

TRANSPORT ASSESSMENT



SYSTRA

RESIDENTIAL DEVELOPMENT, MILLFIELD WORKS, STOCKTON-ON-TEES

TRANSPORT ASSESSMENT

IDENTIFICATION TABLE

Client/Project owner	TJ Thomson & Son Ltd
Project	Residential Development, Millfield Works, Stockton-on-Tees
Study	Transport Assessment
Type of document	Report
Date	21/06/2018
File name	001
Reference number	18C59/001
Number of pages	50

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	HG	Senior	21/06/2018	ISSUE 1
	Checked by	JQ	Associate Director	21/06/2018	
	Approved by	JQ	Associate Director	21/06/2018	
2	Author			DD/MM/YY	
	Checked by			DD/MM/YY	
	Approved by			DD/MM/YY	

TABLE OF CONTENTS

1.	INTRODUCTION	6
1.1	PREAMBLE	6
1.2	SITE LOCATION	6
1.3	SCOPING DISCUSSIONS	7
1.4	REPORT PURPOSE	7
1.5	REPORT STRUCTURE	7
2.	POLICY CONTEXT	9
2.1	INTRODUCTION	9
2.2	NATIONAL PLANNING POLICY	9
2.3	LOCAL PLANNING POLICY	10
2.4	SUMMARY	12
3.	BASELINE CONDITIONS	13
3.1	INTRODUCTION	13
3.2	EXISTING SITE USE	13
3.3	STUDY AREA	13
3.4	HIGHWAY NETWORK	14
3.5	ACCESSIBILITY	15
3.6	PUBLIC TRANSPORT ACCESSIBILITY	16
3.7	TRAIN	18
3.8	EXISTING PROVISION FOR PEDESTRIANS	19
3.9	PUBLIC RIGHTS OF WAY (PROW)	19
3.10	EXISTING PROVISION FOR CYCLISTS	20
3.11	HIGHWAY SAFETY RECORDS	21
3.12	SUMMARY	22
4.	SUSTAINABLE TRAVEL ACCESSIBILITY	23
4.1	LOCAL TRAVEL PATTERNS	23
4.2	WALKING ACCESSIBILITY	25
4.3	CYCLE ACCESSIBILITY	26
4.4	PUBLIC TRANSPORT ACCESSIBILITY	27
4.5	SUMMARY	28

5.	PROPOSED DEVELOPMENT	29
5.1	OVERVIEW	29
5.2	VEHICULAR ACCESS	29
5.3	PEDESTRIAN / CYCLE PROVISION	29
5.4	CAR & CYCLE PARKING	30
6.	TRIP GENERATION AND ASSIGNMENT	31
6.1	INTRODUCTION	31
6.2	TRIP GENERATION	31
6.3	DEVELOPMENT TRIP DISTRIBUTION	32
7.	IMPACT ASSESSMENT	34
7.1	DATA COLLECTION	34
7.2	MODELLING ASSESSMENT	35
7.3	IMPACT ASSESSMENT SUMMARY	41
8.	SUMMARY	42
8.2	CONCLUSION	42
	APPENDICES	43
	APPENDIX A – SITE PLAN	
	APPENDIX B – SCOPING	
	APPENDIX C – SITE ACCESS DRAWING	
	APPENDIX D – TRICS	
	APPENDIX E – TRAFFIC FLOW DIAGRAMS	
	APPENDIX F – MODELLING OUTPUTS	

LIST OF FIGURES

Figure 1.	Site Location	6
Figure 2.	Study Area Junctions	14
Figure 3.	PROW Map	20
Figure 4.	Stockton Cycle Map	21
Figure 5.	E33001621 Boundary	23
Figure 6.	E33001647 Boundary	24
Figure 7.	Site Accessibility Plan	26
Figure 8.	2km and 5km cycle isochrones	27
Figure 9.	Bus Stop Locations	28

LIST OF TABLES

Table 1.	Bus Services	16
Table 2.	Road Accident Data by Severity	22
Table 3.	J2W Modal Split	24
Table 8.	Operational assessment scenarios	34
Table 9.	TEMPRO / NTM local traffic growth factors – Northumberland 025 MSOA	35
Table 10.	Junction 1 – Modelling Results Summary	36
Table 11.	Junction 2 – Modelling Results Summary	37
Table 12.	Junction 2 – Sensitivity Test Modelling Results Summary	38
Table 13.	Junction 3 – Modelling Results Summary	39
Table 14.	Junction 4 – Modelling Results Summary	40
Table 15.	Junction 5 – Modelling Results Summary	40

1. INTRODUCTION

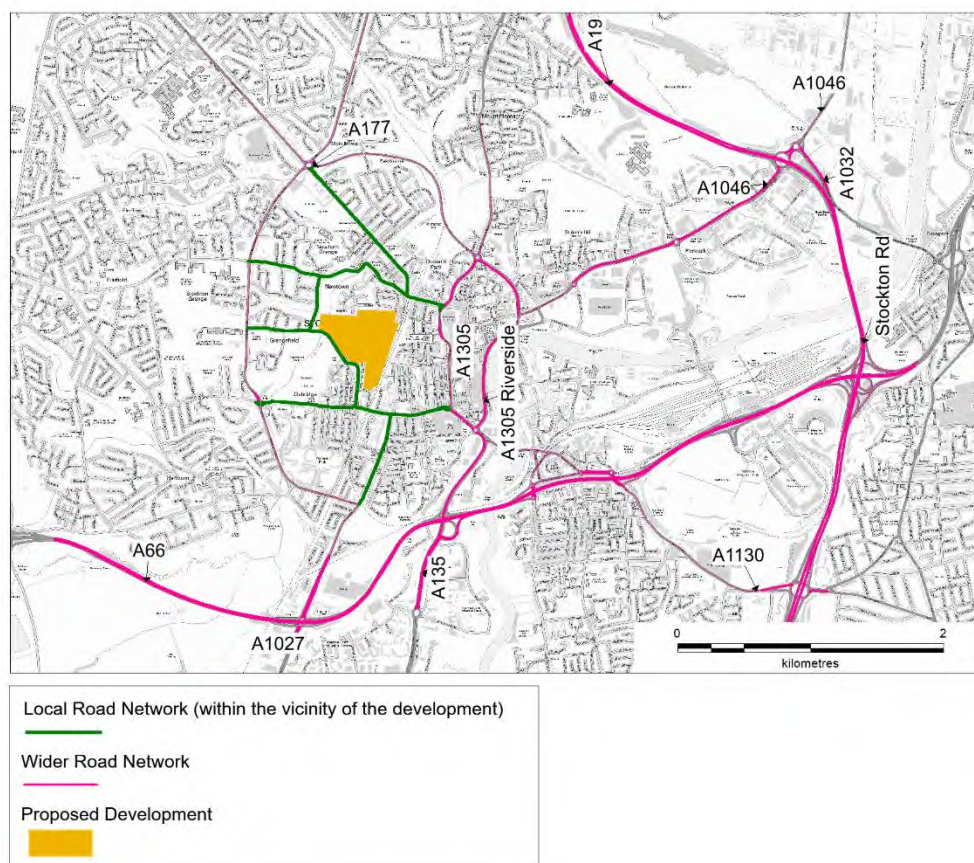
1.1 Preamble

- 1.1.1 SYSTRA Ltd was appointed by TJ Thomson & Son Ltd to prepare this Transport Assessment (TA) and the accompanying Travel Plan (TP) to support an outline planning application for approximately 600 dwellings on the land at the existing Millfield Works, Stockton-on-Tees.

1.2 Site location

- 1.2.1 The proposed development site is located approximately 850m west of Stockton town centre, on Grangefield Road.
- 1.2.2 The site is bounded by Grangefield Road to the south-west, an industrial unit to the south-east, Stockton rail line to the east, a residential community to the north and a woodland area to the north-west. The location of the proposed development in relation to the local and strategic highway network is shown in **Figure 1**. The indicative site plan is provided at **Appendix A**.

Figure 1. Site Location



1.3 Scoping Discussions

- 1.3.1 A scoping note was submitted to Stockton Borough Council for comment. The note and the subsequent response is included in **Appendix B**. This TA has been prepared in light of these discussions.

1.4 Report Purpose

- 1.4.1 The purpose of this TA is to consider the traffic and transport implications of the development and to provide a comprehensive and systematic review of transport issues relating to it. The TA identifies the anticipated transport impacts of the development and outlines any necessary improvements to accessibility and safety for all modes of travel, particularly for alternatives to the car, such as walking, cycling and public transport.
- 1.4.2 This TA will identify the impact of the Development and adopts an approach that seeks to address:
- **Sustainable accessibility** – promote accessibility by all modes of travel, in particular public transport, cycling and walking and assess the likely travel behaviour or travel patterns to and from the site; and
 - **Identifying residual trips** – provide accurate quantitative and qualitative analyses of the predicted impacts of residual trips from the proposed development and ensure that suitable measures are proposed to manage these impacts.

1.5 Report Structure

- 1.5.1 Following this introductory chapter, the remainder of this TA report is structured as follows:
- **Chapter 2: Policy Context** – reviews the relevant current national and local transport policies, and guidance documents and how the proposed development accords with these.
 - **Chapter 3: Baseline Conditions** – describes the baseline travel and transport conditions at the site and on the surrounding highway network. It includes a review of personal injury collision records.
 - **Chapter 4: Sustainable Travel Accessibility** – describes how accessible the site will be for residents.
 - **Chapter 5: Proposed Development** – sets out the development proposals within the context of the wider area. It includes an overview of the access strategy and a review of car and cycle parking standards.
 - **Chapter 6: Trip Generation Assessment** – details the methodology used to ascertain total person and vehicle trip generation and how these trips have been assigned to the local transport and highway networks.
 - **Chapter 7: TA Assumptions and Traffic Flows** – sets out the assessment periods, years and scenarios for the traffic impact assessment. It also outlines details of and justification for assumptions associated with background traffic growth, committed developments and highways schemes.
 - **Chapter 8: Traffic Impact Assessment** – considers the impact of development traffic at study area junctions in terms of queuing and operational capacity;
 - **Chapter 9: Summary and Conclusions** – provides a summary and conclusion by highlighting the key points raised within the report.

1.5.2 All technical appendices are included at the end of this TA for further information.

2. POLICY CONTEXT

2.1 Introduction

- 2.1.1 This chapter of the TA examines the context of the site and how this relates to the relevant transport and development planning policies and guidelines. It provides an overall spatial and planning context for the proposed development.
- 2.1.2 Policies have been adopted in national guidelines, such as the most recent Transport White Paper (2011), that seek to encourage more sustainable modes than the car. A planning system which places greater emphasis on the link between transport and land use planning policies has also been adopted to encourage transport decisions at a local level that are compatible with environmental and community goals and best reflect local circumstances and requirements.
- 2.1.3 The following national and local planning documents have been reviewed:
- The Transport White Paper;
 - The National Planning Policy Framework;
 - Stockton-on-Tees Local Transport Plan; and
 - Stockton-on-Tees Core Development Plan Strategy.

2.2 National Planning Policy

2.2.1 National Planning Policy Framework (NPPF)

- 2.2.2 The final version of the NPPF was published on 27 March 2012. It came into effect immediately, superseding all other national planning policy (e.g. PPGs, PPSs) (except on waste).
- 2.2.3 The document sets out the Government's economic, environmental and social planning policies for England and its expectation for their application. It is meant as high level guidance for local councils to use when defining their local and neighbourhood plans. This approach allows the planning system to be tailored to reflect the needs and priorities of individual communities.
- 2.2.4 The essence of the document is to support sustainable development, defined as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs'.
- 2.2.5 The NPPF defines the delivery of sustainable development through three roles, as given below, and notes that to achieve sustainable development, these roles should be sought jointly and simultaneously through the planning system:
- Planning for prosperity (an economic role);
 - Planning for people (a social role); and
 - Planning for places (an environmental role).

- 2.2.6 At the heart of the NPPF is a presumption in favour of sustainable development which ‘should be seen as a golden thread running through both plan making and decision taking’ (Paragraph 14). In Paragraph 15, it goes on to say that ‘Policies in Local Plans should follow the approach of the presumption in favour of sustainable development so that it is clear that development which is sustainable can be approved without delay’.
- 2.2.7 NPPF recognises that transport policies have an important role to play in wider sustainability and health objectives as well as their direct influence on development. It seeks to ensure that the transport system is balanced in favour of sustainable transport modes, giving people a real choice about how they travel.
- 2.2.8 Paragraph 32 states that developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. It goes on to state that plans and decisions should take account of whether:
- ‘The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
 - Safe and sustainable access to the site can be achieved for all people; and
 - Improvements can be undertaken within the transport networks that cost-effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe’.

2.2.9 The Future of Transport White Paper

- 2.2.10 The current approach to the provision of transportation infrastructure was introduced by the Department for Transport (DfT) in the 2004 White Paper ‘The Future of Transport’. An underlying objective of the strategy was to deal with the pressures of increasing demand for travel by striking the right balance between environmental, economic and social objectives, now and into the future. This placed greater emphasis on managing the growing demand for travel and recognised that simply providing ever more capacity on the existing road network is not the answer in the long term. Increasing emphasis should be placed on encouraging the provision and use of public transport, particularly buses, and the greater introduction of Travel Plan initiatives.
- 2.2.11 The development proposals take on board the key tenets of the White Paper; aiming to provide a land use that is well integrated with the surrounding areas and easily accessible by a range of modes of travel, with particular emphasis on encouraging the use of non-car modes of transport.

2.3 Local Planning Policy

2.3.1 Stockton-on-Tees Local Transport Plan 2011 – 2016 (LTP3)

- 2.3.2 LTP3 strategy documents sets out the councils aims for local transport for the Stockton-on-Tees area for 2011-2016. A new LTP to cover the period from 2016 is being developed by the council at present.

2.3.3 Guidance from the UK government includes five national transport goals which provide overarching priorities for LTPs. The goals are:

- Support economic growth;
- Reduce carbon emissions;
- Promote equality of opportunity;
- Contribute to better safety, security and health;
- Improve quality of life and a healthy natural environment.

2.3.4 LTP3 sets out Stockton-on-Tees' transport strategy in the context of these national goals.

2.3.5 In addition to the policy goals of national government, the Sustainable Community Strategy (SCS) provides the overarching strategic policy framework for Stockton-on-Tees. The current SCS was developed by the Stockton Renaissance (a partnership of Stockton's business, community, voluntary sector and public sector agencies) in 2008. The strategy describes the vision for life in Stockton-on-Tees by 2021.

2.3.6 LTP3 will ensure that transport helps to meet the needs of people in Stockton-on-Tees. The goals and objectives for LTP3 are therefore based on supporting and contributing towards the following SCS visions:

- "Stockton-on-Tees driving Economic Renaissance at the heart of a vibrant Tees Valley city-region."
- "An enhanced quality of place, including renewed town centres and improved local neighbourhoods."
- "Enhanced wellbeing and achievement for local people."

2.3.7 LTP3 seeks to build on the success of the previous plans and takes account of the national, regional and local policy context and stakeholder engagement, as well as having due regard to the legal duties as the local Highway Authority. The goals describe what Stockton-on-Tees Borough Council is trying to achieve to tackle the key challenges:

- "Improve the journey experience of transport users of urban, regional and local networks, including interfaces with national and international networks."
- "Improve the connectivity and access to labour markets of key business centres."
- "Deliver quantified reductions in greenhouse gas emissions within cities and regional networks, taking account of cross-network policy measures."

2.3.8 To achieve a transport system described by the goals, the LTP sets objectives aimed at addressing emerging challenges related to accessibility, mode share, the economy and congestion amongst other issues.

2.3.9 It is considered that the proposed development is in accordance with the goals of the LTP3 as detailed above.

2.3.10 Stockton-on-Tees Core Strategy Development Plan Document

2.3.11 The Stockton-on-Tees Core Strategy Development Plan Document (DPD) was adopted on 24th March 2010 and sets out the spatial strategy to 2024. The DPD is accompanied by a Sustainability Appraisal, a Habitats Regulation Assessment, an Infrastructure Strategy and a Consultation Statement.

2.3.12 The DPD outlines 12 objectives, these being:

1. "To enable all of Stockton Borough's residents to live in prosperous, cohesive, and sustainable communities."
2. "To encourage economic development and promote a more entrepreneurial culture within the Borough, as a means of diversifying the economic base, in addition to strengthening existing economic clusters such as the chemical processing industries."
3. "To increase employment opportunities, with emphasis on maintaining, enhancing and retaining a highly skilled workforce."
4. "To delivery healthy and vibrant town centres, enhancing the role of Stockton as the main centre, a market and university town, and improving the environments of Billingham, Thornaby and Yarm district centres."
5. "To ensure good accessibility for all to jobs, facilities, goods and services within the Borough, and to improve links to other areas of the Tees Valley and beyond."
6. "To provide high quality services and facilities to meet the needs of the Borough's growing and ageing populating, with emphasis on improving the health of the Borough's population, in terms of health care, education and training, together with sport, leisure, recreation and cultural pursuits."
7. "To promote equality, diversity and strengthen community cohesion."
8. "To protect and enhance the Borough's natural environment and to promote the creation, extension and better management of green infrastructure and biodiversity, taking advantage of the Borough's special qualities and location at the mouth of the River Tees."
9. "To protect and enhance the built environment and the area's archaeological, industrial and cultural heritage."
10. "To ensure better use of resources, particularly the re-use of previously developed land".
11. "To provide a safe, healthy and attractive environment."
12. "To provide homes to suit all needs and incomes."

2.3.13 It is considered that the proposed development does not negatively affect the objectives of the DPD detailed above.

2.4 Summary

2.4.1 In summary, there are a number of current and emerging integrated land use and transport planning policies and policy guidance documents that support and underpin the proposed development; and encourage travel to and from the proposed land uses to be by sustainable modes where possible. A Travel Plan has been produced alongside this TA and submitted with the planning application.

3. BASELINE CONDITIONS

3.1 Introduction

- 3.1.1 In this chapter the existing transport conditions, including a description of the existing site and of the local highway network and traffic flows are considered.

3.2 Existing Site Use

- 3.2.1 The site totals around 55 acres and has been a scrap metal processing plant since 1932. The site operation has gradually been wound down of the last few years. Two vehicular accesses exist from Grangefield Road. Further accesses to the site are from Light Pipe Hall Road and Riley Road.

3.3 Study Area

- 3.3.1 The TA study area includes the following junctions. This was revised following the scoping discussions to include the two junction at either end of Grays Road, these are shown in **Figure 2**:

- Junction 1: Primary site access / Grangefield Road junction
- Junction 2: Oxbridge Lane / Sheraton Street junction
- Junction 3: Oxbridge Avenue / Grangefield Road signalised junction
- Junction 4: Grays Road / Grangefield Road junction
- Junction 5: Grays Road / Bishopton Road junction



Grangefield Road

3.4.1 Grangefield road is the main access road to the site. It runs to the south-west of the site and is a two-way single carriageway road with a 30mph speed limit. To the west Grangefield Road connects to Oxbridge Avenue via a signalised junction with pedestrian crossing facilities. To the east, Grangefield Road becomes Tyndale Street (the location of the secondary site access) and then Sheraton Street. Footways and street lighting are present on both sides of the road and buses operate along this route.

Sheraton Street

3.4.2 Sheraton Street runs on from Grangefield Road and Tynedale Street and operates a north-south direction at the southern end of the site. It is a two-way single carriageway road with a 30mph speed limit and central hatching. To the south, Sheraton Street connects to Oxbridge Lane via a priority T-junction. Double yellow lines are present on the approach to the priority T-junction. Footways and street lighting are present on both sides of the road and buses operate along this route.

Oxbridge Avenue

- 3.4.3 Oxbridge Avenue runs in a north-south direction. West of the proposed site, traffic lights connect Oxbridge Avenue to Grangefield Road and in the south-west a four-arm roundabout connects to Oxbridge Lane. Oxbridge Avenue is a two-way single carriageway road subject to a 30mph speed limit. There is also a recommended variable speed limit (20mph) which operates during school opening and closing times. Footways and street lighting are present on both sides of the road, often with a grass verge to separate pedestrians from road users. Buses also operate along this route.

Oxbridge Lane

- 3.4.4 Oxbridge Lane operates in a west-east direction and incorporates a series of roundabouts and T-junctions. In the vicinity of Sheraton Street (which links to the proposed development in the north), yellow lines are present and a designated right-turn pocket is present to support efficient and safe right-turns into Sheraton Street.

Grays Road

- 3.4.5 Grays Road connects to Grangefield Road to the west of the proposed development via a priority T-junction. Grays Road is a two-way single-carriageway road which runs in a north-south direction. The road runs through a residential community, with three T-junctions along its length accessing other residential streets. Grays Road is subject to a 20mph speed limit and traffic calming measures are present. Footways and street lighting are present on both sides of the road.

Bishopton Road

- 3.4.6 At the northern point of Grays Road, a priority T-junction connects to Bishopton Road. Bishopton Road is a two-way single-carriageway road running in a west-east direction. The road is subject to a 30mph speed limit. Footways and street lighting are present on both sides of the road and buses operate along this route.

3.5 Accessibility

- 3.5.1 The development site is located to the west of Stockton town centre and is surrounded by residential communities.
- 3.5.2 There is an existing pedestrian footway that runs from Tynedale Street to Dovecot Street through an underpass under the railway line. A 5-10 minute walk along this link provides access to Stockton High Street and amenities. A further route over the railway line is available from the north east of the site to Mill Street East and on to Stockton town centre and rail station.
- 3.5.3 The masterplan for the development shows there is the potential to integrate the development with the existing external surrounding pedestrian and cycle infrastructure. Internally the permeability of the site has been considered and the road layout is such that it is anticipated that vehicle speeds will be low.

3.6 Public Transport Accessibility

Bus

3.6.1 The nearest bus stops to the site are located on Grangefield Road, Bishopton Road and Durham Road. The stops on Grangefield Road are adjacent to, and opposite the ambulance station. The bus stops on Bishopton Road are located adjacent to, and opposite the junction with Bedford Street and the stops on Durham Road are located to the north of the junction with Bishopton Road.

3.6.2 **Table 1** provides a summary of the existing bus services accessible within a 400m walking distance of the site.

