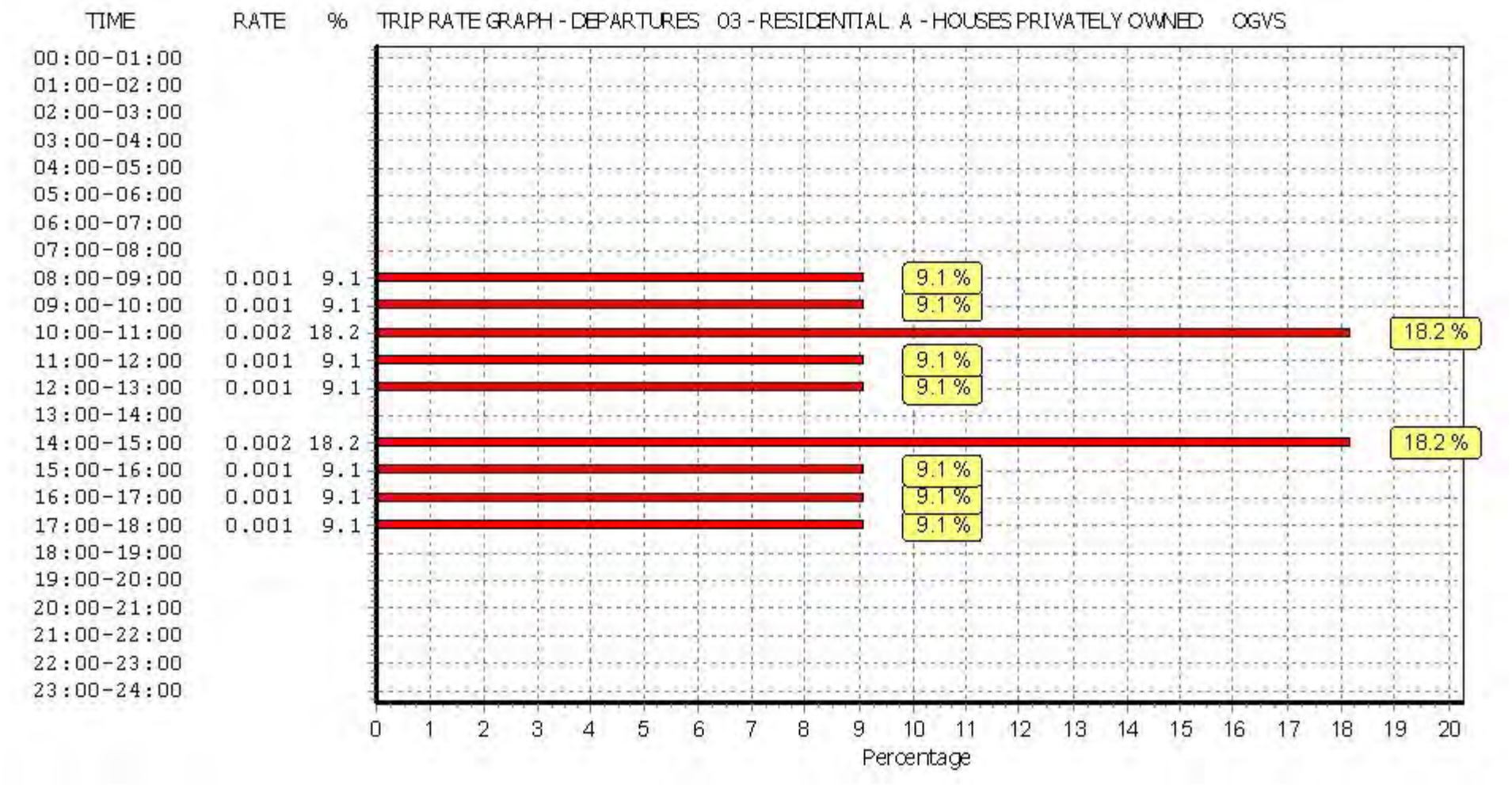

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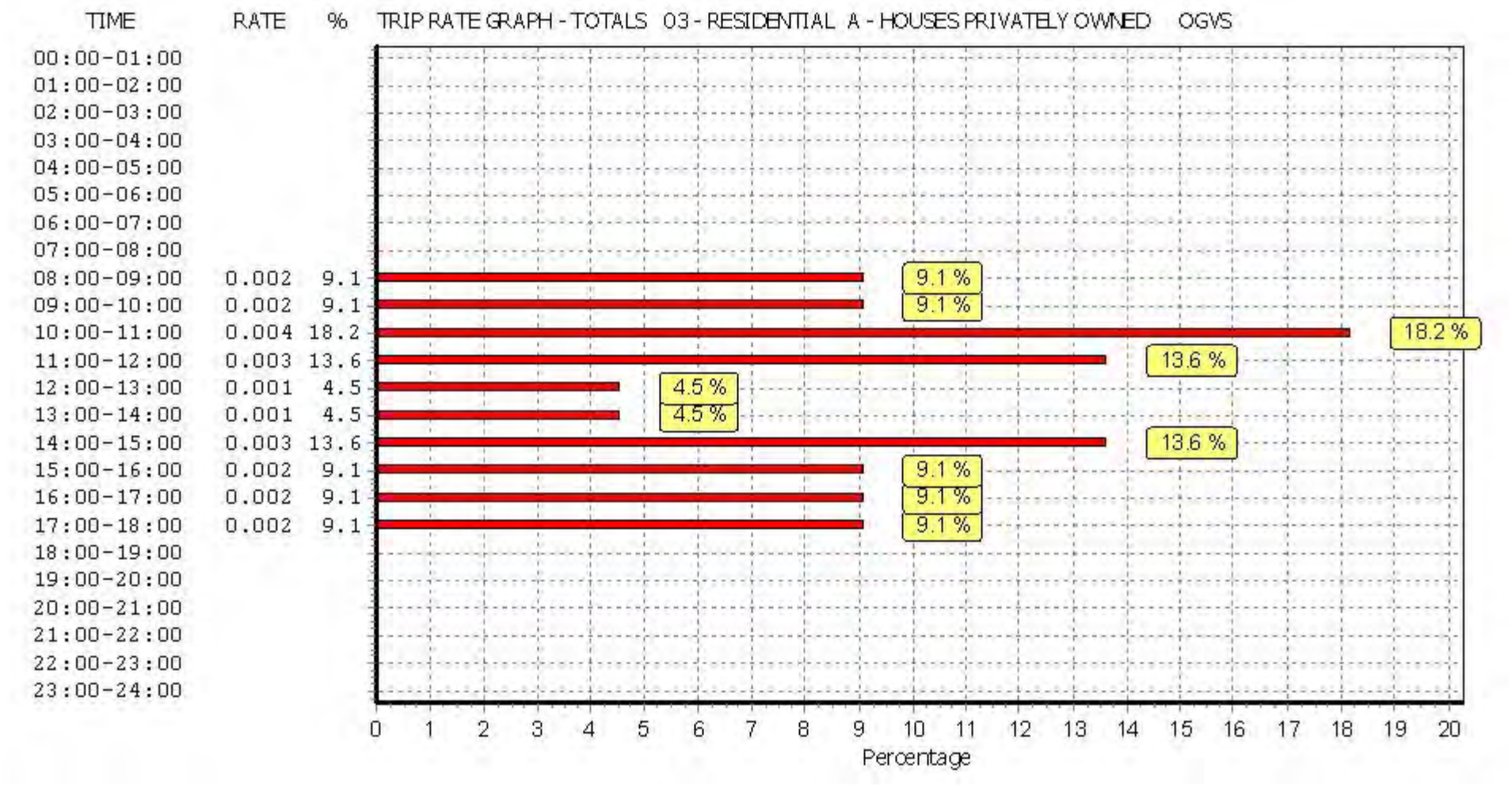

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	21	64	0.000	21	64	0.000	21	64	0.000
08:00 - 09:00	21	64	0.000	21	64	0.000	21	64	0.000
09:00 - 10:00	21	64	0.000	21	64	0.000	21	64	0.000
10:00 - 11:00	21	64	0.000	21	64	0.000	21	64	0.000
11:00 - 12:00	21	64	0.001	21	64	0.001	21	64	0.002
12:00 - 13:00	21	64	0.000	21	64	0.000	21	64	0.000
13:00 - 14:00	21	64	0.000	21	64	0.000	21	64	0.000
14:00 - 15:00	21	64	0.000	21	64	0.000	21	64	0.000
15:00 - 16:00	21	64	0.000	21	64	0.000	21	64	0.000
16:00 - 17:00	21	64	0.000	21	64	0.000	21	64	0.000
17:00 - 18:00	21	64	0.000	21	64	0.000	21	64	0.000
18:00 - 19:00	21	64	0.000	21	64	0.000	21	64	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.001			0.002

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Number of Saturdays:	0
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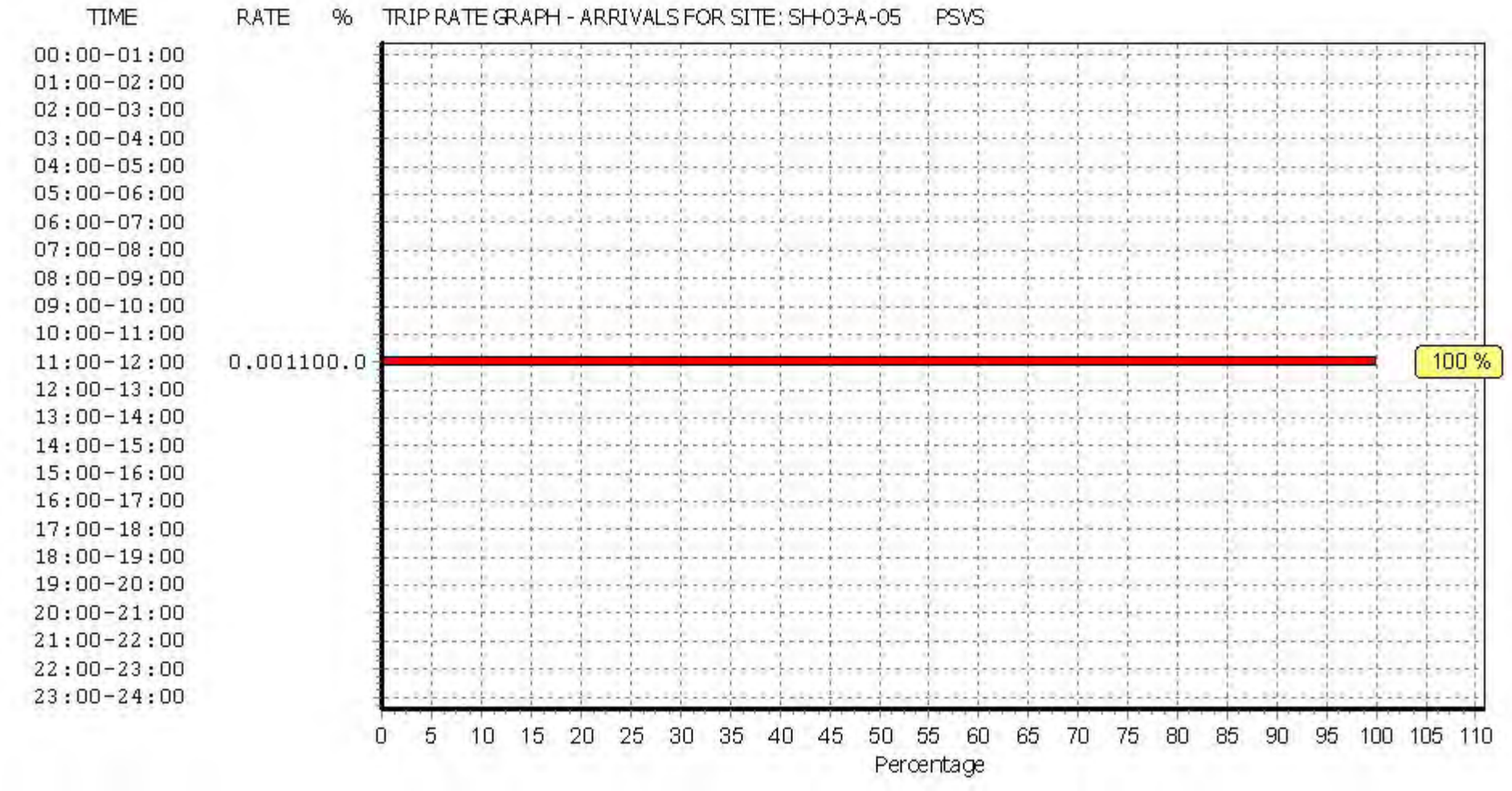

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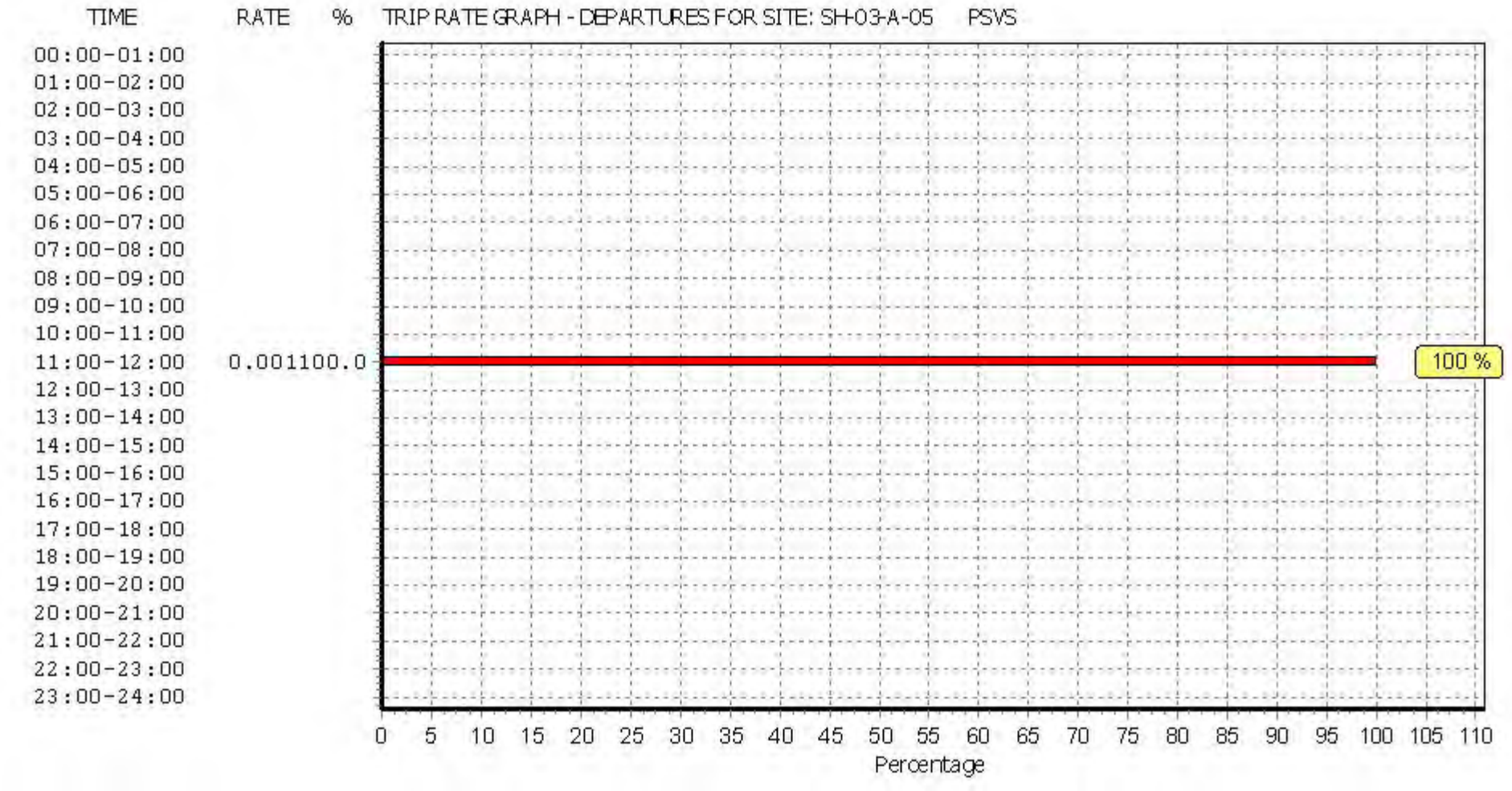

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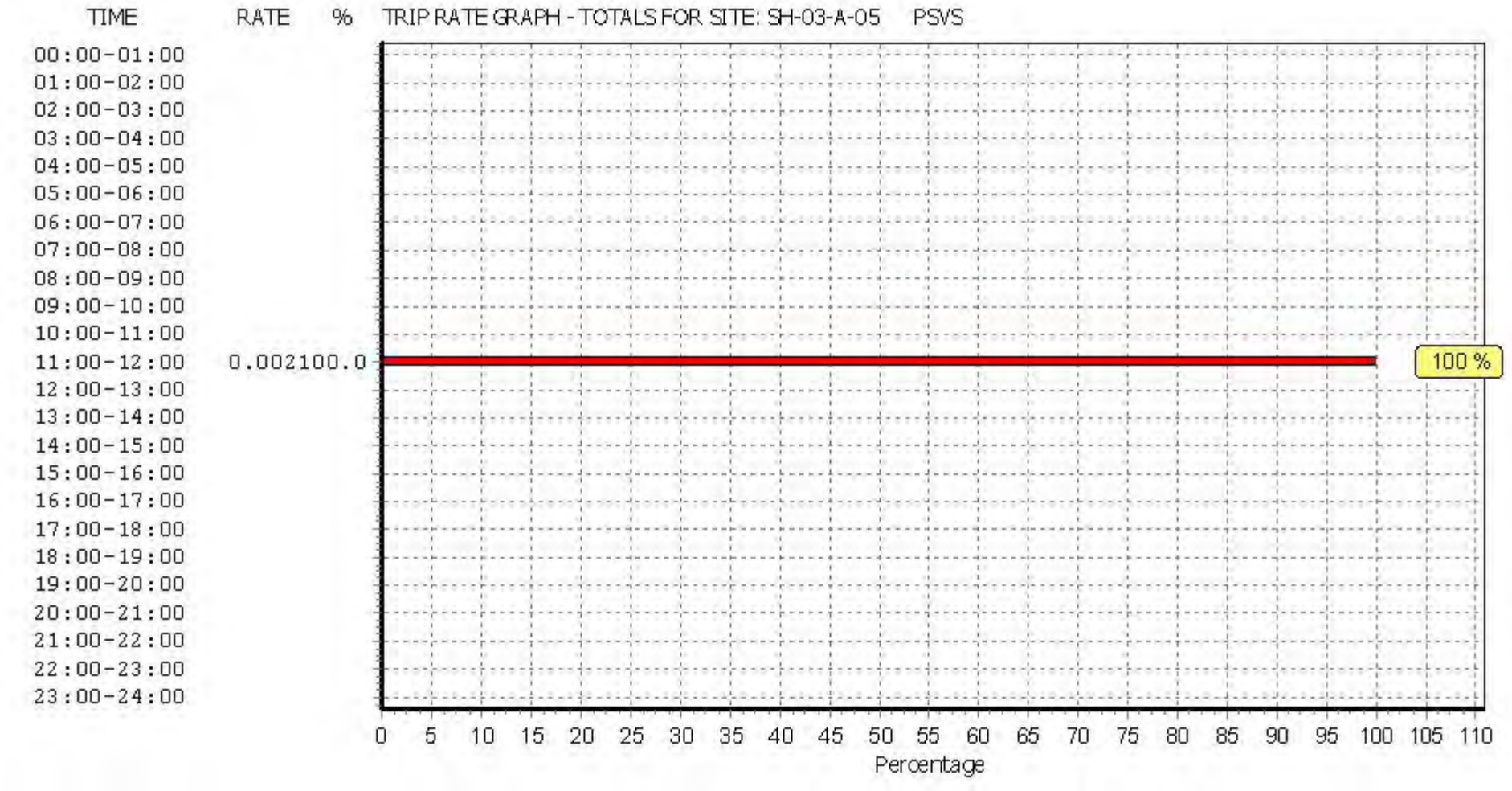

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	21	64	0.022	21	64	0.094	21	64	0.116
08:00 - 09:00	21	64	0.038	21	64	0.122	21	64	0.160
09:00 - 10:00	21	64	0.053	21	64	0.060	21	64	0.113
10:00 - 11:00	21	64	0.058	21	64	0.070	21	64	0.128
11:00 - 12:00	21	64	0.049	21	64	0.055	21	64	0.104
12:00 - 13:00	21	64	0.058	21	64	0.062	21	64	0.120
13:00 - 14:00	21	64	0.058	21	64	0.061	21	64	0.119
14:00 - 15:00	21	64	0.054	21	64	0.055	21	64	0.109
15:00 - 16:00	21	64	0.091	21	64	0.056	21	64	0.147
16:00 - 17:00	21	64	0.092	21	64	0.059	21	64	0.151
17:00 - 18:00	21	64	0.121	21	64	0.059	21	64	0.180
18:00 - 19:00	21	64	0.072	21	64	0.055	21	64	0.127
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.766			0.808			1.574

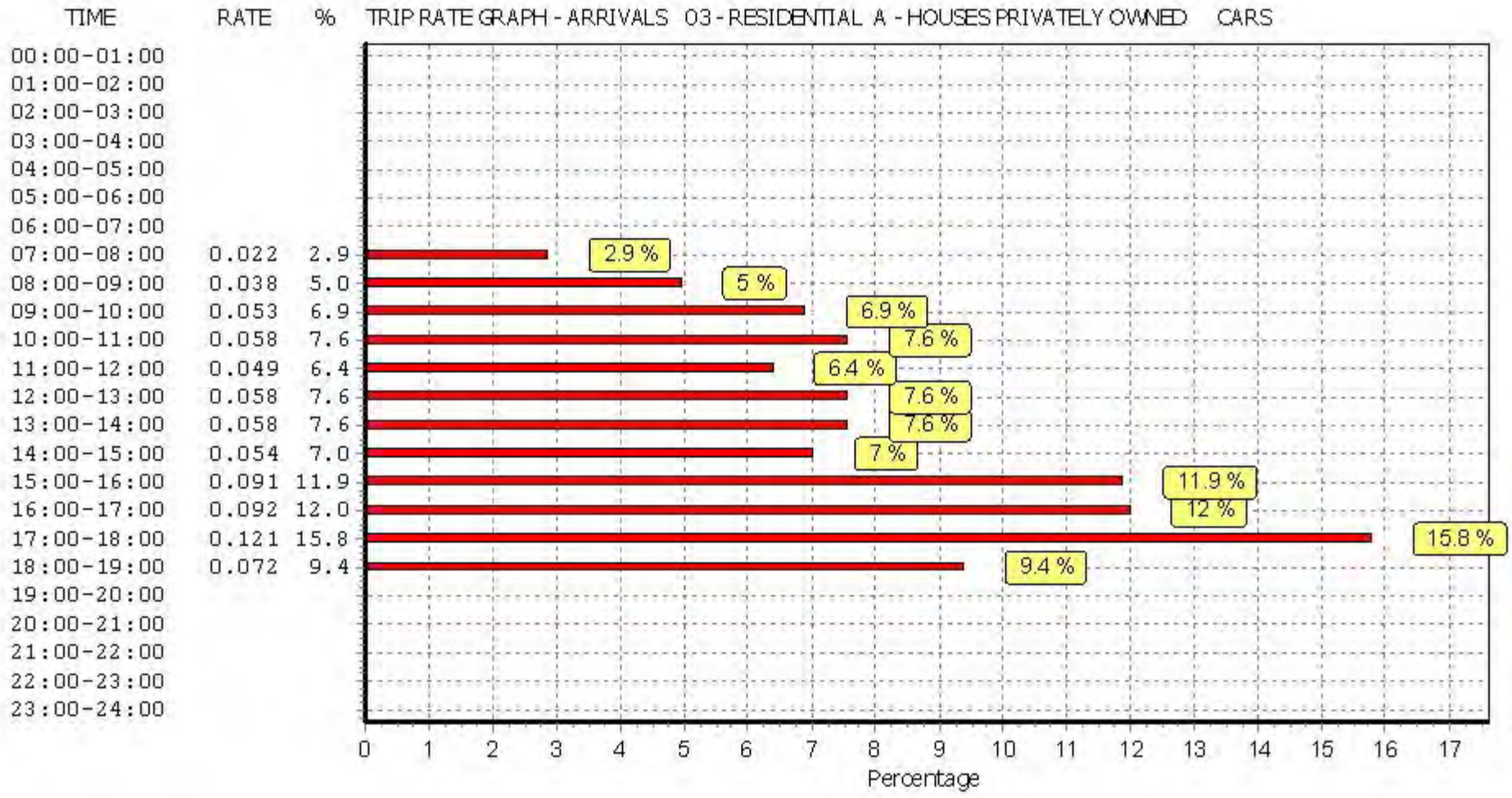
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