Table 1. Bus Services

SERVICE / OPERATOR	ROUTE & KEY DESTINATIONS	DAY	FIRST SERVICE	HEADWAY (MINS)		LAST SERVICE
				Daytime	Evening (after 19:00)	
13A (Stagecoach North East)	Hemlington and Stainton – Middlesbrough – Portrack – Stockton – Grangefield Road – Salters Lane	Mon-Fri	07:30	60	No Service	17:50
		Sat	08:35	60	No Service	17:50
		Sun	No Service			
13 (Stagecoach North East)	Salters Lane – Grangefield Road – Stockton – Portrack – Middlesbrough – Hemlington and Stainton	Mon-Fri	07:17	60	No Service	17:40
		Sat	08:30	60	No Service	17:40
		Sun	No Service			
6 (Stagecoach North East)	Stockton – Grangefield Road – North Tees Hospital	Mon-Sat	10:02	60	No Service	15:02
		Sun	No Service			
	North Tees Hospital – Grangefield Road – Stockton	Mon – Sat	09:47	60	No Service	14:47
		Sun	No Service			
59 (Stagecoach North East)	Stockton – Bishopton Road – Elm Tree – North Tees Hospital – Summerville Tesco	Mon – Fri	06:44	15	60	23:23
		Sat	07:24	20	60	23:23
		Sun	10:13	60	60	23:23
	Summerville Tesco – North Tees	Mon – Fri	07:17	15	60	22:57

SERVICE / OPERATOR	ROUTE & KEY DESTINATIONS	DAY	FIRST SERVICE	HEADWAY (MINS)		LAST SERVICE
				Daytime	Evening (after 19:00)	
	Hospital – Elm Tree – Bishopton Road – Stockton	Sat	07:45	20	60	22:57
		Sun	10:03	60	60	22:57
X8 (Stagecarriage)	Stillington – North Tees Hospital – Bishopton Road – Stockton – Teesside Park – Middlesbrough	Mon - Sat	08:18	60	No Service	18:23
		Sun	No Service			
	Middlesbrough – Teesside Park – Stockton – Bishopton Road – North Tees Hospital – Stillington	Mon - Sat	08:15	60	No Service	18:25
		Sun	No Service			
13A (Stagecoach North East)	Salters Lane – Durham Road – Stockton – Portrack – Middlesbrough – Hemlington and Stainton	Mon - Fri	07:55	60	No Service	18:15
		Sat	09:00	60	No Service	18:15
		Sun	No Service			
13 (Stagecoach North East)	Hemlington and Stainton – Middlesbrough – Portrack – Stockton – Durham Road – Salters Lane	Mon – Fri	07:50	60	No Service	18:15
		Sat	07:55	60	No Service	18:15
15 (Arriva North East)	North Tees Hospital – Roseworth – Durham Road – Stockton – Ingleby Barwick - Thornaby	Mon – Fri	06:25	7/8	30	23:35
		Sat	07:25	7/8	30	23:35
		Sun	09:49	30	30	23:35
	Thornaby – Ingleby Barwick – Stockton – Durham Road – Roseworth – North Tees Hospital	Mon - Fri	06:30	7/8	30	23:41
		Sat	08:04	7/8	30	23:41
		Sun	09:38	30	30	23:31
	Stockton – Durham Road –	Mon - Fri	06:17	10	30	23:35

SERVICE / OPERATOR	ROUTE & KEY DESTINATIONS	DAY	FIRST SERVICE	HEADWAY (MINS)		LAST SERVICE
				Daytime	Evening (after 19:00)	
58 (Stagecoach North East)	Hardwick – University Hospital of North Tees	Sat	06:48	10	30	23:35
		Sun	09:45	30	30	22:58
	Hardwick - North Tees Hospital – Durham Road – Stockton	Mon – Fri	06:39	10	30	23:18
		Sat	07:10	10	30	23:18
		Sun	10:06	30	30	23:18
58A (Stagecoach North East)	Hardwick – North Tees Hospital – Durham Road – Stockton – Portrack – Port Clarence	Mon – Fri	06:57	30	No Service	07:27
		Sat – Sun		No Service		
X22 (Arriva North East)	Middlesbrough – Stockton – Durham Road – North Tees Hospital – Sedgfield – Trimdon – Wingate – Peterlee	Mon - Fri	06:56	60	No Service	17:26
		Sat	08:06	60	No Service	17:21
		Sun		No Service		

- 3.6.3 Both bus stops on Grangefield Road consist of a bus stop flag with supporting timetable information.
- 3.6.4 The westbound bus stop on Bishopton Road provides a sheltered waiting area for passengers, a bus stop flag, seating and timetable information. The eastbound bus stop has a bus stop flag and timetable information.
- 3.6.5 Both bus stops on Durham Road provide sheltered waiting areas for passengers, a bus stop flag and timetable information.

3.7 Train

- 3.7.1 Stockton rail station is located approximately 0.5km to the north east of the development site. The station is located on the Durham Coast Line. The preceding station is Billingham in the north and the following is Thornaby to the south.
- 3.7.2 Northern Rail manage the station and operate all services. There are hourly services to Hexham and Middlesbrough, with some services extending past Middlesbrough to Whitby or Saltburn. Additional services operate between Darlington and Hartlepool. From Middlesbrough, Darlington and Newcastle additional intercity services can be accessed.

- 3.7.3 Both platforms offer step free access to and from trains, and feature passenger waiting shelters, with customer information and help points, the station is unstaffed.
- 3.7.4 The station is served by buses that run along Bishopton Road and Durham Road. The station is also accessible by cycling or foot from the site with an approximate 6 minute walk time, and 2 minute cycle time from the site.
- 3.7.5 Thornaby rail station is located approximately 2.3km south east of the development site, and is situated on the Tees Valley Line and Durham Coast Line. The preceding stations are Stockton on the Durham Coast Line to the north and Eaglescliffe on the Tees Valley Line to the west. The following is Middlesbrough to the west.
- 3.7.6 TransPennine Express manage the station and operate some of the services. There are hourly TransPennine Express services to Middlesbrough and Manchester Airport via York where additional intercity services can be accessed.
- 3.7.7 Northern Rail operate additional services from Thornaby with hourly northbound services along the Durham Coast line towards Hexham, and half hourly services to Darlington, with alternate services extending to Bishop Auckland. Eastbound there are three services per hour to Middlesbrough with extensions to Saltburn, Nunthorpe and Whitby.
- 3.7.8 Both platforms offer step free access to and from trains, and feature passenger waiting shelters, with customer information screens and a help point in the station car park and on platform 2. The station is staffed with a ticket office open during daytime hours.
- 3.7.9 The station is served by buses along Mandale Road and Station Street. The station is also accessible by cycling or foot from the site with an approximate 27 minute walk time, and 7 minute cycle time from the rear of the site.

3.8 Existing Provision for Pedestrians

- 3.8.1 The development will be located within the existing urban area of Stockton and therefore there is an existing network of footways and footpaths in the vicinity of the application site offering pedestrians a choice of routes to their destinations.
- 3.8.2 To the south and west of the application site, on Grangefield Road and Tynedale Street there are footways adjacent to both carriageways, with dropped kerbs at crossing points. There is a pedestrian refuge with dropped kerbs and tactile paving to the south of the site on Grangefield Road.
- 3.8.3 Pedestrian connections towards Stockton town centre are provided via Oxbridge Lane; an underpass connecting to Dovecot Street; a bridge connecting to Mill Street West and via Bishopton Lane.

3.9 Public Rights of Way (PROW)

- 3.9.1 A review of PROW located in the vicinity of the application site has been undertaken. **Figure 3** is an extract from the Stockton-on-Tees Borough Council website showing routes in the local area. As can be seen the route from Tynedale Street via the underpass to Dovecot Street is identified as a PROW. This route is considered to be very important for the development

providing a key sustainable connection to the town centre, it will therefore be incorporated and enhanced as part of the development.

Figure 3. PROW Map

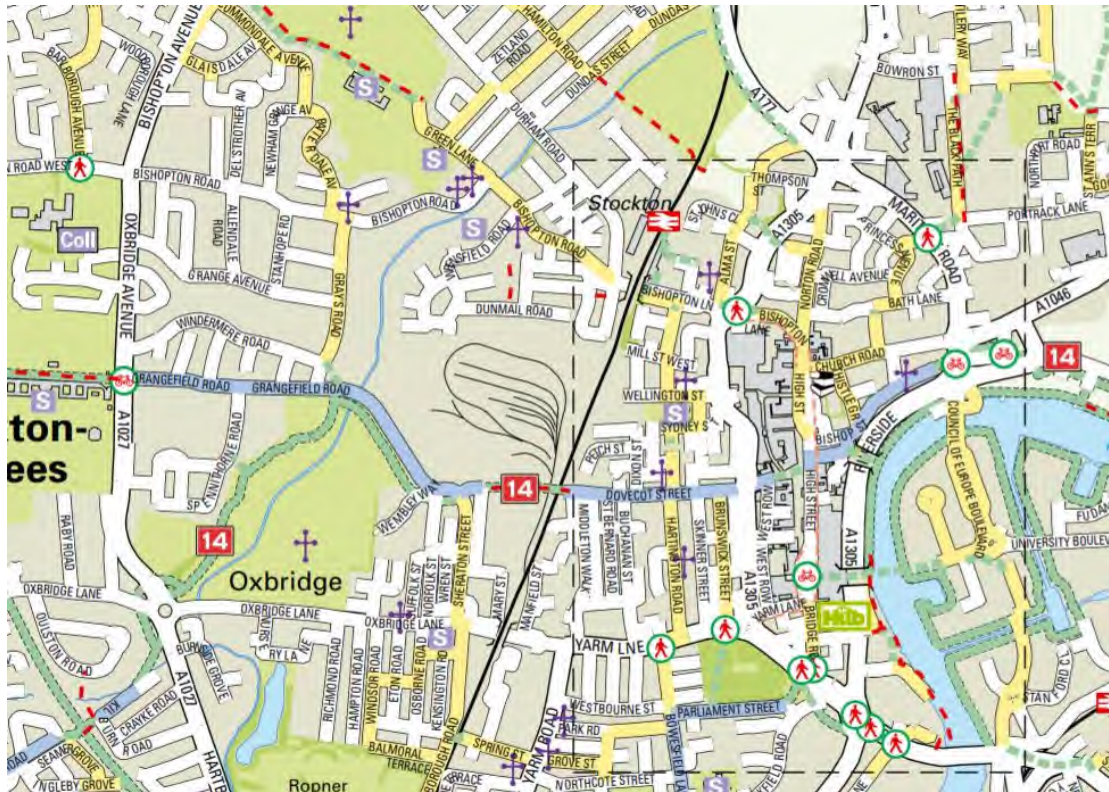


3.10 Existing Provision for Cyclists

- 3.10.1 The development is located to greatly benefit from cycle provision. The exert from Stockton Borough Council's Cycle Map (Figure 4) identifies that NCN14 will run through the middle of the development and connect to the town centre via the underpass. NCN14 will run along the north western boundary of the development and then connect to NCN1.
- 3.10.2 NCN Route 14 runs from Darlington, through Stockton, Hartlepool, Durham, and South Shields. NCN 1 runs towards Middlesbrough in the east and Sunderland in the North. A

number of local cycle routes, including advisory cycle routes exist within the vicinity of the development.

Figure 4. Stockton Cycle Map



3.10.3 The review of the sustainable transport provision is considered to demonstrate that the development is located in a very sustainable area in terms of its proximity to the town centre, access to public transport and walking and cycling routes.

3.11 Highway Safety Records

3.11.1 Personal injury collision (PIC) records have been obtained from www.crashmap.co.uk for the most recently available three-year period, from 1st January 2015 to 31st December 2017. PICs only include collisions involving human injury or death.

3.11.2 This section of the report presents a review of this data for the TA study area, which includes Grange Lane from the junction with Oxbridge Avenue until Tynedale Street, Tynedale Street until Sheraton Street, and Sheraton Street until the junction with Oxbridge Lane.

3.11.3 There have been 2 PICs recorded across the TA study area over the three-year assessment period. Table 2 provides a summary of these by collision severity.

Table 2. Road Accident Data by Severity

YEAR	SEVERITY			TOTAL
	Slight	Serious	Fatal	
2015	1	0	0	2
2016	1	0	0	0
2017	0	0	0	0
TOTAL	2	0	0	2

3.11.4 As can be seen, of the 2 reported collisions, 2 resulted in 'slight' injuries. There have been no serious or fatal PICs. There have been no collisions reported along Grangefield Road and Tynedale Street in the immediate vicinity of the site.

3.11.5 Two collisions resulted in slight injury. Both occurred in the vicinity of the Sheraton Street and Oxbridge Lane junction. They occurred in different locations at the junction. One collision involved two vehicles and the second one vehicle and one pedestrian. There is no considered to be consistent causation factors between the two vehicles.

3.12 Summary

3.12.1 The review of collision data does not identify any incidents or clusters which raise concern with regard to the proposed development.

4. SUSTAINABLE TRAVEL ACCESSIBILITY

4.1 Local Travel Patterns

- 4.1.1 In order to gain an understanding of how existing residents in the vicinity of the site currently choose to travel to work, a review of the 2011 Census dataset Method of Travel to Work for E33001621 and E33001647 has been undertaken. These areas incorporate the site and existing residential developments surrounding the site
- 4.1.2 Figure 5 shows the extent of E33001621, Figure 6 shows the extent of E33001647 and Table 3 presents the local travel mode split and calculates the average of this across both areas.

Figure 5. E33001621 Boundary



Source: www.nomisweb.co.uk

Figure 6. E33001647 Boundary

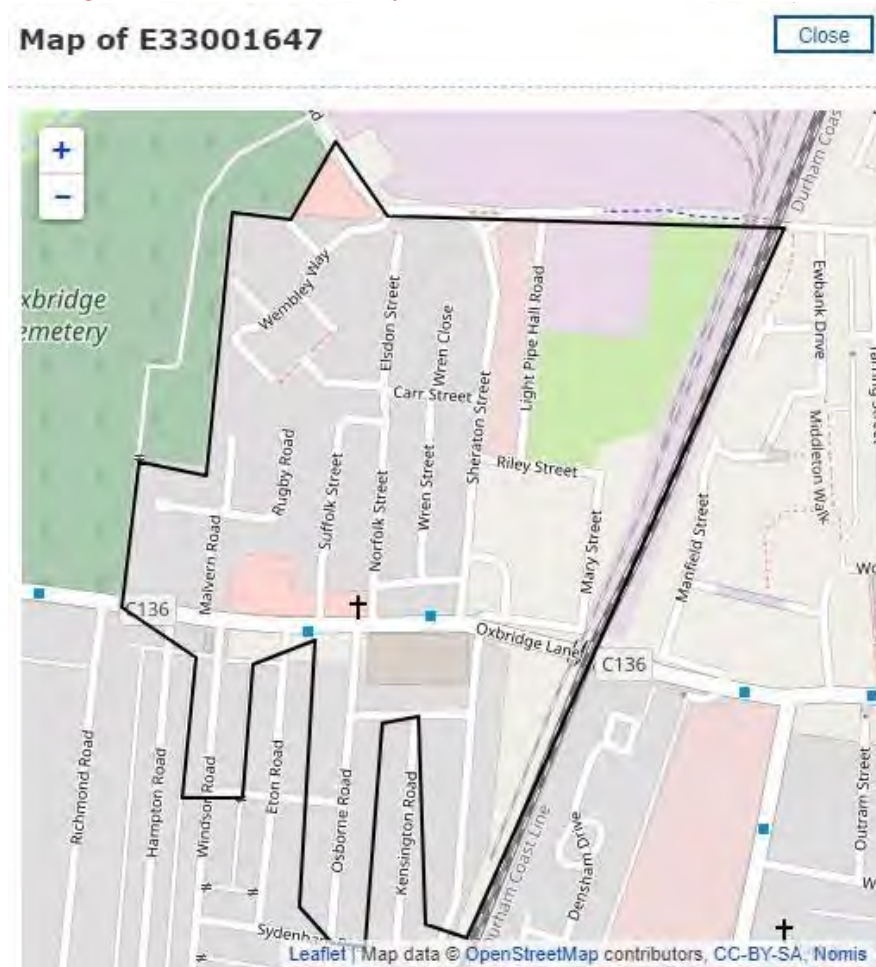


Table 3. J2W Modal Split

METHOD OF TRAVEL TO WORK	E33001621		E33001647		TOTAL	
	Number:	%	Number:	%	Number:	%
Underground, metro, light rail or tram	0	0%	2	1%	2	0%
Train	2	0%	2	1%	4	0%
Bus, minibus or coach	44	8%	15	6%	59	7%
Taxi	3	1%	3	1%	6	1%
Motorcycle, scooter or moped	3	1%	2	1%	5	1%
Driving a car or van	381	71%	163	62%	544	68%

METHOD OF TRAVEL TO WORK	E33001621		E33001647		TOTAL	
Passenger in a car or van	33	6%	19	7%	52	6%
Bicycle	10	2%	4	2%	14	2%
On foot	61	11%	50	19%	111	14%
Other method of travel to work	3	1%	2	1%	5	1%

4.1.3 Table 3 shows that a total of approximately 30% of trips to work are by sustainable modes of travel, with a high proportion of walking trips at 14% of all travel to work trips.

4.2 Walking Accessibility

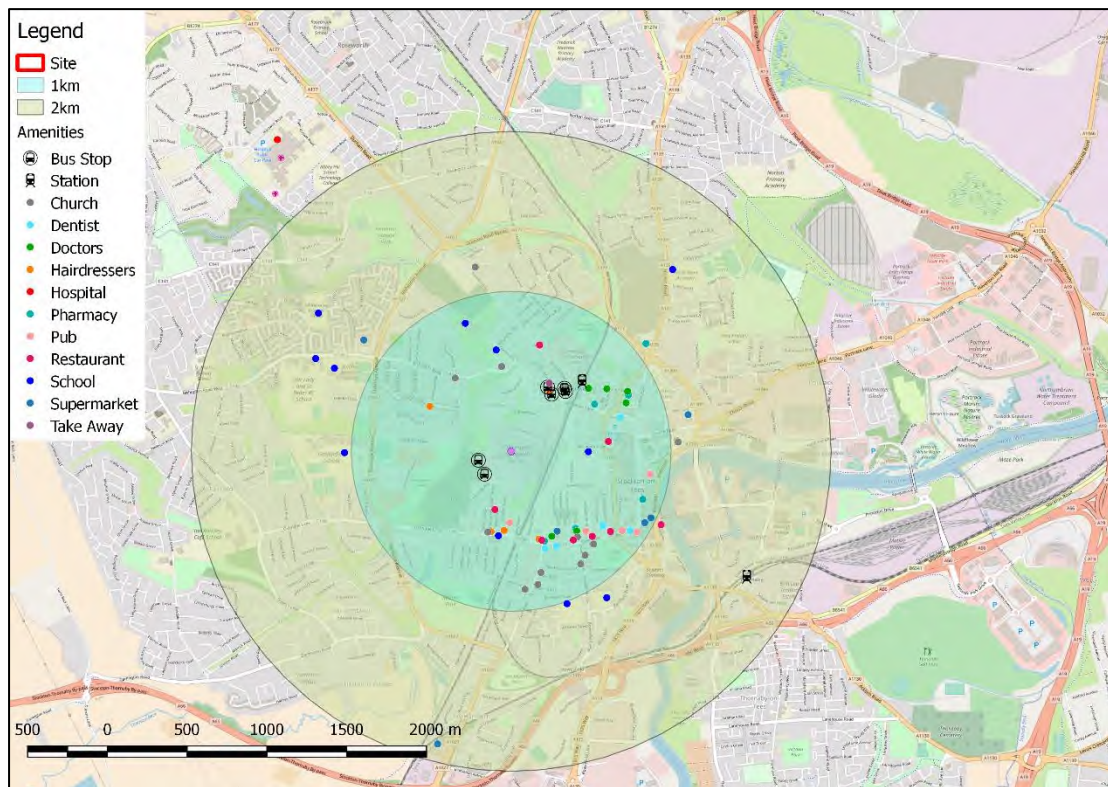
4.2.1 Accessibility standards for new developments are set out in the Chartered Institute for Highways and Transportation (CIHT) guidance document 'Providing for Journeys on Foot' (2000).

4.2.2 The CIHT guidance recognises that this "varies by location, individual circumstances and various factors including:

- An individual's fitness and physical ability
- Encumbrances, e.g. shopping or pushchair
- Availability, cost and convenience of alternative transport modes
- Time savings
- Journey purpose
- Personal motivation
- General deterrent to walking".

4.2.3 The guidance goes on to suggest acceptable walking distances for pedestrians without mobility impairments based on an average walk speed of 1.4 metres/s. For commuting and school journey purposes it prescribes 1,000 metres as an 'acceptable' walk distance and 2,000 metres as the 'preferred maximum' walk distance.

Figure 7. Site Accessibility Plan



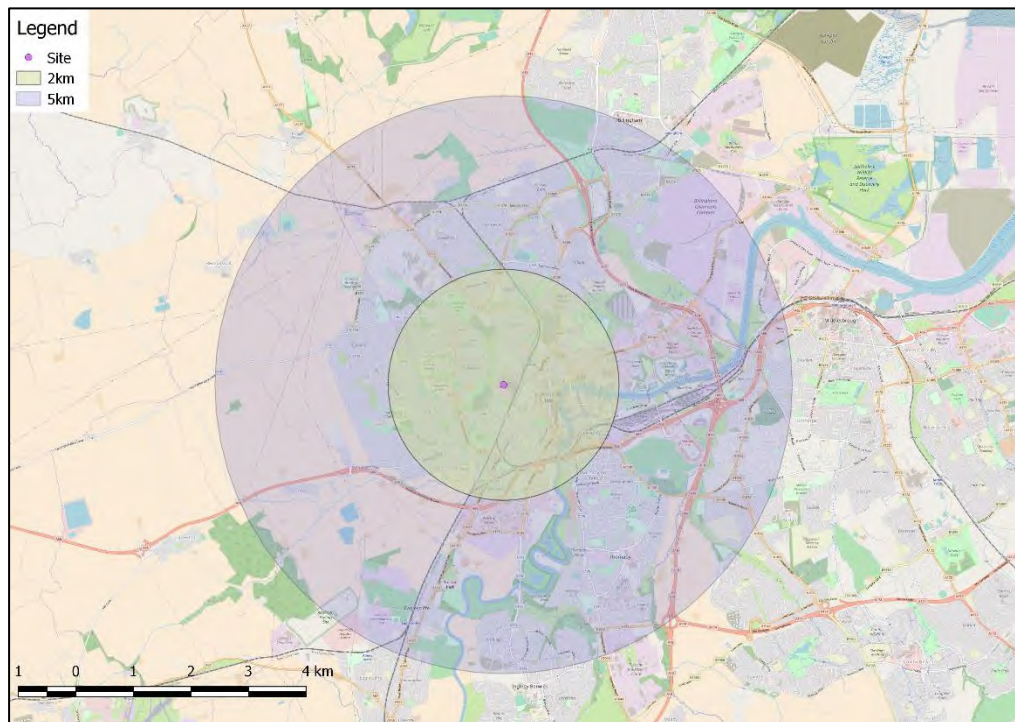
Source: GIS/OS Data

- 4.2.4 **Figure 7** is an accessibility plan showing the proximity of the proposed residential site in relation to local amenities, including walking isochrones for 'acceptable' and 'preferred maximum' walk distances.
- 4.2.5 The accessibility plan demonstrates that the proposed residential site is within an 'acceptable' walk distance of a number of healthcare, educational, religious and other amenities, with Stockton town centre within an 'acceptable' walking distance. This includes Stockton rail station. Further afield are a number of additional healthcare, educational, religious and other amenities within the 'preferred maximum' walk distance of 2,000 meters. This includes Thornaby rail station. Just outside of the 'preferred maximum' walk distance of 2000 meters is North Tees Hospital.

4.3 Cycle Accessibility

- 4.3.1 Based on the acceptable and preferred maximum walk distances and the associated travel times, it is assumed that those travelling by bicycle would have similar travel time thresholds. As such, **Figure 8** has plotted 2km and 5km cycle isochrones from the proposed residential site.

Figure 8. 2km and 5km cycle isochrones



Source: GIS/OS Data

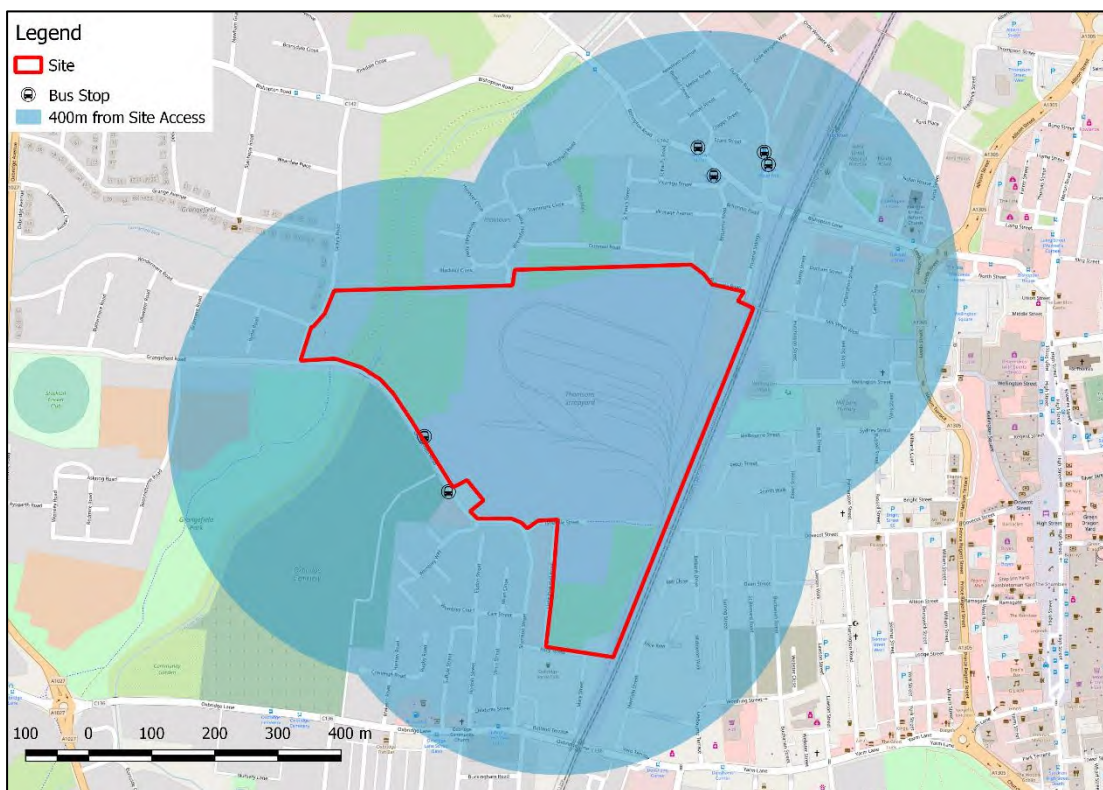
- 4.3.2 As can be seen, the whole of Stockton urban area is accessible within less than 20 minutes travel time by bicycle.

4.4 Public Transport Accessibility

- 4.4.1 As noted previously, there is a pair of bus stops on Grangefield Road along the site frontage. The northbound bus stop is located opposite the ambulance station and provides services towards Newham Grange and Hardwick, the southbound bus stop is located adjacent to the site entrance and provides services to Middlesbrough, Stainton and Stockton. The stops have direct frontage access to the western boundary of the site.
- 4.4.2 Additional bus stops can be found on Bishopton Road, with the westbound stop providing services towards Hardwick and Stillington and the eastbound stop providing services towards Middlesbrough and Stockton. Another pair of bus stops are located on Durham Road, within 400m of the northern pedestrian access to the site. Services from the southbound stop are available to Ingleby Barwick, Thornaby, Stockton, Middlesbrough and Port Clarence, while services northbound from this stop are available to Peterlee, Hardwick, Newham Grange and Roseworth.
- 4.4.3 All bus stops are located within a 400m walk distance of the application site. This is in accordance with the best practice guidance provided in 'Guidelines for Planning for Public Transport in Developments' (1999). This is illustrated in **Figure 9**.

Figure 9. Bus Stop Locations

Source: GIS/OS Data/Site Visit



4.5 Summary

- 4.5.1 On review of the information presented above and in Section 3 (Existing Conditions), it is considered that the site location is very sustainable in terms of accessibility by alternative modes to the private car.
- 4.5.2 The proposed residential site is located within acceptable walk distances to the nearest bus stops, which provide regular services to Stockton and further afield to commutable destinations such as Middlesbrough and Thornaby.
- 4.5.3 A Travel Plan has been prepared alongside this TA and aims to:
- Raise the level of awareness amongst future residents as to the full range of transport options available to them for their journey to and from work, particularly alternatives to single occupancy car travel;
 - Reduce the travel impact of all users of the site, including residents and their visitors;
 - Improve the health and well-being of residents through promotion of healthy transport modes such as walking and cycling; and
 - To maximise the use of sustainable travel modes for day-to-day journeys.

5. PROPOSED DEVELOPMENT

5.1 Overview

- 5.1.1 This chapter of the TA introduces and outlines the development proposals for the site. It includes a description of the proposed land uses, access and servicing arrangements and a review of car and cycle parking provision.
- 5.1.2 The proposed development is an outline planning application for 600 dwellings with associated infrastructure.

5.2 Vehicular access

- 5.2.1 The proposal includes two points of access to serve the residential development.
- 5.2.2 The primary vehicular access will be from Grangefield Road and will be located at the site of the existing primary site access. The junction will take the form of a standard priority junction.
- 5.2.3 A secondary site access will be provided from Tynedale Street. This will include the extension of the existing road into the development site. The priority will change with Light Pipe Hall Road being controlled by a give way marking.
- 5.2.4 The proposed site access layout can be seen on **Drawing Ref: 18C59_SA01** in **Appendix C**.
- 5.2.5 A further emergency access will be provided to the north east of the development accessed via Britannia Road. This access will be controlled by a lockable bollard to limit vehicular access to the emergency services only. This route will also act as a pedestrian/cycle route connecting to the bridge over the railway and towards the town centre.

5.3 Pedestrian / Cycle provision

- 5.3.1 The primary access point will be provided with footways internal to the development connecting to Grangefield Road. Footways will be provided adjacent to all carriageways throughout the development.
- 5.3.1 As part of the development it is proposed to construct a 3m wide shared footway / cycleway along the route of the existing NCN14 route from Tynedale Street via the existing underpass and towards the town centre. The pedestrian/cycle route will cross the southern spur of the development internal road network. This will be achieved by providing a raised table to slow vehicles down.
- 5.3.2 As outlined a further pedestrian/cycle route, incorporated into the design for an emergency access point, will be provided to the north east of the development connecting to the bridge over the railway and towards the town centre.
- 5.3.3 The road network internal to the development will be designed to encourage slow speeds.

5.4 Car & Cycle Parking

- 5.4.1 Owing to the outline nature of the residential planning application, details of car and cycle parking have not been confirmed. Details relating to the proposed level and types of parking will be confirmed as part of future submissions and will be in accordance with the parking standards at that time.

6. TRIP GENERATION AND ASSIGNMENT

6.1 Introduction

- 6.1.1 This chapter provides details on the methodology used to calculate the number of person and vehicle trips the development will generate and how these trips will be distributed on the highway network. The following process utilises the methodology outlined in the scoping note included in **Appendix A**.

6.2 Trip Generation

- 6.2.1 An assessment of the potential person and vehicle trip generation associated with the proposed residential development has been derived from the TRICS 7.5.1 database for residential use, using the Mixed Private House category.
- 6.2.2 The proposed trip rates identified in **Table 1** reflect sites of a character and location to the site proposed (South East, East Anglia, East Midlands, Yorkshire & North Lincolnshire, North and Edge of Town Centre, Suburban Area and Edge of Town). The person trip rates and resultant person trips are shown in **Table 4**. The full TRICS output is included in **Appendix D**.
- 6.2.3 Person trips have been converted into vehicle trips using the 2011 Journey to Work Census Data for people travelling to work for the adjacent MSOAs (E33001621 & E33001647). The proportion of trips by car driver is 68%. The resultant vehicle trips are also shown in **Table 4**.

Table 4. Development Trips

	AM PEAK		PM PEAK	
	Arrivals	Departures	Arrivals	Departures
Trip Rate (per dwelling)	0.189	0.668	0.51	0.256
Person Trips (600 dwellings)	113	401	306	154
Vehicle Trips (600 dwellings)	77	272	208	104

6.2.4 Netting Off

- 6.2.5 The site has a consented use which currently generates trips or could be brought back into use without the need for planning permission. The site area measures 41,193 sq. metres, with the vast majority (93%) being hard standing/lay down. It is intended these trips are netted off from the proposed trip generation identified in **Table 4**.
- 6.2.6 SYSTRA has undertaken an assessment of the potential person trip generation associated with the consented uses using trip rates derived from the TRICS 7.5.1 database for employment

use, using the Industrial Unit category. Site area (in hectares) has been used given the nature of the existing use and the size of the site.

- 6.2.7 The proposed trip rates identified in **Table 5** reflect sites of a character and location to the site proposed (South East, East Anglia, East Midlands, Yorkshire & North Lincolnshire, North and Edge of Town Centre, Suburban Area and Edge of Town). The person trip rates and resultant person trips are shown in **Table 5**.
- 6.2.8 Person trips were converted into vehicle trips using the 2011 Journey to Work Census Data for people travelling from work for the adjacent MSOAs (E33001621 & E33001647). The proportion of trips by car driver is 68%. The resultant vehicle trips are also shown in **Table 5**.

Table 5. Netted Off Trips

	AM PEAK		PM PEAK	
	Arrivals	Departures	Arrivals	Departures
Trip Rate (per Hectare)	11.364	5.909	0.91	6.818
Person Trips (4.1193 Hectares)	47	24	4	28
Vehicle Trips (4.1193 Hectares)	31	16	3	19

- 6.2.9 The resultant vehicle trip generation is shown in **Table 6**.

Table 6. Vehicle Trip Generation

	AM PEAK		PM PEAK	
	Arrivals	Departures	Arrivals	Departures
Development Trips (600 dwellings)	77	272	208	104
Netted Off Trips (4.1194 Hectares)	31	16	3	19
Total Development Vehicle Trips	46	256	205	85

6.3 Development Trip Distribution

- 6.3.1 The development trip distribution has been determined using 2011 census data for the workplace destinations of the residents for the MSOAs stated above. These have been assigned to the road network based upon local knowledge of the surrounding road network and Google journey time information. The assignment routes are as follows:

- Route Assignment 1 - O/D Oxbridge Avenue North;
- Route Assignment 2 - O/D Oxbridge Avenue South;
- Route Assignment 3 - O/D Oxbridge Lane East;
- Route Assignment 4 - O/D Oxbridge Lane West;
- Route Assignment 5 - O/D Grays Road.

6.3.2 The outcome can be seen in **Table 7**.

Table 7. Trip Distribution & Assignment

DESTINATION	PERCENTAGE OF TRIPS TRAVELLING TO DESTINATION	ROUTE ASSIGNMENT				
		1	2	3	4	5
Central Stockton	32%			27%		5%
West Stockton	11%	8%	2%		1%	
Middlesbrough	12%			12%		
North-east Stockton	11%	9%				2%
Immediate vicinity of the site	8%	2%		2%	2%	2%
South Stockton	6%		4%	2%		
Darlington	4%		2%		2%	
Redcar and Cleveland	4%			4%		
County Durham	3%	1.5%			1.5%	
Hartlepool	2%	2%				
Hambleton	2%			2%		
Sunderland	1%	1%				
Newcastle upon Tyne	1%	1%				
Other	3%	0.6%	0.6%	0.6%	0.6%	0.6%
Total	100%	25.1%	8.6%	49.6%	7.1%	9.6%

7. IMPACT ASSESSMENT

7.1 Data Collection

7.1.1 Traffic Surveys

7.1.2 Classified junction turning count surveys were undertaken on the 16/05/2018 at the following junctions:

- Oxbridge Lane / Sheraton Street junction
- Oxbridge Avenue / Grangefield Road signalised junction
- Grays Road / Grangefield Road junction
- Grays Road / Bishopton Road junction

7.1.3 These turning counts allowed for the calculation of link flows including at the proposed site access location.

7.1.4 Assessment Periods & Years

7.1.5 The traffic impact assessment is based on the weekday morning and evening peak hours of the local highway network. Typically, this aligns with the highest periods for vehicle trip generation of residential developments associated with regular commuter journeys and is therefore considered to present the worst case. The weekday peak hours of the local highway network are as follows:

- AM Peak: 08:00 - 09:00
- PM Peak: 16:30 – 17:30

7.1.6 This TA assesses the impact of the proposed development at the Application Year (2018) and the Design Year (2023), i.e. 5 years after the date of submission of the planning application.

7.1.7 Full Traffic Flow Diagrams are included in **Appendix E**.

7.1.8 Committed developments

7.1.9 As outlined in the scoping document, there are no committed developments included within the assessment.

7.1.10 Assessment scenarios

7.1.11 An overview of the scenarios considered in this assessment is summarised in Table 8.

Table 8. Operational assessment scenarios

Assessment Year	Scenario	
	Base	Base + Development
2018	AM, PM	AM, PM

2023	AM, PM	AM, PM
------	--------	--------

7.1.12 Background Traffic Growth

7.1.13 The 2018 baseline traffic flows have been factored to the future assessment year using local traffic growth factors from the National Transport Model (NTM) datasets modified in the Trip End Model Presentation Program (TEMPro).

7.1.14 The geographical Mid-layer Super Output Area (MSOA) 'Stockton 012' has been chosen as the area definition. The alternative assumptions tab has been used to remove the housing provision associated with the proposed development. The growth factors for weekday AM and PM peak periods is provided in **Table 9**.

Table 9. TEMPRO / NTM local traffic growth factors – Northumberland 025 MSA

GROWTH PERIOD	TRAFFIC GROWTH	
	AM Peak	PM Peak
2018 – 2023	1.0498	1.0409

7.2 Modelling Assessment

7.2.1 The following junctions have been subjected to a modelling assessment:

- Junction 1 - Primary Site Access / Grangefield Road – priority junction;
- Junction 2 - Oxbridge Lane / Sheraton Street junction – priority junction;
- Junction 3 - Oxbridge Avenue / Grangefield Road junction – traffic signals;
- Junction 4 - Grays Road / Grangefield Road junction – priority junction; and
- Junction 5 - Grays Road / Bishopton Road junction – priority junction.

7.2.2 The development is proposing two access points, however to ensure a robust assessment, all of the development trips will be assigned to the primary site access.

7.2.3 The assessments have been undertaken using TRL industry-standard modelling software Junctions 9 (PICADY) for the priority junctions and LINSIG3 for the signalised junction.

7.2.4 PICADY models return results in RFC (Ratio of Flow to Capacity) and mean maximum queues in each 15-minute time segment, measured in the number of passenger car units (PCUs). Theoretically, RFC values between 0.00 and 0.85 indicate good operating conditions; values of between 0.85 and 1.00 represent variable operation (i.e. queues building at the junction resulting in increased vehicle delay moving through the junction); values in excess of 1.00 represent overloaded conditions.

7.2.5 LINSIG models return results in DoS (Degree of Saturation) which is a percentage calculated from the demand flow divided by the capacity. A DoS between 0% and 90% is considered as representing stable operating conditions, values between 90% and 100% represents a constrained scenario where queues start to build up at the junction and increase vehicle

delay. DoS beyond 100% represents overloaded conditions and a junction working beyond theoretical capacity. The PRC refers to the Practical Reserve Capacity for the junction as a whole. A positive number indicates the spare capacity with the junction and a negative number indicates that there is no spare capacity.

7.2.6 Full modelling outputs for all junctions are provided at **Appendix F**.

7.2.7 Junction 1 – Primary Site Access / Grangefield Road Junction

7.2.8 **Table 10** summarises the results of the model for the site access junction. Only the with development scenario is provided.

Table 10. Junction 1 – Modelling Results Summary

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	Junction 1 - 2023 Base + Development					
Site Access to Grangefield Road South	0.3	7.55	0.25	0.1	5.64	0.08
Site Access to Grangefield Road North	0.3	9.70	0.25	0.1	8.48	0.09
Grangefield Road South to Site Access	0.1	6.57	0.25	0.3	7.77	0.22

7.2.9 As shown in **Table 10** the junction operates well within capacity with the highest RFC reported as 0.25 in the 2023 AM Base + Development Scenario. This is a worst case assessment assuming that all development traffic utilises the primary site access.

7.2.10 Junction 2 – Oxbridge Lane / Sheraton Street Junction

7.2.11 **Table 11** summarises the results of the model for the Oxbridge Lane / Sheraton Street / Marlborough Street junction.

Table 11. Junction 2 – Modelling Results Summary

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	Junction 2 - 2023 Base					
Marlborough Street to All Movements	0.1	10.28	0.11	0.1	10.96	0.10
Oxbridge Lane East to Sheraton Street	0.5	9.95	0.33	0.9	9.09	0.44
Sheraton Street to Oxbridge Lane East	1.2	16.99	0.53	0.5	9.95	0.32
Sheraton Street to Oxbridge Lane West	0.2	22.31	0.16	0.3	21.73	0.26
Junction 2 - 2023 Base + Development						
Marlborough Street to All Movements	0.1	11.21	0.12	0.1	12.34	0.11
Oxbridge Lane East to Sheraton Street	0.6	10.61	0.38	2.0	11.73	0.62
Sheraton Street to Oxbridge Lane East	6.5	64.86	0.90	0.7	12.60	0.43
Sheraton Street to Oxbridge Lane West	1.4	114.93	0.64	0.6	32.31	0.37

7.2.12 As shown in **Table 11** the junction operates within capacity with the highest RFC on the Sheraton Street to Oxbridge Lane South movement reported as 0.90 in the 2023 AM Base + Development Scenario.

7.2.13 It is noted that delay has increased on the movements from Sheraton Street, particularly the right turning traffic, as a result of the increase in development traffic. In reality it is anticipated that the right turning development traffic assigned to use that route (7.1% or 18 trips) or right turning base traffic would instead choose to reassign to the Oxbridge Avenue / Grangefield Road traffic signals junction (junction 3) to access the Oxbridge Lane / Oxbridge Avenue roundabout. This would substantially reduce the delay on both turning movements from Sheraton Street.

7.2.14 To demonstrate this a sensitivity test has removed 50% (9) and 100% (18) of the development trips from this right turning movement. In reality some of the base traffic may also choose to

reassign but to ensure a robust assessment this has not been undertaken. This results in the results shown in **Table 12**.

Table 12. Junction 2 – Sensitivity Test Modelling Results Summary

	AM		
	Queue (PCU)	Delay (s)	RFC
50% reduction in right turning development traffic (9 trips)			
Sheraton Street to Oxbridge Lane East	5.4	53.43	0.86
Sheraton Street to Oxbridge Lane West	0.8	77.19	0.47
100% reduction in right turning development traffic (18 trips)			
Sheraton Street to Oxbridge Lane East	4.6	45.91	0.84
Sheraton Street to Oxbridge Lane West	0.5	58.94	0.33

7.2.15 This is considered to demonstrate that through a very minor reassignment of the traffic, any delay at the junction is substantially reduced.

7.2.16 Junction 3 – Oxbridge Avenue / Grangefield Road Junction

7.2.17 **Table 13** summarises the results of the model for the Oxbridge Avenue / Grangefield Road junction. The junction has a loop controlled cycle crossing allowing for east/west movements across the junction. The model has allowed for this to be triggered every third cycle i.e. every 270 seconds, this equates to 13.3 calls in one hour period. From viewing the videos used in the survey, this far exceeds the number of cyclists crossing the junction which was a nominal number per hour. The modelling results are therefore considered to be extremely robust.

Table 13. Junction 3 – Modelling Results Summary

		AM		PM	
		Mean Max Queue (PCU)	Deg Sat (%)	Mean Max Queue (PCU)	Deg Sat (%)
		Junction 3 - 2023 Base			
Oxbridge North	Avenue	12.7	57.5	17.6	69.4
Grangefield Road		3.5	57.4	4.2	67.3
Oxbridge South	Avenue	11.3	53.0	14.9	62.2
PRC Over All Lanes %		56.5		29.7	
Junction 3 - 2023 Base + Development					
Oxbridge North	Avenue	13.5	64.9	19.8	75.6
Grangefield Road		6.2	68.1	5.6	76.3
Oxbridge South	Avenue	11.9	59.9	15.6	66.1
PRC Over All Lanes %		32.2		18	

7.2.18 As shown in **Table 13** the junction operates well within capacity with the highest degree of saturation on the Oxbridge North arm reported as 75.6% in the 2023 PM Base + Development Scenario. As stated, given the inclusion of cycle crossing at every third stage, it is considered that this junction has been modelled in a very robust manner.

7.2.19 This is considered to support the sensitivity test outlined in **Table 12** that vehicles could choose to utilise this junction to access the south and west rather than utilise junction 2.

7.2.20 Junction 4 – Grays Road / Grangefield Road Junction

7.2.21 **Table 14** summarises the results of the model for the Grays Road / Grangefield Road junction.

Table 14. Junction 4 – Modelling Results Summary

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	Junction 4 - 2023 Base					
Grays Road to All Movements	0.4	7.63	0.28	0.3	6.97	0.20
Grangefield East to Grays Road	0.2	6.03	0.18	0.4	6.334	0.26
Junction 4 - 2023 Base + Development						
Grays Road to All Movements	0.4	7.89	0.29	0.3	7.47	0.24
Grangefield East to Grays Road	0.4	6.01	0.24	0.5	6.57	0.29

7.2.22 As shown in **Table 14** the junction operates well within capacity with a highest RFC of 0.29 on different movements in the 2023 AM Base + Development Scenario.

7.2.23 Junction 5 – Grays Road / Bishopston Road

7.2.24 **Table 15** summarises the results of the model for the Grays Road / Bishopston Road junction.

Table 15. Junction 5 – Modelling Results Summary

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	Junction 5 - 2023 Base					
Grays Road to All Movements	0.2	9.84	0.20	0.2	9.96	0.17
Bishopston Road West to Grays Road	0.1	7.08	0.13	0.1	7.62	0.13
Junction 5 - 2023 Base + Development						
Grays Road to All Movements	0.3	10.41	0.26	0.2	10.17	0.19

Grangefield East to Grays Road	0.1	7.09	0.13	0.1	7.69	0.13
-----------------------------------	-----	------	------	-----	------	------

- 7.2.25 As shown in **Table 15** the junction operates well within capacity with a highest RFC of 0.26 on Grays Road in the 2023 AM Base + Development Scenario.

7.3 Impact Assessment Summary

- 7.3.1 This section has summarised the junction modelling exercise which has been undertaken to assess the impact of the proposed development.
- 7.3.2 The modelling assessment has demonstrated that no junctions operate in excess of their theoretical capacity in Base + Development scenario.
- 7.3.3 The impact of the development is not considered to cause a severe impact in accordance with NPPF.

8. SUMMARY

- 8.1.1 SYSTRA has prepared this Transport Assessment and the accompanying Residential Travel Plan on behalf of TJ Thomson & Son Ltd to assess the traffic and transportation impacts associated with the development of 600 dwellings on the land at the existing Millfield Works, Stockton-on-Tees
- 8.1.2 With reference to the National Planning Policy Framework, the site is considered to be in a very sustainable location and measures will be built into the development to enhance connections to sustainable transport provision.
- 8.1.3 The road safety record of the highway network within the study area has been examined and no significant road safety problems or trends have been identified.
- 8.1.4 Trip rates have been obtained from the industry standard TRICS database for Privately Owned Dwelling, and have been used to establish a trip generation profile for the proposed development.
- 8.1.5 Standalone junction modelling assessments have been undertaken for four off-site junctions and the proposed site access junction. The junction modelling exercise has demonstrated that the surrounding highway network, can accommodate the additional traffic generated by the development without significant queuing or delay.

8.2 CONCLUSION

- 8.2.1 Based on the above and with reference to paragraph 32 of the NPPF, there are considered to be no reasonable grounds for refusal of the proposed redevelopment on transportation grounds as the impacts of the proposed development are not “severe”.