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

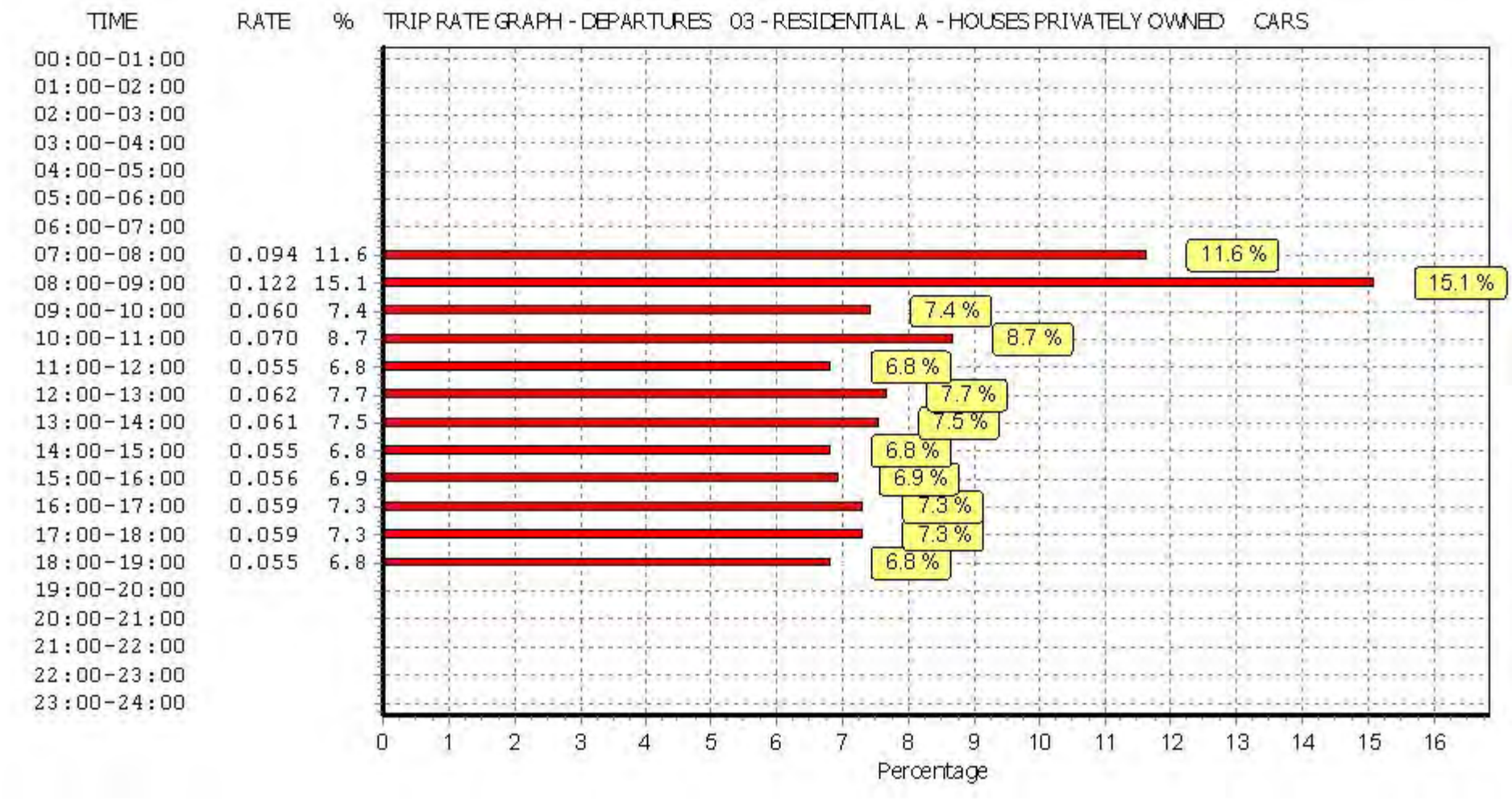
Parameter summary

Trip rate parameter range selected:	10 - 432 (units:)
Survey date date range:	01/04/13 - 13/11/15
Number of weekdays (Monday-Friday):	21
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



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



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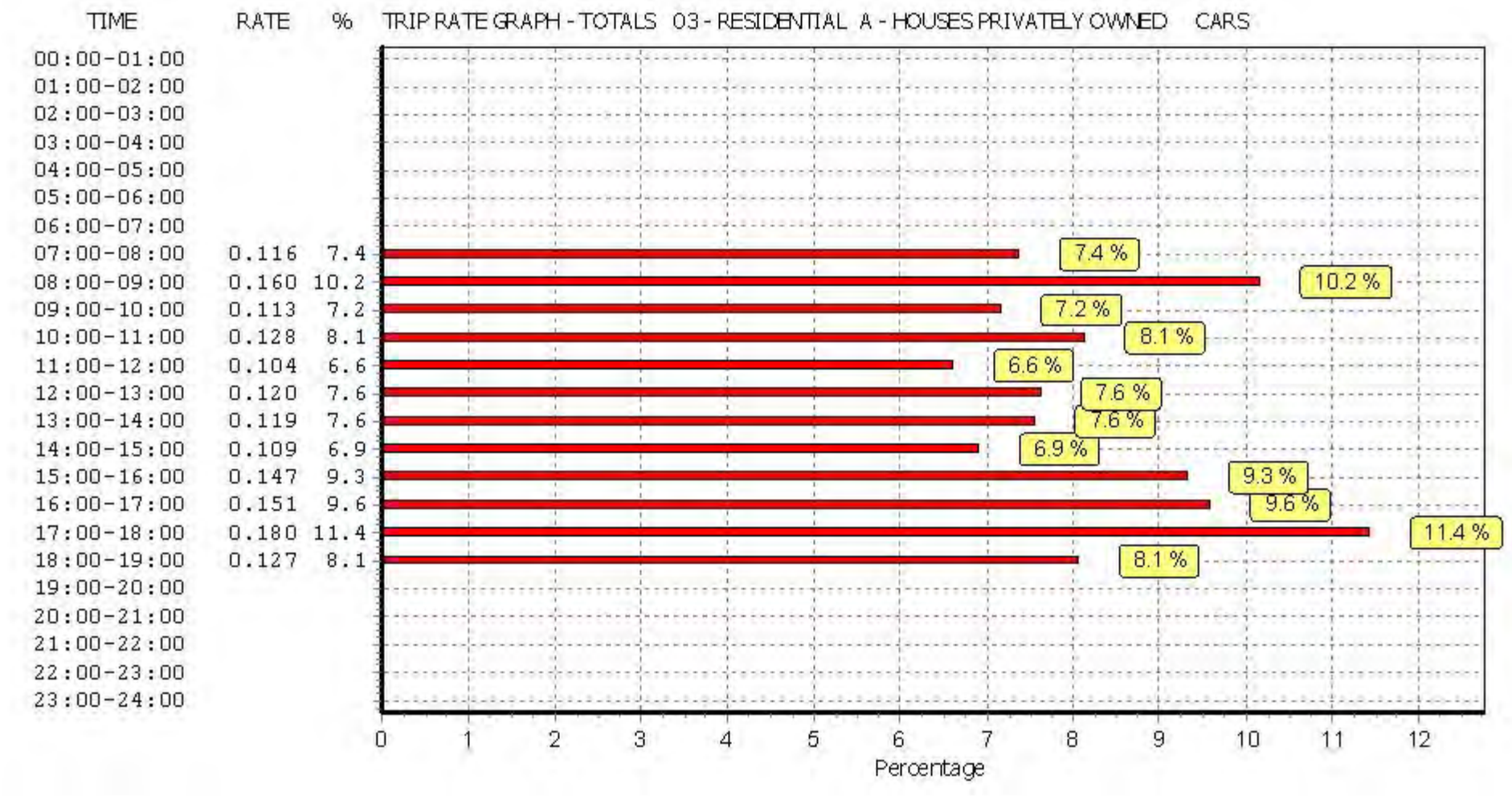

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	21	64	0.010	21	64	0.034	21	64	0.044
08:00 - 09:00	21	64	0.020	21	64	0.025	21	64	0.045
09:00 - 10:00	21	64	0.020	21	64	0.013	21	64	0.033
10:00 - 11:00	21	64	0.018	21	64	0.016	21	64	0.034
11:00 - 12:00	21	64	0.015	21	64	0.016	21	64	0.031
12:00 - 13:00	21	64	0.018	21	64	0.016	21	64	0.034
13:00 - 14:00	21	64	0.021	21	64	0.015	21	64	0.036
14:00 - 15:00	21	64	0.013	21	64	0.017	21	64	0.030
15:00 - 16:00	21	64	0.021	21	64	0.018	21	64	0.039
16:00 - 17:00	21	64	0.014	21	64	0.021	21	64	0.035
17:00 - 18:00	21	64	0.034	21	64	0.012	21	64	0.046
18:00 - 19:00	21	64	0.019	21	64	0.016	21	64	0.035
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.223			0.219			0.442

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

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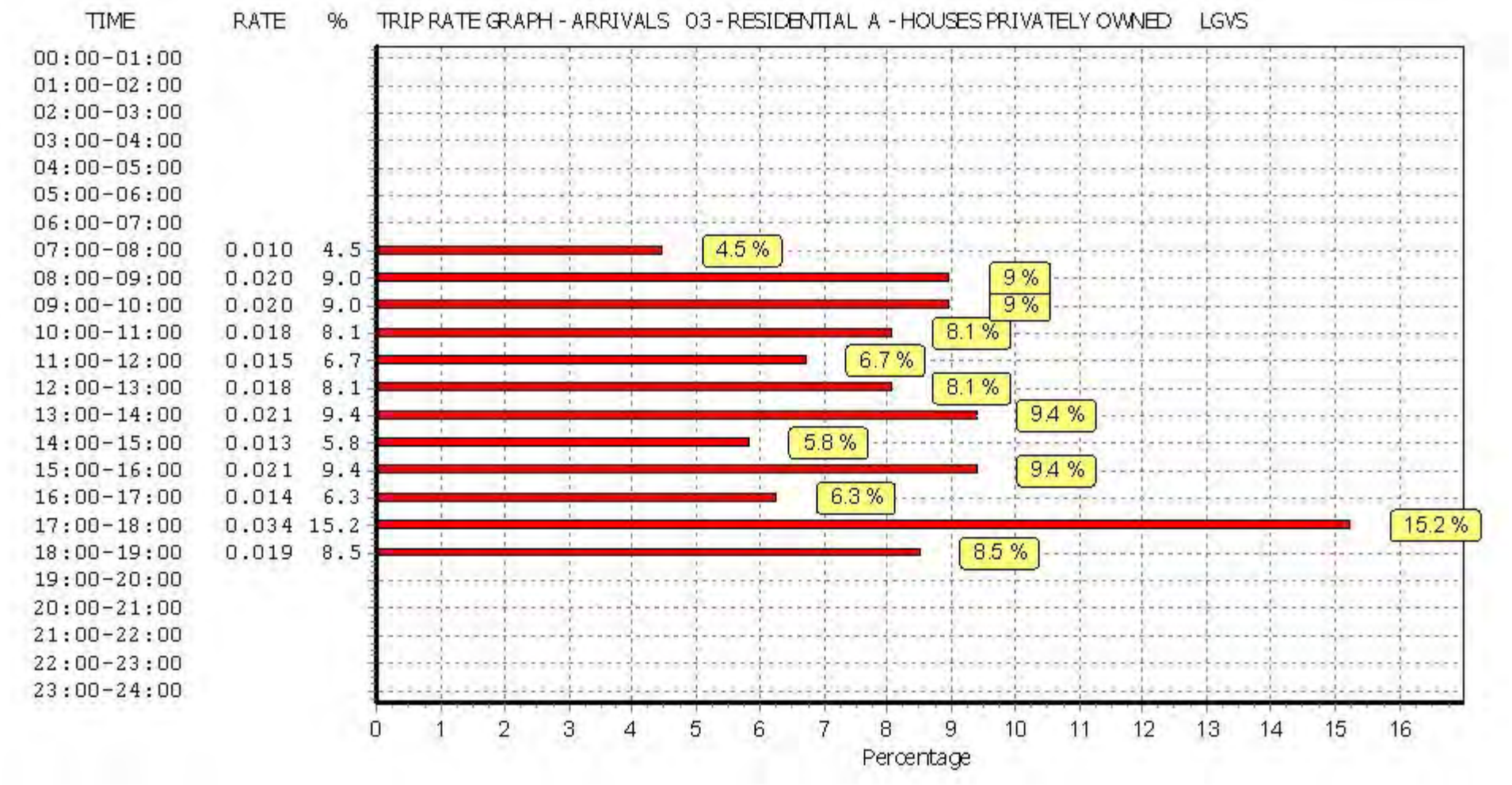
Parameter summary

Trip rate parameter range selected:	10 - 432 (units:)
Survey date date range:	01/04/13 - 13/11/15
Number of weekdays (Monday-Friday):	21
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



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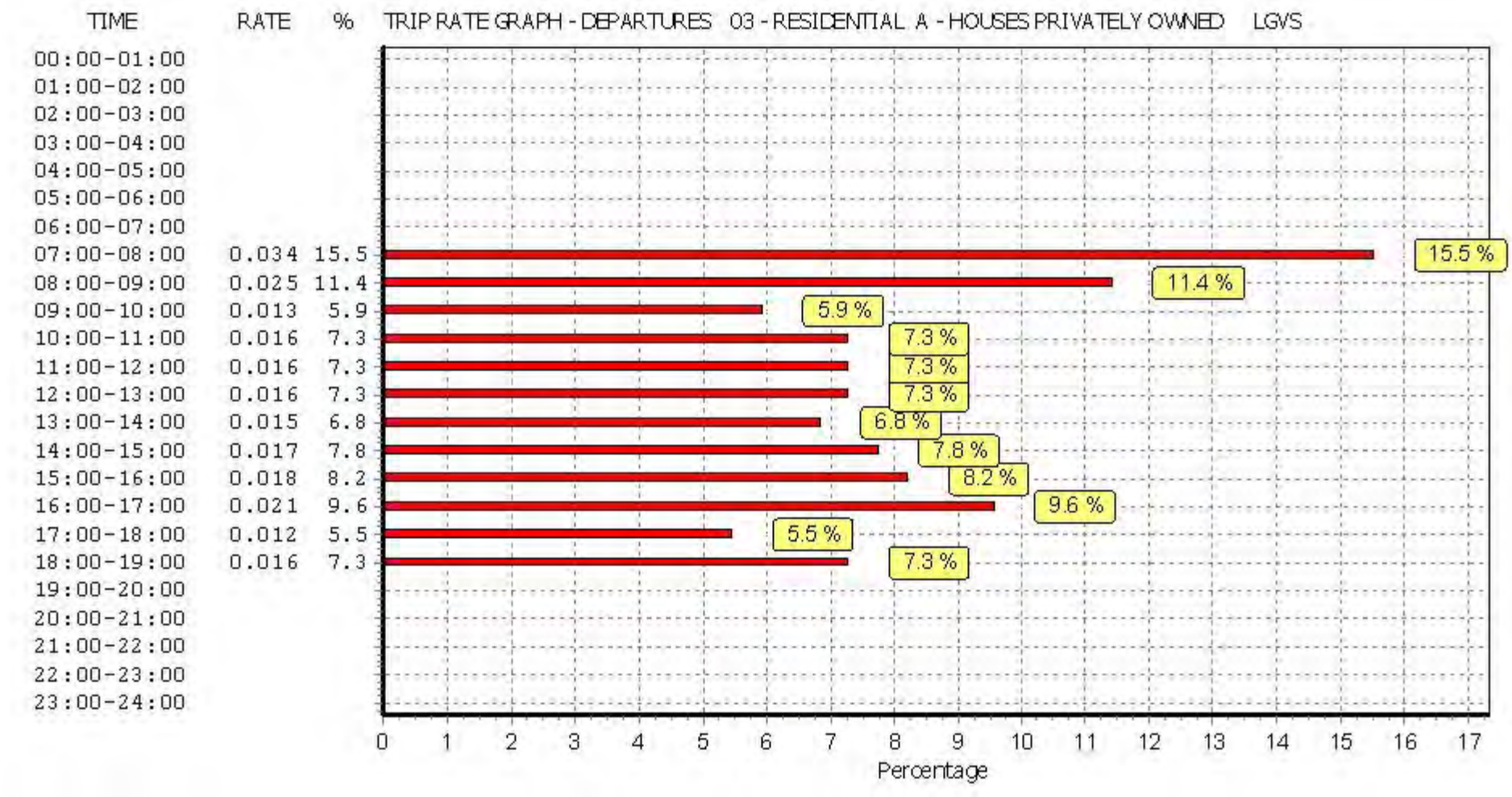

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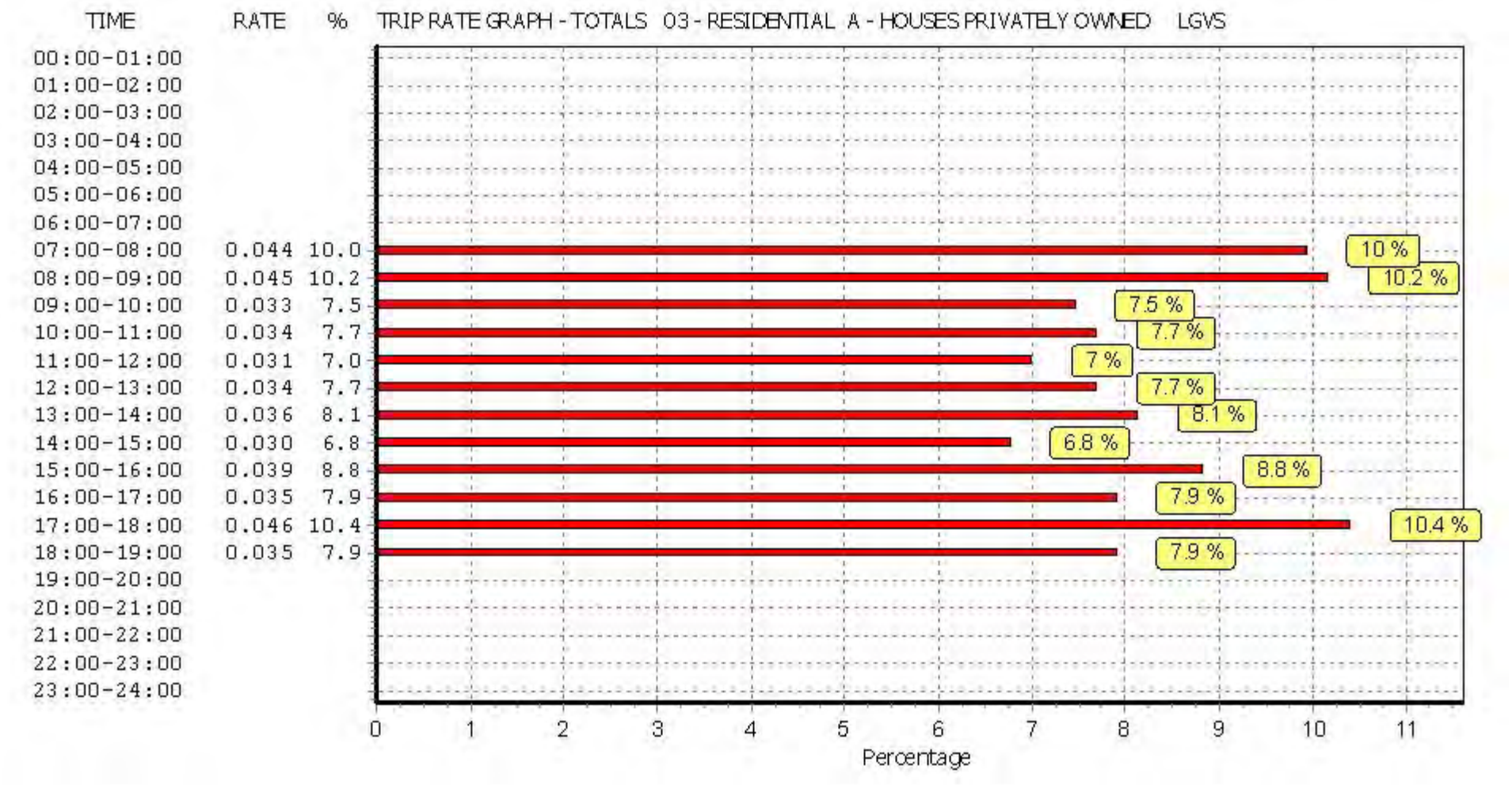

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Calculation Reference: AUDIT-202608-170123-0139

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE
OGVS

Selected regions and areas:

02	SOUTH EAST		
	BD	BEDFORDSHIRE	1 days
	ES	EAST SUSSEX	2 days
	HC	HAMPSHIRE	1 days
	HF	HERTFORDSHIRE	2 days
03	SOUTH WEST		
	BR	BRISTOL CITY	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	SF	SUFFOLK	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
08	NORTH WEST		
	LC	LANCASHIRE	1 days
09	NORTH		
	TV	TEES VALLEY	1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 186 to 22657 (units: sqm)
Range Selected by User: 186 to 52400 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/04/13 to 26/11/15

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

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

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

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

Selected Locations:

Town Centre	5
Edge of Town Centre	5
Suburban Area (PPS6 Out of Centre)	3

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

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

Secondary Filtering selection:

Use Class:

B1	13 days

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

Population within 1 mile:

5,001 to 10,000	3 days
15,001 to 20,000	3 days
25,001 to 50,000	7 days

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

Population within 5 miles:

75,001 to 100,000	2 days
100,001 to 125,000	1 days
125,001 to 250,000	6 days
250,001 to 500,000	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	7 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	4 days
No	9 days

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

PTAL Rating:

No PTAL Present	13 days

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

LIST OF SITES relevant to selection parameters

1 BD-02-A-03 OFFICES BEDFORDSHIRE
BROMHAM ROAD

BEDFORD
Edge of Town Centre
No Sub Category
Total Gross floor area: 1469 sqm
Survey date: MONDAY 14/10/13 Survey Type: MANUAL