APPENDICES

Residential Development, Millfield Works,
Stockton-on-Tees

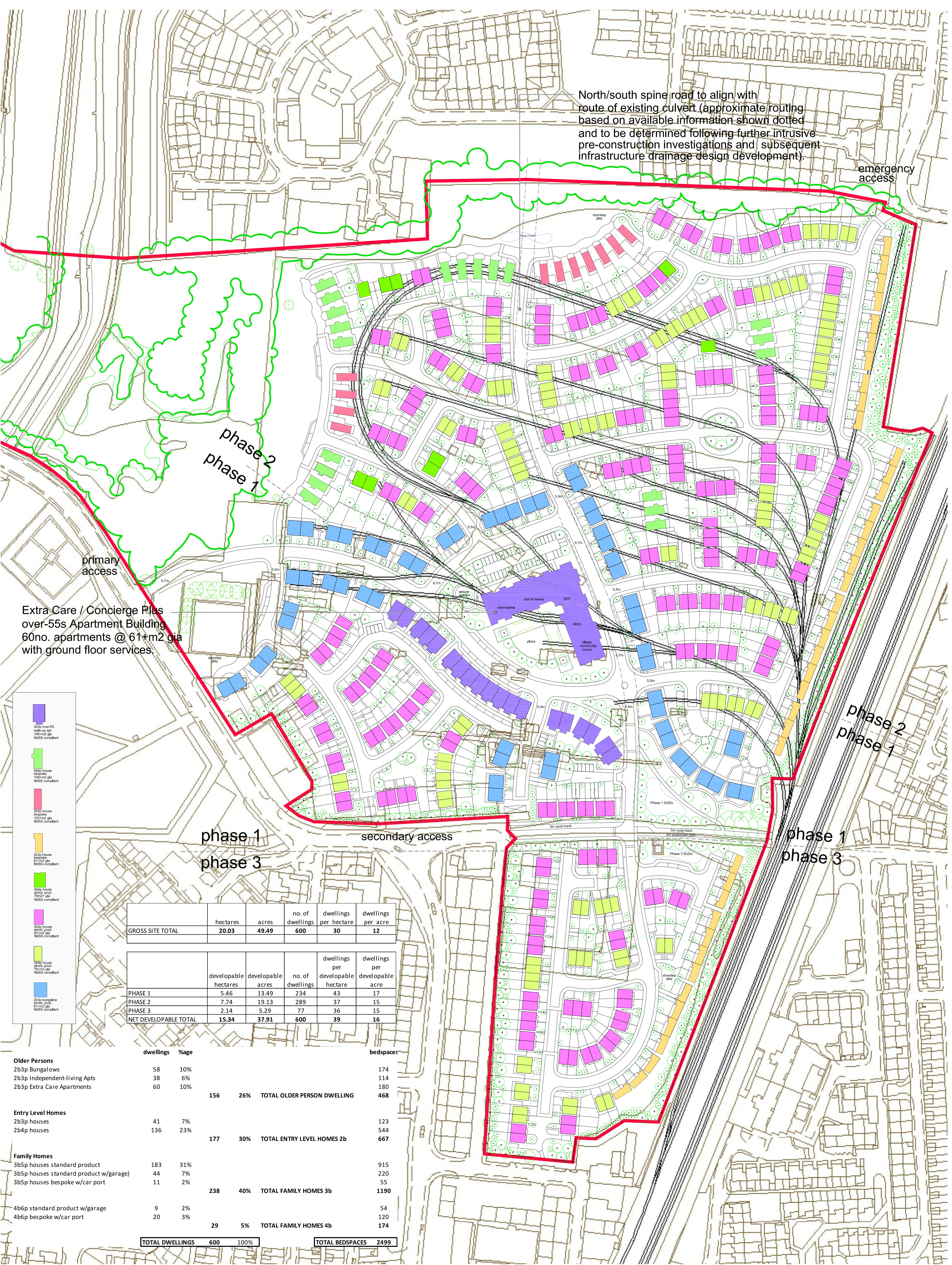
Transport Assessment

Draft Report

18C59/001

21/06/2018

APPENDIX A – Site Plan



North/south spine road to align with route of existing culvert (approximate routing based on available information shown dotted and to be determined following further intrusive pre-construction investigations and subsequent infrastructure drainage design development).

emergency access

phase 2
phase 1

primary access

Extra Care / Concierge Plus over-55s Apartment Building
60no. apartments @ 61+m2 gfa with ground floor services.

phase 1
phase 3

secondary access

phase 2
phase 1

phase 1
phase 3

- 2b3p over-55s
wellness apt
108+m2 gfa
NHS compliant
- 4b6p house
bespoke
108+m2 gfa
NHS compliant
- 3b5p house
bespoke
102+m2 gfa
NHS compliant
- 2b3p house
standard product
81+m2 gfa
NHS compliant
- 4b6p house
standard product
71+m2 gfa
NHS compliant
- 3b5p house
standard product
92+m2 gfa
NHS compliant
- 2b3p house
standard product
71+m2 gfa
NHS compliant
- 2b3p bungalow
standard product
61+m2 gfa
NHS compliant

	hectares	acres	no. of dwellings	dwellings per hectare	dwellings per acre
GROSS SITE TOTAL	20.03	49.49	600	30	12

	developable hectares	developable acres	no. of dwellings	dwellings per developable hectare	dwellings per developable acre
PHASE 1	5.46	13.49	234	43	17
PHASE 2	7.74	19.13	289	37	15
PHASE 3	2.14	5.29	77	36	15
NET DEVELOPABLE TOTAL	15.34	37.91	600	39	16

	dwellings	%age		bedspaces
Older Persons				
2b3p Bungalows	58	10%		174
2b3p Independent-living Apts	38	6%		114
2b3p Extra Care Apartments	60	10%		180
	156	26%	TOTAL OLDER PERSON DWELLING	468
Entry Level Homes				
2b3p houses	41	7%		123
2b4p houses	136	23%		544
	177	30%	TOTAL ENTRY LEVEL HOMES 2b	667
Family Homes				
3b5p houses standard product	183	31%		915
3b5p houses standard product w/garage	44	7%		220
3b5p houses bespoke w/car port	11	2%		55
	238	40%	TOTAL FAMILY HOMES 3b	1190
4b6p standard product w/garage	9	2%		54
4b6p bespoke w/car port	20	3%		120
	29	5%	TOTAL FAMILY HOMES 4b	174

TOTAL DWELLINGS	600	100%	TOTAL BEDSPACES	2499
-----------------	-----	------	-----------------	------

0 5 10 20
m

APPENDIX B – Scoping

TRAFFIC AND TRANSPORT - SCOPING NOTE

1.1 Introduction

- 1.1.1 The purpose of this Scoping Note is to define the methodology for identifying the anticipated transport impacts of the proposed development at Millfield Works, Stockton. Production of a Transport Assessment is considered appropriate given the scale of the development (circa 550 residential dwellings) and the resultant trip generation.
- 1.1.2 SYSTRA, on behalf of the developer, seeks the approval of Stockton Council Local Highways Authority (LHA) to the Transport Assessment approach set out in this document.
- 1.1.3 The Transport Assessment will be prepared in line with this scoping note and broadly in line with the now superseded Guidance on Transport Assessment (DfT, March 2007). The emphasis on this approach is to maximise access by sustainable options and managing travel behaviour whilst providing safe and adequate access proposals for all modes of transport.
- 1.1.4 SYSTRA welcomes comments from the LHA on the approach outlined in this Scoping Note and asks for written confirmation that the methodology and assumptions set out in this document are agreeable in principle.

1.2 Access Proposals

- 1.2.1 Drawing 107609/001 shows the proposed vehicular site access for the development.
- 1.2.2 The main vehicular site access will be from Grangefield Road. This primary access point will be a priority junction and it is anticipated that this may require a right-turn ghost island facility. This will be confirmed through the impact assessment discussed further below.
- 1.2.3 Alongside this primary access point, it is proposed that an additional secondary emergency vehicular access point is provided. This will be a simple priority T-junction. Three location options for this secondary access are shown on Drawing 107609/001. The developer welcomes feedback from LPA on any preference for the secondary vehicular access. To summarise, options currently being explored are:
 - A new junction connecting to Britannia Road to the north-east of the site;
 - Utilising the existing Tynedale Street / Sheraton Street junction and extending Tynedale Street into the site; or
 - A new junction connecting Riley Street to the south-east of the site.
- 1.2.4 Pedestrian provision will be provided on both new vehicular site accesses. Pedestrian links are available from Stockton town centre to the site. Crossing of the rail line is enabled at two locations near the site; to the south via an underpass and to the north via a bridge over the rail track.

1.3 Scope of Assessment

- 1.3.1 The Transport Assessment will set out the existing transport issues relating to the site, outline the details of the development proposals and assess the associated impact on the local network.

- 1.3.2 SYSTRA will review the accessibility of the site by all modes of transport. Measures to improve accessibility will be identified and implemented as part of the development proposals if appropriate, viable and feasible.

1.3.3 Trip Generation

- 1.3.4 SYSTRA has undertaken an assessment of the potential person trip generation associated with the proposed development using trip rates derived from the TRICS 7.5.1 database for residential use, using the Mixed Private House category. The proposed trip rates identified in **Table 1** reflect sites of a character and location to the site proposed (South East, East Anglia, East Midlands, Yorkshire & North Lincolnshire, North and Edge of Town Centre, Suburban Area and Edge of Town, 08:00 – 09:00 & 17:00 – 18:00). The person trip rates and resultant person trips are shown in **Table 1**.
- 1.3.5 Person trips have been converted into vehicle trips using the 2011 Journey to Work Census Data for people travelling to work for the adjacent MSOAs (E33001621 & E33001647). The proportion of trips by car driver is 68%. The resultant vehicle trips are also shown in **Table 1**.

Table 1. Development Trips

	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
Trip Rate (per dwelling)	0.189	0.668	0.51	0.256
Person Trips (550 dwellings)	104	367	281	141
Vehicle Trips (550 dwellings)	71	250	191	96

1.3.6 Netting Off

- 1.3.7 The site has a number of consented uses which currently generate trips or could be brought back into use without the need for planning permission. The site area measures 41,193 sq. metres, with the vast majority (93%) being hard standing/lay down. It is intended these trips are netted off from the proposed trip generation identified in **Table 1**.
- 1.3.8 SYSTRA has undertaken an assessment of the potential person trip generation associated with the consented uses using trip rates derived from the TRICS 7.5.1 database for employment use, using the Industrial Unit category. Site area (in hectares) has been used given the nature of the existing use and the size of the site. The proposed trip rates identified in **Table 2** reflect sites of a character and location to the site proposed (South East, East Anglia, East Midlands, Yorkshire & North Lincolnshire, North and Edge of Town Centre, Suburban Area and Edge of Town, 08:00 – 09:00 & 17:00 – 18:00). The person trip rates and resultant person trips are shown in **Table 2**.
- 1.3.9 Person trips were converted into vehicle trips using the 2011 Journey to Work Census Data for people travelling from work for the adjacent MSOAs (E33001621 & E33001647). The proportion of trips by car driver is 67%. The resultant vehicle trips are also shown in **Table 2**.

Table 2. Netted Off Trips

	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
Trip Rate (per Hectare)	11.364	5.909	0.91	6.818
Person Trips (4.1193 Hectares)	47	24	4	28
Vehicle Trips (4.1193 Hectares)	31	16	3	19

1.3.10 The resultant vehicle trip generation is shown in **Table 3**.

Table 3. Vehicle Trip Generation

	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
Development Trips (550 dwellings)	71	250	191	96
Netted Off Trips (4.1194 Hectares)	31	16	3	19
Total Development Vehicle Trips	40	234	188	77

1.3.11 Committed Developments

1.3.12 SYSTRA is not aware of any committed developments or highway schemes that need to be considered in the assessment. Should any sites require consideration, we would be grateful if the LHA could advise.

1.3.13 Road Safety

1.3.14 An analysis of the personal injury accident records on the public highway in the vicinity of the site for the most recent three-year period will be undertaken. The study area will include the roads bounding the sites within 100 metres of the site access locations. If the appropriate contact for collision data could be provided that would be helpful.

1.3.15 Development Trip Distribution

A proposed development trip distribution has been determined using 2011 census data for the workplace destinations of the residents for the MSOAs stated above. These have been assigned to the road network based upon local knowledge of the surrounding road network and Google journey time information. The assignment routes are as follows:

- Route Assignment 1 - O/D Oxbridge Avenue North;
- Route Assignment 2 - O/D Oxbridge Avenue South;
- Route Assignment 3 - O/D Oxbridge Lane East;
- Route Assignment 4 - O/D Oxbridge Lane West;
- Route Assignment 5 - O/D Grays Road.

The outcome can be seen in **Table 4**.

Table 4. Trip Distribution & Assignment

Destination	Percentage of trips travelling to destination	Route Assignment				
		1	2	3	4	5
Central Stockton	32%			32%		
West Stockton	11%	8%	2%		1%	
Middlesbrough	12%			12%		
North-east Stockton	11%	9%		2%		
Immediate vicinity of the site	8%	2%		2%	2%	2%
South Stockton	6%			5%	1%	
Darlington	4%		2%		2%	
Redcar and Cleveland	4%			4%		
County Durham	3%	1.5%			1.5%	
Hartlepool	2%	2%				
Hambleton	2%			2%		
Sunderland	1%	1%				
Newcastle upon Tyne	1%	1%				
Other	3%	0.6%	0.6%	0.6%	0.6%	0.6%
Total	100%	25.1%	4.6%	59.6%	8.1%	2.6%

1.3.16 Impact Assessment

1.3.17 Junction capacity assessments are anticipated to be undertaken at the following junctions local to the development:

- Primary site access / Grangefield Road junction (Junctions9);
- Oxbridge Lane / Sheraton Street junction (Junctions9);
- Oxbridge Avenue / Grangefield Road signalised junction (LinSig).

1.3.18 This is considered appropriate given the volume of traffic generated by the development. Following these junctions the traffic is considered to distribute across the network. The resultant vehicle trips through the junctions can be seen in **Table 5** below.

Table 5. Vehicle Trips by Junction

	Route Assignment	AM Peak		PM Peak	
		Arrivals	Departures	Arrivals	Departures
Primary site access / Grangefield Road junction	1, 2, 3, 4, 5	40	234	188	77
Oxbridge Lane / Sheraton Street junction	3 & 4	27	158	127	52
Oxbridge Avenue / Grangefield Road signalised junction	1 & 2	12	69	56	23

1.4 Conclusion

1.4.1 It is anticipated that the assessment will demonstrate that there are no transportation or highways constraints that would preclude the site from residential development.

www.stockton.gov.uk

Economic Growth and Development Services,
Municipal Buildings, Church Road, Stockton on Tees. TS18 1LD
Tel 01642 526022 Fax 01642 526048 DX 60611

App No. 18/0813/PREAPP
Please ask for: Gregory Archer
Direct line: 01642 526052
Email: planningdevelopmentsservices@stockton.gov.uk
Date: 2 May 2018

Dear Jennifer,

Proposal: **Proposed outline for approx 500 dwellings**
Location: **Millfield Works, T J Thompson, Grange Road**

Thank you for the above enquiry on which I would make the following comments.

Traffic Impact

The applicant has provided a 'Traffic and Transport – Scoping Note' which sets out the proposed traffic generation, taking account of the extant usages within the site, and distribution which will be utilised within the Transport Assessment (TA) that will be submitted in support of the proposed application and this is considered to be acceptable.

Site Access / Junction Improvements

The applicant has submitted a drawing (ref. 107609_001) showing the proposed primary site access arrangements which will be taken from Grange Road which, due to the scale of the proposed development, will take the form of a Ghost Island Protected Right Turn. Subject to the design of the proposed junction being compliant with Design Manual for Roads and Bridges (DMRB) and a capacity assessment of the junction, to ensure that it is capable of accommodating queuing vehicles waiting to enter the site in both the AM and PM peak periods, the proposed primary site access is considered to be broadly acceptable.

The applicant has also indicated the locations of three potential secondary access points which are:

- A new junction connecting to Britannia Road to the north east of the site;
- Utilising the existing Tynedale Street / Sheraton Street junction and extending Tynedale Street into the site; or
- A new junction connection Riley Street to the south east of the site.

The Council's preference would be for the secondary access point to be taken from Tynedale Street however, the existing cycleways / PRow would need to be taken in to account when developing this option.

The 'Traffic and Transport – Scoping Note' also sets out that the following junctions will be assessed as a part of the TA:

Sirius Geotechnical Ltd
Russel House
Mill Road
Langley Moor
Durham
DH7 8HJ



INVESTORS
IN PEOPLE



- Primary Site Access / Grangefield Road
- Oxbridge Lane / Sheraton Street junction
- Oxbridge Avenue / Grangefield Road signalised junction.

An assessment of the following junctions will also be required:

- Grays Road / Grangefield Road junction
- Grays Road / Bishopton Road junction
- Secondary Site Access (Tynedale Street)

The TA will have to consider if any highway mitigation is required at the above junctions and provide solutions as necessary. The TA will also have to consider if the proposal would have a wider impact on Elton Interchange and other junctions contained within the Wesam and Norsam traffic models. If an impact is demonstrated and a benefit attributed to this housing proposal by the current highway improvements that have been agreed as part of the modelling, then a financial contribution towards these improvements will be required.

Site Layout / Car Parking

The development should be designed and constructed in accordance with the Council's Design Guide and Specification (Residential and Industrial Estates Development) current edition and Supplementary Planning Document 3: Parking Provision for New Developments (SPD3).

Sustainable Connections

The site is located close to Stockton Town centre and is well served by both bus and cycleway connections. A financial contribution towards the improvement of the Dovecot Street underpass and the pedestrian over bridge of the railway would be requested to facilitate improved links with the town centre.

Construction Management Plan

Any application should include a preliminary Construction Management Plan which would cover the remediation phase of the site and the implementation phases of the development.

Landscape and Visual

Building for Life

The proposed redevelopment of the former scrapyard site for residential uses would be supported. The site should follow a Manual for Streets Approach, as set out on the Council's Design Guide, and be designed in accordance with the principles of 'Building for Life 12'. These principles are used to assess all residential planning applications submitted to SBC. A strategic framework should be prepared to demonstrate how any design should respond to the site's constraints and opportunities taking into account the following themes: movement, placemaking, land use and, green and blue infrastructure. This shall inform a site masterplan, and be used as part of the Design and Access Statement, to explain how the final layout has been achieved.

Landscape Character / Impact

Consideration should be given to the relationship between the site and the surrounding area, particularly the frontage to Grangefield Road and Tynedale Street. Any development proposals should not turn their back on this area. A tree lined avenue with a wide landscaped area as a buffer (as used at the Queensgate development – former Visqueen site) may be appropriate. Careful consideration is also required as to the treatment of boundaries to the industrial units on Light Pipe Hall Road to the south of the site and the remaining scrap yard to the north.

Trees / Hedges and TPOs

Existing site trees should be retained where possible and incorporated into the green infrastructure of the site. The retention of trees shall be informed by a tree survey undertaken in accordance with the recommendations of BS 5837:2012 Trees in relation to design, demolition and construction.

Recommendations

Public Open Space

On-site open space and recreational play facilities will be required, in accordance with the Open Space, Recreation and Landscaping Supplementary Planning Document 2009, and should be incorporated into the development layout providing recreational opportunities for residents of all ages. Open space should form a backbone to the development, and incorporate improved pedestrian and cycle links from Lustrum Beck and Grangefield Park to the west with the town centre to the east. The relationship of the site to the Lustrum Beck corridor and the wider Surface Water Drainage Strategies /SuDS will be another key factor in the Masterplanning of the open space provision.

Contaminated land

Understanding how the development platforms and or creation of on site mounding to cap contaminated material on site must be demonstrated. Any restriction of the recreational use of the public open space or on plant species section due to contamination must be fully considered and if necessary mitigation solutions proposed.

Flood Risk Management

A detailed site specific flood risk assessment (FRA) and drainage strategy (DS) should be submitted at planning application stage; the scope of the FRA and DS should be agreed with the Lead Local Flood Authority (LLFA).

Parts of the proposed development are in a Flood Zone 3 and The Environment Agency's surface water maps show a high risk of surface water flooding 1 in 30 year event 3.3% chance in any, to parts of the site.

The proposed development must not increase the risk of surface water runoff from the site or cause any increased flood risk to neighbouring sites. Any increase in surface water generated by the proposed development or existing surface water / groundwater issues on the site must be alleviated by the installation of sustainable drainage system within the site.

If the applicant proposes to discharge surface water into an ordinary watercourse a land drainage consent will be required from the Lead Local Flood Authority (LLFA). A land drainage consent is separate application that could take up to 8 weeks for completion and no works on the watercourse can proceed until consent has been approved by the LLFA.

There are a number of watercourses that cross the proposed development site, a survey of any existing drainage systems including water bodies/watercourses must be undertaken and details provided within the Flood Risk Assessment/Drainage Strategy. The survey must consider the condition of the watercourse/drainage system in which the SuDS may discharge too. If any drainage system is identified on site during construction works the Lead Local Flood Authority should be notified. Any existing watercourses situated within the boundary of the proposed development site must be protected and the LLFA must be informed of any proposed works to the existing watercourses.

Surface water discharges from the proposed development shall be flow regulated to ensure that flooding problems elsewhere in the catchment are not exacerbated. For development which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body should be as close as reasonably practicable to the Greenfield runoff rate from the development.

The existing flows from upstream catchments that are intercepted or affected by the development must be maintained through the proposed development site. The drainage system must be designed to operate without flooding for up to the 1 in 30 year event and accommodate the 1 in 100 year plus climate change making sure sufficient steps are taken to ensure that any surface flows between the 1 in 30 and 1 in 100 year events plus climate change are stored within the proposed development site. The choice of where these volumes are accommodated may be within the drainage system itself or within other areas designated within the site for conveyance and storage.

The update guidance states the new allowances for climate change and we now require both +20% scenario and a +40% scenario. Therefore new surface water drainage schemes designed within Flood Risk Assessments/Drainage Strategies require at least three sets of calculations; 1 in 30 year event, 1 in 100 year plus 20% climate change & 1 in 100 year plus 40% climate change.

- Drainage systems can be designed to include a 20% allowance for climate change however;
- A sensitivity test against the 40% allowance is required to ensure that the additional runoff is wholly contained within the site and there is no increase in the rate of runoff discharged from the site. It must be demonstrated that there are no implications to people from the increased flood hazard (volume between 20% and 40% allowance). It is crucial that the additional runoff from the 40% is contained within the site and does not contribute to an increased flood risk to people/property/critical infrastructure/third parties elsewhere.
- If flows cannot be contained within the site without increasing risk to properties or main infrastructure a 40% allowance must be provided.

The layout of any proposed development and the sustainable drainage system should be designed to mimic natural drainage flow paths, utilising existing natural low-lying areas and conveyance pathways where appropriate. This means considering the existing blue/green corridors across the proposed site and utilising the existing natural low-lying areas for the proposed surface water management system for the proposed development. To mimic natural catchment process as closely as possible, a 'management train' is required. It is fundamental to designing a successful SuDS scheme. It uses techniques in series to reduce pollution, flow rates and volumes. The detailed design must show flow routes, SuDS component selection, sub-catchments, discharge and flow control locations, storage features and how SuDS integrate into landscape.

Future maintenance requirements should be considered at all stages in the design and construction process and suitable access provided to facilitate all reasonably foreseeable future inspection, monitoring, maintenance or repair works.

Understanding how the development platforms, on site detention basins, blue corridors and or creation of on site mounding together with capping layers of contaminated material must be fully considered and if necessary mitigation solutions proposed.

The applicant must consider local guidance detailed in the 'Tees Valley Local Standards for Sustainable Drainage' (<https://www.stockton.gov.uk/media/6235/flooding-webpage-update-jane-salisbury-25-02-2016-3msg.pdf>). It is recommended that the applicant contacts the Flood Risk Management Team at an early stage to discuss surface water management requirements and their proposed surface water drainage solution for any new development.

Other Matter

Should an application be made the proposal will be assessed against a number of policies contained in the Adopted Local Plan and guidelines in SPG2, we normally recommend that dwellings be separated by a minimum 21 metres back to back or 11 metres back to side. The parking requirements are set out in SPD 3.

Affordable housing should be in accordance with policy. The development may result in other demands such as education, public transport and other transport/highway infrastructure. These would be considered alongside the precise nature of any submitted proposals.

Arrangements for refuse/recycling and vehicle tracking to demonstrate safe operations will need to be explored.

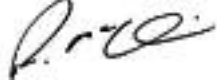
Without levels information and a clear assessment of surrounding development it is not possible to comment on the overall heights and design of the buildings.

Consideration would also need to be given to renewable energy and sustainability issues. There may also be ecological/archaeological issues which may need to be evaluated.

Should I receive any further comments I will forward them for your consideration.

This is an informal officer opinion only and does not bind the Council to a formal decision should an application be submitted. The opinion given is a desk-based assessment and no site visit has been undertaken, therefore issues may arise during the course of any application which were not apparent at this pre-application stage.

Yours faithfully

A handwritten signature in black ink, appearing to read 'R. McGuckin', written in a cursive style.