2 BR-02-A-02 PLANNING & ENGINEERING BRISTOL CITY
ST THOMAS STREET

BRISTOL
Town Centre
Built-Up Zone
Total Gross floor area: 5736 sqm
Survey date: FRIDAY 29/11/13 Survey Type: MANUAL

3 CA-02-A-05 OFFICES CAMBRIDGESHIRE
NEW ROAD

PETERBOROUGH
Town Centre
Built-Up Zone
Total Gross floor area: 8793 sqm
Survey date: TUESDAY 16/12/14 Survey Type: MANUAL

4 ES-02-A-11 HOUSING COMPANY EAST SUSSEX
THE SIDINGS
ORE VALLEY
HASTINGS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 186 sqm
Survey date: TUESDAY 17/11/15 Survey Type: MANUAL

5 ES-02-A-12 COUNCIL OFFICES EAST SUSSEX
VICARAGE LANE

HAILSHAM
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 3640 sqm
Survey date: THURSDAY 26/11/15 Survey Type: MANUAL

6 HC-02-A-12 HMRC HAMPSHIRE
NORTHERN ROAD
COSHAM
PORTSMOUTH
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 10100 sqm
Survey date: MONDAY 23/11/15 Survey Type: MANUAL

7 HF-02-A-03 OFFICE HERTFORDSHIRE
60 VICTORIA STREET

ST ALBANS
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 610 sqm
Survey date: WEDNESDAY 16/10/13 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 HF-02-A-04 OFFICES HERTFORDSHIRE
STATION WAY

ST ALBANS
Edge of Town Centre
Residential Zone
Total Gross floor area: 5000 sqm
Survey date: THURSDAY 02/10/14 Survey Type: MANUAL

9 LC-02-A-09 OFFICES LANCASHIRE
FURTHERGATE

BLACKBURN
Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Gross floor area: 2600 sqm
Survey date: TUESDAY 04/06/13 Survey Type: MANUAL

10 SF-02-A-02 OFFICES SUFFOLK
BATH STREET

IPSWICH
Edge of Town Centre
Commercial Zone
Total Gross floor area: 6505 sqm
Survey date: FRIDAY 19/07/13 Survey Type: MANUAL

11 TV-02-A-04 COUNCIL OFFICES TEES VALLEY
CORPORATION ROAD

MIDDLESBROUGH
Town Centre
Commercial Zone
Total Gross floor area: 3950 sqm
Survey date: TUESDAY 08/10/13 Survey Type: MANUAL

12 WK-02-A-01 OFFICES WARWICKSHIRE
WARWICK ROAD

COVENTRY
Town Centre
Built-Up Zone
Total Gross floor area: 960 sqm
Survey date: THURSDAY 17/10/13 Survey Type: MANUAL

13 WO-02-A-01 OFFICES WORCESTERSHIRE
ST MARY'S STREET

WORCESTER
Town Centre
Built-Up Zone
Total Gross floor area: 22657 sqm
Survey date: FRIDAY 23/05/14 Survey Type: MANUAL

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

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	10100	0.000	1	10100	0.000	1	10100	0.000
06:30 - 07:00	1	10100	0.010	1	10100	0.010	1	10100	0.020
07:00 - 07:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
07:30 - 08:00	13	5554	0.001	13	5554	0.000	13	5554	0.001
08:00 - 08:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
08:30 - 09:00	13	5554	0.000	13	5554	0.001	13	5554	0.001
09:00 - 09:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
09:30 - 10:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
10:00 - 10:30	13	5554	0.001	13	5554	0.000	13	5554	0.001
10:30 - 11:00	13	5554	0.000	13	5554	0.001	13	5554	0.001
11:00 - 11:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
11:30 - 12:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
12:00 - 12:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
12:30 - 13:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
13:00 - 13:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
13:30 - 14:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
14:00 - 14:30	13	5554	0.003	13	5554	0.003	13	5554	0.006
14:30 - 15:00	13	5554	0.001	13	5554	0.000	13	5554	0.001
15:00 - 15:30	13	5554	0.000	13	5554	0.001	13	5554	0.001
15:30 - 16:00	13	5554	0.004	13	5554	0.003	13	5554	0.007
16:00 - 16:30	13	5554	0.000	13	5554	0.001	13	5554	0.001
16:30 - 17:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
17:00 - 17:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
17:30 - 18:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
18:00 - 18:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
18:30 - 19:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.020			0.020			0.040

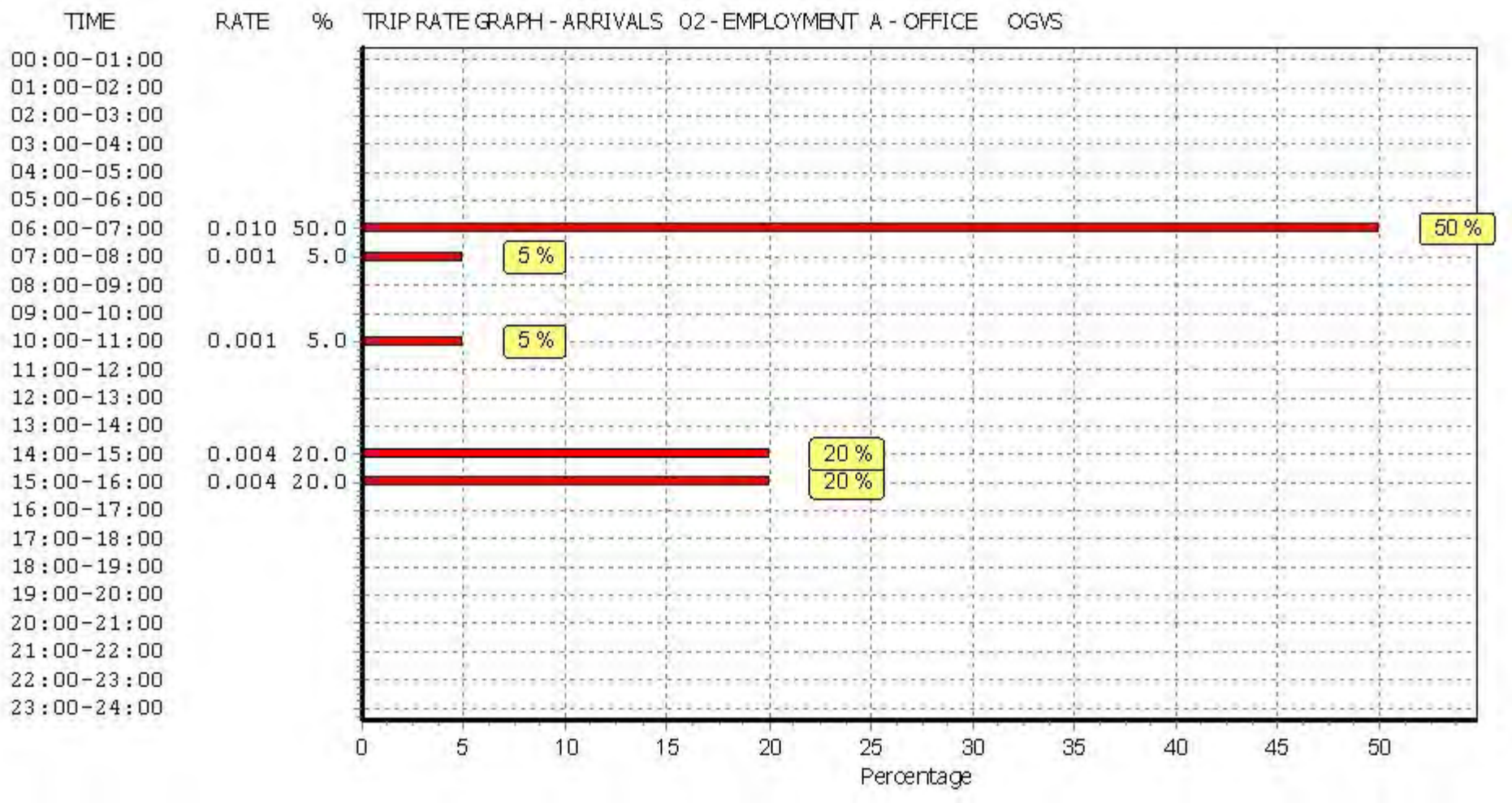
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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:	186 - 22657 (units: sqm)
Survey date date range:	01/04/13 - 26/11/15
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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



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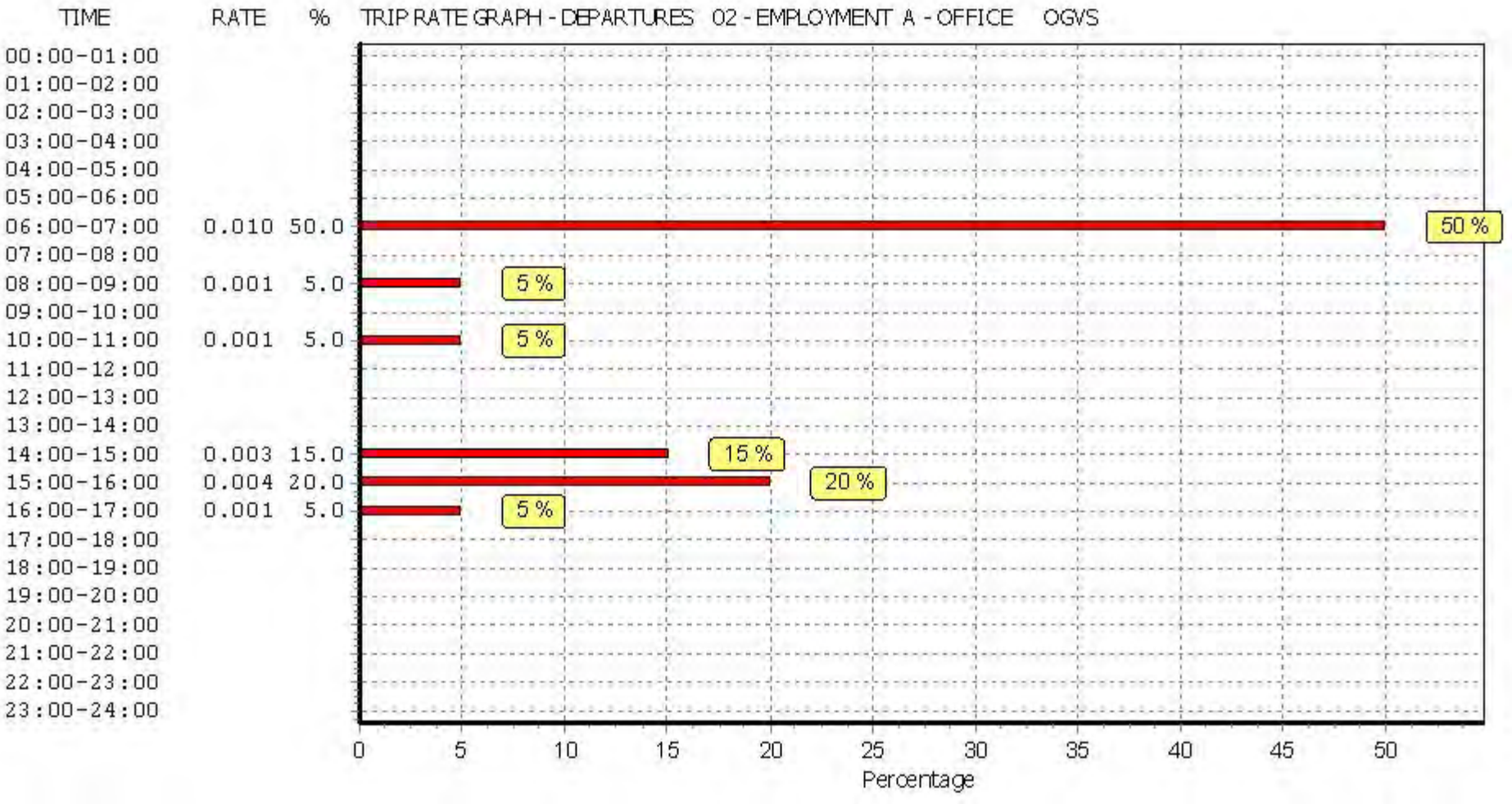
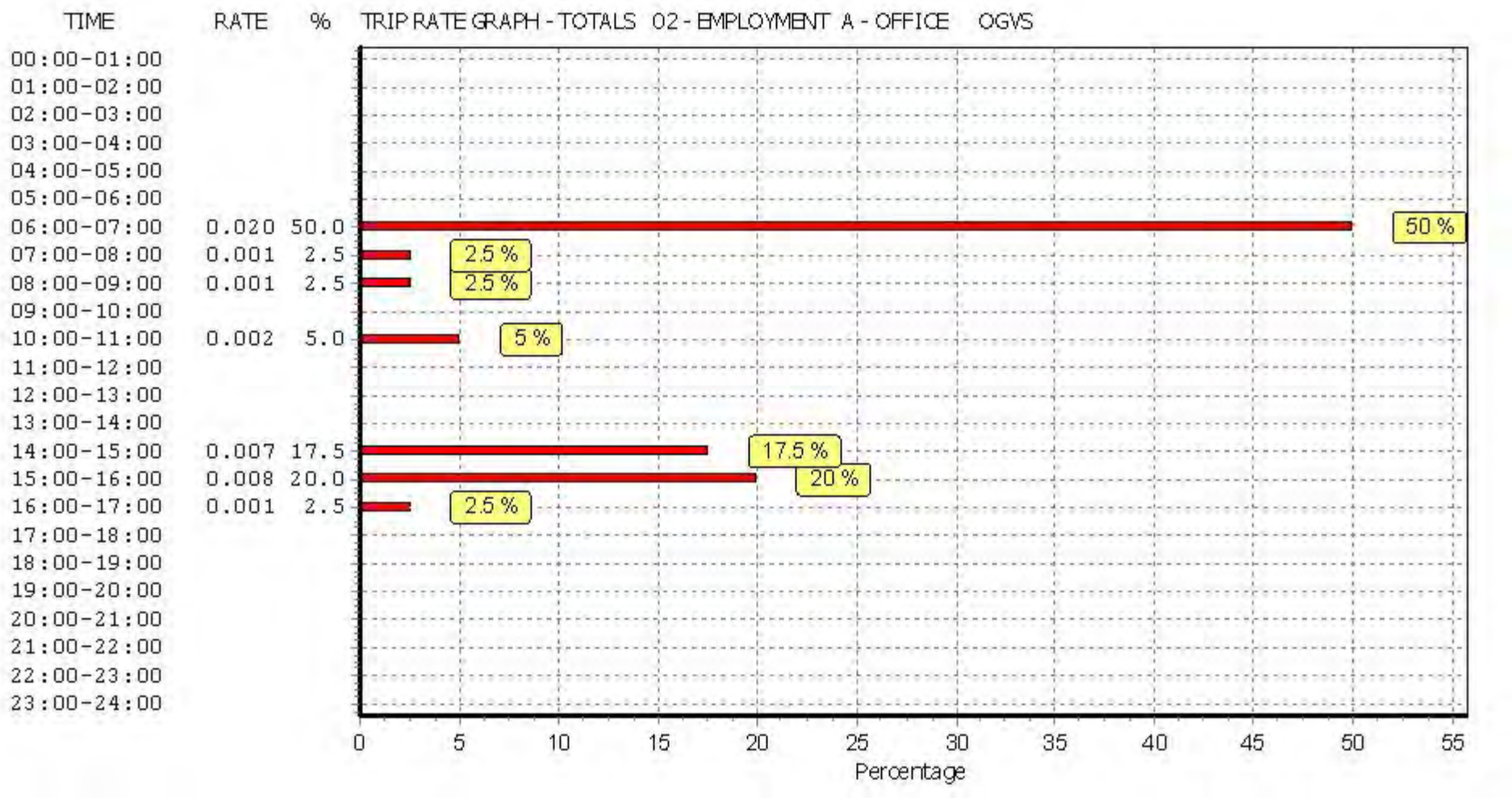


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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



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

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	10100	0.000	1	10100	0.000	1	10100	0.000
06:30 - 07:00	1	10100	0.000	1	10100	0.000	1	10100	0.000
07:00 - 07:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
07:30 - 08:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
08:00 - 08:30	13	5554	0.001	13	5554	0.000	13	5554	0.001
08:30 - 09:00	13	5554	0.003	13	5554	0.000	13	5554	0.003
09:00 - 09:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
09:30 - 10:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
10:00 - 10:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
10:30 - 11:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
11:00 - 11:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
11:30 - 12:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
12:00 - 12:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
12:30 - 13:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
13:00 - 13:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
13:30 - 14:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
14:00 - 14:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
14:30 - 15:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
15:00 - 15:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
15:30 - 16:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
16:00 - 16:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
16:30 - 17:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
17:00 - 17:30	13	5554	0.000	13	5554	0.001	13	5554	0.001
17:30 - 18:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
18:00 - 18:30	13	5554	0.000	13	5554	0.000	13	5554	0.000
18:30 - 19:00	13	5554	0.000	13	5554	0.000	13	5554	0.000
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.004			0.001			0.005

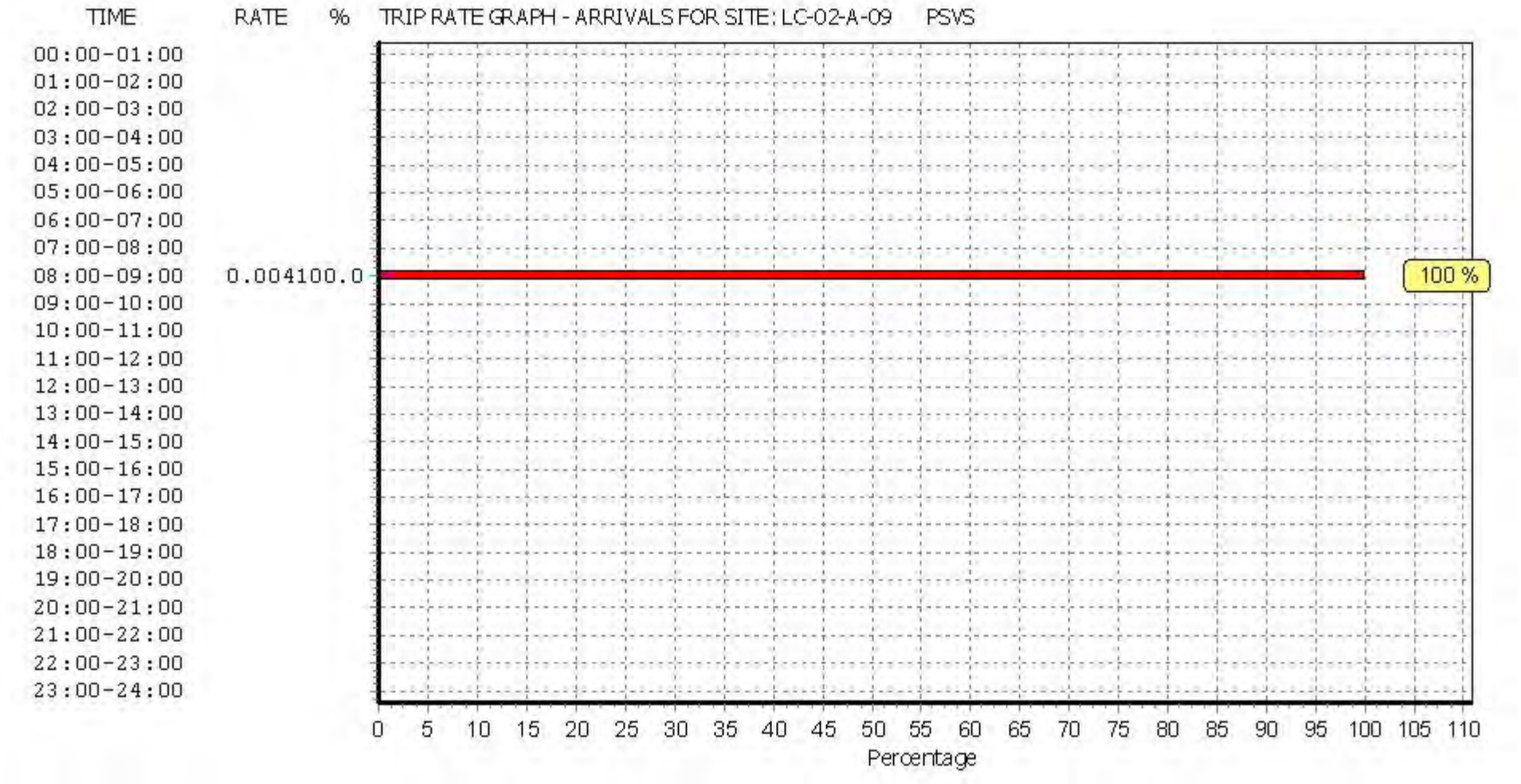
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

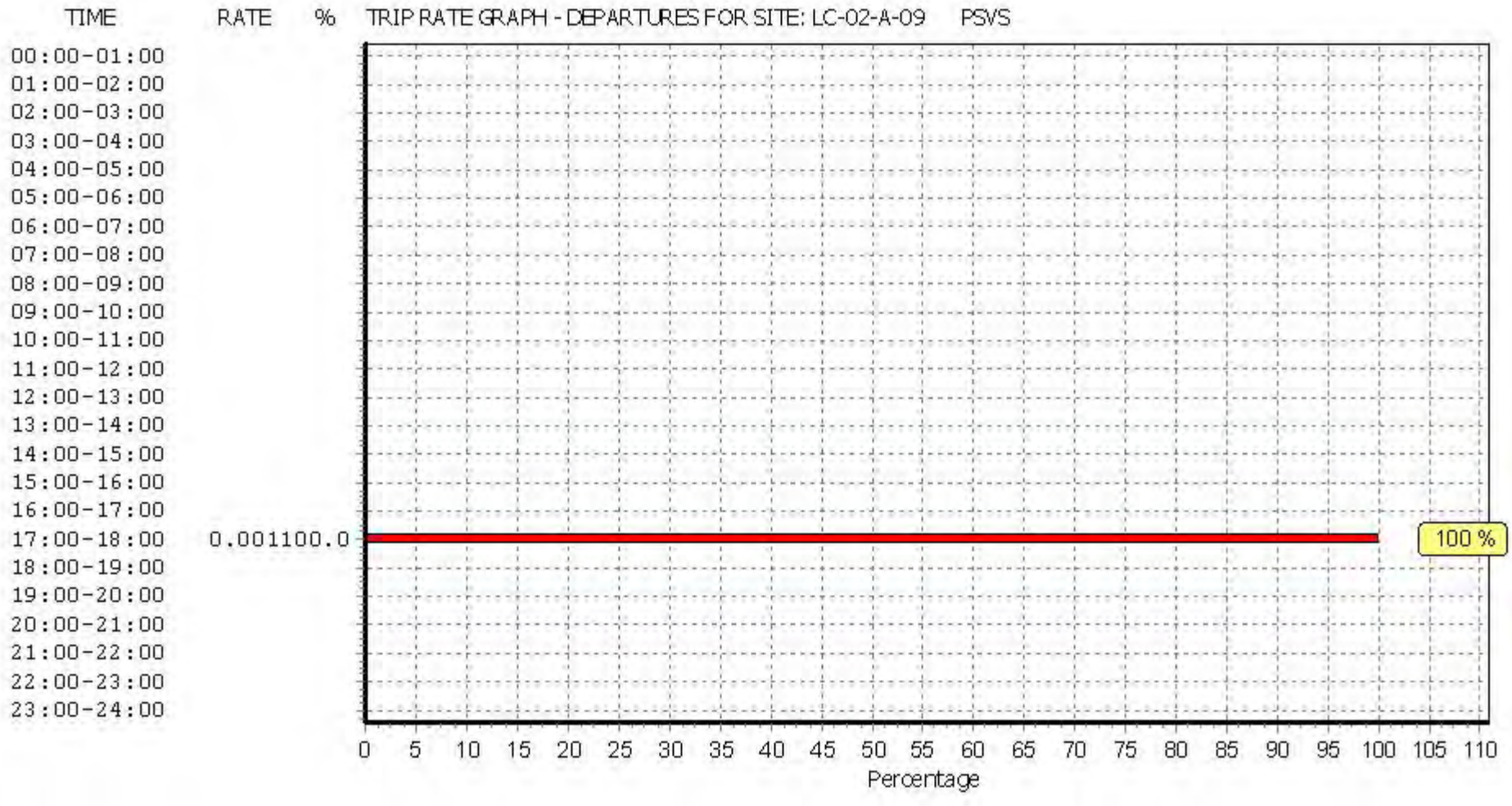
Parameter summary

Trip rate parameter range selected:	186 - 22657 (units: sqm)
Survey date date range:	01/04/13 - 26/11/15
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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