Richard McGuckin
Director of Economic Growth and Development

APPENDIX C – Site Access Drawing



Drawn JP	Checked JQ	Approved SP
Original dwg. size A1	Date 19.06.18	Scale 1:500
Drawing Status INFORMATION	Drawing Number 18C59_SA01	Rev. -

APPENDIX D – TRICs Data

Calculation Reference: AUDIT-700703-180620-0613

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HC HAMPSHIRE	1 days
	WS WEST SUSSEX	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	2 days
05	EAST MIDLANDS	
	NT NOTTINGHAMSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
09	NORTH	
	CB CUMBRIA	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: 64 to 178 (units:)
Range Selected by User: 50 to 211 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 20/09/17

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	1 days
Wednesday	1 days
Thursday	4 days

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

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

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

Selected Locations:

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

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

Selected Location Sub Categories:

Industrial Zone	1
Residential Zone	5
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	8 days
----	--------

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

Population within 1 mile:

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

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

Population within 5 miles:

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

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	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:

Yes	1 days
No	7 days

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

PTAL Rating:

No PTAL Present	8 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	CA-03-K-01	MIXED HOUSES & FLATS		CAMBRIDGESHIRE
	WEASANHAM LANE			
	FENLAND			
	WISBECH			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	100		
	Survey date: MONDAY	07/09/15	Survey Type: MANUAL	
2	CA-03-K-03	FLATS & TERRACED		CAMBRIDGESHIRE
	YORK STREET			
	CAMBRIDGE			
	Edge of Town Centre			
	No Sub Category			
	Total Number of dwellings:	178		
	Survey date: WEDNESDAY	20/09/17	Survey Type: MANUAL	
3	CB-03-K-01	FLATS & TERRACED		CUMBRIA
	BRIDGE LANE			
	CARLISLE			
	Edge of Town			
	Industrial Zone			
	Total Number of dwellings:	66		
	Survey date: THURSDAY	12/06/14	Survey Type: MANUAL	
4	ES-03-K-01	MIXED HOUSES & FLATS		EAST SUSSEX
	LEWES ROAD			
	RIDGEWOOD			
	UCKFIELD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	64		
	Survey date: THURSDAY	14/07/16	Survey Type: MANUAL	
5	HC-03-K-06	HOUSES & FLATS		HAMPSHIRE
	ROMSEY ROAD			
	MAYBUSH			
	SOUTHAMPTON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	91		
	Survey date: THURSDAY	02/10/14	Survey Type: MANUAL	
6	NE-03-K-01	BLOCK OF FLATS		NORTH EAST LINCOLNSHIRE
	LADYSMITH ROAD			
	CLEETHORPES			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	67		
	Survey date: TUESDAY	06/05/14	Survey Type: MANUAL	
7	NT-03-K-02	MIXED HOUSES		NOTTINGHAMSHIRE
	CASTLE BRIDGE ROAD			
	NOTTINGHAM			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	132		
	Survey date: MONDAY	07/11/16	Survey Type: MANUAL	
8	WS-03-K-03	MIXED HOUSES & FLATS		WEST SUSSEX
	LITTLEHAMPTON ROAD			
	WEST DURREINGTON			
	WORTHING			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	115		
	Survey date: THURSDAY	12/05/16	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/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.066	8	102	0.221	8	102	0.287
08:00 - 09:00	8	102	0.106	8	102	0.278	8	102	0.384
09:00 - 10:00	8	102	0.107	8	102	0.119	8	102	0.226
10:00 - 11:00	8	102	0.108	8	102	0.155	8	102	0.263
11:00 - 12:00	8	102	0.100	8	102	0.097	8	102	0.197
12:00 - 13:00	8	102	0.129	8	102	0.121	8	102	0.250
13:00 - 14:00	8	102	0.130	8	102	0.111	8	102	0.241
14:00 - 15:00	8	102	0.105	8	102	0.145	8	102	0.250
15:00 - 16:00	8	102	0.183	8	102	0.124	8	102	0.307
16:00 - 17:00	8	102	0.173	8	102	0.128	8	102	0.301
17:00 - 18:00	8	102	0.247	8	102	0.134	8	102	0.381
18:00 - 19:00	8	102	0.204	8	102	0.121	8	102	0.325
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	1.658			1.754			3.412		

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL TAXIS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.001	8	102	0.001	8	102	0.002
08:00 - 09:00	8	102	0.007	8	102	0.009	8	102	0.016
09:00 - 10:00	8	102	0.007	8	102	0.007	8	102	0.014
10:00 - 11:00	8	102	0.004	8	102	0.004	8	102	0.008
11:00 - 12:00	8	102	0.002	8	102	0.004	8	102	0.006
12:00 - 13:00	8	102	0.002	8	102	0.001	8	102	0.003
13:00 - 14:00	8	102	0.004	8	102	0.005	8	102	0.009
14:00 - 15:00	8	102	0.005	8	102	0.005	8	102	0.010
15:00 - 16:00	8	102	0.004	8	102	0.002	8	102	0.006
16:00 - 17:00	8	102	0.005	8	102	0.005	8	102	0.010
17:00 - 18:00	8	102	0.002	8	102	0.004	8	102	0.006
18:00 - 19:00	8	102	0.005	8	102	0.005	8	102	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.048			0.052			0.100

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.001	8	102	0.001	8	102	0.002
08:00 - 09:00	8	102	0.002	8	102	0.000	8	102	0.002
09:00 - 10:00	8	102	0.000	8	102	0.004	8	102	0.004
10:00 - 11:00	8	102	0.006	8	102	0.005	8	102	0.011
11:00 - 12:00	8	102	0.000	8	102	0.001	8	102	0.001
12:00 - 13:00	8	102	0.001	8	102	0.000	8	102	0.001
13:00 - 14:00	8	102	0.002	8	102	0.001	8	102	0.003
14:00 - 15:00	8	102	0.002	8	102	0.004	8	102	0.006
15:00 - 16:00	8	102	0.000	8	102	0.000	8	102	0.000
16:00 - 17:00	8	102	0.000	8	102	0.000	8	102	0.000
17:00 - 18:00	8	102	0.000	8	102	0.000	8	102	0.000
18:00 - 19:00	8	102	0.000	8	102	0.000	8	102	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.014			0.016			0.030

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
 MULTI-MODAL PSVS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.000	8	102	0.000	8	102	0.000
08:00 - 09:00	8	102	0.001	8	102	0.001	8	102	0.002
09:00 - 10:00	8	102	0.000	8	102	0.000	8	102	0.000
10:00 - 11:00	8	102	0.000	8	102	0.000	8	102	0.000
11:00 - 12:00	8	102	0.000	8	102	0.000	8	102	0.000
12:00 - 13:00	8	102	0.000	8	102	0.000	8	102	0.000
13:00 - 14:00	8	102	0.000	8	102	0.000	8	102	0.000
14:00 - 15:00	8	102	0.001	8	102	0.001	8	102	0.002
15:00 - 16:00	8	102	0.001	8	102	0.001	8	102	0.002
16:00 - 17:00	8	102	0.000	8	102	0.000	8	102	0.000
17:00 - 18:00	8	102	0.000	8	102	0.000	8	102	0.000
18:00 - 19:00	8	102	0.000	8	102	0.000	8	102	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

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

*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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
 MULTI-MODAL CYCLISTS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.005	8	102	0.026	8	102	0.031
08:00 - 09:00	8	102	0.010	8	102	0.042	8	102	0.052
09:00 - 10:00	8	102	0.009	8	102	0.010	8	102	0.019
10:00 - 11:00	8	102	0.005	8	102	0.012	8	102	0.017
11:00 - 12:00	8	102	0.007	8	102	0.010	8	102	0.017
12:00 - 13:00	8	102	0.012	8	102	0.006	8	102	0.018
13:00 - 14:00	8	102	0.014	8	102	0.010	8	102	0.024
14:00 - 15:00	8	102	0.004	8	102	0.011	8	102	0.015
15:00 - 16:00	8	102	0.016	8	102	0.009	8	102	0.025
16:00 - 17:00	8	102	0.010	8	102	0.012	8	102	0.022
17:00 - 18:00	8	102	0.010	8	102	0.007	8	102	0.017
18:00 - 19:00	8	102	0.022	8	102	0.007	8	102	0.029
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.124			0.162			0.286		

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.080	8	102	0.269	8	102	0.349
08:00 - 09:00	8	102	0.130	8	102	0.442	8	102	0.572
09:00 - 10:00	8	102	0.148	8	102	0.175	8	102	0.323
10:00 - 11:00	8	102	0.160	8	102	0.215	8	102	0.375
11:00 - 12:00	8	102	0.137	8	102	0.137	8	102	0.274
12:00 - 13:00	8	102	0.175	8	102	0.170	8	102	0.345
13:00 - 14:00	8	102	0.175	8	102	0.149	8	102	0.324
14:00 - 15:00	8	102	0.153	8	102	0.188	8	102	0.341
15:00 - 16:00	8	102	0.323	8	102	0.177	8	102	0.500
16:00 - 17:00	8	102	0.258	8	102	0.192	8	102	0.450
17:00 - 18:00	8	102	0.353	8	102	0.188	8	102	0.541
18:00 - 19:00	8	102	0.290	8	102	0.167	8	102	0.457
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.382			2.469			4.851

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL PEDESTRIANS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.018	8	102	0.074	8	102	0.092
08:00 - 09:00	8	102	0.037	8	102	0.140	8	102	0.177
09:00 - 10:00	8	102	0.047	8	102	0.066	8	102	0.113
10:00 - 11:00	8	102	0.037	8	102	0.062	8	102	0.099
11:00 - 12:00	8	102	0.037	8	102	0.050	8	102	0.087
12:00 - 13:00	8	102	0.055	8	102	0.054	8	102	0.109
13:00 - 14:00	8	102	0.086	8	102	0.069	8	102	0.155
14:00 - 15:00	8	102	0.060	8	102	0.109	8	102	0.169
15:00 - 16:00	8	102	0.154	8	102	0.066	8	102	0.220
16:00 - 17:00	8	102	0.097	8	102	0.046	8	102	0.143
17:00 - 18:00	8	102	0.114	8	102	0.054	8	102	0.168
18:00 - 19:00	8	102	0.085	8	102	0.042	8	102	0.127
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.827			0.832			1.659

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
 MULTI-MODAL BUS/TRAM PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.000	8	102	0.022	8	102	0.022
08:00 - 09:00	8	102	0.012	8	102	0.028	8	102	0.040
09:00 - 10:00	8	102	0.002	8	102	0.014	8	102	0.016
10:00 - 11:00	8	102	0.007	8	102	0.016	8	102	0.023
11:00 - 12:00	8	102	0.005	8	102	0.006	8	102	0.011
12:00 - 13:00	8	102	0.007	8	102	0.007	8	102	0.014
13:00 - 14:00	8	102	0.014	8	102	0.007	8	102	0.021
14:00 - 15:00	8	102	0.010	8	102	0.009	8	102	0.019
15:00 - 16:00	8	102	0.038	8	102	0.021	8	102	0.059
16:00 - 17:00	8	102	0.016	8	102	0.004	8	102	0.020
17:00 - 18:00	8	102	0.026	8	102	0.006	8	102	0.032
18:00 - 19:00	8	102	0.026	8	102	0.002	8	102	0.028
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.163			0.142			0.305		

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL TOTAL RAIL PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.000	8	102	0.023	8	102	0.023
08:00 - 09:00	8	102	0.000	8	102	0.016	8	102	0.016
09:00 - 10:00	8	102	0.004	8	102	0.006	8	102	0.010
10:00 - 11:00	8	102	0.000	8	102	0.004	8	102	0.004
11:00 - 12:00	8	102	0.000	8	102	0.001	8	102	0.001
12:00 - 13:00	8	102	0.000	8	102	0.001	8	102	0.001
13:00 - 14:00	8	102	0.002	8	102	0.002	8	102	0.004
14:00 - 15:00	8	102	0.001	8	102	0.002	8	102	0.003
15:00 - 16:00	8	102	0.005	8	102	0.000	8	102	0.005
16:00 - 17:00	8	102	0.001	8	102	0.000	8	102	0.001
17:00 - 18:00	8	102	0.007	8	102	0.000	8	102	0.007
18:00 - 19:00	8	102	0.012	8	102	0.000	8	102	0.012
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.032			0.055			0.087

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
 MULTI-MODAL COACH PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.000	8	102	0.000	8	102	0.000
08:00 - 09:00	8	102	0.000	8	102	0.000	8	102	0.000
09:00 - 10:00	8	102	0.000	8	102	0.000	8	102	0.000
10:00 - 11:00	8	102	0.000	8	102	0.000	8	102	0.000
11:00 - 12:00	8	102	0.000	8	102	0.000	8	102	0.000
12:00 - 13:00	8	102	0.000	8	102	0.000	8	102	0.000
13:00 - 14:00	8	102	0.000	8	102	0.000	8	102	0.000
14:00 - 15:00	8	102	0.000	8	102	0.000	8	102	0.000
15:00 - 16:00	8	102	0.000	8	102	0.000	8	102	0.000
16:00 - 17:00	8	102	0.000	8	102	0.000	8	102	0.000
17:00 - 18:00	8	102	0.000	8	102	0.000	8	102	0.000
18:00 - 19:00	8	102	0.000	8	102	0.000	8	102	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL PUBLIC TRANSPORT USERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.000	8	102	0.046	8	102	0.046
08:00 - 09:00	8	102	0.012	8	102	0.044	8	102	0.056
09:00 - 10:00	8	102	0.006	8	102	0.020	8	102	0.026
10:00 - 11:00	8	102	0.007	8	102	0.020	8	102	0.027
11:00 - 12:00	8	102	0.005	8	102	0.007	8	102	0.012
12:00 - 13:00	8	102	0.007	8	102	0.009	8	102	0.016
13:00 - 14:00	8	102	0.016	8	102	0.010	8	102	0.026
14:00 - 15:00	8	102	0.011	8	102	0.011	8	102	0.022
15:00 - 16:00	8	102	0.043	8	102	0.021	8	102	0.064
16:00 - 17:00	8	102	0.017	8	102	0.004	8	102	0.021
17:00 - 18:00	8	102	0.033	8	102	0.006	8	102	0.039
18:00 - 19:00	8	102	0.038	8	102	0.002	8	102	0.040
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.195			0.200			0.395

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL TOTAL PEOPLE
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.103	8	102	0.415	8	102	0.518
08:00 - 09:00	8	102	0.189	8	102	0.668	8	102	0.857
09:00 - 10:00	8	102	0.209	8	102	0.271	8	102	0.480
10:00 - 11:00	8	102	0.209	8	102	0.309	8	102	0.518
11:00 - 12:00	8	102	0.186	8	102	0.204	8	102	0.390
12:00 - 13:00	8	102	0.250	8	102	0.239	8	102	0.489
13:00 - 14:00	8	102	0.290	8	102	0.237	8	102	0.527
14:00 - 15:00	8	102	0.228	8	102	0.320	8	102	0.548
15:00 - 16:00	8	102	0.536	8	102	0.273	8	102	0.809
16:00 - 17:00	8	102	0.383	8	102	0.253	8	102	0.636
17:00 - 18:00	8	102	0.510	8	102	0.256	8	102	0.766
18:00 - 19:00	8	102	0.435	8	102	0.219	8	102	0.654
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.528			3.664			7.192

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
MULTI-MODAL CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.043	8	102	0.180	8	102	0.223
08:00 - 09:00	8	102	0.068	8	102	0.218	8	102	0.286
09:00 - 10:00	8	102	0.071	8	102	0.087	8	102	0.158
10:00 - 11:00	8	102	0.066	8	102	0.107	8	102	0.173
11:00 - 12:00	8	102	0.065	8	102	0.057	8	102	0.122
12:00 - 13:00	8	102	0.093	8	102	0.084	8	102	0.177
13:00 - 14:00	8	102	0.079	8	102	0.070	8	102	0.149
14:00 - 15:00	8	102	0.065	8	102	0.106	8	102	0.171
15:00 - 16:00	8	102	0.133	8	102	0.085	8	102	0.218
16:00 - 17:00	8	102	0.123	8	102	0.079	8	102	0.202
17:00 - 18:00	8	102	0.180	8	102	0.091	8	102	0.271
18:00 - 19:00	8	102	0.157	8	102	0.085	8	102	0.242
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.143			1.249			2.392

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
 MULTI-MODAL LGVS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.017	8	102	0.012	8	102	0.029
08:00 - 09:00	8	102	0.011	8	102	0.010	8	102	0.021
09:00 - 10:00	8	102	0.017	8	102	0.007	8	102	0.024
10:00 - 11:00	8	102	0.022	8	102	0.028	8	102	0.050
11:00 - 12:00	8	102	0.012	8	102	0.014	8	102	0.026
12:00 - 13:00	8	102	0.015	8	102	0.016	8	102	0.031
13:00 - 14:00	8	102	0.021	8	102	0.014	8	102	0.035
14:00 - 15:00	8	102	0.015	8	102	0.012	8	102	0.027
15:00 - 16:00	8	102	0.015	8	102	0.020	8	102	0.035
16:00 - 17:00	8	102	0.011	8	102	0.021	8	102	0.032
17:00 - 18:00	8	102	0.018	8	102	0.011	8	102	0.029
18:00 - 19:00	8	102	0.009	8	102	0.007	8	102	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.183			0.172			0.355		

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
 MULTI-MODAL MOTOR CYCLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	102	0.000	8	102	0.000	8	102	0.000
08:00 - 09:00	8	102	0.000	8	102	0.000	8	102	0.000
09:00 - 10:00	8	102	0.000	8	102	0.000	8	102	0.000
10:00 - 11:00	8	102	0.000	8	102	0.000	8	102	0.000
11:00 - 12:00	8	102	0.002	8	102	0.001	8	102	0.003
12:00 - 13:00	8	102	0.001	8	102	0.001	8	102	0.002
13:00 - 14:00	8	102	0.000	8	102	0.002	8	102	0.002
14:00 - 15:00	8	102	0.001	8	102	0.000	8	102	0.001
15:00 - 16:00	8	102	0.001	8	102	0.001	8	102	0.002
16:00 - 17:00	8	102	0.000	8	102	0.001	8	102	0.001
17:00 - 18:00	8	102	0.002	8	102	0.001	8	102	0.003
18:00 - 19:00	8	102	0.000	8	102	0.000	8	102	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	64 - 178 (units:)
Survey date date range:	01/01/10 - 20/09/17
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-700703-180413-0455

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : C - INDUSTRIAL UNIT
MULTI-MODAL VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
	WM WEST MIDLANDS	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:	Site area
Actual Range:	0.62 to 0.95 (units: hect)
Range Selected by User:	0.24 to 11.40 (units: hect)

Public Transport Provision:

Selection by:	Include all surveys
---------------	---------------------

Date Range:	01/01/10 to 06/07/17
-------------	----------------------

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

Selected survey days:

Tuesday	2 days
Thursday	1 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	2

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

Selected Location Sub Categories:

Industrial Zone	2
Commercial Zone	1

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

Secondary Filtering selection:

Use Class:

B1	1 days
B2	2 days

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

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

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

Population within 5 miles:

50,001 to 75,000	1 days
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:

0.6 to 1.0	1 days
1.1 to 1.5	2 days

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

Travel Plan:

No	3 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	3 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	DV-02-C-02	ENERGY RECOVERY FACILITY	DEVON
	GRACE ROAD SOUTH		
	MARSH BARTON TRAD. EST.		
	EXETER		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Site area:		0.95 hect
	Survey date: THURSDAY		06/07/17
			Survey Type: MANUAL
2	HE-02-C-02	THERMAL PROCESSING	HEREFORDSHIRE
	COLLEGE ROAD		
	BURCOTT		
	HEREFORD		
	Edge of Town		
	Commercial Zone		
	Total Site area:		0.63 hect
	Survey date: TUESDAY		22/10/13
			Survey Type: MANUAL
3	WM-02-C-03	INDUSTRIAL GLASS	WEST MIDLANDS
	DOWNING STREET		
	SMETHWICK		
	Edge of Town		
	Industrial Zone		
	Total Site area:		0.62 hect
	Survey date: TUESDAY		06/11/12
			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/C - INDUSTRIAL UNIT
MULTI-MODAL VEHICLES
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	5.000	3	0.73	1.364	3	0.73	6.364
07:30 - 08:00	3	0.73	2.727	3	0.73	1.364	3	0.73	4.091
08:00 - 08:30	3	0.73	2.727	3	0.73	2.273	3	0.73	5.000
08:30 - 09:00	3	0.73	5.909	3	0.73	3.636	3	0.73	9.545
09:00 - 09:30	3	0.73	9.545	3	0.73	2.727	3	0.73	12.272
09:30 - 10:00	3	0.73	5.909	3	0.73	3.636	3	0.73	9.545
10:00 - 10:30	3	0.73	2.727	3	0.73	2.727	3	0.73	5.454
10:30 - 11:00	3	0.73	1.818	3	0.73	1.364	3	0.73	3.182
11:00 - 11:30	3	0.73	1.818	3	0.73	1.818	3	0.73	3.636
11:30 - 12:00	3	0.73	5.000	3	0.73	4.091	3	0.73	9.091
12:00 - 12:30	3	0.73	6.818	3	0.73	6.818	3	0.73	13.636
12:30 - 13:00	3	0.73	3.636	3	0.73	4.091	3	0.73	7.727
13:00 - 13:30	3	0.73	2.727	3	0.73	3.636	3	0.73	6.363
13:30 - 14:00	3	0.73	2.273	3	0.73	2.273	3	0.73	4.546
14:00 - 14:30	3	0.73	3.182	3	0.73	2.273	3	0.73	5.455
14:30 - 15:00	3	0.73	0.909	3	0.73	1.364	3	0.73	2.273
15:00 - 15:30	3	0.73	3.182	3	0.73	3.182	3	0.73	6.364
15:30 - 16:00	3	0.73	1.818	3	0.73	2.727	3	0.73	4.545
16:00 - 16:30	3	0.73	2.273	3	0.73	3.636	3	0.73	5.909
16:30 - 17:00	3	0.73	0.000	3	0.73	10.909	3	0.73	10.909
17:00 - 17:30	3	0.73	0.455	3	0.73	1.818	3	0.73	2.273
17:30 - 18:00	3	0.73	0.455	3	0.73	4.091	3	0.73	4.546
18:00 - 18:30	3	0.73	0.455	3	0.73	2.273	3	0.73	2.728
18:30 - 19:00	3	0.73	1.818	3	0.73	1.364	3	0.73	3.182
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:			73.181			75.455			148.636

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.*

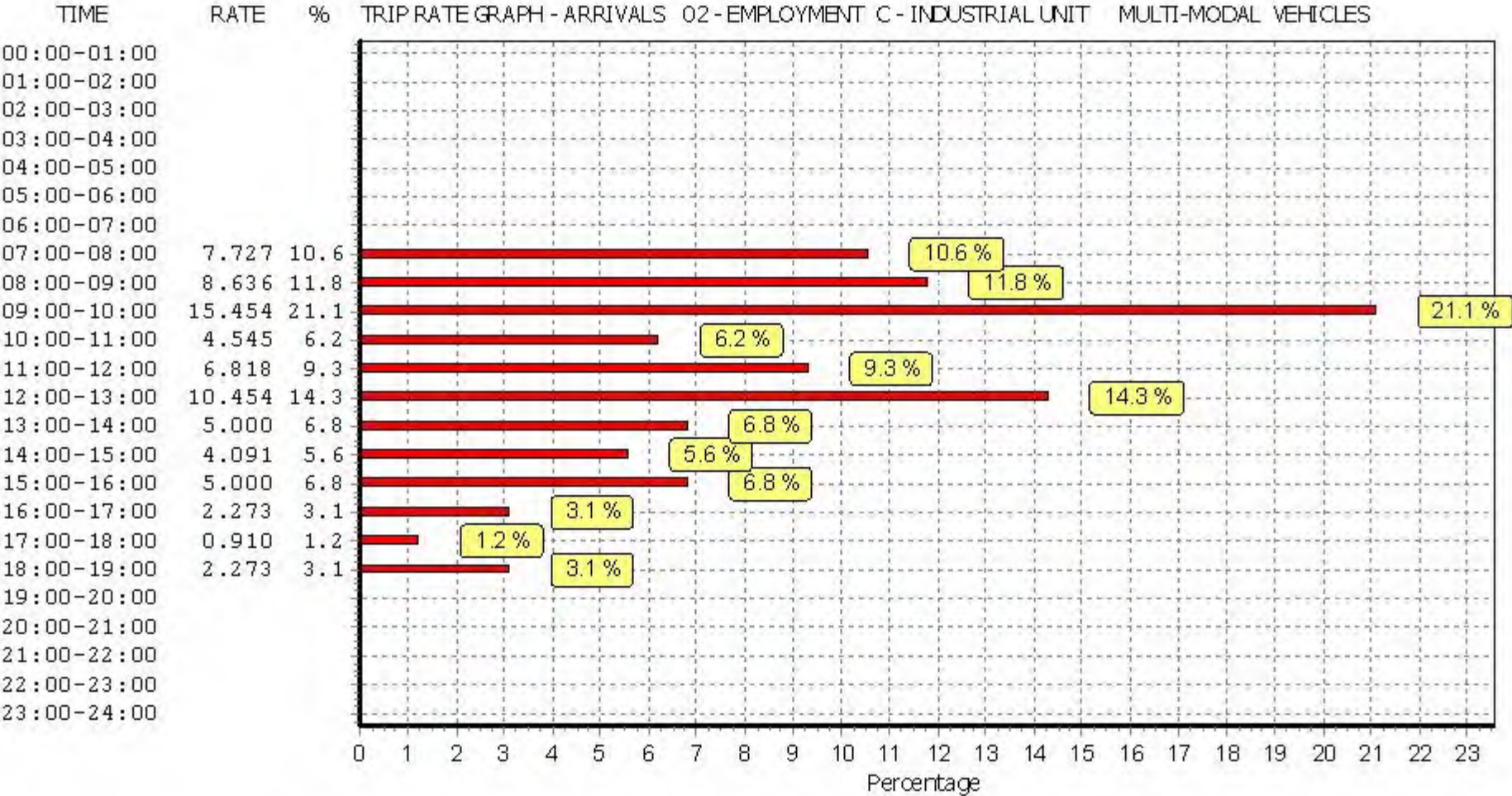
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