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



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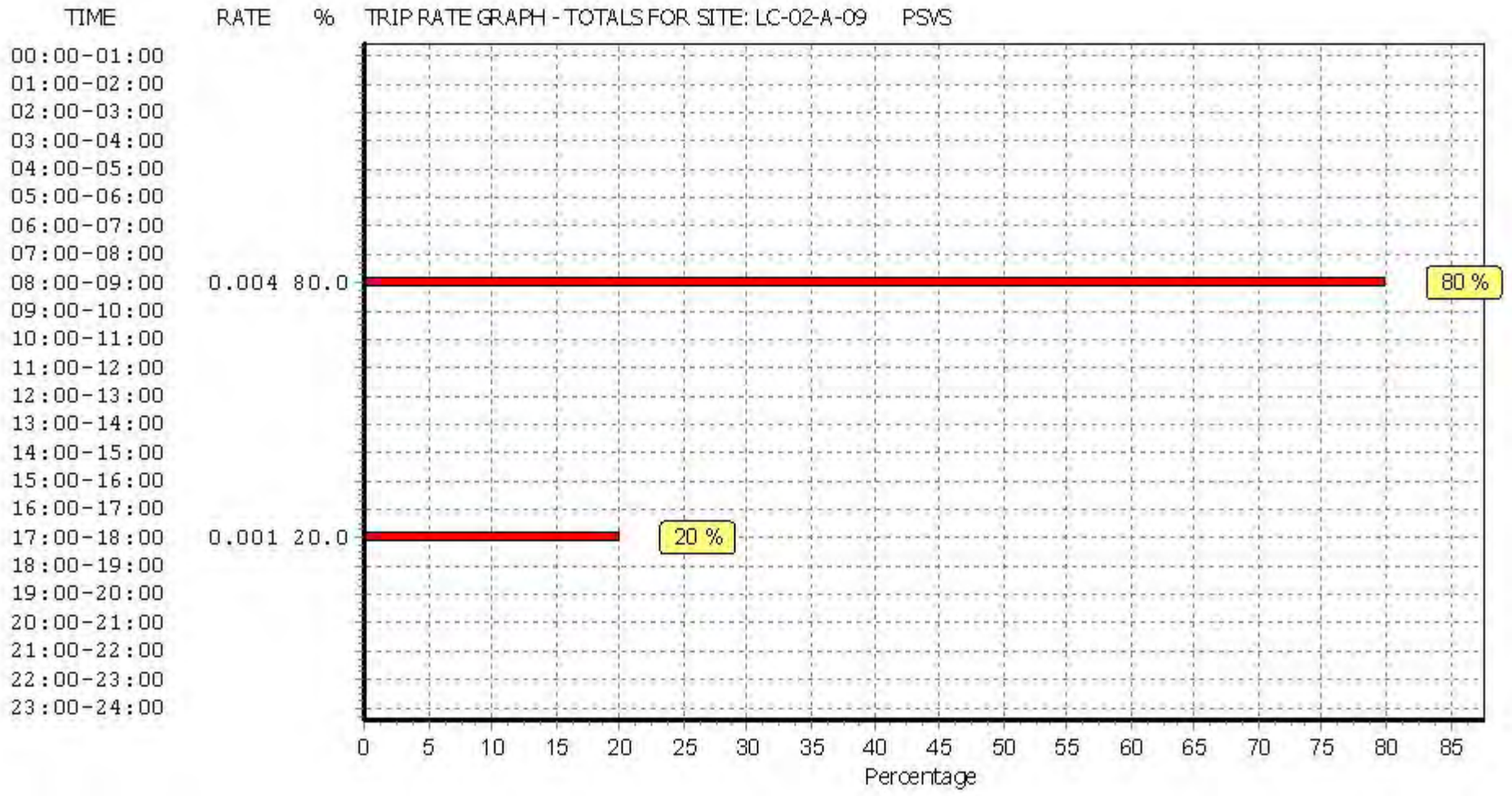


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
CARS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	10100	0.396	1	10100	0.030	1	10100	0.426
06:30 - 07:00	1	10100	0.673	1	10100	0.109	1	10100	0.782
07:00 - 07:30	13	5554	0.145	13	5554	0.011	13	5554	0.156
07:30 - 08:00	13	5554	0.186	13	5554	0.028	13	5554	0.214
08:00 - 08:30	13	5554	0.235	13	5554	0.012	13	5554	0.247
08:30 - 09:00	13	5554	0.267	13	5554	0.012	13	5554	0.279
09:00 - 09:30	13	5554	0.173	13	5554	0.029	13	5554	0.202
09:30 - 10:00	13	5554	0.090	13	5554	0.028	13	5554	0.118
10:00 - 10:30	13	5554	0.039	13	5554	0.035	13	5554	0.074
10:30 - 11:00	13	5554	0.037	13	5554	0.022	13	5554	0.059
11:00 - 11:30	13	5554	0.014	13	5554	0.019	13	5554	0.033
11:30 - 12:00	13	5554	0.026	13	5554	0.029	13	5554	0.055
12:00 - 12:30	13	5554	0.021	13	5554	0.050	13	5554	0.071
12:30 - 13:00	13	5554	0.043	13	5554	0.055	13	5554	0.098
13:00 - 13:30	13	5554	0.053	13	5554	0.055	13	5554	0.108
13:30 - 14:00	13	5554	0.032	13	5554	0.048	13	5554	0.080
14:00 - 14:30	13	5554	0.026	13	5554	0.055	13	5554	0.081
14:30 - 15:00	13	5554	0.024	13	5554	0.102	13	5554	0.126
15:00 - 15:30	13	5554	0.019	13	5554	0.118	13	5554	0.137
15:30 - 16:00	13	5554	0.030	13	5554	0.127	13	5554	0.157
16:00 - 16:30	13	5554	0.022	13	5554	0.161	13	5554	0.183
16:30 - 17:00	13	5554	0.022	13	5554	0.140	13	5554	0.162
17:00 - 17:30	13	5554	0.014	13	5554	0.216	13	5554	0.230
17:30 - 18:00	13	5554	0.030	13	5554	0.165	13	5554	0.195
18:00 - 18:30	13	5554	0.006	13	5554	0.091	13	5554	0.097
18:30 - 19:00	13	5554	0.011	13	5554	0.053	13	5554	0.064
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.634			1.800			4.434

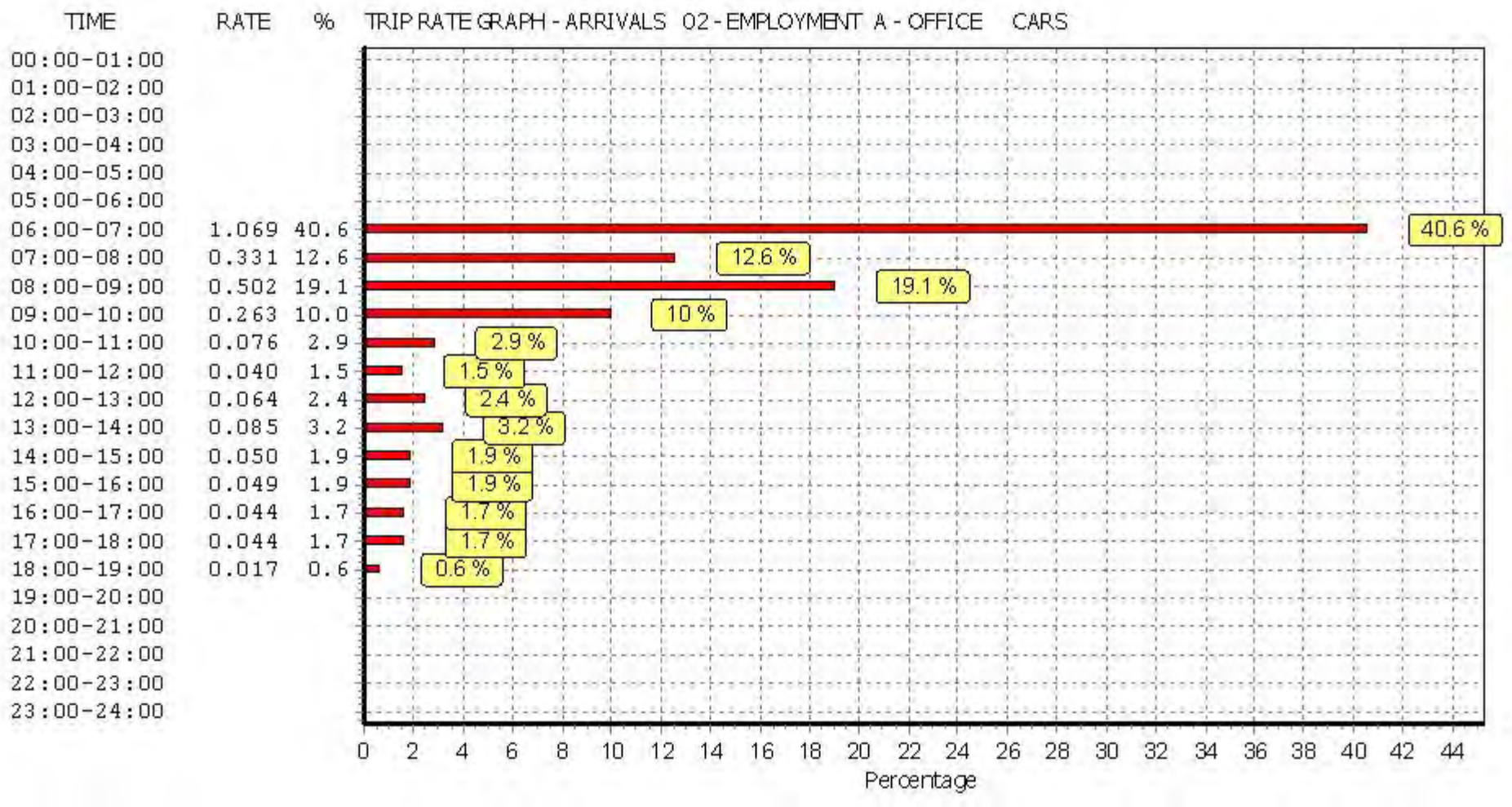
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

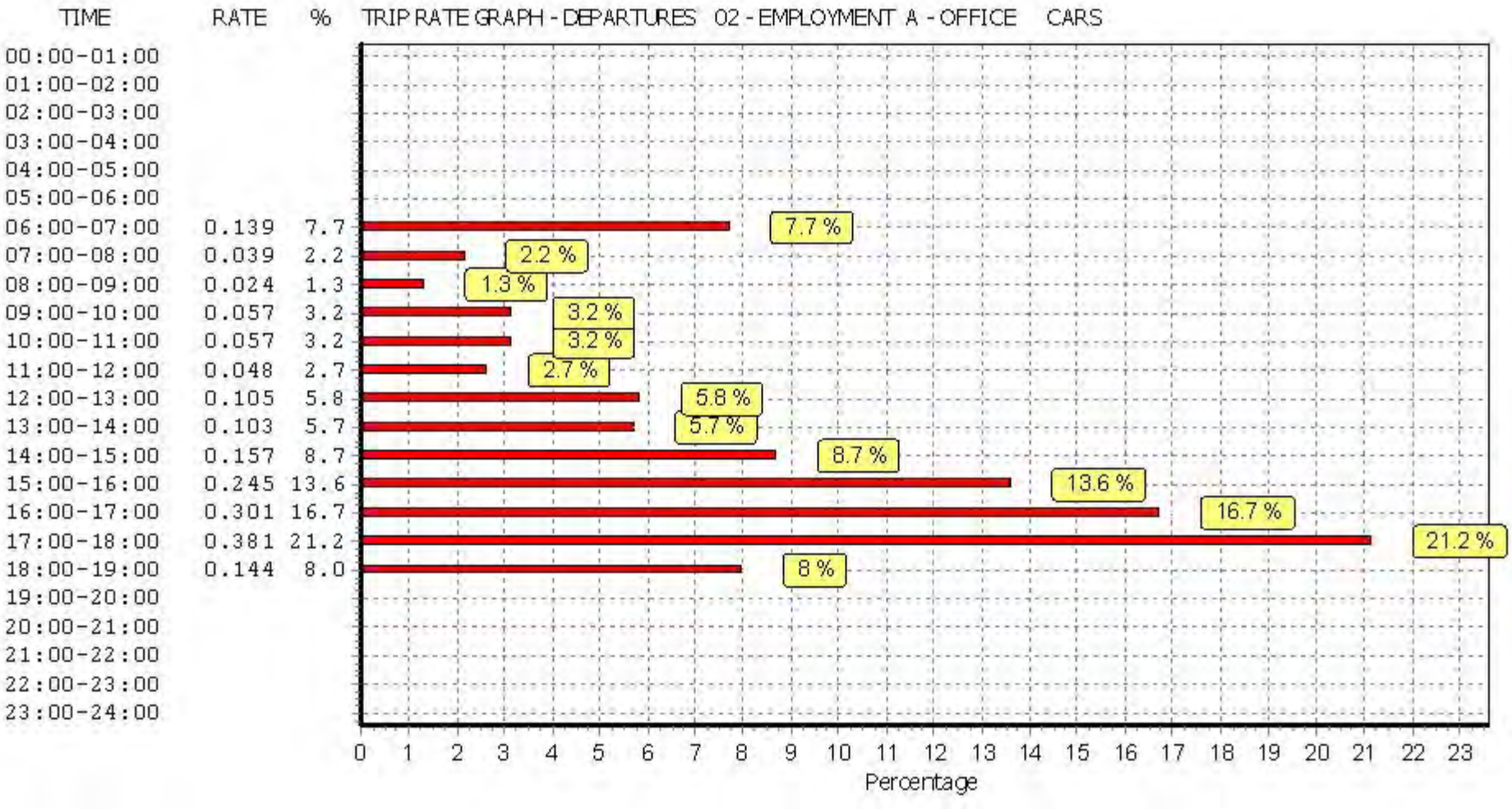
Parameter summary

Trip rate parameter range selected:	186 - 22657 (units: sqm)
Survey date date range:	01/04/13 - 26/11/15
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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



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



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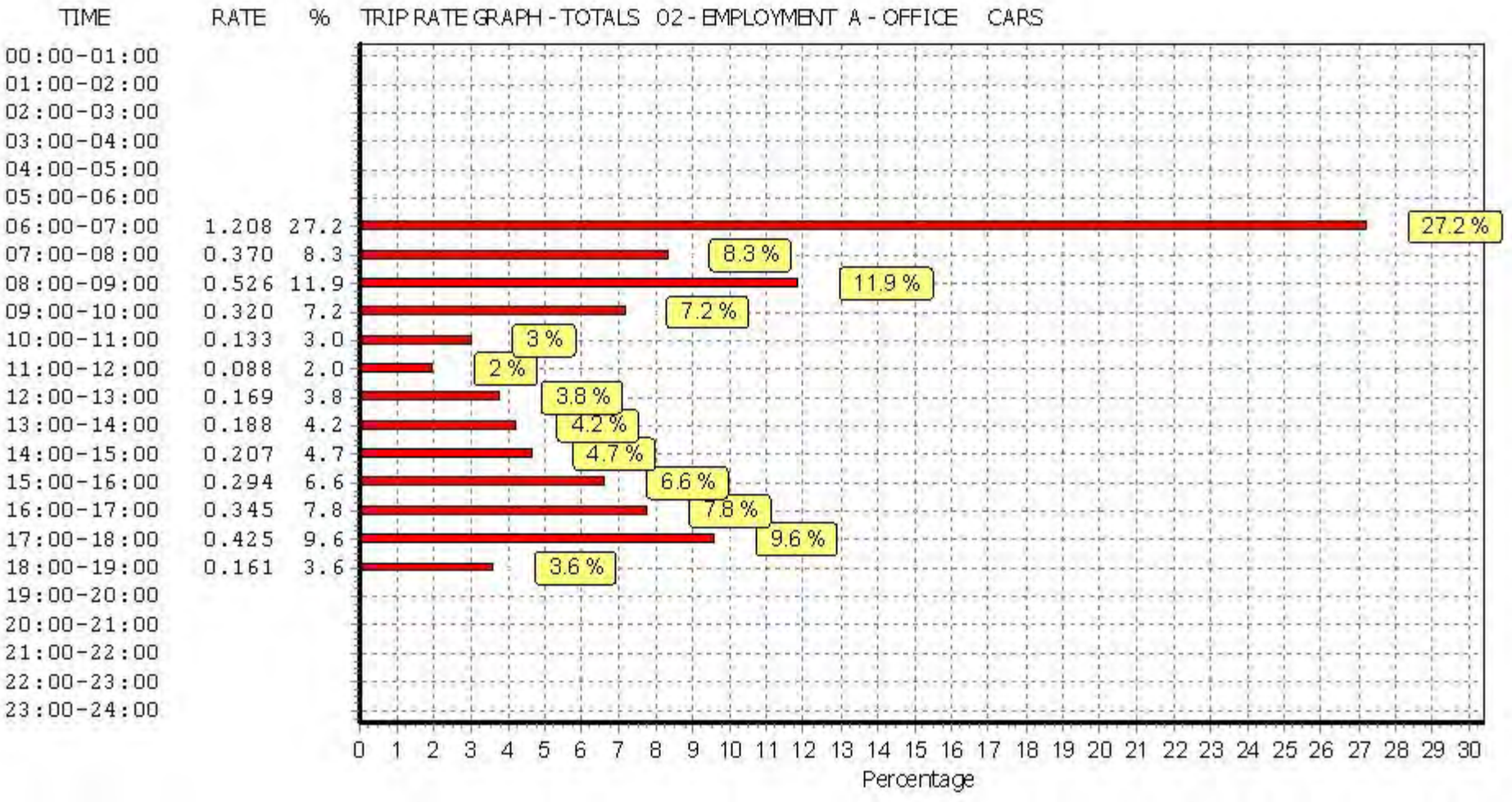

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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
LGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	10100	0.010	1	10100	0.000	1	10100	0.010
06:30 - 07:00	1	10100	0.010	1	10100	0.020	1	10100	0.030
07:00 - 07:30	13	5554	0.007	13	5554	0.004	13	5554	0.011
07:30 - 08:00	13	5554	0.015	13	5554	0.010	13	5554	0.025
08:00 - 08:30	13	5554	0.015	13	5554	0.028	13	5554	0.043
08:30 - 09:00	13	5554	0.018	13	5554	0.018	13	5554	0.036
09:00 - 09:30	13	5554	0.014	13	5554	0.019	13	5554	0.033
09:30 - 10:00	13	5554	0.017	13	5554	0.012	13	5554	0.029
10:00 - 10:30	13	5554	0.006	13	5554	0.010	13	5554	0.016
10:30 - 11:00	13	5554	0.014	13	5554	0.008	13	5554	0.022
11:00 - 11:30	13	5554	0.014	13	5554	0.019	13	5554	0.033
11:30 - 12:00	13	5554	0.008	13	5554	0.006	13	5554	0.014
12:00 - 12:30	13	5554	0.012	13	5554	0.008	13	5554	0.020
12:30 - 13:00	13	5554	0.021	13	5554	0.018	13	5554	0.039
13:00 - 13:30	13	5554	0.003	13	5554	0.010	13	5554	0.013
13:30 - 14:00	13	5554	0.010	13	5554	0.006	13	5554	0.016
14:00 - 14:30	13	5554	0.010	13	5554	0.003	13	5554	0.013
14:30 - 15:00	13	5554	0.014	13	5554	0.010	13	5554	0.024
15:00 - 15:30	13	5554	0.008	13	5554	0.014	13	5554	0.022
15:30 - 16:00	13	5554	0.015	13	5554	0.012	13	5554	0.027
16:00 - 16:30	13	5554	0.015	13	5554	0.022	13	5554	0.037
16:30 - 17:00	13	5554	0.018	13	5554	0.014	13	5554	0.032
17:00 - 17:30	13	5554	0.010	13	5554	0.006	13	5554	0.016
17:30 - 18:00	13	5554	0.012	13	5554	0.012	13	5554	0.024
18:00 - 18:30	13	5554	0.004	13	5554	0.007	13	5554	0.011
18:30 - 19:00	13	5554	0.004	13	5554	0.006	13	5554	0.010
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.304			0.302			0.606

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

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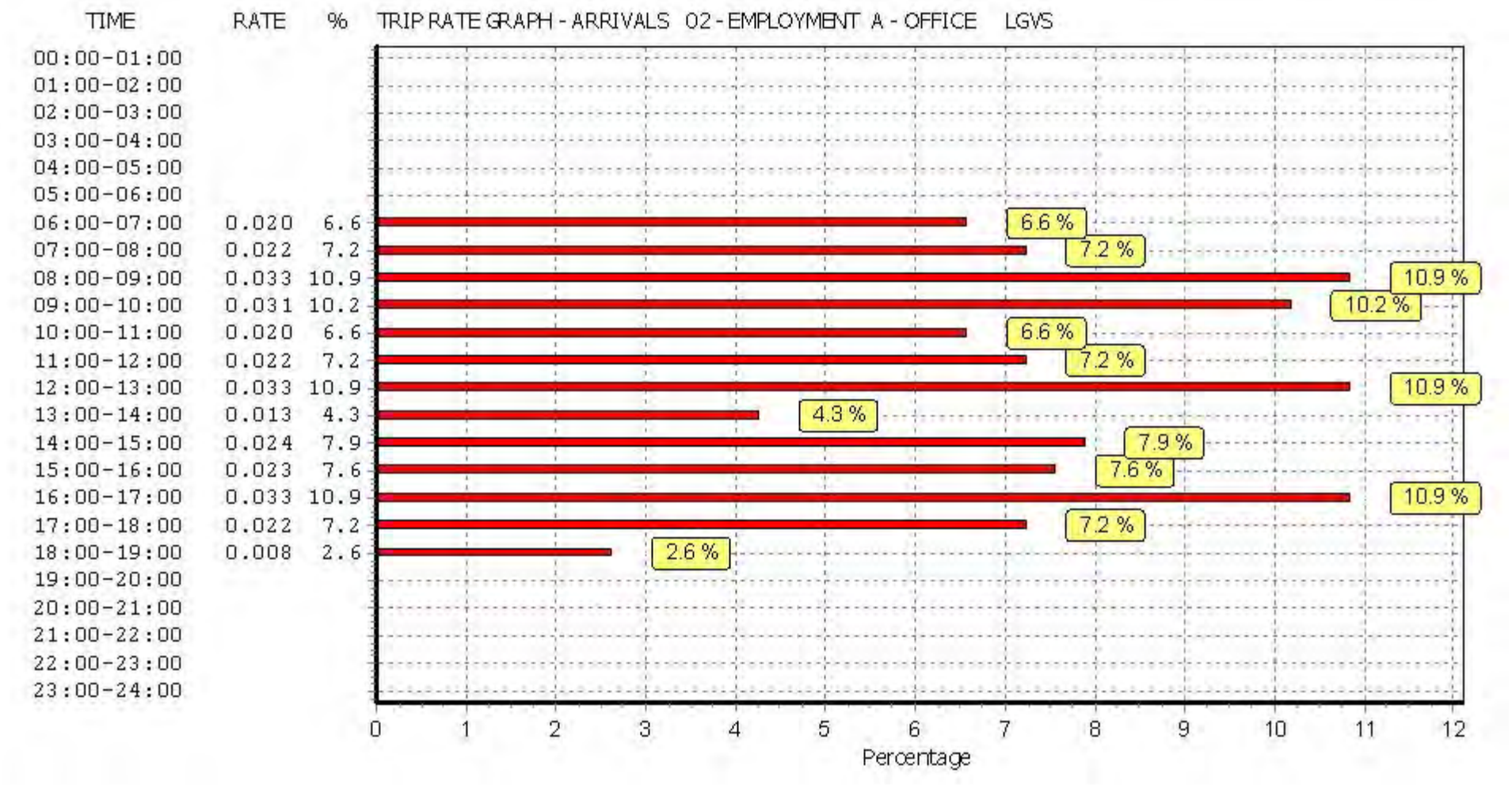
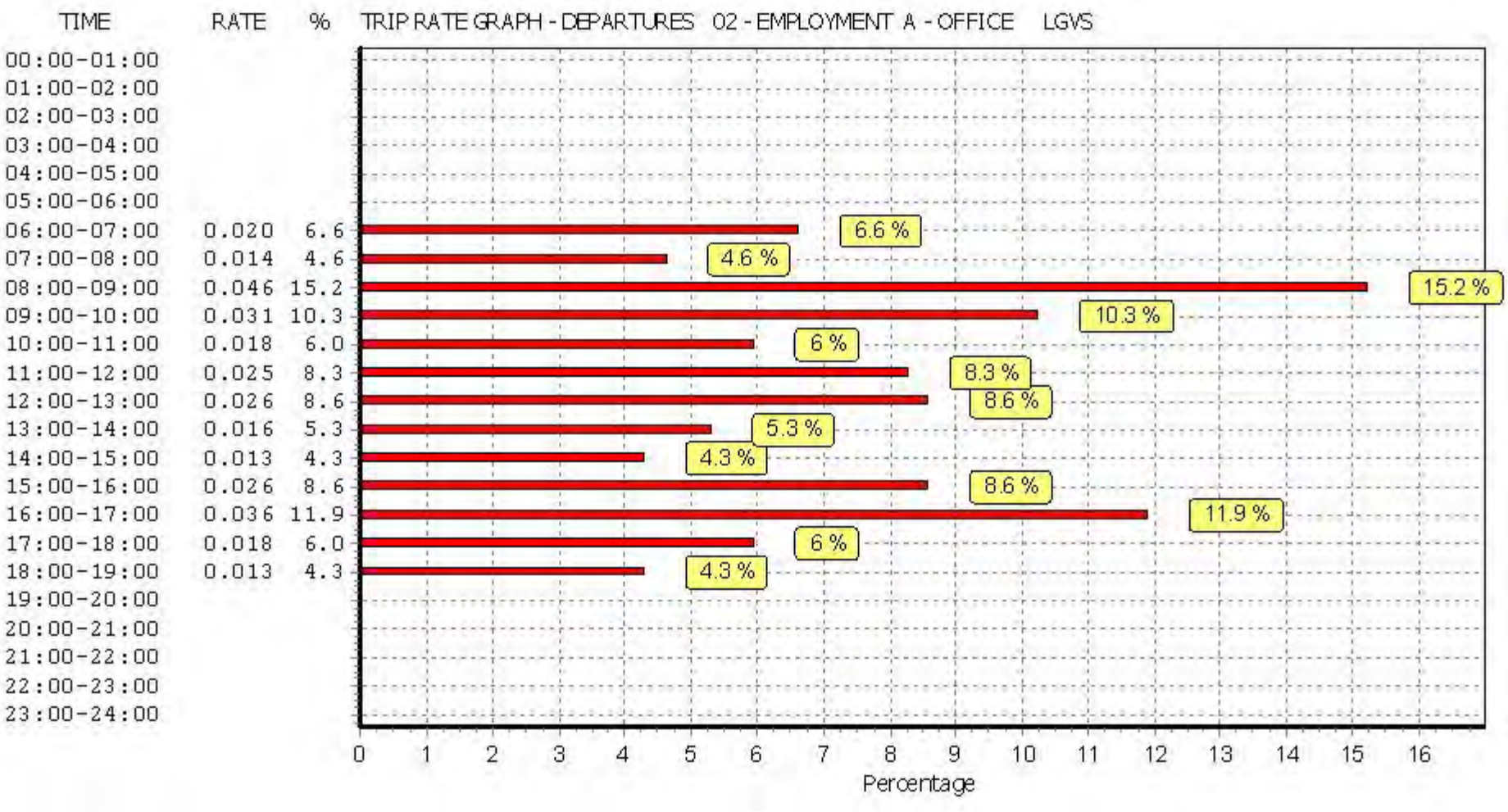
Parameter summary

Trip rate parameter range selected:	186 - 22657 (units: sqm)
Survey date date range:	01/04/13 - 26/11/15
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

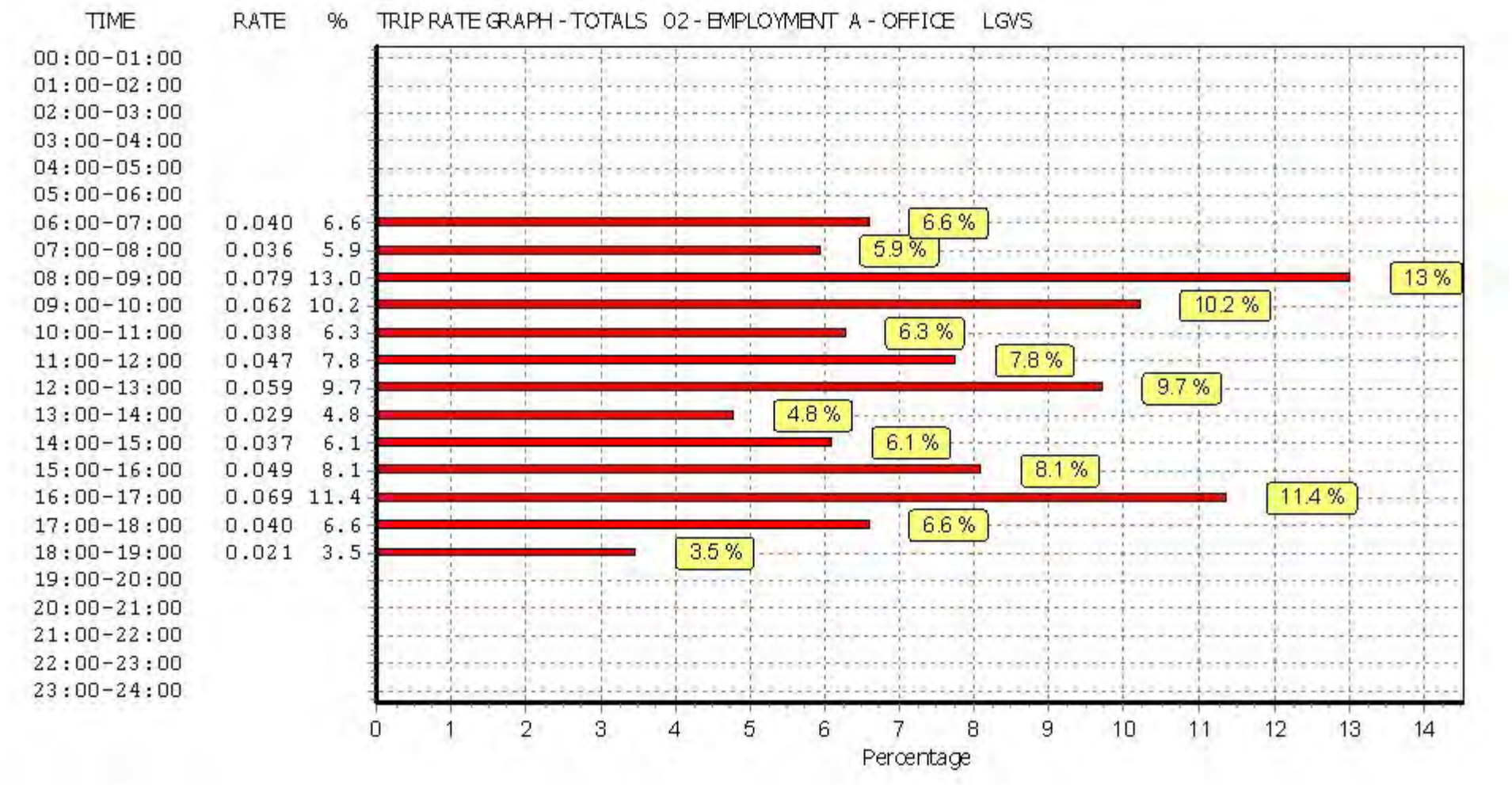
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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



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



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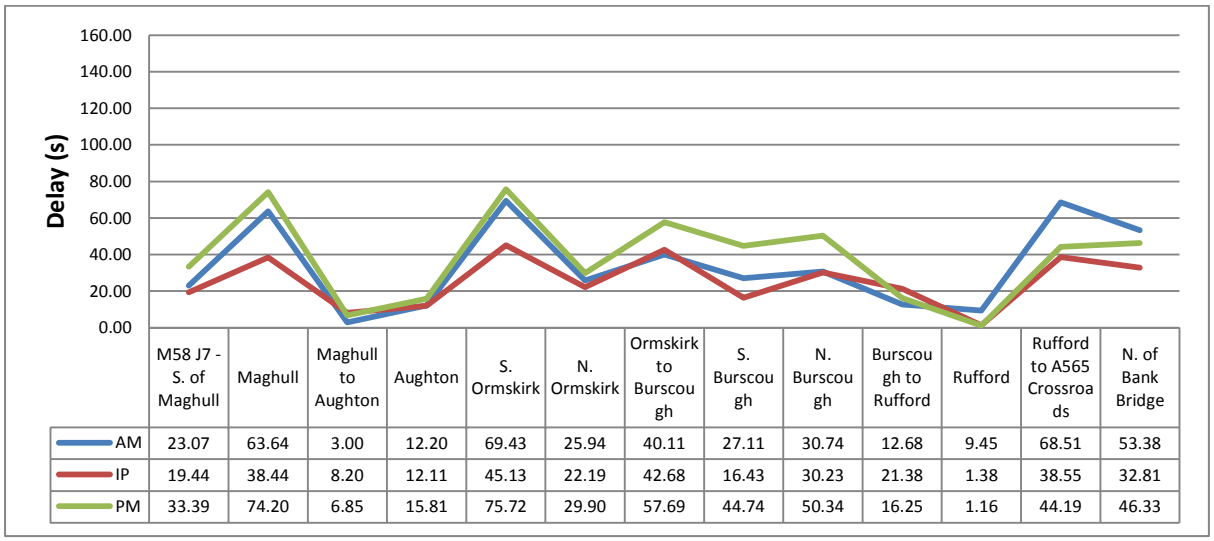
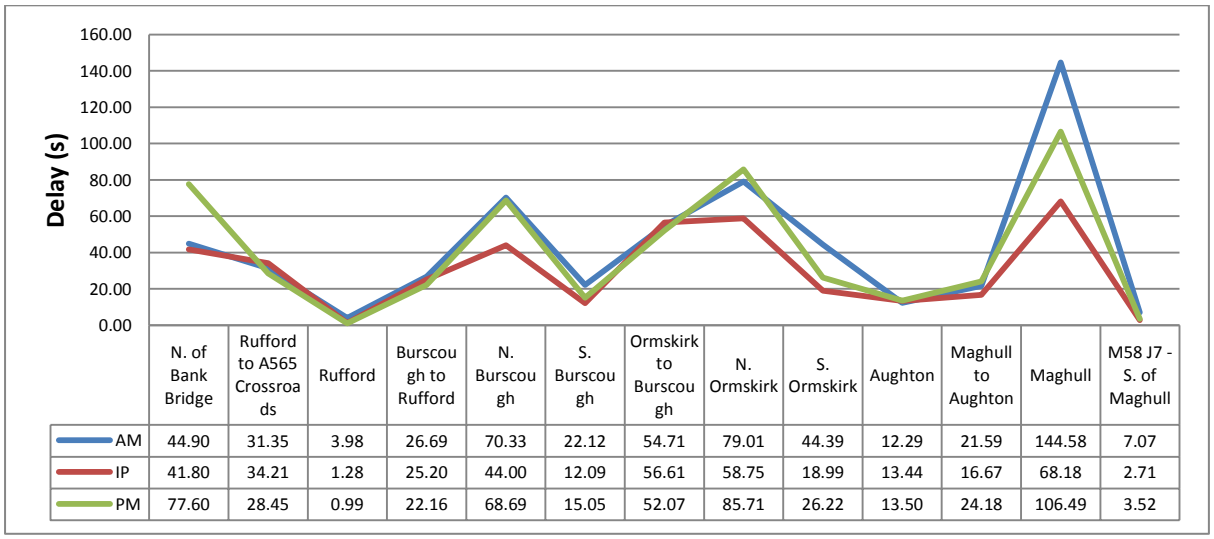
Appendix D. Cumulative Route Delay Graphs



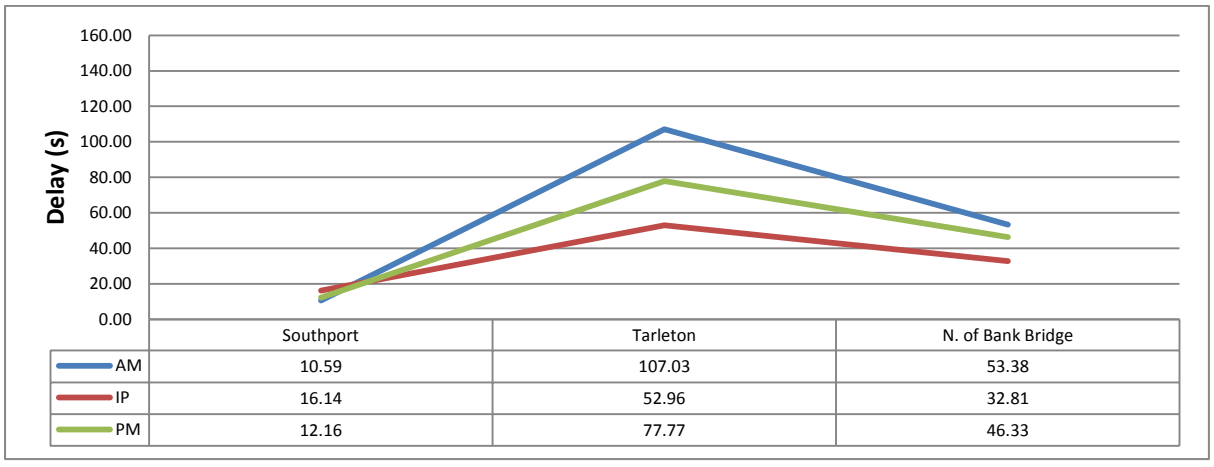
	M58 J7 - S. of Maghull	Maghull	Maghull to Aughton	Aughton	S. Ormskirk	N. Ormskirk	Ormskirk to Burscough	S. Burscough	N. Burscough	Burscough to Rufford	Rufford	Rufford to A565 Crossroads	N. of Bank Bridge
AM	23.07	63.64	3.00	12.20	69.43	25.94	40.11	27.11	30.74	12.68	9.45	68.51	53.38
IP	19.44	38.44	8.20	12.11	45.13	22.19	42.68	16.43	30.23	21.38	1.38	38.55	32.81
PM	33.39	74.20	6.85	15.81	75.72	29.90	57.69	44.74	50.34	16.25	1.16	44.19	46.33

1 A59 Maghull to Bank Bridge (NB)



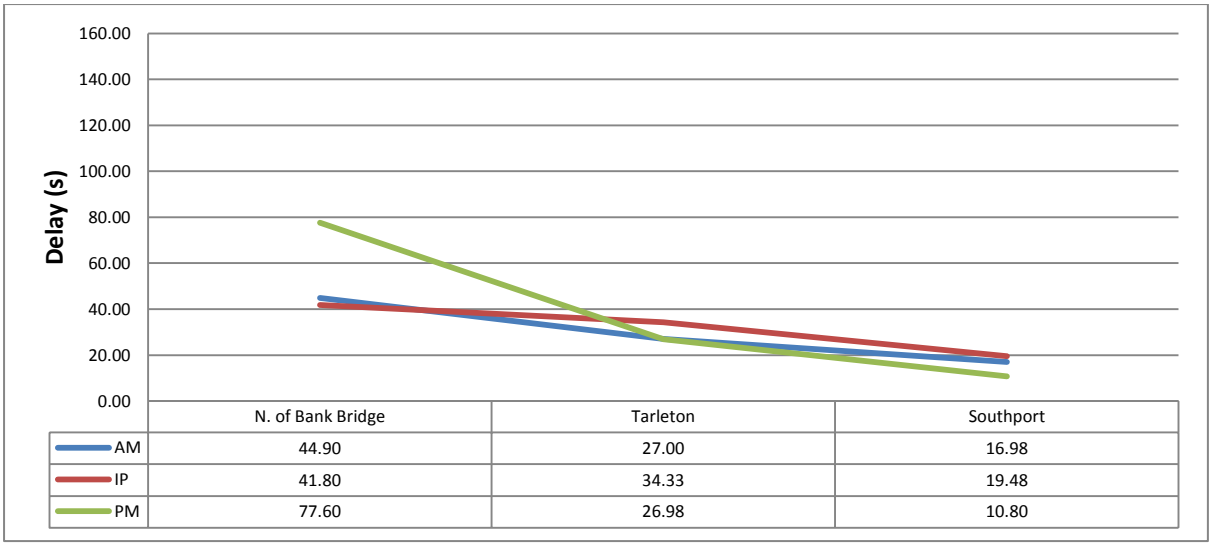
	N. of Bank Bridge	Rufford to A565 Crossroads	Rufford	Burscough to Rufford	N. Burscough	S. Burscough	Ormskirk to Burscough	N. Ormskirk	S. Ormskirk	Aughton	Maghull to Aughton	Maghull	M58 J7 - S. of Maghull
AM	44.90	31.35	3.98	26.69	70.33	22.12	54.71	79.01	44.39	12.29	21.59	144.58	7.07
IP	41.80	34.21	1.28	25.20	44.00	12.09	56.61	58.75	18.99	13.44	16.67	68.18	2.71
PM	77.60	28.45	0.99	22.16	68.69	15.05	52.07	85.71	26.22	13.50	24.18	106.49	3.52

2 A59 Maghull to Bank Bridge (SB)



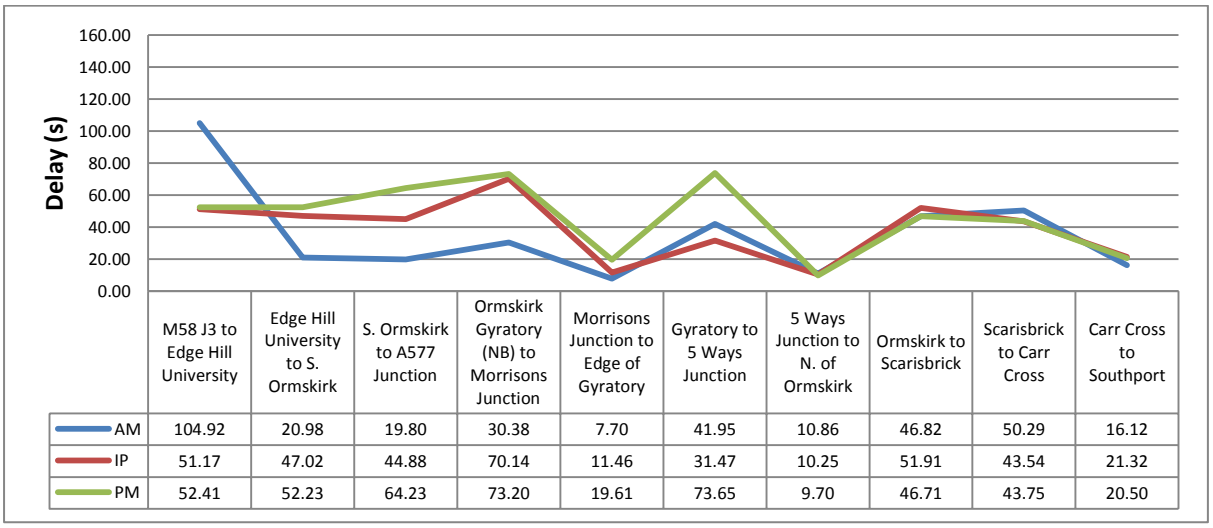
	Southport	Tarleton	N. of Bank Bridge
AM	10.59	107.03	53.38
IP	16.14	52.96	32.81
PM	12.16	77.77	46.33

3 A565 Southport to Bank Bridge (EB)



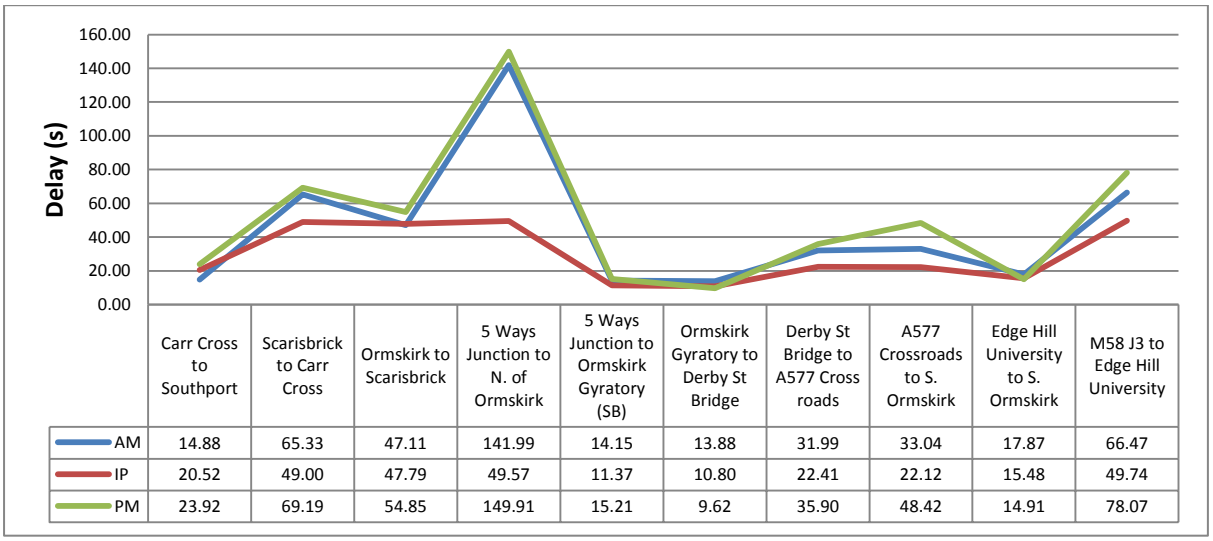
	N. of Bank Bridge	Tarleton	Southport
AM	44.90	27.00	16.98
IP	41.80	34.33	19.48
PM	77.60	26.98	10.80