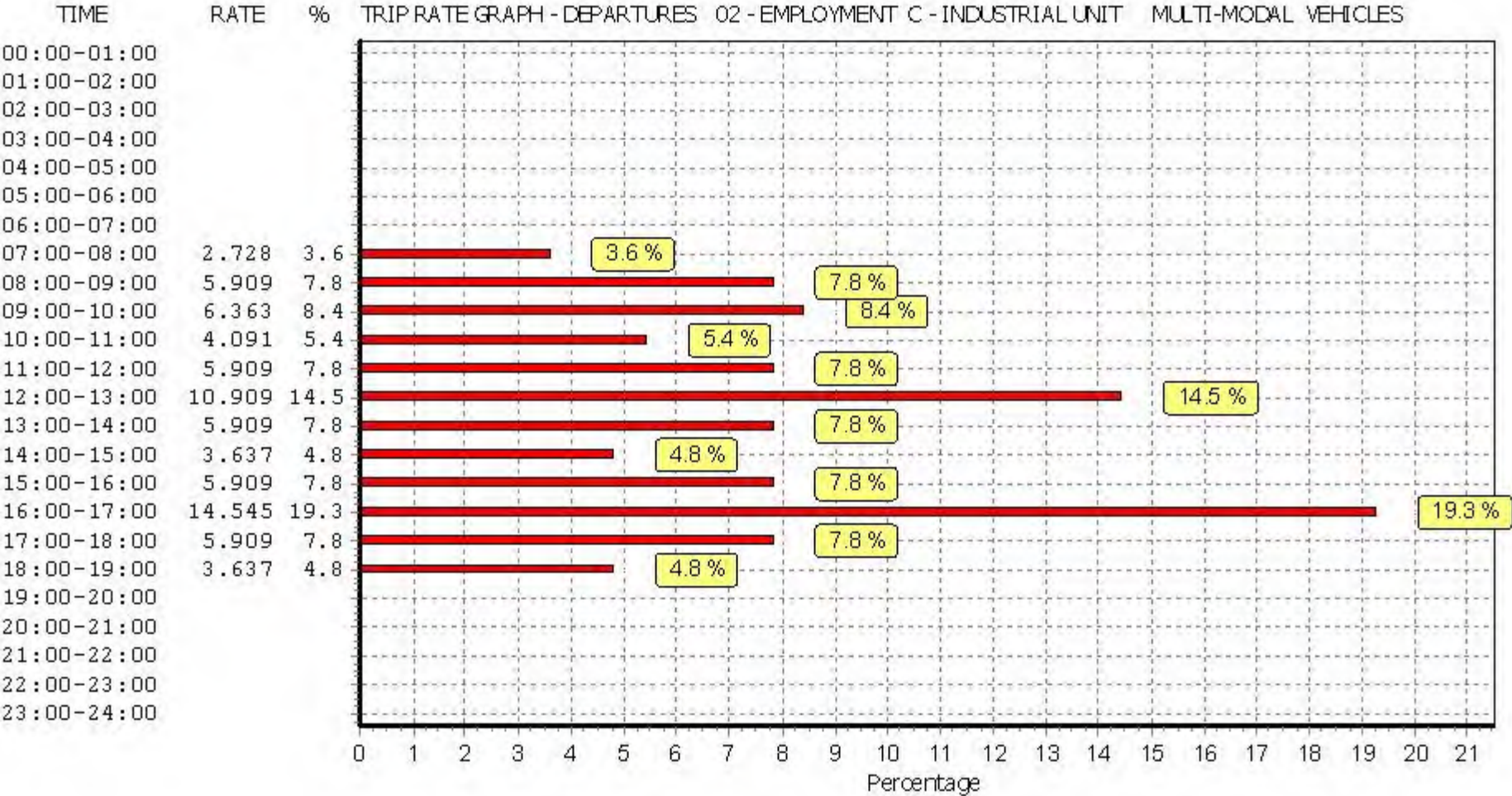
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

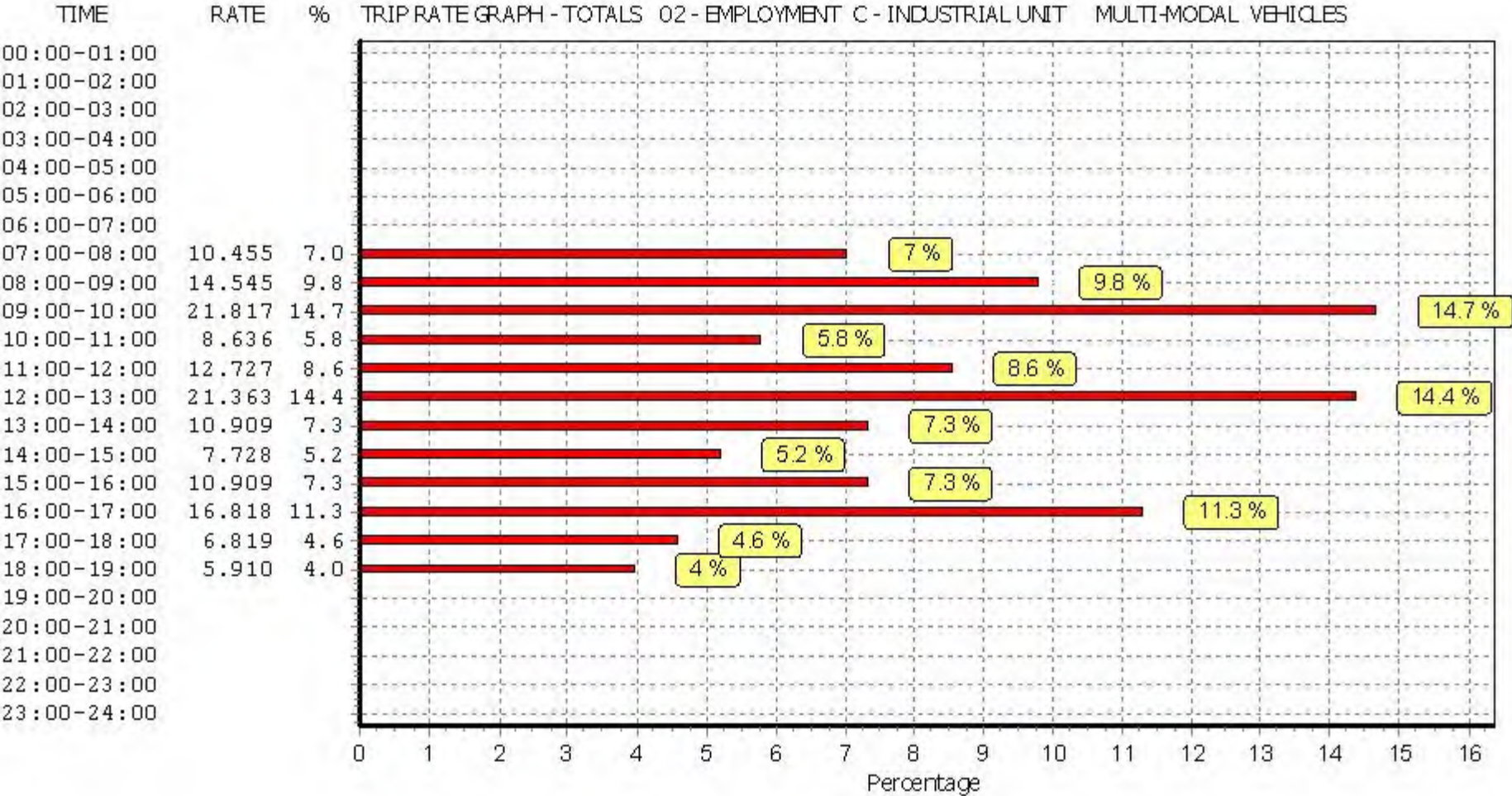
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT
MULTI-MODAL TAXIS
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:		0.000			0.000			0.000	

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

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

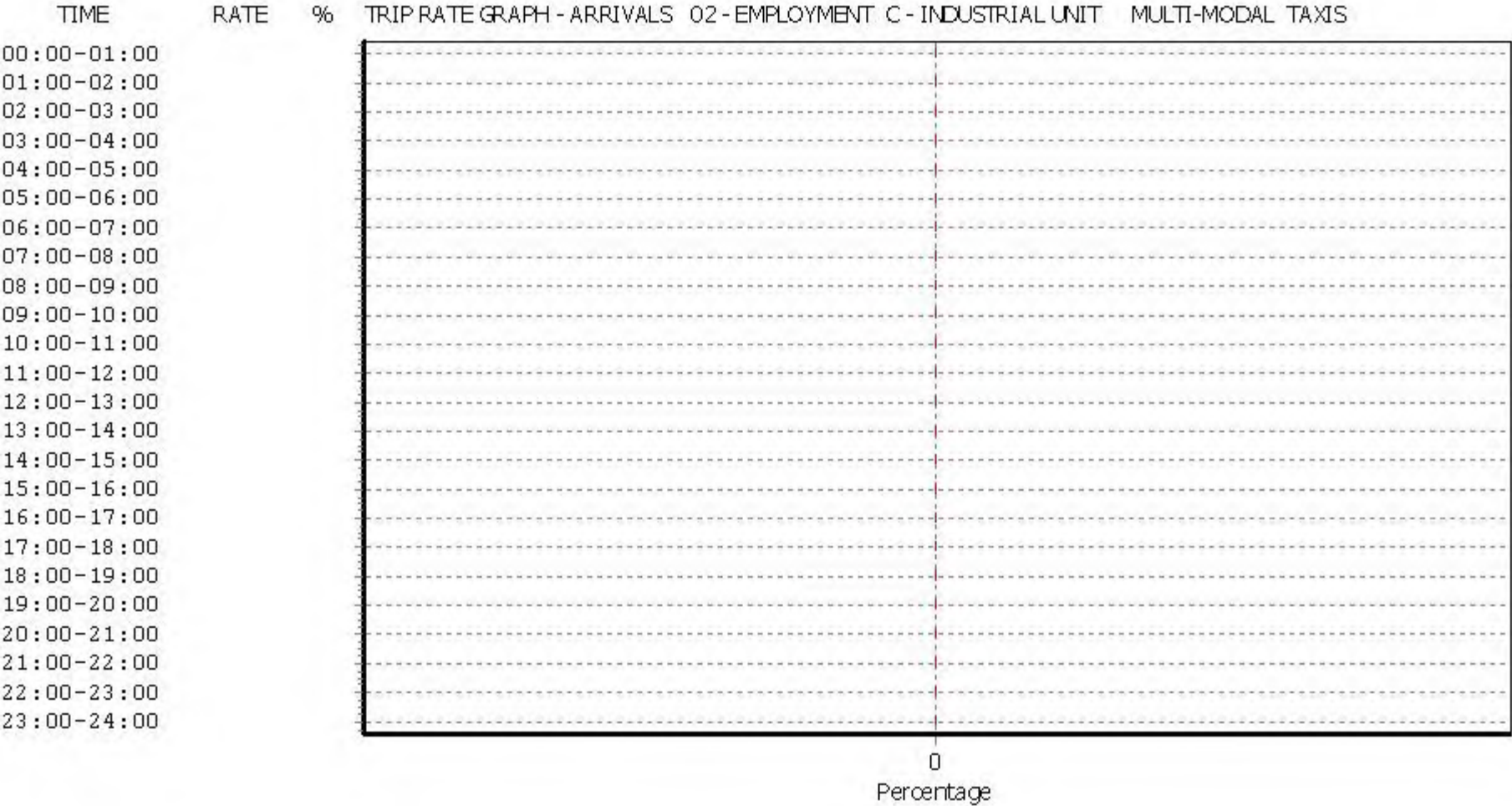
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

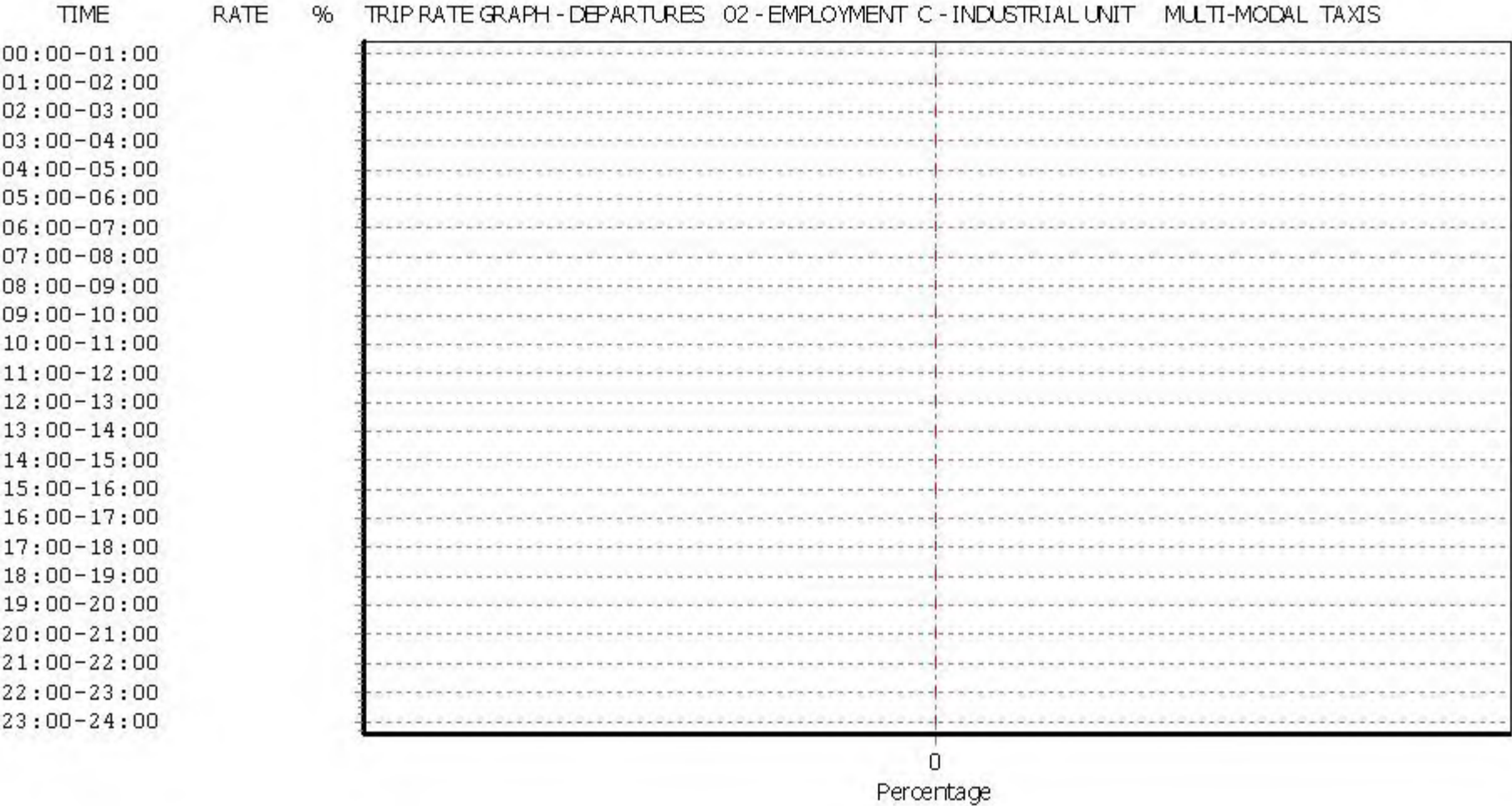
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

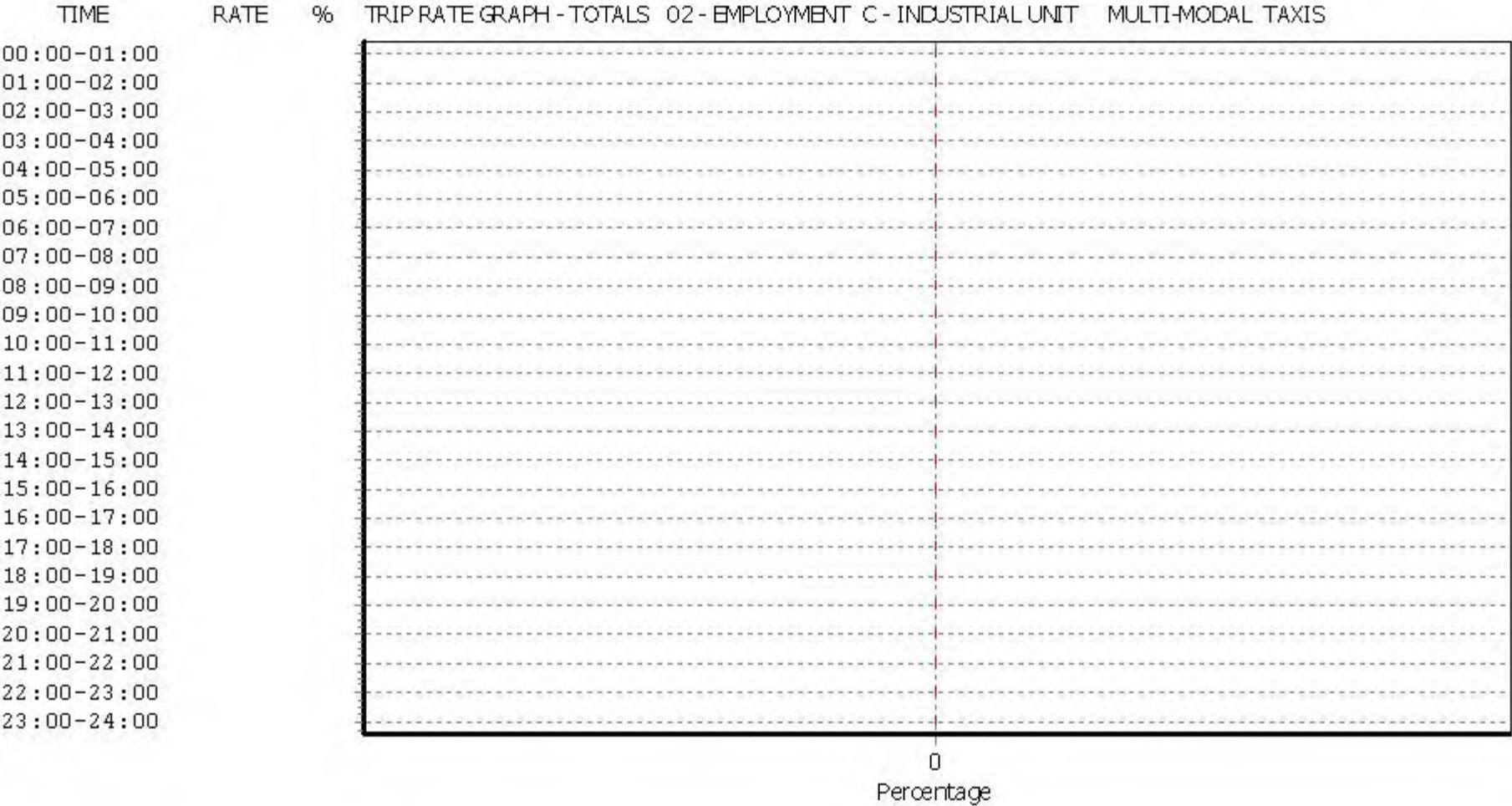
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT
MULTI-MODAL OGVS
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	1.364	3	0.73	0.909	3	0.73	2.273
07:30 - 08:00	3	0.73	1.364	3	0.73	1.364	3	0.73	2.728
08:00 - 08:30	3	0.73	1.818	3	0.73	1.818	3	0.73	3.636
08:30 - 09:00	3	0.73	3.182	3	0.73	2.273	3	0.73	5.455
09:00 - 09:30	3	0.73	1.364	3	0.73	1.818	3	0.73	3.182
09:30 - 10:00	3	0.73	3.636	3	0.73	2.727	3	0.73	6.363
10:00 - 10:30	3	0.73	0.000	3	0.73	0.909	3	0.73	0.909
10:30 - 11:00	3	0.73	0.455	3	0.73	0.455	3	0.73	0.910
11:00 - 11:30	3	0.73	0.455	3	0.73	0.455	3	0.73	0.910
11:30 - 12:00	3	0.73	3.182	3	0.73	2.727	3	0.73	5.909
12:00 - 12:30	3	0.73	5.000	3	0.73	5.455	3	0.73	10.455
12:30 - 13:00	3	0.73	2.273	3	0.73	3.636	3	0.73	5.909
13:00 - 13:30	3	0.73	2.727	3	0.73	2.273	3	0.73	5.000
13:30 - 14:00	3	0.73	1.818	3	0.73	1.818	3	0.73	3.636
14:00 - 14:30	3	0.73	1.364	3	0.73	0.909	3	0.73	2.273
14:30 - 15:00	3	0.73	0.909	3	0.73	0.909	3	0.73	1.818
15:00 - 15:30	3	0.73	1.364	3	0.73	1.818	3	0.73	3.182
15:30 - 16:00	3	0.73	1.364	3	0.73	0.909	3	0.73	2.273
16:00 - 16:30	3	0.73	0.909	3	0.73	1.364	3	0.73	2.273
16:30 - 17:00	3	0.73	0.000	3	0.73	0.909	3	0.73	0.909
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.455	3	0.73	0.000	3	0.73	0.455
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:			35.003			35.455			70.458

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.