4 A565 Southport to Bank Bridge (WB)



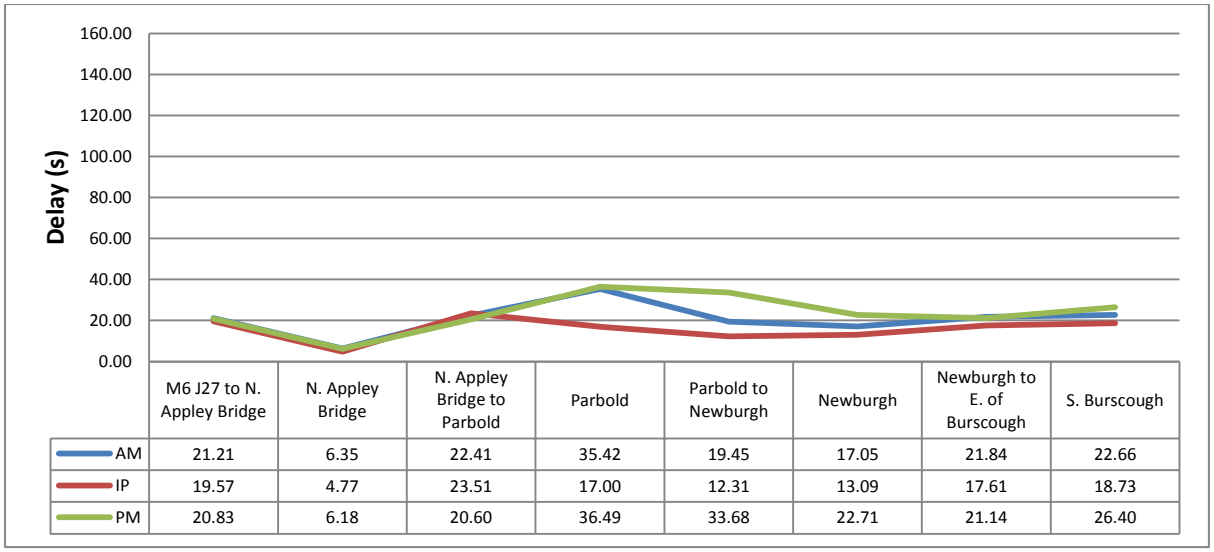
	M58 J3 to Edge Hill University	Edge Hill University to S. Ormskirk	S. Ormskirk to A577 Junction	Ormskirk Gyratory (NB) to Morrisons Junction	Morrisons Junction to Edge of Gyratory	Gyratory to 5 Ways Junction	5 Ways Junction to N. of Ormskirk	Ormskirk to Scarisbrick	Scarisbrick to Carr Cross	Carr Cross to Southport
AM	104.92	20.98	19.80	30.38	7.70	41.95	10.86	46.82	50.29	16.12
IP	51.17	47.02	44.88	70.14	11.46	31.47	10.25	51.91	43.54	21.32
PM	52.41	52.23	64.23	73.20	19.61	73.65	9.70	46.71	43.75	20.50

5 A570 Southport to M58 J3 (NB)



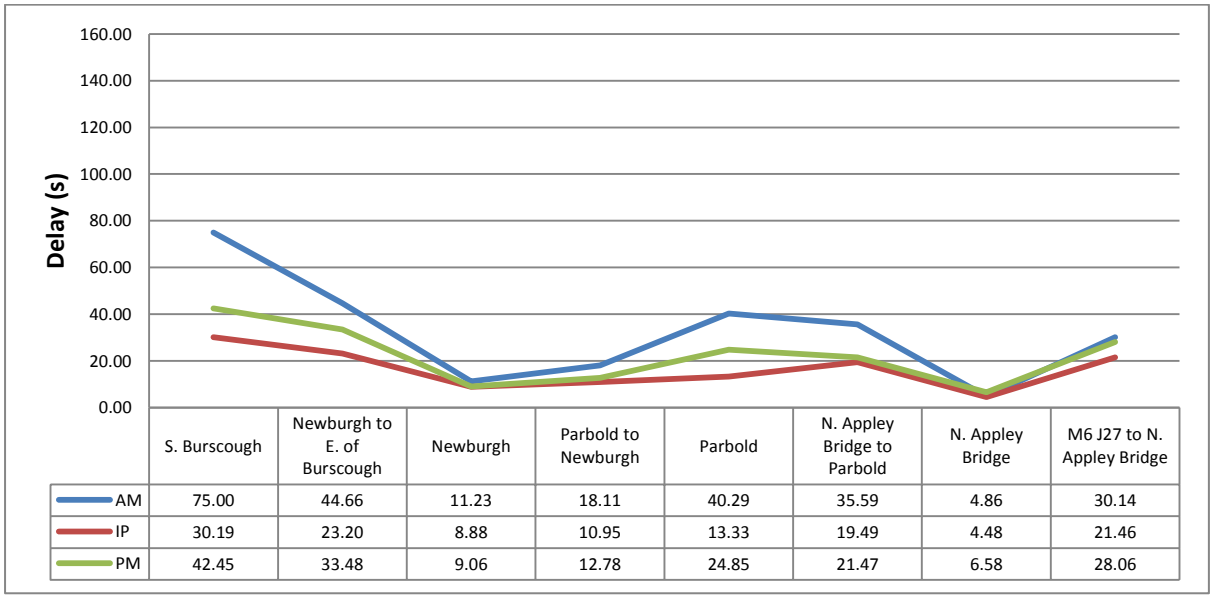
	Carr Cross to Southport	Scarisbrick to Carr Cross	Ormskirk to Scarisbrick	5 Ways Junction to N. of Ormskirk	5 Ways Junction to Ormskirk Gyratory (SB)	Ormskirk Gyratory to Derby St Bridge	Derby St Bridge to A577 Cross roads	A577 Crossroads to S. Ormskirk	Edge Hill University to S. Ormskirk	M58 J3 to Edge Hill University
AM	14.88	65.33	47.11	141.99	14.15	13.88	31.99	33.04	17.87	66.47
IP	20.52	49.00	47.79	49.57	11.37	10.80	22.41	22.12	15.48	49.74
PM	23.92	69.19	54.85	149.91	15.21	9.62	35.90	48.42	14.91	78.07

6 A570 Southport to M58 J3 (SB)



	M6 J27 to N. Appley Bridge	N. Appley Bridge	N. Appley Bridge to Parbold	Parbold	Parbold to Newburgh	Newburgh	Newburgh to E. of Burscough	S. Burscough
AM	21.21	6.35	22.41	35.42	19.45	17.05	21.84	22.66
IP	19.57	4.77	23.51	17.00	12.31	13.09	17.61	18.73
PM	20.83	6.18	20.60	36.49	33.68	22.71	21.14	26.40

7 A5209 Burscough to M6 J27 (EB)



	S. Burscough	Newburgh to E. of Burscough	Newburgh	Parbold to Newburgh	Parbold	N. Appley Bridge to Parbold	N. Appley Bridge	M6 J27 to N. Appley Bridge
AM	75.00	44.66	11.23	18.11	40.29	35.59	4.86	30.14
IP	30.19	23.20	8.88	10.95	13.33	19.49	4.48	21.46
PM	42.45	33.48	9.06	12.78	24.85	21.47	6.58	28.06

8 A5209 Burscough to M6 J27 (WB)

Appendix E. Ormskirk – Further Information

Ormskirk – Further Information

1. Introduction

During discussions with LCC Officers, stakeholder engagement, and data analysis it has become apparent that Ormskirk warrants further attention than allowed for by the scope of the WLRMS. Subsequently there is an ambition to develop a dedicated Ormskirk Movement Strategy. The aim of this chapter is to inform and set the scene for this Strategy by discussing some of the key issues identified in Ormskirk during WLRMS development.

2. Background

Ormskirk is a historic market town which has traditionally been seen as the heart of West Lancashire. The town centre plays host to a market on Thursdays and Saturdays; this market has been operated continuously for over 700 years. The successful Edge Hill University is located on the A570 within close proximity to the town centre.

Ormskirk is situated at the intersection between the A59 and the A570 and as a result is subject to significant traffic flows. The town centre of Ormskirk is circled by the A570 gyratory which was associated with historic proposals concentrating on the delivery of an A570 Ormskirk Bypass. However, following investigating of the M58 to Southport corridor these proposals were withdrawn as it was concluded that much traffic within Ormskirk is not through traffic.

3. Derby Street Bridge

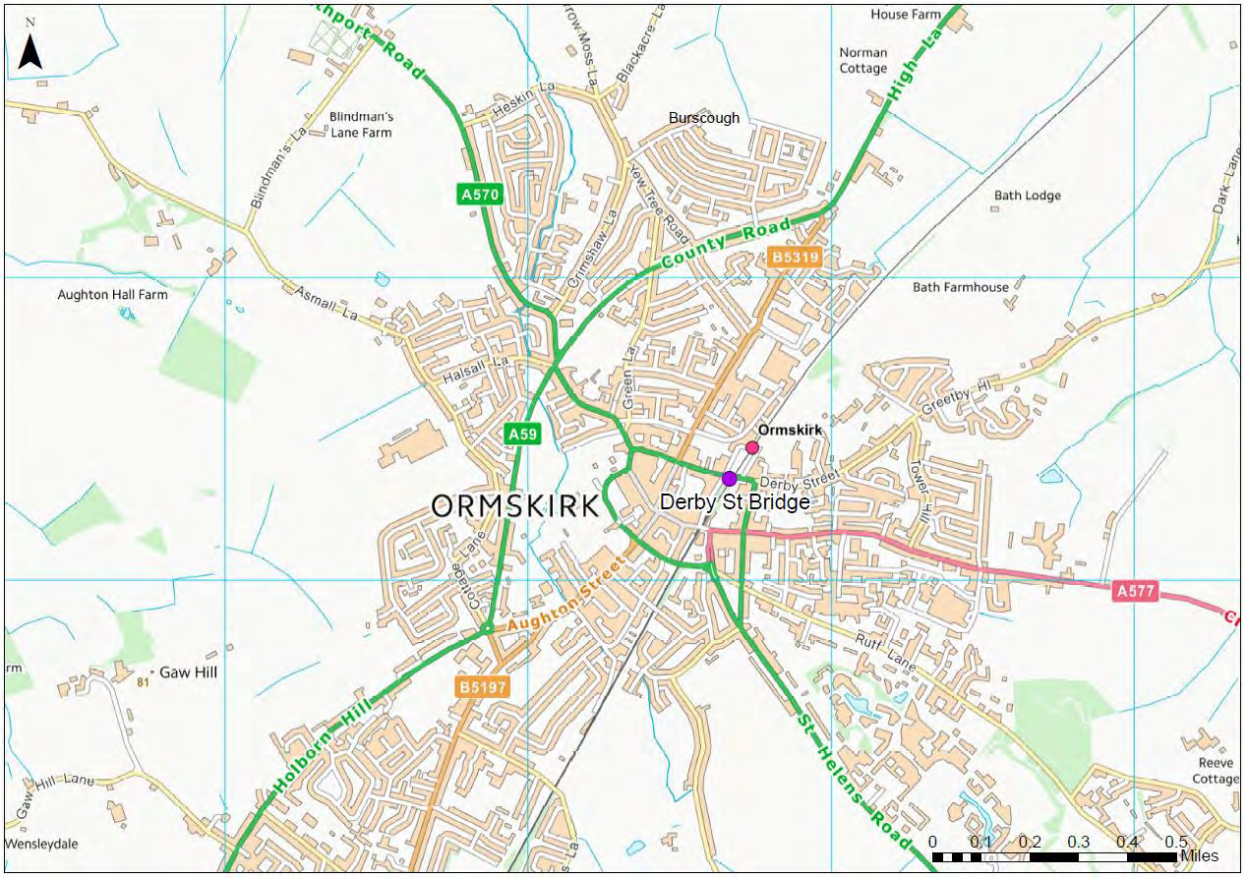
3.1 Background

Derby Street Bridge in Ormskirk forms part of the A570 Ormskirk town centre gyratory. The Bridge is a Grade II Listed structure and lies within the Ormskirk Town Centre Conservation Area. The Bridge carries the A570 over the Liverpool to Ormskirk railway line immediately to the south of Ormskirk Rail Station.

The Bridge has two marked traffic lanes of sub-standard width. Although there are footways on either side, one is very narrow and the bridge parapets are low and do not meet current standards. Alongside this, the Bridge's structural integrity needs to be addressed as successive inspections and specialist investigations have shown that the bridge is in poor structural condition.

Successive inspections and specialist investigations by LCC have shown that the bridge is in poor condition and requires structural improvements to ensure resilience and safety for all individuals travelling across the bridge and to ensure there is no interaction with the railway line which the Bridge crosses. Indicative estimates for remedial works on the bridge range between £0.75m to £2.5m and full bridge replacement estimated between £5m and £7m depending on the solution chosen. Any option needs to consider the uses of the bridge, its inclusion in the A570 Ormskirk gyratory, its prominent location adjacent to Ormskirk adjacent to rail station, and Grade II listed nature lying within a conservation area.

During discussions with LCC and stakeholders Derby St Bridge was repeatedly identified as an area of interest where intervention is required, its location is shown in the Figure below.



Location of Derby St Bridge

3.2 Weight Restriction

A Temporary Traffic Regulation Order (TTRO) implementing an 18 tonne weight restriction, including relevant signing, was implemented as of 27/05/2016. This was introduced on a five year basis to allow LCC the requisite time to study the bridge's structural integrity and traffic function whilst a longer term solution was identified. A 13 tonne weight limit was initially proposed, but this would have compromised the effective operation of the town centre gyratory as it would exclude buses and emergency vehicles from the bridge.

The impact of the weight restriction on HGV flows has been assessed using traffic count data provided by LCC for 2015 and 2016. This allows for a comparison of the effects of the TTRO and its impact on HGV movements through Ormskirk on the A570. The Figure below shows location of the ATC sites used and the TTRO. Due to the paucity of traffic count information the following counts have been used with the understanding that a more detailed analysis could be undertaken if more detailed traffic counts become available.

ATC Sites and Derby Street Bridge Weight Restriction

The ATC data covers between 4 and 7 consecutive days of traffic counts in both November and July. The MCTC data covers 1 day in July. Average daily traffic flows were used from Stage 1 of the WLRMS.

The MCTC data only covered a 12 hour period (07:00 – 19:00), so was factored up to 24 hours using the mean of the data from the same site in 2015 by direction. This gave a 12 to 24 hour factor of 1.4 (based on the median of the independent values of 1.38 and 1.42 by direction).

A570 HGV Traffic Data

Site ID	Description	Direction	2015 HGV Counts	2016 HGV Counts	Difference
Site 4	A570 Southport Road, N of Harridge Lane at LC155, Scarisbrick	NB	116	104	-12
		SB	103	86	-17
Site 7	A570 Ormskirk Road, E of High Lane at LC373, Bickerstaffe	WB	148	384	236
		EB	163	207	44

The Table above shows that in 2015 the numbers of HGVs travelling on the A570 in each direction were broadly similar across both sites. However with the TTRO in place a significant variation in flows by direction can be seen at the site south of Ormskirk with considerably more HGVs travelling northbound (towards Ormskirk) than southbound (away from Ormskirk). This is likely to be related to the TTRO which restricts southbound HGV through traffic on the A570 via Derby Street Bridge.

As discussed above, a key trend from Stage 1 of the WLRMS shows that between 2012 and 2014 there was a slightly higher number of HGVs travelling on the A570 via Derby Street Bridge (southbound) compared to Park Road (northbound). This is now no longer the case with a lower number of HGVs being observed travelling south than going north on the A570.

Stakeholder engagement with the Lancashire Constabulary highlighted issues around weight restriction enforcement potentially leading to Police opposition to any permanent weight restriction implementation. Subsequently, thought has been given to alternative enforcement regimes using cameras or community involvement. For example, Jacobs's staff have been involved in the successful implementation of community enforcement of weight restrictions, such as the Kent County Council Lorry Watch Scheme. If a permanent weight restriction is sought then additional consideration should be given to alternative methods of enforcement in partnership with Lancashire Constabulary.

Key Observation: The 18 tonne weight restriction on Derby Street Bridge appears to have successfully reduced HGV flows south bound on the A570 via the Bridge. If there is ambition to retain or broaden this weight restriction in the longer term partnership with Sefton MBC to implement advance warning on the A570 would be beneficial. As would investigating of alternative weight limit enforcement in partnership with Lancashire Constabulary e.g. camera or community enforcement.

4. HGV Diversion Routes

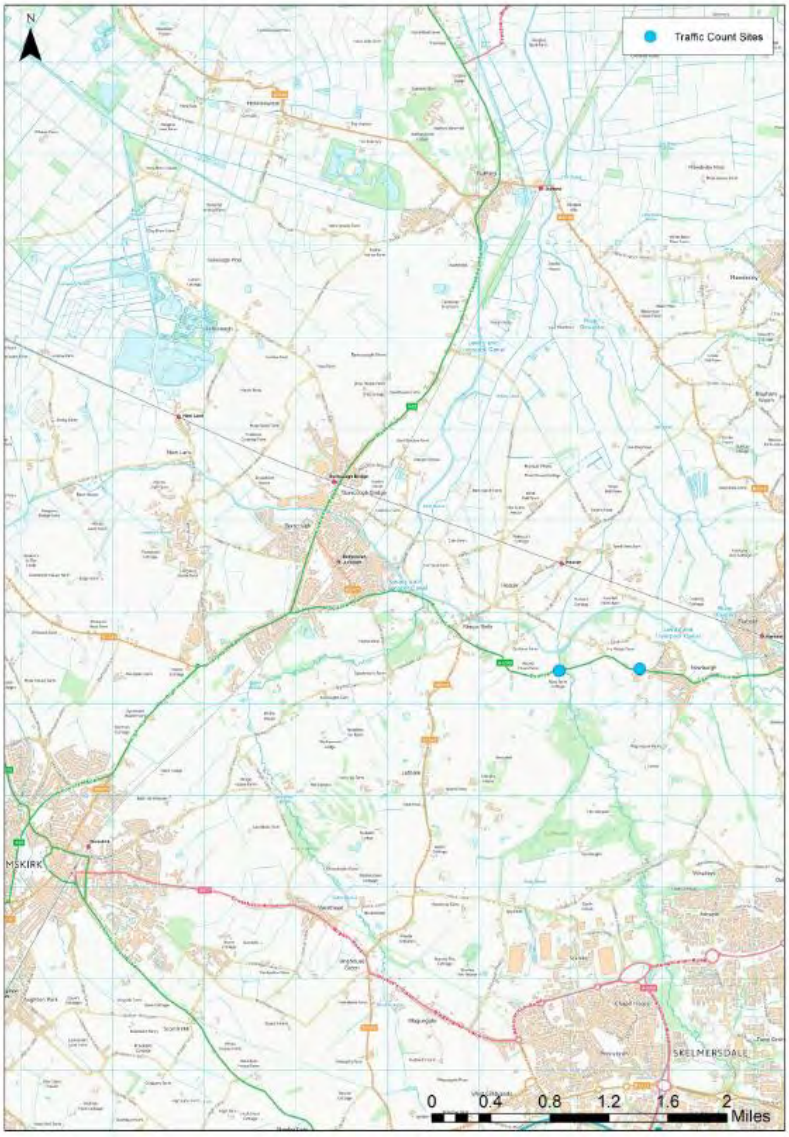
Following implementation of the weight restriction on Derby Street Bridge HGVs travelling southbound from Southport on the A570 in the direction of the strategic road network are signed southbound via the A59 at the Five Ways Junction. During the site visit it was noted that no advance signage was in place in Sefton on the A570 advising of the weight restriction.

During stakeholder engagement some concerns were raised regarding the re-routing of HGVs to avoid the weight restriction on Derby Street Bridge. In particular concerns were raised regarding increased use of two routes:

- A5209 from Burscough to the M6
- Aughton Street northbound from the A59 to the A570

No traffic counts were available on Aughton Street following implementation of the weight restriction to review its impact. However, there is certainly the potential for HGVs to use this route if heading to locations to the east of Ormskirk. If this were investigated in the future the location of Morrisons on Aughton Street and its servicing arrangement should be considered.

To ascertain the effect of the Derby Street Bridge weight restriction on the A5209 analysis was carried out on two traffic count sites on the A5209 east of Burscough, as shown in the Figure below.



A5209 TATC Sites

These sites were for seven days of July for both 2015 and 2016. The results are shown below in the Table below along with a further comparison with 2014 data ensuring the validity of 2015 data.

A5209 HGV Traffic Data

		Eastbound				Westbound		
		2014	2015	2016		2014	2015	2016
Average Weekday	0700 - 1900	295.8	391.2	128.2		340.2	345.2	126.8
	0600 - 2200	331	425.4	125.4		372.4	372.6	125.2
	0600 - 0000	334.6	428.6	126		378.6	377.8	126.6
	0000 - 0000	348.2	449.6	131.4		391.6	392.8	130.4

As shown above there was an upward trend in HGV flows between 2014 and 2015. This is not then reflected in the following year as there is a marked decrease in HGVs on the A5209 in both directions between 2015 and 2016. The analysis undertaken on the A5209 used data across one week in July

over two years. Whilst the 2015 data was sense checked against 2014 data, there is the potential that an unforeseen event or anomaly in 2016 e.g. roadworks may have generated a significant decrease in HGV flows during the observed week. Otherwise it is possible that the Derby St Bridge weight restriction has reduced HGV traffic in both directions on the A5209.

Key Observation: The 18t weight restriction implemented on Derby Street Bridge, Ormskirk, appears to have reduced southbound HGV flows on the A570 Ormskirk Gyratory relative to the unrestricted northbound route. The limited data available indicates that this traffic is not using the A5209 and therefore it is assumed that this HGV traffic is travelling south along the A59 towards the Switch Island Link as signed.

There were a number of limitations associated with the assessment carried out above, including that the traffic data used to draw these conclusions compares multiple months and could constitute a potential limitation to the findings. However, Stage 1 of the WLRMS assesses seasonal variation in traffic flow and concluded that the number of HGVs on the road network is less likely to fluctuate when compared to other types of traffic. This provides additional confidence in initial findings with the understanding that further detailed analysis would require increased traffic count collection. As such it is recommended that further monitoring of the traffic flow and composition on the A5209 is carried out in future.

5. Option Development

A number of options for Derby Street Bridge responding to identified issues were taken forward from Stage 1 as part of the WLRMS. These were amended in partnership with stakeholders, most notably LCC's Bridges and Structures team and West Lancashire Borough Council as well as expert highways engineering input from within Jacobs. These options were then sifted and prioritised to identify preferred options to inform LCC's longer term investment planning. These are identified and expanded upon in Chapter 11 and again in Appendix F.

6. A570 Gyratory

The Figure below shows the identified route functions within Ormskirk. Both the A59 and A570 play strategic functions in terms of movement. Additionally the market town nature of Ormskirk and its role as a service centre for West Lancashire's more rural hinterland means that place functions are also more important than in the surrounding rural area. In particular the Ormskirk town centre A570 gyratory has been identified as M3P3. This is due to the significance of this area for both movement and as a place in itself, in addition to affording access to the town centre. However, it is worth noting that sections of the A570 have sub-standard narrow footways and carriageway widths.

One use of the Movement and Place Matrix is the identification of sections of streets which do not adequately support their predominant functions. This allows for future assessments to carry forward these evaluations and make an assessment of their 'change potential'. In this way the tool can assist the identification of locations where the function of roads can be changed through targeted interventions to better reflect their priority uses.

During stakeholder engagement and the site visit it became apparent that the A570 is traffic dominated and that this impacts on the quality of life in Ormskirk and the potential of the A570 to provide good quality urban realm, supporting place functions e.g. socialising, eating etc. The A570 also acts as barrier to pedestrian movement between the wider town and town centre with NMU facilities not being conducive to high levels of walking and cycling.

Route Function - Ormskirk

The operation of the A570 gyratory will be informed by any final decision made on Derby Street Bridge and as such needs to be considered as part of a holistic Ormskirk Movement Strategy. During stakeholder engagement and option generation it became apparent that there was latent demand for traffic reduction on the A570 linked to urban realm improvements.

Options which could be potentially implemented in isolation are identified and assessed later in this report e.g. de-priming of the A570 between its junctions with the M58 and A59 in support of limiting town centre traffic and HGV flows, and particular NMU improvements. However, a number of options were identified which would require deeper investigation and potential implementation as part of a holistic Ormskirk package. These are identified in the Table below to be potentially taken forward outside of the WLRMS.

Potential Ormskirk Interventions Excluded from Further Consideration as part of the WLRMS

Location	Intervention	Reason for Exclusion from WLRMS
A570 Ormskirk Gyratory (adjacent to Ormskirk Parish Church and other entrances to the pedestrianised town centre)	Implement a shared space style scheme in line with the approach taken in Fishergate Hill, Preston on section(s) of the A570 gyratory	• Require traffic modelling and significant traffic management. • Require implementation as part of a wider strategy aimed at increasing levels of active / sustainable transport
A570 Gyratory and Ormskirk town centre	Area wide 18 tonne environmental weight restriction	• Require additional evidence that the current Derby Street weight restriction has not caused detrimental impacts elsewhere • Would be predicated on the removal of the relevant section of the A570 from the Primary Route Network.

7. Junctions

A number of issues have been identified with junctions within Ormskirk, most notably in reference to poor safety record and impact on vehicle flow as identified in the Figure below.

Junction Issues within Ormskirk

Where possible options have been identified to respond to observed issues at these junctions. However, as a minimum the junctions identified in the Table below will be worthy of further consideration as part of the Ormskirk Movement Strategy.

Ormskirk Junction Issues

Junction	Observed Issues
Five Ways Junction (A59, A570, Halsall Lane)	• Worst performing junction in terms of congestion in West Lancashire, with southbound delays especially heavy in AM and PM peaks • Safety blackspot • A59 and A570 likely to see significant development led traffic growth • Potential for the Derby Street weight restriction to increase right hand turns from the A570 southbound on to the A59 southbound which junction geometry and swept paths do not currently easily facilitate
A59, Cottage Lane, Aughton Street, B5197	• Congestion, particularly northbound on the A59 • The potential for school traffic to contribute to congestion in the proximity of this junction

	• Safety blackspot • A59 likely to see significant development led traffic growth • Potential for HGVs diverting from the Derby Street weight restriction to use the A59 southbound before making a left turn on to Aughton Street. Swept paths do not currently easily facilitate this movement
A570 (St Helens Road) and A570 (Knowlsey Road)	• Congestion • Safety blackspot
A570 (Knowsley Road) and Ruff Lane	• Safety blackspot
A570 (Knowsley Road and A577 (Wigan Road)	• Safety blackspot • Congestion • Adjacent to AQMA

8. NMU

NMU facilities in general within Ormskirk are not conducive to high mode share for walking and cycling. In addition a notable concentration of PIAs involving pedestrians was identified within Ormskirk town centre, most notably on the A570. Indeed within Ormskirk, 22% of causalities are pedestrians. This is more than three times the percentage of pedestrian causalities found in the wider study area (6.9%) but is likely to be a factor of increased pedestrian footfall within Ormskirk for which corroborating data is not available. However, safety concerns are often cited as a primary reason for not engaging in walking or cycling. As such, an integrated programme of NMU improvements must be implemented if there is a desire to increase the walking and cycling modal share for local journeys. A number of NMU interventions are identified in later chapters but benefit may be gained from an integrated programme of investment, potentially linked to the proposed development of a linear park linking Ormskirk and Burscough as well as improved NMU facilities linking Edge Hill University with the town centre.

In particular the following NMU issues, as listed in the Table below have been identified during WLRMS development.

Ormskirk NMU Issues

Location	Observed Issues
A570 (Knowsley Road) and A570 (Park Road)	• Limited pedestrian facilities between the east of the town and the gyratory. The current layout of the junction only includes one signalised pedestrian crossing on the northern arm of the junction
A570 (Park Road) and Aughton Street	• Heavy pedestrian flows between the pedestrianised town centre via Aughton Street and the Morrisons car park are not particularly well catered for with current two-stage signalised

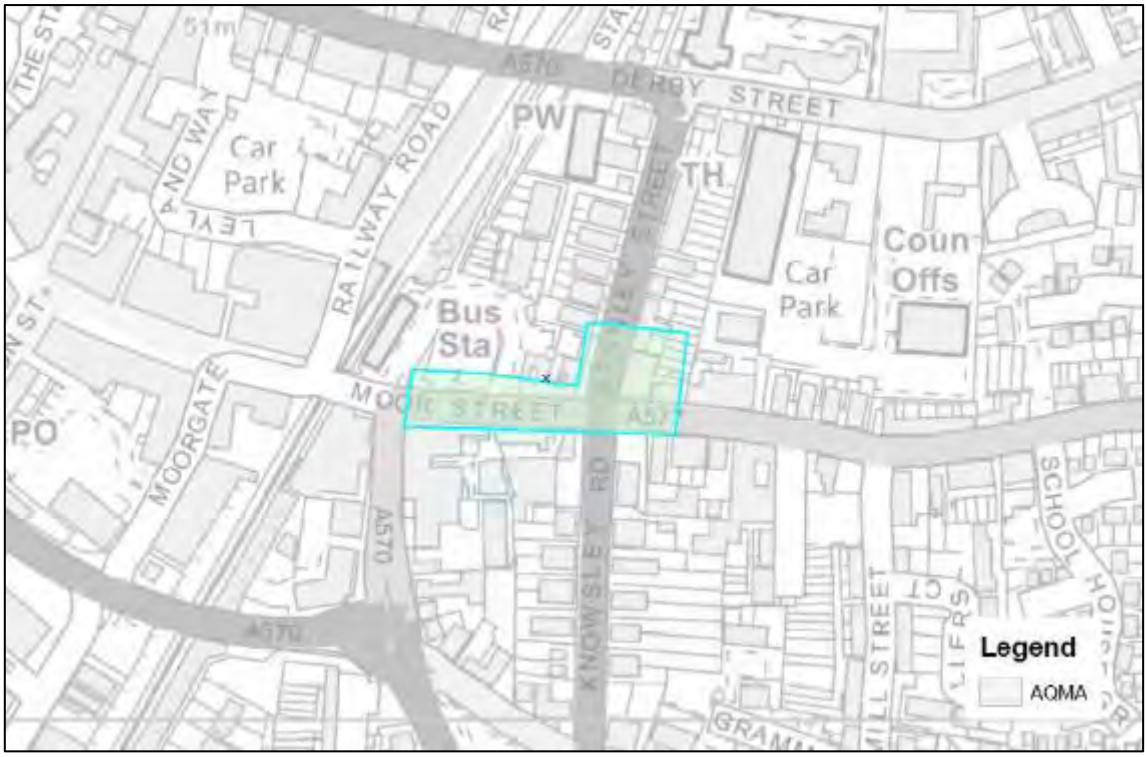
	pedestrian crossing
A570 (Knowsley Road) and A577 Moor Street	• Very limited crossing opportunities to provide access to the town centre, with no signalised pedestrian crossing facilities on any of the four arms
Ormskirk rail station and Ormskirk bus station	• The current shared use path linking the bus and rail station is poorly overlooked and maintained
Edge Hill University	• Improved pedestrian and cycle facilities are required to link the University with the town centre.

9. AQMA

West Lancashire BC's Local Air Quality Management Progress Report to 2007 indicated that the Moor Street area of Ormskirk was likely to exceed the annual air quality limit for nitrogen dioxide. A detailed assessment was then carried out in August 2009. Subsequently an AQMA was declared on a part of Moor Street and the southern section of Stanley Street in January 2010. The extent of the AQMA can be seen in Figure 6.6.

A further assessment of the Moor Street AQMA was completed in February 2010. This concluded that road traffic is the main contributor to the overall pollutant levels in the AQMA. An Air Quality Action Plan for West Lancashire BC was developed in March 2011. The plan suggested a number of measures to improve air quality in the AQMA including the replacement of older buses with new cleaner vehicles, review access for Railway Road, and review the traffic signals SCOOT system on Moor Street and all junctions associated with the AQMA etc.

Key Observation: Any measures proposed as part of the forthcoming Ormskirk Movement should not have a detrimental impact on the Moor Street AQMA or air quality more generally in Ormskirk.



Moor Street AQMA

10. Prioritised Interventions for Ormskirk

The Tables below identifies the prioritised interventions identified as part of stage 2 of the WLRMS which are located within Ormskirk for each of the identified packages.

Derby Street Bridge Interventions - Ormskirk

Ref	Description	Est. Cost
DS03A	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; implement 18 tonne environmental weight restriction.[1]	£2,500,000
DS03B	Derby Street Bridge: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways; no weight restriction.[1]	£2,500,000

Junction Improvements Package – Ormskirk

Ref	Description	Est. Cost
O21	Improved signal performance at the junction of the A570 Park Road and Morrisons Store access by use of the DFOF and BIAS commands, on link 3014D with DFOF set at -5 seconds and the BIAS for link 3014D set to 30; encouraging the optimiser to maintain a closer fixed offset for the two junctions	<£5,000
O24	Improved signal performance at the junction of Ruff Lane and Knowsley Road by resolving UTC/SCOOT issue and validating QCMC and STOC values	<£5,000
O25	Five Ways junction (A59/A570) issues could be potentially caused by large gaps in the queues causing the MOVA to identify end of saturation prematurely which could be mitigated by monitoring and review of SATINC and GAMBER values.	<£5,000

Non-Motorised User Package – Ormskirk

Ref	Description	Est. Cost
WL5	Improved cycle parking facilities within Ormskirk and Burscough town centres	£50,000
O2	Upgrade footpath linking Ormskirk railway station and bus station to a dedicated pedestrian and cycle shared use route (assuming sufficient access and ~3metres width can be achieved).	£100,000
O13	Introduction of single pedestrian crossing phase at Aughton Street / A570 Junction	<£5,000
O19	Provision of PUFFIN type pedestrian crossing facilities across the St Helens Road and Moor Street East approaches (will require updated signal infrastructure). Or potential for a Toucan crossing as part of improved cycle links with the railway station.	£50,000 - £100,000
O20	Provision of PUFFIN type pedestrian crossing facilities at junction of Wigan Rd, Knowsley Rd, Stanley Street, and Moor Street	<£120,000
O22	Improve the pedestrian facilities across A570 Park Road near Moorgate through reinstatement of the crossing onto SCOOT network by re-connecting the link cable and allowing SCOOT to determine the most appropriate crossing time	<£5,000
WL7	Upgrade the footways on the A59 and A570 (between Ormskirk and Burscough, and between Ormskirk and Edge Hill University) to shared use (pedestrian and cyclist). Will be a need to modify kerbs, examine and potentially introduce additional width at pinch points, and introduce side road treatments	<£750,000
O4	Improved pavement and facilities for cyclists and pedestrians on St Helen's Road from the junction of Moor Street to the junction with Ruff Lane.	£75,000

Route Hierarchy Package – Ormskirk

Ref	Description	Est. Cost
WL10	Examine deliveries and servicing arrangements to find more suitable drop patterns in Ormskirk and Burscough e.g. work with refuse collection etc.	£20,000
WL2	Improved signing strategy between Southport and the motorway network aimed at reducing traffic flows through Ormskirk on the A570[1]	£50,000
O6	Remove the A570 from the primary route network between its junctions with the M58 and A59 in support of limiting its use by long distance traffic and HGVs[2]	£25,000

11. Next Steps

During the development of the WLRMS it has become apparent that the development of a Movement Strategy which focuses on Ormskirk within the context of wider West Lancashire is required. This is outside the scope of this work but will be informed by the findings of the WLRMS and the Ormskirk Town Centre Strategy developed by West Lancashire Borough Council.

The Ormskirk Town Centre Strategy aimed to provide clear direction supporting positive change which would improve business confidence and encourage inward investment. It outlines a long term vision for the town centre, and identifies short-term priorities to address key issues and capitalise on opportunities available. A number of these relate or have implications for Ormskirk's transport network e.g. removing traffic from the town in support of increased levels of public transport, cycling, and walking; and investment in Ormskirk's public transport interchanges. As such LCC will need to work in partnership with West Lancashire BC to ensure consistency of aims and approach during both implementation of the WLRMS and development of the Ormskirk Movement Strategy.

Appendix F. Intervention Assessment

Option Sift

Deliverability	Feasibility	Value for Money
(e.g. political, planning, timescale or third party issues)	(e.g. physical constraint, land availability and design standards)	(e.g. perceived value for money)
Deliverable in theory	Feasible in theory	Likely to deliver value for money
Deliverable but with challenges	Feasible but with challenges	May deliver value for money
Very difficult to deliver	Significant challenges	Not likely to deliver value for money

Qualitative assessment against network objectives

2	Large beneficial impact
1	Beneficial impact
0	Neutral / marginal impact
-1	Adverse impact
-2	Large adverse impact

Initial Sifting Criteria

Each option must meet the following sifting criteria to be considered further:

1: Deliverable but with challenges
2: Feasible but with challenges
3: May deliver value for money
4: Overall fit with network objectives (Appraisal score >6)

Qualitative assessment against supporting objectives

2	Large beneficial impact
1	Beneficial impact
0	Neutral / marginal impact
-1	Adverse impact
-2	Large adverse impact

Expected Cost (£m)

<50
50-100
100-150
150-250
>250

Reference	Option Description	Notes	Deliverability	Feasibility	Value for Money	Network Objectives 1	2	3	4	5	6	Total	Initial Sifting Criteria 1	2	3	4	Shortlisted for further assessment	Supporting Objectives 1	2	3	4	5	6	7	Total	Overall Score	Expected Cost (£m)	Notes
DSO1	Option 1: Remedial works on existing bridge to maintain its heritage characteristics but with use restricted to pedestrians and cyclists, raise parapet walls to meet current road over rail standards and implement an appropriate on-going maintenance regime.	Create vehicle access issues for station P&R, require reorganisation of gyratory potentially increasing use of Aughton St. Support improved walking and cycling in Ormskirk.	Very difficult to deliver: due to political and network issues of severe traffic restriction	Feasible in theory: due to limited intervention aimed at slowing current degradation	Not likely to deliver value for money	1	-2	-2	2	-2	2	-1	✔	✔	✔	x	x This has a negative score in terms of the network objectives though scores higher against LTP objectives	-2	0	2	2	1	0	2	5	4	£0.75m based on the existing estimate for preventative maintenance of the bridge and raising the parapets - not addressing the structural defects	
DSO2	Option 2: Remedial works on existing bridge to maintain its heritage characteristics and change use to a single traffic lane restricted to light vehicles with a 3 tonne weight limit, raise parapet walls to meet current road over rail standards and implement an on-going maintenance regime.	3 tonne restriction would exclude some vital service vehicles e.g. winter maintenance, emergency services, buses etc.	Very difficult to deliver: due to political and network issues of severe traffic restriction	Feasible in theory: due to limited intervention aimed at slowing current degradation	May deliver value for money	1	-1	-1	1	-1	2	1	✔	✔	✔	x	x This has a negative score in terms of the network objectives though scores higher against LTP objectives	-1	0	1	1	0	0	1	2	3	£1.5m based on the existing estimate for preventative maintenance of the bridge and raising the parapets together with highway realignment works - not addressing the structural defects	
DSO3a	Option 3: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways, implement 18 tonne environmental weight limit.	Will permanently maintain current 18 tonne restriction excluding heavy traffic	Deliverable but with challenges: Due to impact of works and availability of funding	Feasible but with challenges: due to effect of works on the existing network, agreeing suitable remediation and working over live railway.	Likely to deliver value for money	1	1	0	1	1	2	8	✔	✔	✔	✔	✓	0	0	1	1	1	0	4	12	Approx. £2.5m based on the existing estimate for preventative maintenance of the bridge and raising the parapets together with highway realignment works and works to address structural defects	
DSO3b	Option 3: Strengthen and repair existing bridge to preserve its heritage characteristics, raise parapet walls to meet current road over rail standards and change use to a single traffic lane with wider footways. No weight limit.	Same as 3a except no weight restriction proposed.	Deliverable but with challenges: Due to impact of works and availability of funding	Feasible but with challenges: due to effect of works on the existing network, agreeing suitable remediation and working over live railway.	Likely to deliver value for money	0	1	1	1	1	1	7	✔	✔	✔	✔	✓	1	0	0	1	1	1	0	4	11	Approx. £2.5m based on the existing estimate for maintenance of the bridge and raising the parapets together with highway realignment works and works to address structural defects	
DSO4	Option 4: Strengthen, repair and widen existing bridge to accommodate two lanes with additional width for pedestrians and raised parapet walls which meet current road over rail standards. It would require a cantilevered concrete slab over the arch with rebuilt stone faced concrete parapet walls. This would compromise the heritage characteristics of the bridge.	Widening bridge would be technically difficult and likely to compromise heritage aspects of the bridge.	Deliverable but with challenges: Due to impact of works and availability of funding	Significant challenges: due to effect of works on the existing network, issues with additional loading on the existing structure and agreeing suitable remediation and working over live railway.	Not likely to deliver value for money: due to the potential cost of the works being high and the maintenance liability associated with the existing structure would remain	0	1	1	1	2	2	9	x due to impact on existing listed structure	x due to restrictions on the available area	x high cost when balanced against replacement option DS06	✔	x Scores highly but it is unlikely that this would be deliverable	1	0	0	1	1	1	-1	3	12	Approx. £5m based on the existing estimate for preventative maintenance of the bridge together construction of cantilever widenings with highway realignment works and works to address structural defects	
DSO5	Option 5: Replacement with a new wider three arch bridge with two lanes able to accommodate all classes of vehicles including HGV's with additional width for pedestrians and raised parapet walls which meet current road over rail standards. This would significantly compromise the heritage characteristics of the bridge.	Difficult engineering solution. This would significantly compromise the heritage characteristics of the bridge.	Very difficult to deliver: due to impact of works, availability of funding, issues with railway and effect on listed structure	Significant challenges: due to significant effect of works on the existing network, demolition and reconstruction working over live railway.	Not likely to deliver value for money: due to the potential cost of the works being very high	0	2	1	1	2	2	11	x due to impact on existing listed structure	x due to requirement to build within the railway area	x very high cost when balanced against replacement option DS06	✔	x Scores highly but it is very unlikely that this would be deliverable	1	0	0	1	1	1	-1	3	14	Approx. £7m based on the demolition of the existing bridge and reconstruction of a replacement 3 arch concrete and masonry bridge	
DSO6	Option 6: Replace with a modern, single span bridge with two lanes able to accommodate all classes of vehicles including HGV's with additional width for pedestrians and raised parapet walls which meet current road over rail standards. This would significantly compromise the heritage characteristics of the bridge.	This would significantly compromise the heritage characteristics of the bridge.	Very difficult to deliver: due to availability of funding, issues with railway and effect on listed structure	Feasible but with challenges: due to demolition of the existing structure and reconstruction of new bridge over live railway	Likely to deliver value for money if 2 traffic lanes are required	0	2	1	1	2	2	11	x due to impact on existing listed structure	✔	✔	✔	x Scores highly but high cost and demolition of listed structure may prevent delivery	1	0	0	1	1	1	-1	3	14	Approx. £5m based on the demolition of the existing bridge and reconstruction of a replacement single span steel and concrete bridge	
							x2			x2																	

✔	x

Network Objectives
1 Improve the quality of life for residents affected by traffic using inappropriate routes, particularly heavy goods vehicles
2 Ensure the transport network supports long-term economic success and facilitates growth (x2 weighting applied).
3 Improve journey time reliability for all modes of transport on Key Route Network.
4 Improve safety for all highway users (x2 weighting applied).
5 Ensure the route network is well maintained and resilient to the impacts of incidents and the environment.
6 Reduce the negative impacts of traffic on local communities.

Lancashire Local Transport Plan Priorities
1 Improving Access into Areas of Economic Growth and Regeneration.
2 Providing Better Access to Education and Employment.
3 Improving People's Quality of Life and Wellbeing.
4 Improving the Safety of our Streets for our most Vulnerable Residents.
5 Providing, Safe, Reliable, Convenient and Affordable Transport Alternatives to the Car.
6 Maintaining our Assets.
7 Reducing Carbon Emissions and its Effects.

Option sift

Deliverability	**Feasibility**	**Value for Money**
(e.g. political, planning, timescale or third party issues)	(e.g. physical constraint, land availability and design standards)	(e.g. perceived value for money)
Deliverable in theory	Feasible in theory	Likely to deliver value for money
Deliverable but with challenges	Feasible but with challenges	May deliver value for money
Very difficult to deliver	Significant challenges	Not likely to deliver value for money

Qualitative assessment against network objectives	
2	Large beneficial impact
1	Beneficial impact
0	Neutral / marginal impact
-1	Adverse impact
-2	Large adverse impact

Initial Sifting Criteria

Each option must meet the following sifting criteria to be considered further:
1: Deliverable but with challenges
2: Feasible but with challenges
3: May deliver value for money
4: Overall fit with network objectives (Appraisal score >6)

Reference	Option Description	Deliverability	Feasibility	Value for Money	Network Objectives							Initial Sifting Criteria				Shortlisted for further assessment
					1	2	3	4	5	6	Total	1	2	3	4	
BBO1 (do nothing option)	Option 1: Remedial works on existing bridge and implement an appropriate on-going maintenance regime. This includes maintaining the high friction surfacing in line with LCC's adopted polices.	Deliverable in theory	Feasible in theory	May deliver value for money	0	0	0	0	1	0	1	✓	✓	✓	Low scoring	
BBO1A	Option 1a: Remedial works on existing bridge and implement an appropriate on-going maintenance regime, with implementation of speed enforcement / vehicle activated signage. This includes maintaining the high friction surfacing in line with LCC's adopted polices.	Deliverable in theory	Feasible in theory	May deliver value for money	0	0	0	1	1	0	3	✓	✓	✓	Low scoring	
BBO2	Option 2: Widen the existing structure but retain the façade.	Very difficult to deliver: due to effect on listed structure	Significant challenges: building a widening in or over a tidal river would need closure with temp bridge	Not likely to deliver value for money	0	2	1	1	1	0	8	x	x	x	✓	x
BBO3	Option 3: Replace with a new section of road between the Coe Lane junction and the A59 just south of Mill Brow Cottages. This would include either a single bridge across the Leeds and Liverpool Canal and River Douglas or two separate structures depending on the most appropriate engineering solution.	Deliverable but with challenges	Feasible in theory	May deliver value for money	0	2	2	2	1	0	11	✓	✓	✓	✓	✓
BBO4	Option 4: Will follow the same footprint as Option 3 with the addition of a new carriageway south of the A59 (in the vicinity of the Coe Lane junction) connecting to the A59 south of Cuerden Farm. This may, or may not, require terminal roundabouts at east end of the carriageway or a variation of this theme. This level of detail will be assessed in due course if the option is deemed viable enough to progress to the later stages of option development.	Deliverable but with challenges	Feasible in theory	Not likely to deliver value for money	0	2	2	2	2	1	13	✓	✓	x	✓	x
						x2		x2								

	Network Objectives
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4	Improve safety for all highway users (x2 weighting applied).
5	Ensure the route network is well maintained and resilient to the impacts of incidents and the environment.
6	Reduce the negative impacts of traffic on local communities.