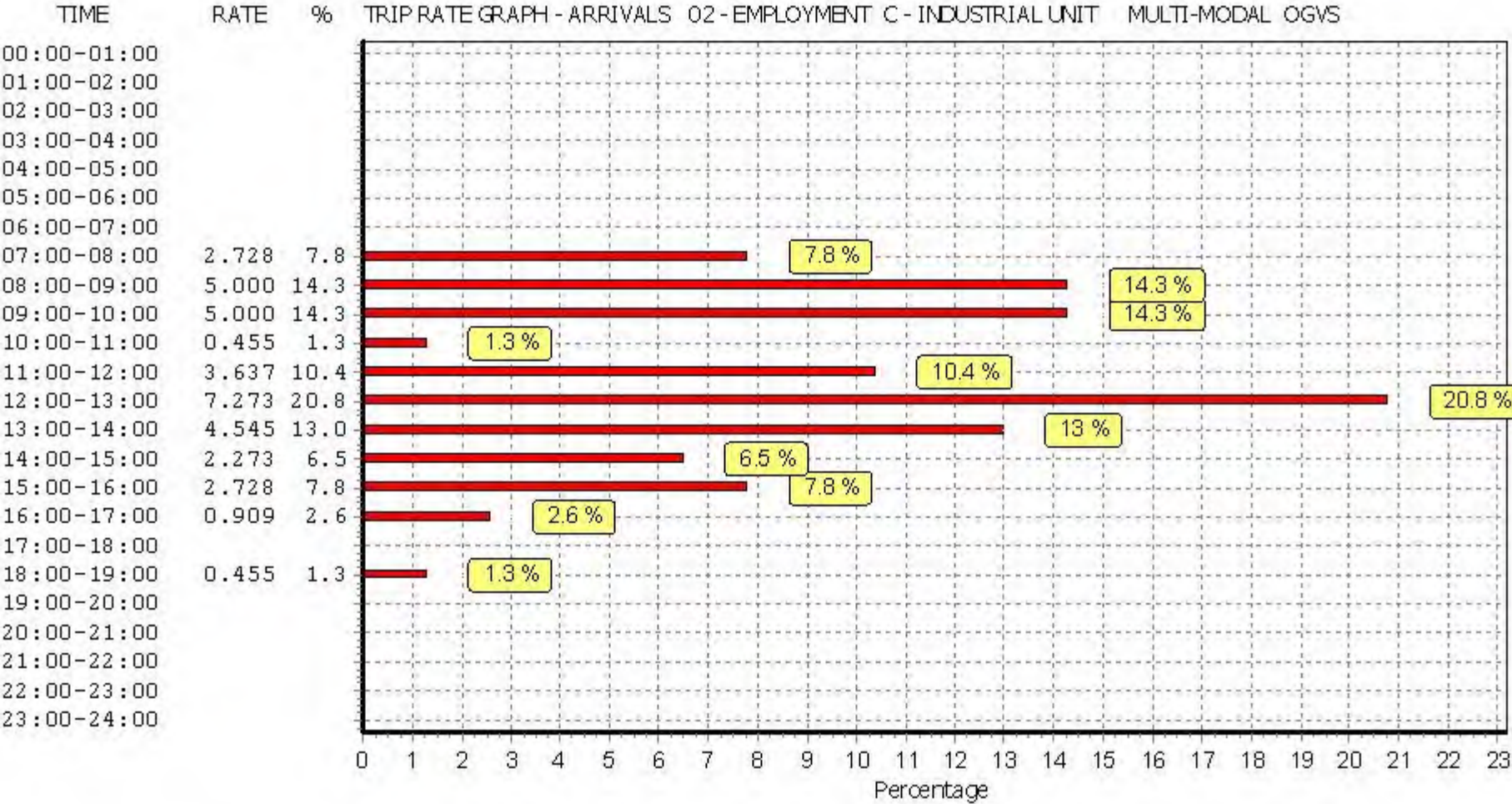
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

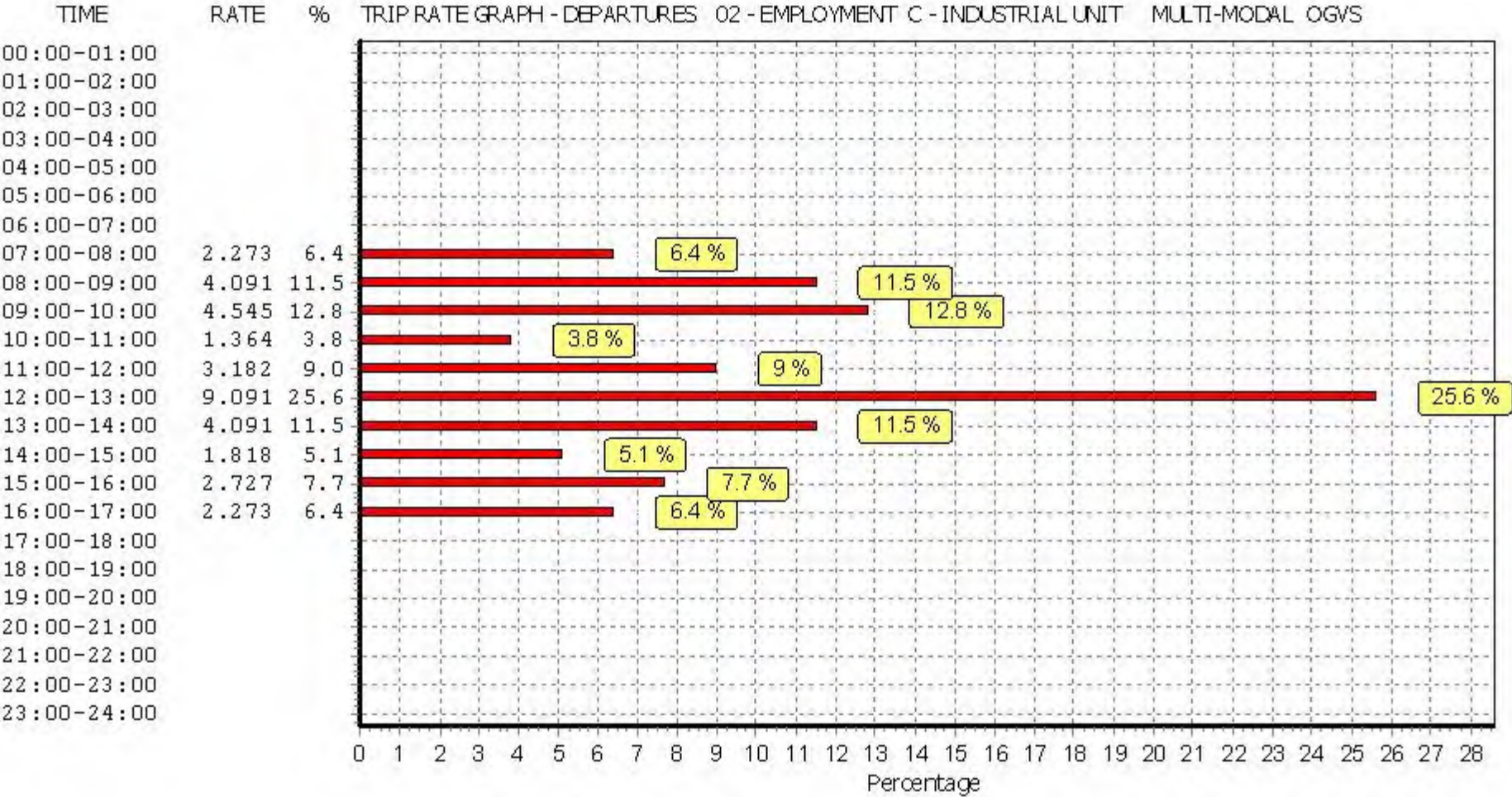
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

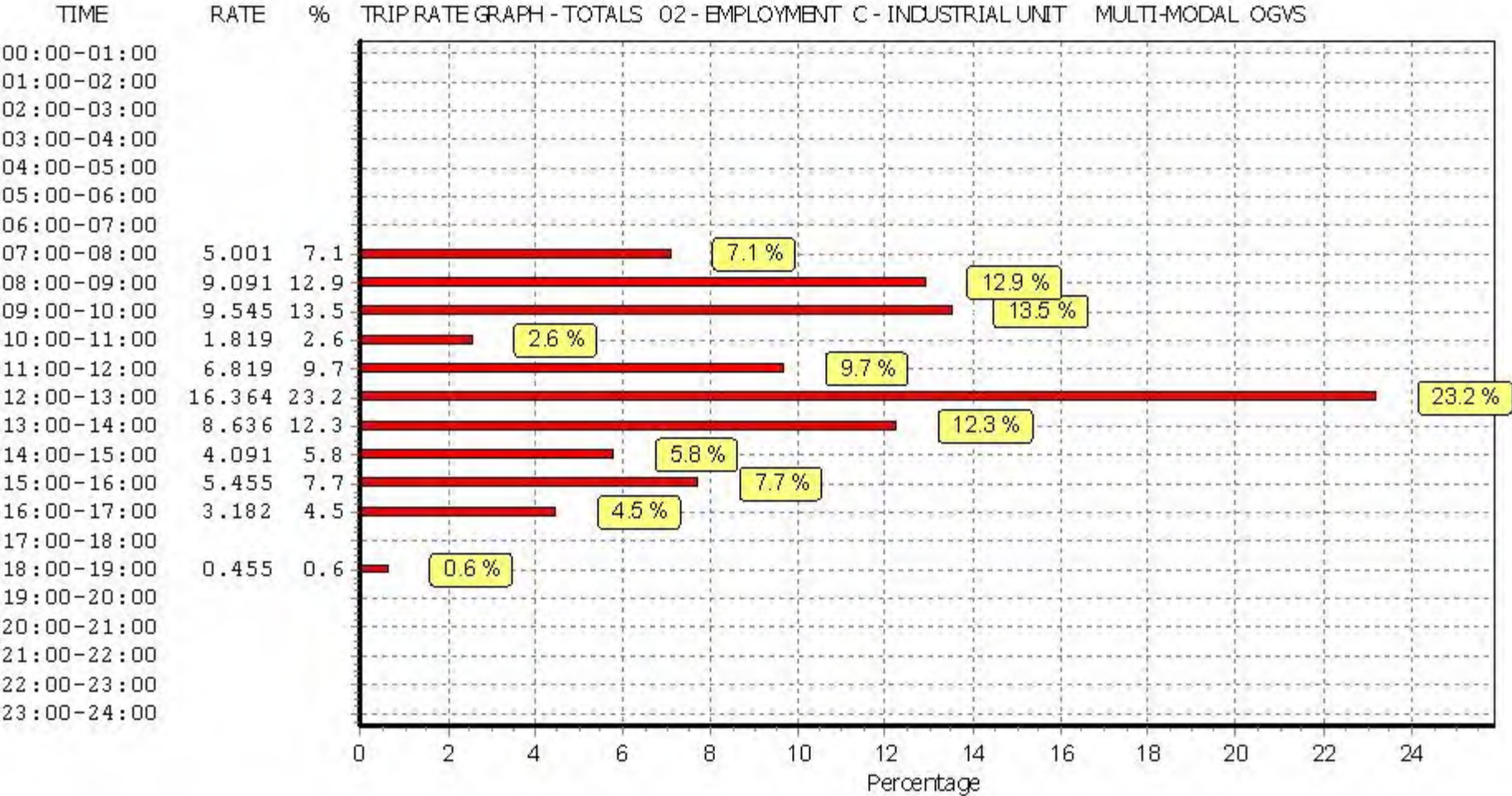
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT

MULTI-MODAL PSVS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:		0.000			0.000			0.000	

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

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

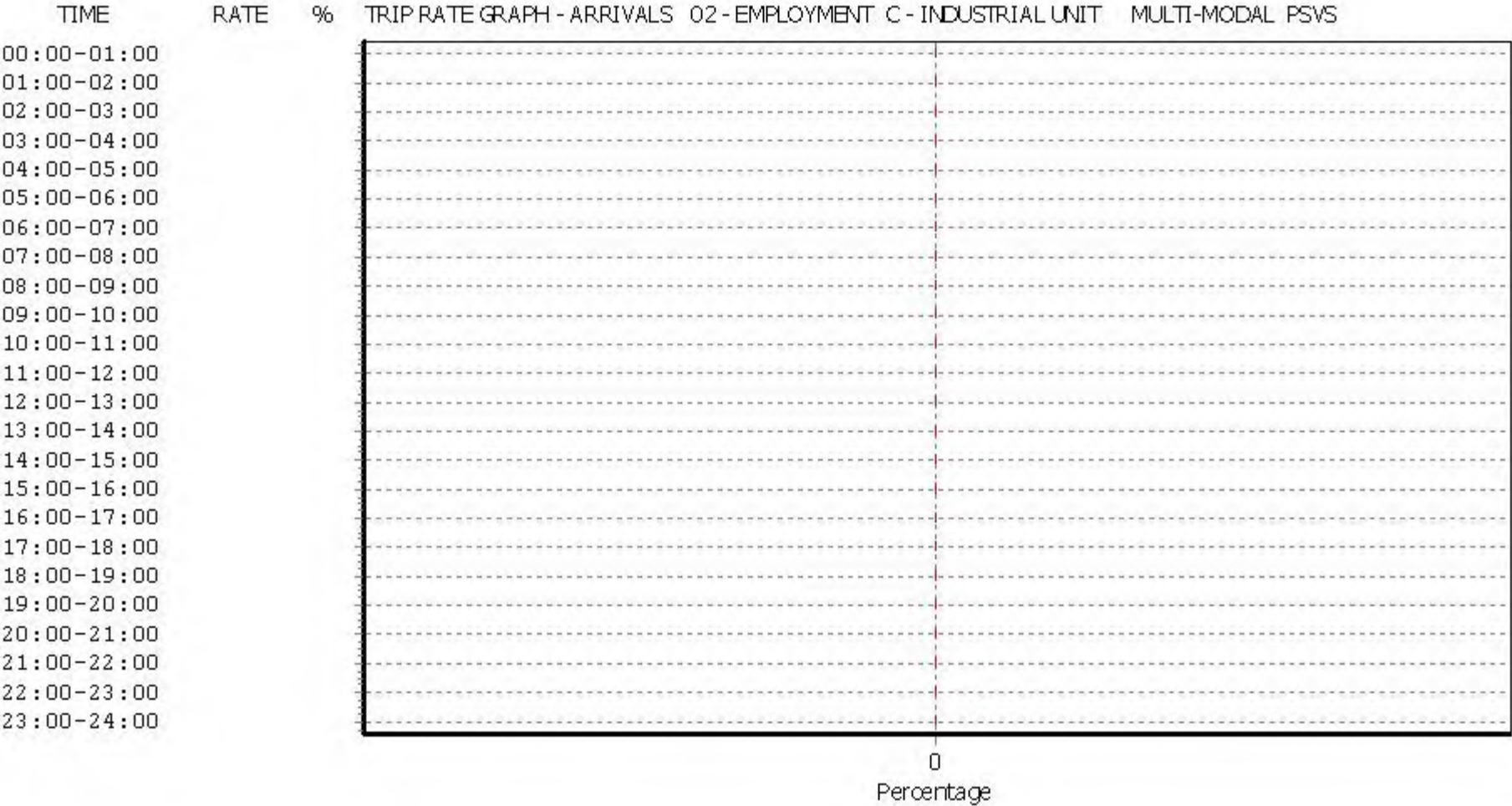
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

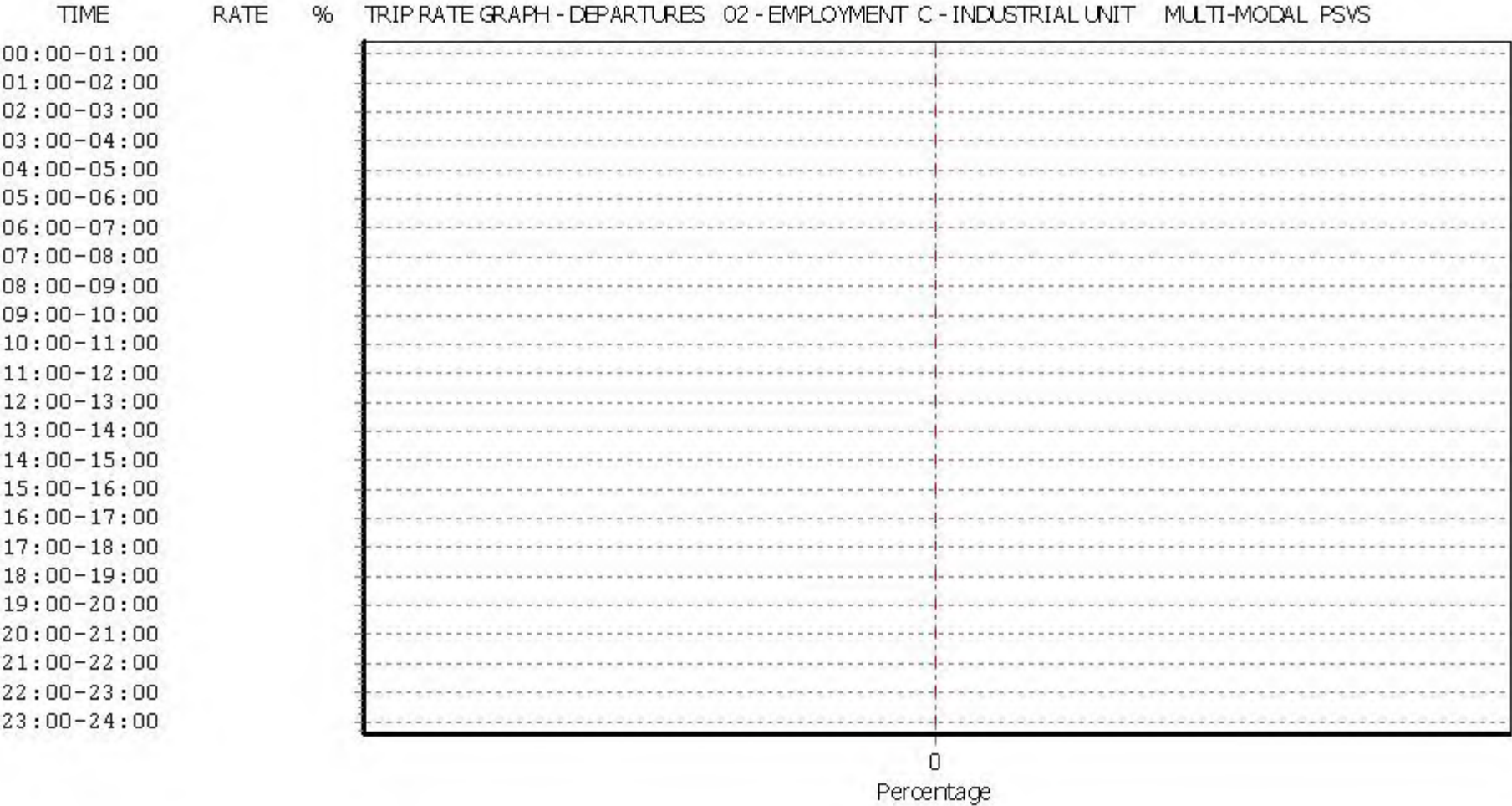
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

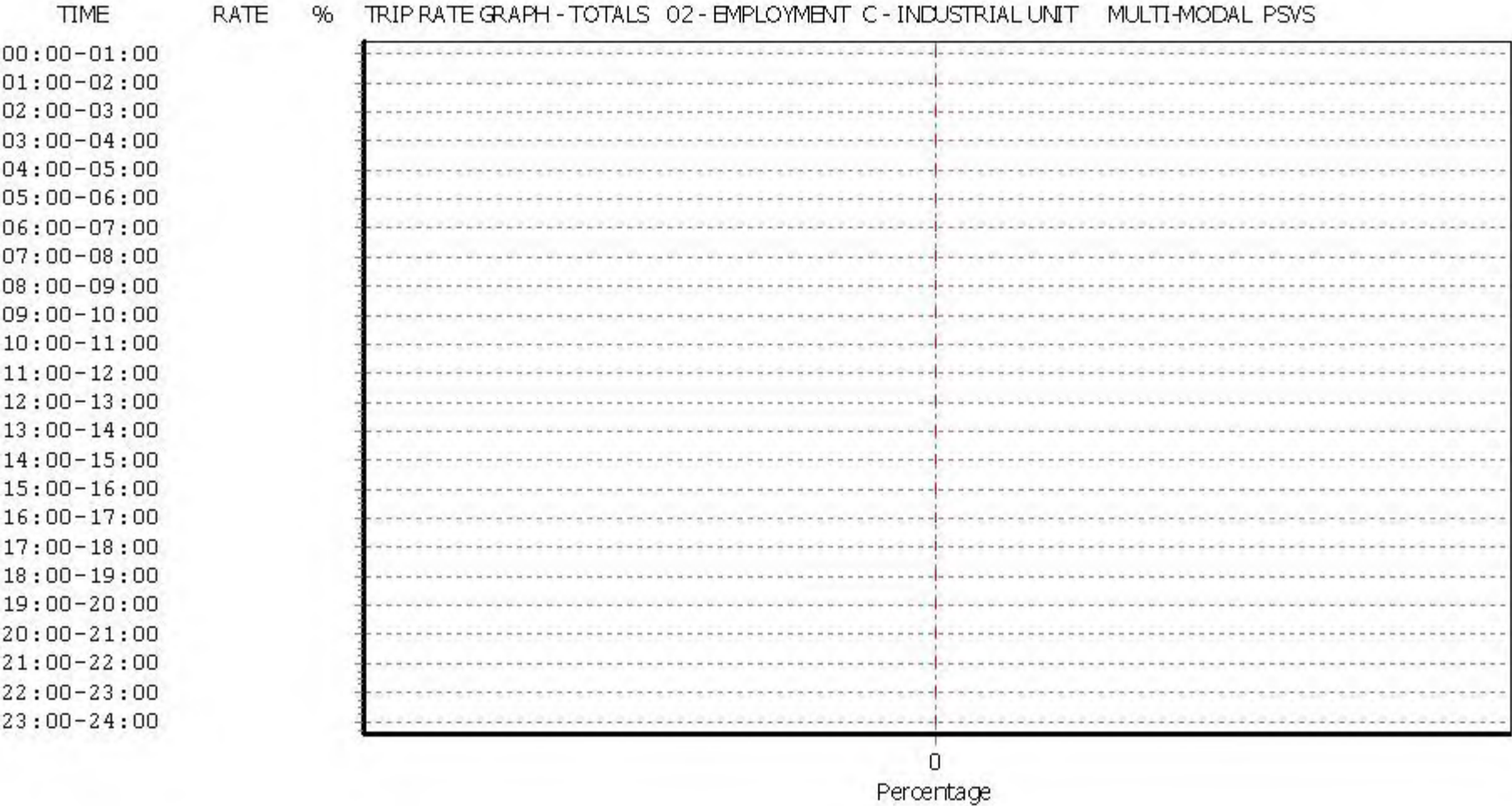
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT
MULTI-MODAL CYCLISTS
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
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:			0.000			0.910			0.910

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.*

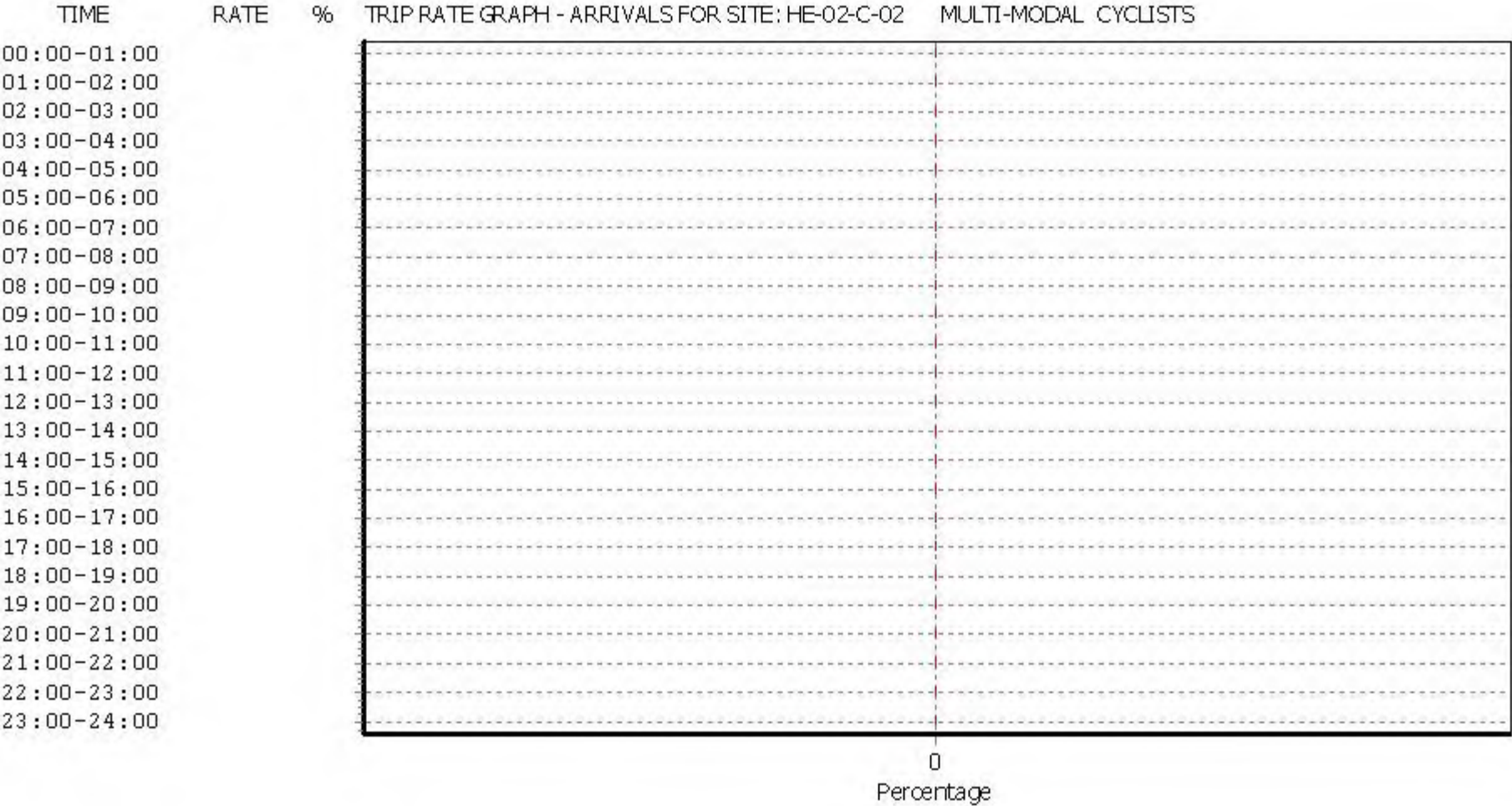
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