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Option sift

Deliverability	**Feasibility**	**Value for Money**
(e.g. political, planning, timescale or third party issues)	(e.g. physical constraint, land availability and design standards)	(e.g. perceived value for money)
Deliverable in theory	Feasible in theory	Likely to deliver value for money
Deliverable but with challenges	Feasible but with challenges	May deliver value for money
Very difficult to deliver	Significant challenges	Not likely to deliver value for money

Qualitative assessment against network objectives	
2	Large beneficial impact
1	Beneficial impact
0	Neutral / marginal impact
-1	Adverse impact
-2	Large adverse impact

Initial Sifting Criteria
Each option must meet the following sifting criteria to be considered further:
1: Likely to be deliverable
2: Likely to be feasible
3: Likely to be affordable
4: Overall fit with network objectives (Appraisal score >**)

Rank (by category)	Reference	Option Description	Deliverability	Feasibility	Value for Money	Network Objectives							Initial Sifting Criteria				Shortlisted for further assessment
						1	2	3	4	5	6	Total	1	2	3	4	
5	T1	A new link road between Green Lane and the A565 at Tarleton to relieve the impact of through heavy traffic	Deliverable but with challenges	Feasible in theory	May deliver value for money	2	1	0	1	0	0	6	✓	✓	✓	✓	✓
2	WL10	Examine deliveries and servicing arrangements to find more suitable drop patterns in Ormskirk and Burscough e.g. work with refuse collection etc.	Deliverable in theory	Feasible in theory	Likely to deliver value for money	2	1	1	1	0	1	8	✓	✓	✓	✓	✓
2	WL2	Improved signing strategy between Southport and the motorway network aimed at reducing traffic flows through Ormskirk on the A5701	Deliverable but with challenges	Feasible in theory	Likely to deliver value for money	0	1	1	1	0	2	7	✓	✓	✓	✓	✓
	WL3	Variable Message Signing Strategy for Ormskirk to react to events and improve car park information	Deliverable in theory	Significant challenges	May deliver value for money	1	0	1	0	0	2	4	✓	✓	✓	x	x
1	O6	Remove the A570 from the primary route network between its junctions with the M58 and A59 in support of limiting its use by long distance traffic and HGVs.	Deliverable but with challenges	Feasible in theory	Likely to deliver value for money	2	1	1	1	0	2	9	✓	✓	✓	✓	✓
	WL9	Provide park and ride facilities close to the M58 which could serve Southport and Edge Hill University during term time	Deliverable in theory	Feasible but with challenges	Not likely to deliver value for money	1	0	1	1	0	1	5	✓	✓	✓	x	x
	WL11	Remove the A5209 from the primary route network	Deliverable but with challenges	Feasible in theory	May deliver value for money	2	0	1	0	0	2	5	✓	✓	✓	x	x
							x2		x2								

✓	x

Network Objectives

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4	Improve safety for all highway users (x2 weighting applied).
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Option sift

Deliverability (e.g. political, planning, timescale or third party issues)
Deliverable in theory
Deliverable but with challenges
Very difficult to deliver

Feasibility (e.g. physical constraint, land availability and design standards)
Feasible in theory
Feasible but with challenges
Significant challenges

Value for Money (e.g. perceived value for money)
Likely to deliver value for money
May deliver value for money
Not likely to deliver value for money

Qualitative assessment against network objectives	
2	Large beneficial impact
1	Beneficial impact
0	Neutral / marginal impact
-1	Adverse impact
-2	Large adverse impact

Initial Sifting Criteria
Each option must meet the following sifting criteria to be considered further:
1: Likely to be deliverable
2: Likely to be feasible
3: Likely to be affordable
4: Overall fit with network objectives (Appraisal score >**)

Rank (by category)	Reference	Option Description	Deliverability	Feasibility	Value for Money	Network Objectives							Initial Sifting Criteria				Shortlisted for further assessment
						1	2	3	4	5	6	Total	1	2	3	4	
							x2		x2								
3	O21	Improved signal performance at the junction of the A570 Park Road and Morrisons Store access by use of the DFOF and BIAS commands, on link 3014D with DFOF set at -5 seconds and the BIAS for link 3014D set to 30; encouraging the optimiser to maintain a closer fixed offset for the two junctions	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	2	0	1	1	6	✓	✓	✓	✓	✓
3	O24	Improved signal performance at the junction of Ruff Lane and Knowsley Road by resolving UTC/SCOOT issue and validating QCMC and STOC values	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	2	0	1	1	6	✓	✓	✓	✓	✓
3	O25	Five Ways junction (A59/A570) issues could be potentially caused by large gaps in the queues causing the MOVA to identify end of saturation prematurely which could be mitigated by monitoring and review of SATINC and GAMBER values.	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	1	1	1	0	6	✓	✓	✓	✓	✓
2	T2	Signal junction optimisation at the junction of A59 and the A565 linked to proposed introduction of a right hand filter lane1	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	1	1	1	1	7	✓	✓	✓	✓	✓
1	WL1	Signal optimisation at junction of A570 and B5242 (Morris Dancers)	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	2	2	1	1	10	✓	✓	✓	✓	✓
	O10	Amend junction geometry to accommodate HGV swept paths between A570 southbound and A59 northbound at Five Ways junction	Deliverable but with challenges	Feasible in theory	Likely to deliver value for money	1	0	0	1	0	1	4	✓	✓	✓	x	✓
3	B2	Staggered signalised junction to be implemented to replace the two mini-roundabouts on the Burscough High Street (A59). Would include pedestrian facilities crossing Tesco junction and the application of walk with traffic to optimise signal timings. Would need to consider B32.	Deliverable but with challenges	Feasible in theory	May deliver value for money	0	1	1	1	1	0	6	✓	✓	✓	✓	✓
	O18	Increase the length of the left turn filter lane from St Helens Road onto Park Road (A570)	Deliverable in theory	Feasible but with challenges	May deliver value for money	0	0	1	1	1	0	4	✓	✓	✓	x	x

Network Objectives

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4 Improve safety for all highway users (x2 weighting applied).
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✓	x

Option sift

Deliverability (e.g. political, planning, timescale or third party issues)	**Feasibility** (e.g. physical constraint, land availability and design standards)	**Value for Money** (e.g. perceived value for money)
Deliverable in theory	Feasible in theory	Likely to deliver value for money
Deliverable but with challenges	Feasible but with challenges	May deliver value for money
Very difficult to deliver	Significant challenges	Not likely to deliver value for money

Qualitative assessment against network objectives	
2	Large beneficial impact
1	Beneficial impact
0	Neutral / marginal impact
-1	Adverse impact
-2	Large adverse impact

Initial Sifting Criteria

Each option must meet the following sifting criteria to be considered further:
1: Likely to be deliverable
2: Likely to be feasible
3: Likely to be affordable
4: Overall fit with network objectives (Appraisal score >**)

Rank (by category)	Reference	Option Description	Deliverability	Feasibility	Value for Money	Network Objectives							Initial Sifting Criteria				Shortlisted for further assessment
						1	2	3	4	5	6	Total	1	2	3	4	
4	WL5	Improved cycle parking facilities within Ormskirk and Burscough town centres	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	1	0	1	2	6	✓	✓	✓	✓	✓
1	B3	Public realm and pedestrian improvement on Burscough High Street (A59), including removal of guard rails, side road treatments e.g. side road footway crossings and junction mouth tightening, use of block paving (would need to consider B2)	Deliverable in theory	Feasible in theory	Likely to deliver value for money	1	1	1	1	1	2	9	✓	✓	✓	✓	✓
1	O2	Upgrade footpath linking Ormskirk railway station and bus station to a dedicated pedestrian and cycle shared use route (assuming sufficient access and ~3metres width can be achieved).	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	1	2	0	2	9	✓	✓	✓	✓	✓
	O3	New traffic signals at the A577 Moor Street/A570 St Helens Road junction to improve bus, cyclist, and pedestrian access to bus station	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	0	1	1	0	1	4	✓	✓	✓	x	x
	O12	Upgrade signals at Aughton Street / A570 junction to PUFFIN type crossing (with detection) and introduce pedestrian countdown timers.	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	0	1	1	0	2	5	✓	✓	✓	x	x
9	O13	Introduction of single pedestrian crossing phase at Aughton Street / A570 Junction	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	0	1	2	0	2	7	✓	✓	✓	✓	✓
7	O19	Provision of PUFFIN type pedestrian crossing facilities across the St Helens Road and Moor Street East approaches (will require updated signal infrastructure). Or potential for a Toucan crossing as part of improved cycle links with the railway station.	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	1	1	0	2	7	✓	✓	✓	✓	✓
9	O20	Provision of PUFFIN type pedestrian crossing facilities at junction of Wigan Rd, Knowlsley Rd, Stanley Street, and Moor Street	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	0	1	2	0	2	7	✓	✓	✓	✓	✓
7	O22	Improve the pedestrian facilities across A570 Park Road near Moorgate through reinstatement of the crossing onto SCOOT network by re-connecting the link cable and allowing SCOOT to determine the most appropriate crossing time	Deliverable in theory	Feasible in theory	Likely to deliver value for money	0	1	1	1	0	2	7	✓	✓	✓	✓	✓
5	WL6	Improve West Lancashire's links to Lancashire's wider cycle network, in line with West Lancashire's Green Infrastructure and Cycle Strategy, including the following proposals: - Linking the Trans-Pennine Trail at Lydiate, and RR91 at Aughton - Linking Southport Town Centre eastwards to RR91 on the Leeds and Liverpool Canal at New Lane, including upgrading the canal towpath between there and Burscough Wharf - East from the north end of Southport to RR91 at Mere Brow - Linear Park proposal between Ormskirk and Burscough	Deliverable in theory	Feasible in theory	May deliver value for money	0	1	1	1	0	2	7	✓	✓	✓	✓	✓
3	WL7	Upgrade the footways on the A59 and A570 (between Ormskirk and Burscough, and between Ormskirk and Edge Hill University) to shared use (pedestrian and cyclist). This would be considered in conjunction with the Ormskirk to Burscough Linear Park.	Deliverable in theory	Feasible but with challenges	Likely to deliver value for money	1	0	1	2	2	2	10	✓	✓	✓	✓	✓
6	O4	Improved pavement and facilities for cyclists and pedestrians on St Helen's Road from the junction of Moor Street to the junction with Ruff Lane.	Deliverable but with challenges	Feasible in theory	Likely to deliver value for money	0	0	1	2	0	2	7	✓	✓	✓	✓	✓
	O17	Improvements to pedestrian crossing facilities at the junction of St Helens Road and Park Road, including upgrading to PUFFIN type crossing, provision of additional staggered facilities across St Helens Road, and changes to the layout of the staggered facilities across Park Road	Deliverable in theory	Feasible in theory	May deliver value for money	0	0	1	1	0	2	5	✓	✓	✓	x	x
							x2		x2				✓	x			

Network Objectives

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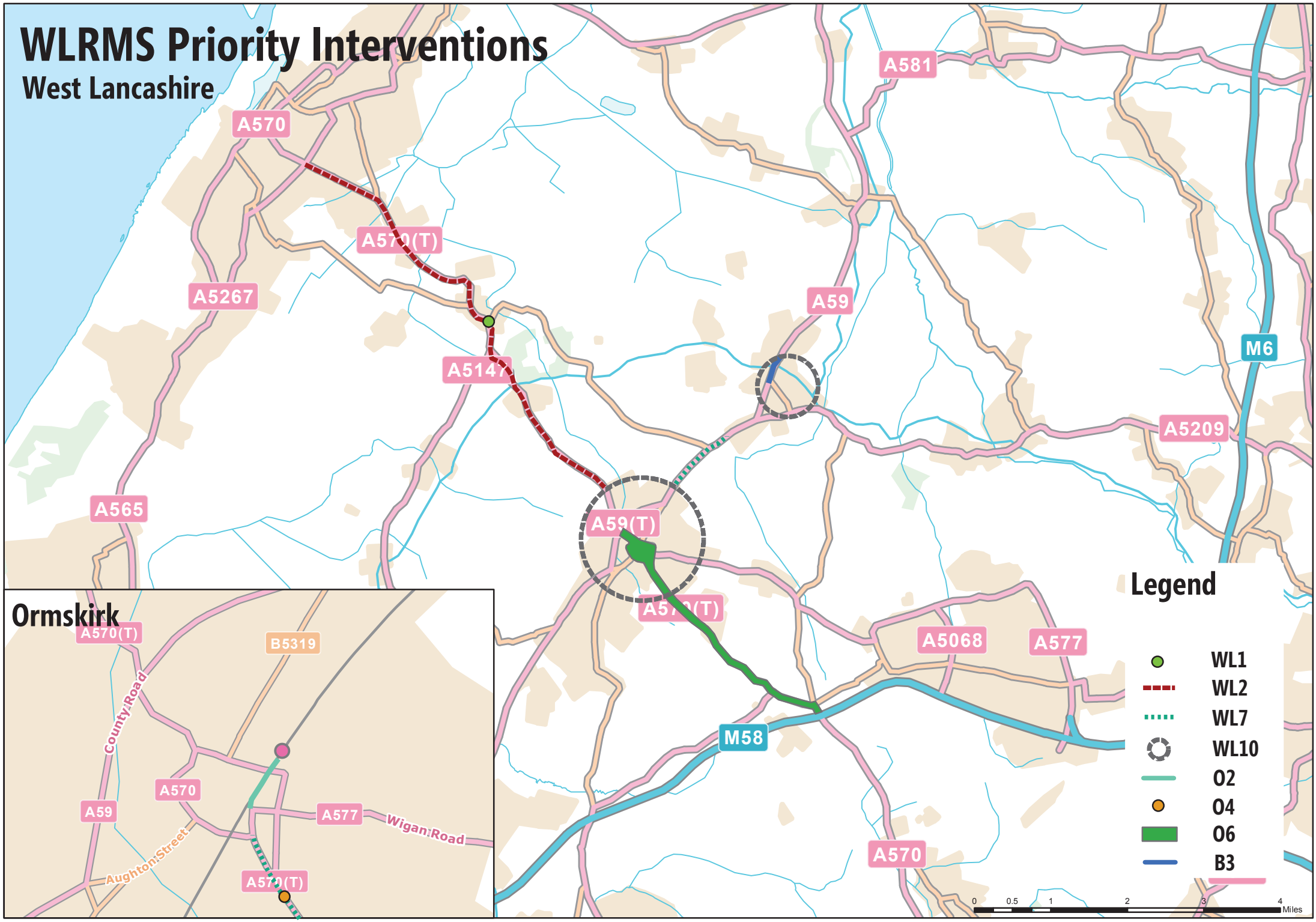
Appendix G. Plan Showing WLRMS Priority Intervention Locations


WLRMS Priority Interventions
West Lancashire
A570
A581
A570(T)
A5267
A59
M6
A5147
A5209
A565
A59(T)
A570(T)
A5068
A577
M58
A570
Ormskirk
A570(T)
B5319
County Road
A570
A59
A577
Wigan Road
Aughton Street
A570(T)
Legend
WL1
WL2
WL7
WL10
O2
O4
O6
B3
0
0.5
1
2
3
4
Miles

Appendix H. Bank Bridge and Derby Street Bridge Option Description Sheet

Bridges

Introduction

Due to the formation of West Lancashire's road network there are a number of bridge structures which are key to network efficiency and resilience.

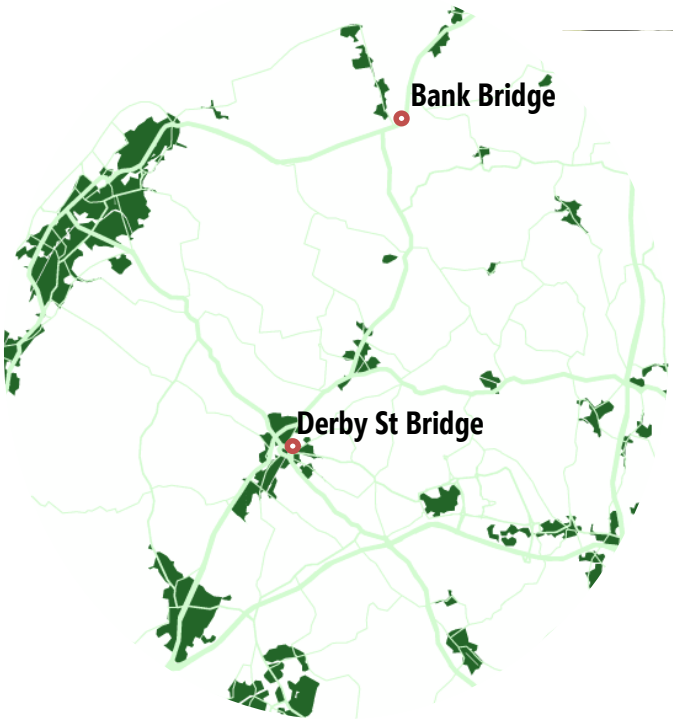
The RMS has identified two bridges in particular which require intervention.

Bank Bridge

A Grade II listed bridge, forming a key east-west link between Preston and Southport. There is a need to improve highway safety and resilience at this location.

Derby St Bridge

A Grade II listed bridge, forming a key part of Ormskirk's highway gyratory. This bridge requires maintenance and there are linked opportunities to improve highway safety and the surrounding urban realm.



Bank Bridge

Background

Bank Bridge in Tarleton is a Grade II listed bridge formed of two separate structures crossing the River Douglas and the Rufford Branch of the Leeds and Liverpool Canal respectively. This bridge on the A59 acts as the primary east-west link between Preston and Southport.

Issues

The bridge is an identified crash black spot, which results from the bridge's poor alignment and narrow carriageway widths with parapets close to the road edge. The bridge parapets have been subject to impacts by vehicles resulting in a need for on-going repair. Furthermore the bridge is vulnerable to the impacts of weather related events. Any closure of the bridge results in significant congestion.

Preferred Options

Remedial works on existing bridge and implementation of speed management measures.

New bridge structure supporting a new carriageway crossing the River Douglas and Leeds and Liverpool Canal.

Bank Bridge

Option: Remedial Works & Speed Management

Description

Remedial works on existing bridge and implementation of an appropriate on-going maintenance regime.

The current high friction surfacing should be maintained in line with LCC's adopted policies and procedures.

Furthermore, the implementation of a range of speed management measures e.g. camera enforcement, rumble strips and vehicle activated signage is proposed.

This option provides a short term cost-effective solution which can be implemented in advance of the long term proposals for a new bridge.

High Friction Surface Speed Management

Potential Benefits

The current high friction surfacing has been successful in reducing bridge impacts.

The introduction of speed management measures will reduce vehicle entry speeds, thus reducing crashes and improving safety and highway resilience.

This is a cost effective way of improving both driver safety and network resilience.

Estimated Cost: £500,000

Bank Bridge

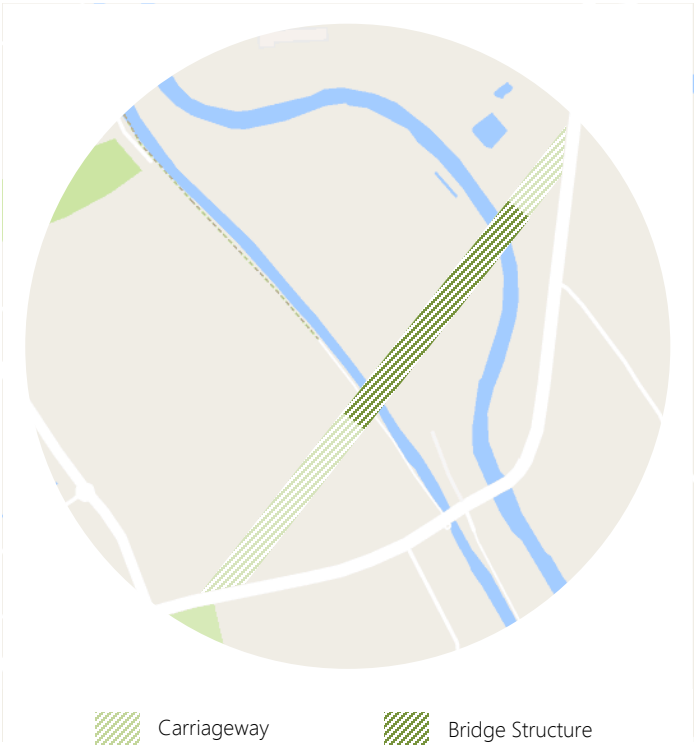
Option: New Bridge on Improved Alignment

Description

Implementation of a new section of road between the Coe Lane junction and the A59 just south of Mill Brow Cottages.

This would include either a single bridge across the Leeds and Liverpool Canal and River Douglas or two separate structures depending on site conditions and the most appropriate engineering solution.

This option presents the opportunity to retain the existing Grade II listed bridge, but with the addition of a modern structure.



Potential Benefits

This additional bridge structure built to modern standards on an improved alignment will improve highway safety.

Reduced accidents at this location will improve network resilience on this key east-west link.

It is envisaged that this new structure will also be highly resilient to the impacts of extreme weather related events.

This option allows for the retention of the existing Grade II listed structure protecting West Lancashire's heritage and promoting a more resilient highway network.

Estimated Cost: £15,000,000

Derby St Bridge

Background

Derby St Bridge is a Grade II listed bridge within Ormskirk. The bridge carries the A570 over the Liverpool to Ormskirk railway line immediately to the south of Ormskirk station, the A570 at this location forming part of the town centre gyratory. There is currently a temporary 18t weight restriction in place protecting the structure.

Issues

The bridge has two marked traffic lanes of sub-standard width across the bridge. Although there are footways on either side, one is very narrow and the bridge parapets are low and do not meet current standards. Alongside this, the bridge's structural integrity needs to be addressed as successive inspections and specialist investigations have shown that the bridge has structural issues.

Preferred Option

Remedial works on existing bridge and implementation of single lane with increased pedestrian footways.

Derby St Bridge

Option: Remedial Works & Implementation of Single Lane

Description

Remedial works on existing bridge and implementation of a single lane with improved footways for pedestrian usage.

This would include improved signage on the approach to the bridge indicating a single lane with the potential to provide lane markings also.

The area beyond the bridge reaches a key junction. This may require junction modelling to assess the impact of this scheme and any requirements of traffic management measures.

The remedial repair works would negate the requirement for a weight limit across the bridge, however as part of a wider place making scheme, this may be retained.

Single Lane with Improved NMU Access

Potential Benefits

This option provides a cost-effective solution avoiding any major engineering works to replace the existing structure.

This option also strengthens and protects the Grade II listed structure, retaining its historical significance.

Widened footways would provide safer conditions to cross the bridge and align with the development of a place making scheme for Ormskirk.

Estimated Cost: £2,500,000