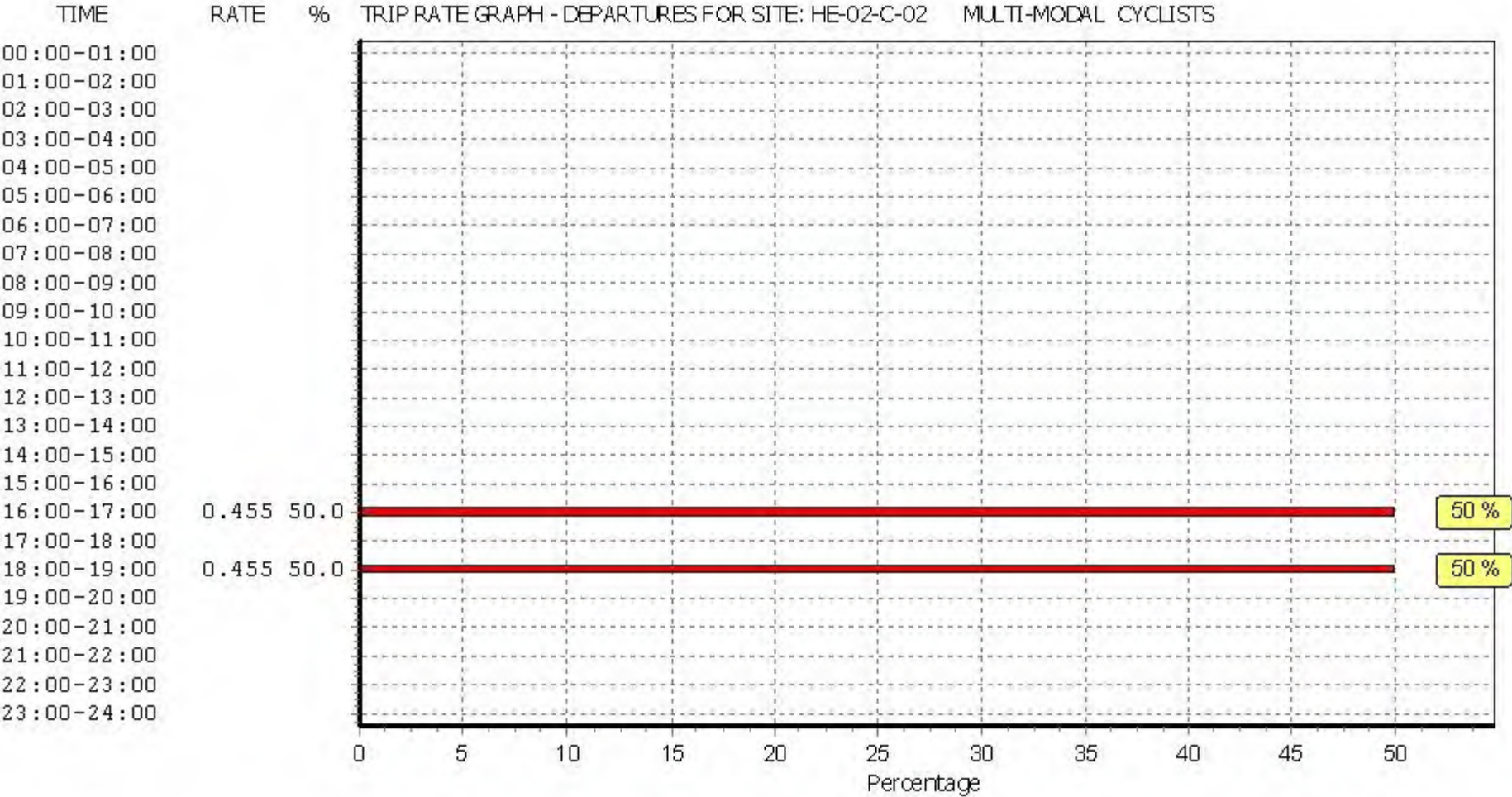
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

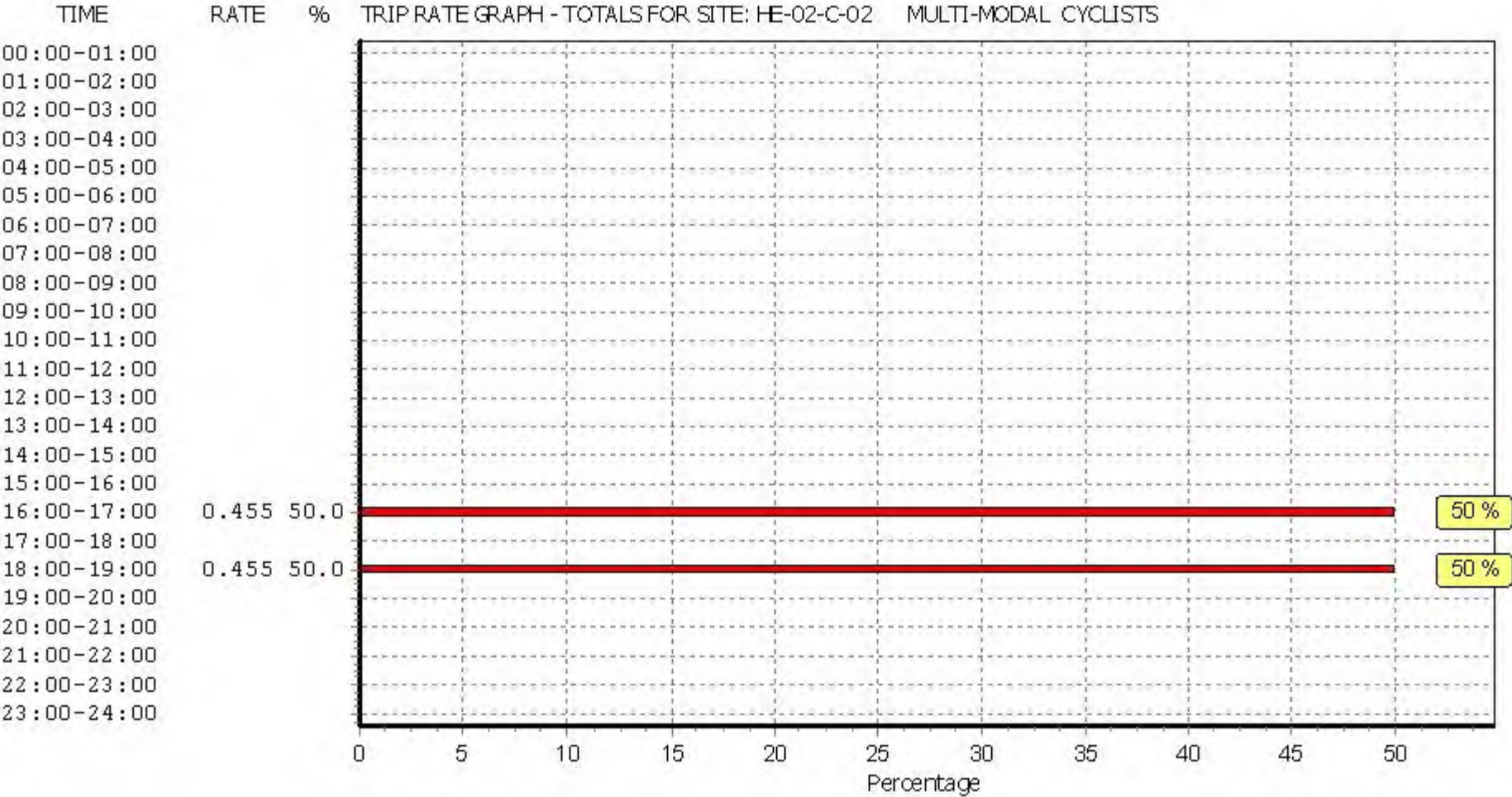
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	5.909	3	0.73	1.364	3	0.73	7.273
07:30 - 08:00	3	0.73	3.636	3	0.73	1.364	3	0.73	5.000
08:00 - 08:30	3	0.73	3.636	3	0.73	2.273	3	0.73	5.909
08:30 - 09:00	3	0.73	7.273	3	0.73	3.636	3	0.73	10.909
09:00 - 09:30	3	0.73	10.909	3	0.73	2.727	3	0.73	13.636
09:30 - 10:00	3	0.73	10.909	3	0.73	6.818	3	0.73	17.727
10:00 - 10:30	3	0.73	2.727	3	0.73	2.727	3	0.73	5.454
10:30 - 11:00	3	0.73	3.182	3	0.73	1.818	3	0.73	5.000
11:00 - 11:30	3	0.73	1.818	3	0.73	2.273	3	0.73	4.091
11:30 - 12:00	3	0.73	7.727	3	0.73	6.364	3	0.73	14.091
12:00 - 12:30	3	0.73	12.727	3	0.73	10.455	3	0.73	23.182
12:30 - 13:00	3	0.73	5.909	3	0.73	6.818	3	0.73	12.727
13:00 - 13:30	3	0.73	3.182	3	0.73	4.545	3	0.73	7.727
13:30 - 14:00	3	0.73	3.636	3	0.73	3.182	3	0.73	6.818
14:00 - 14:30	3	0.73	3.636	3	0.73	2.727	3	0.73	6.363
14:30 - 15:00	3	0.73	1.364	3	0.73	1.818	3	0.73	3.182
15:00 - 15:30	3	0.73	4.545	3	0.73	5.909	3	0.73	10.454
15:30 - 16:00	3	0.73	2.727	3	0.73	5.000	3	0.73	7.727
16:00 - 16:30	3	0.73	3.182	3	0.73	5.909	3	0.73	9.091
16:30 - 17:00	3	0.73	0.000	3	0.73	14.545	3	0.73	14.545
17:00 - 17:30	3	0.73	0.455	3	0.73	1.818	3	0.73	2.273
17:30 - 18:00	3	0.73	0.455	3	0.73	4.545	3	0.73	5.000
18:00 - 18:30	3	0.73	0.455	3	0.73	2.273	3	0.73	2.728
18:30 - 19:00	3	0.73	2.727	3	0.73	1.364	3	0.73	4.091
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:			102.726			102.272			204.998

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.*

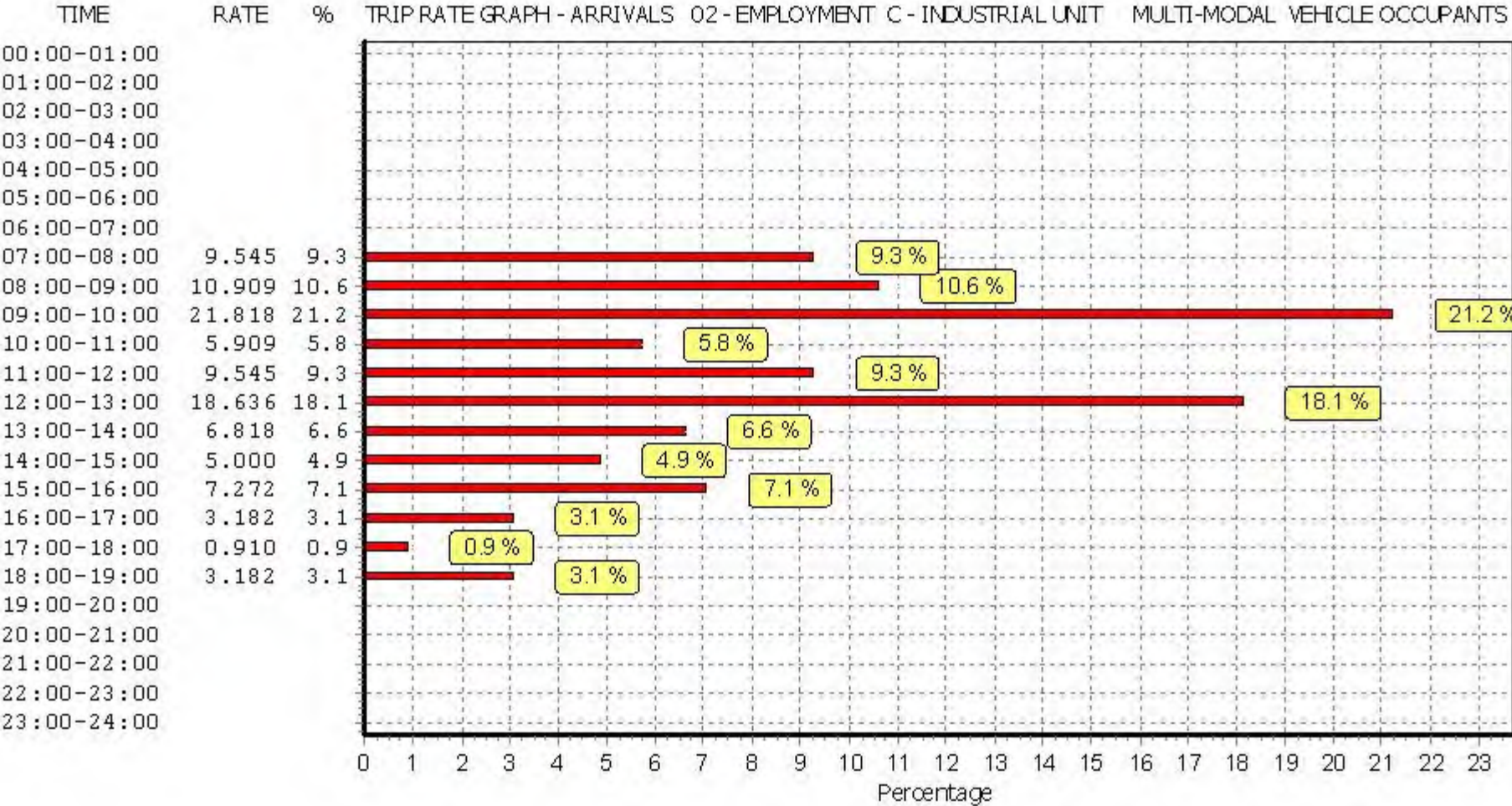
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

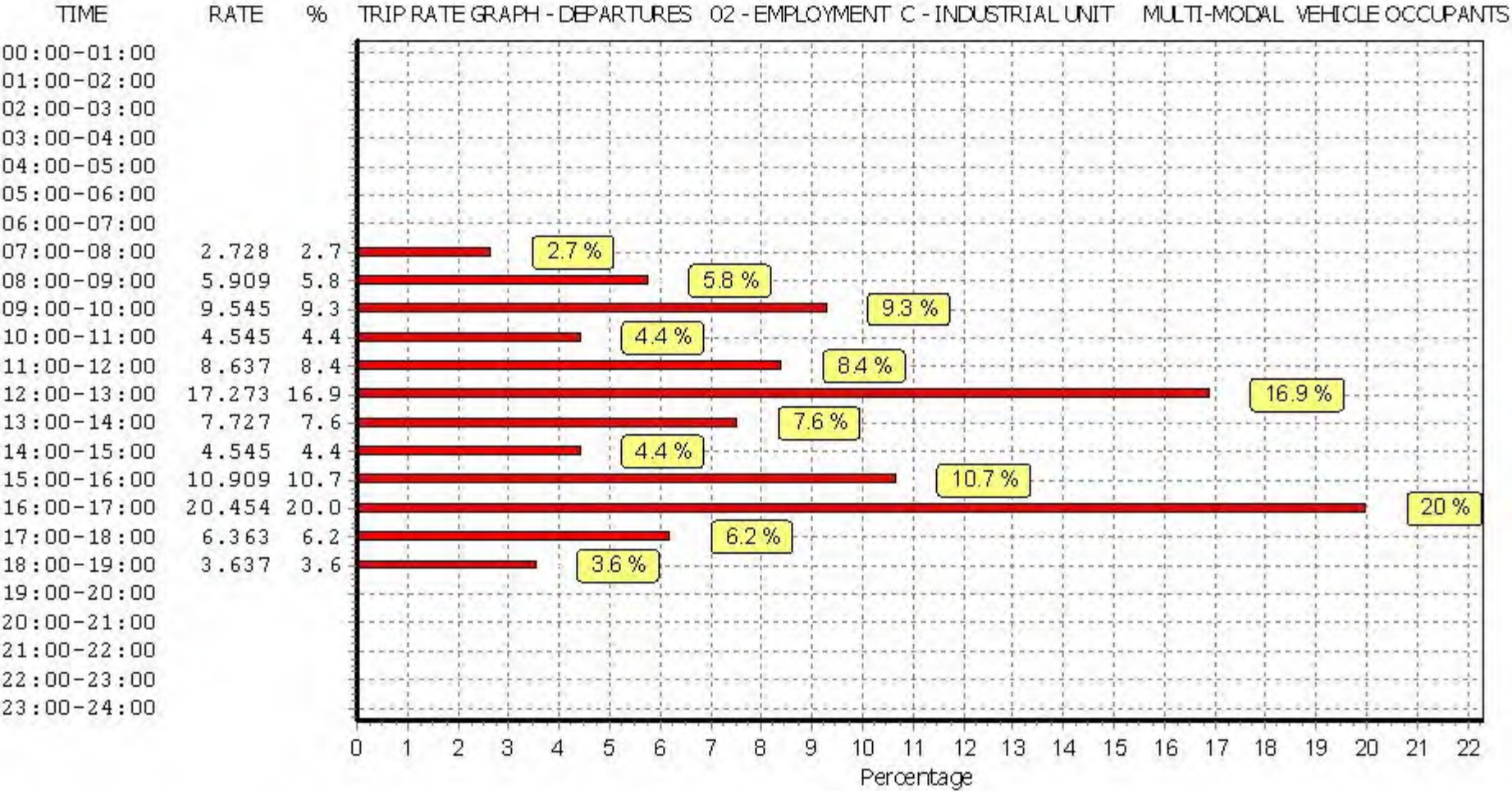
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

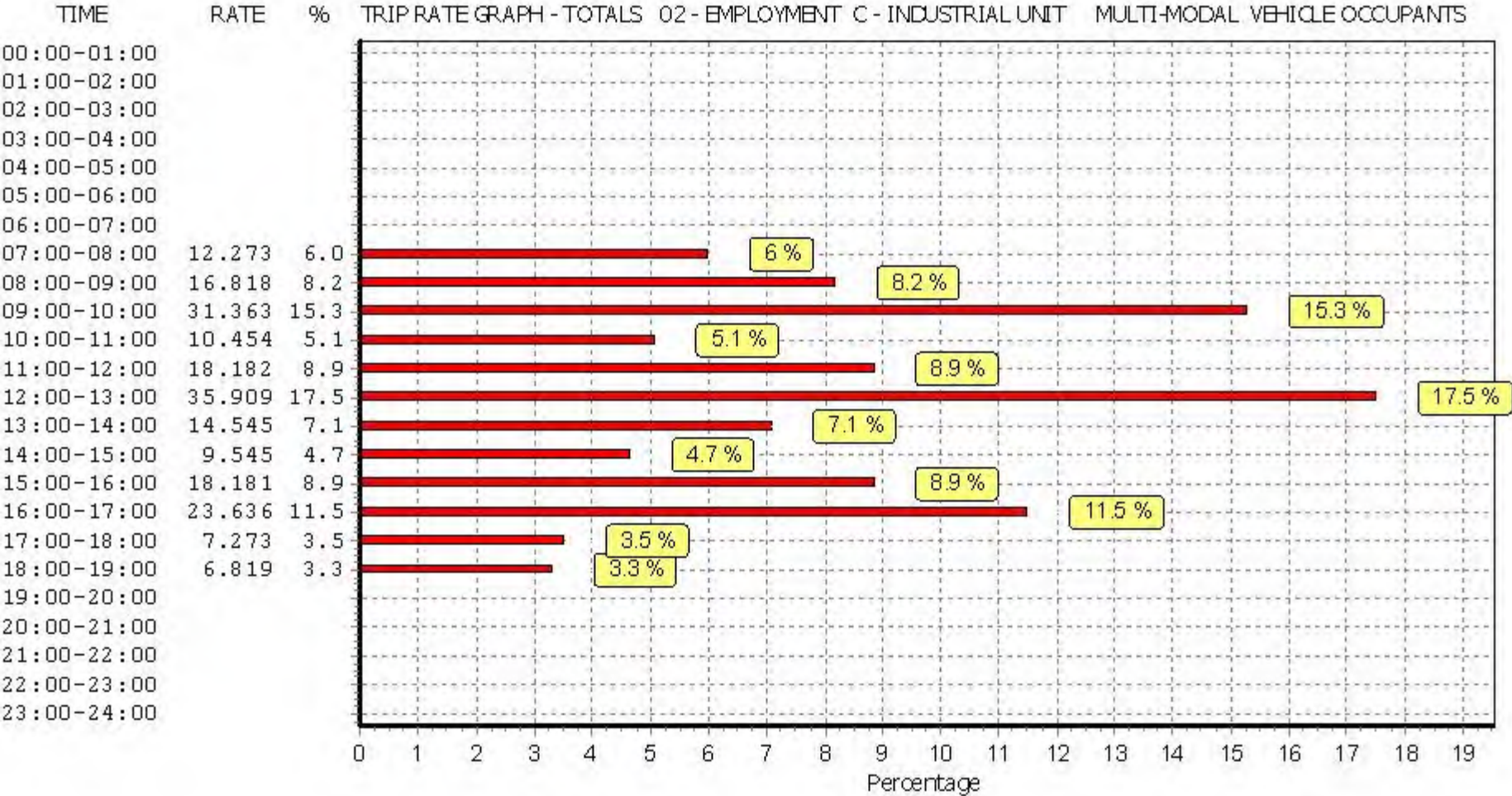
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.455	3	0.73	0.000	3	0.73	0.455
07:30 - 08:00	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
08:00 - 08:30	3	0.73	0.455	3	0.73	0.000	3	0.73	0.455
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:		0.910			1.820			2.730	

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.

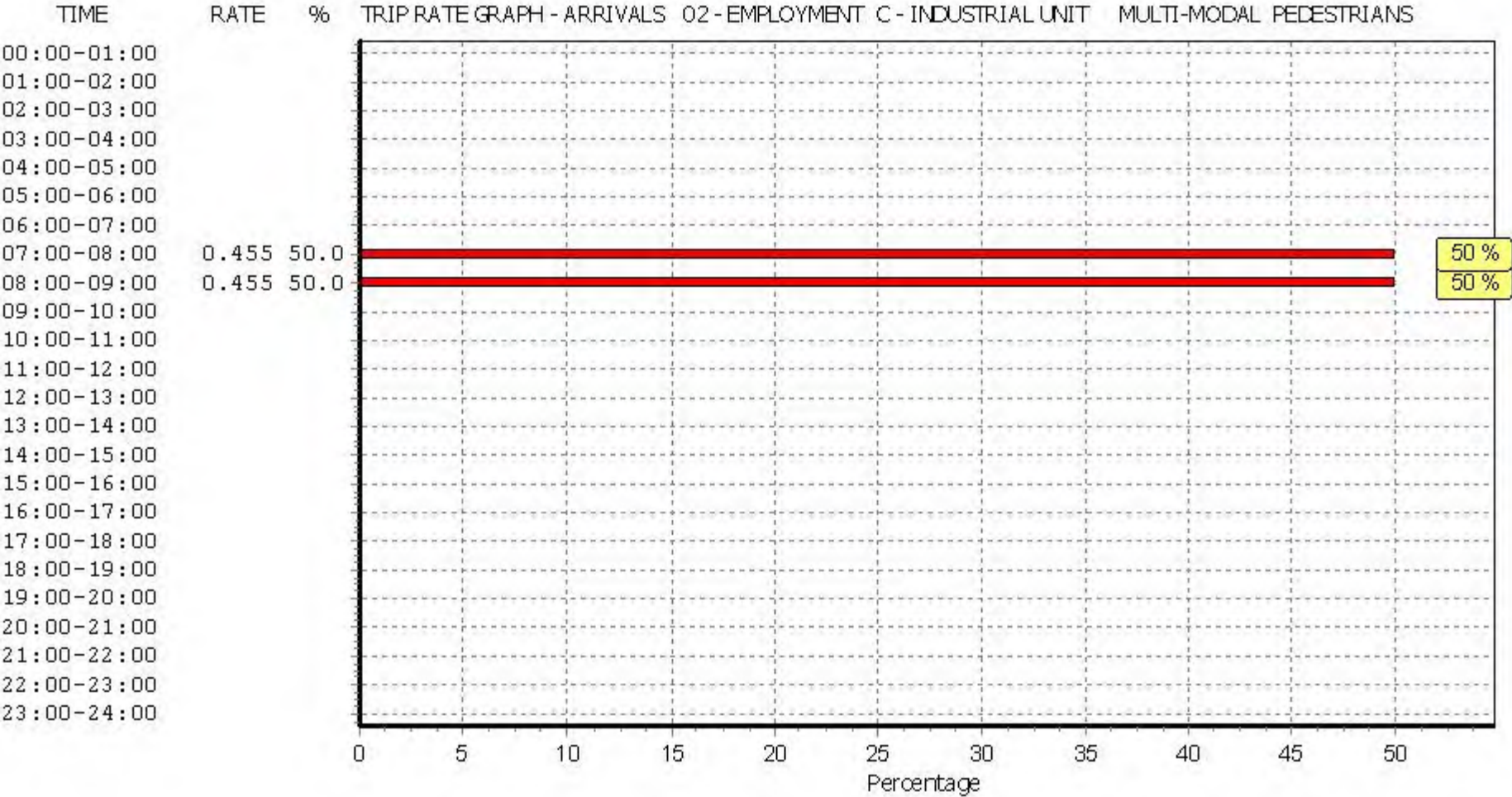
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

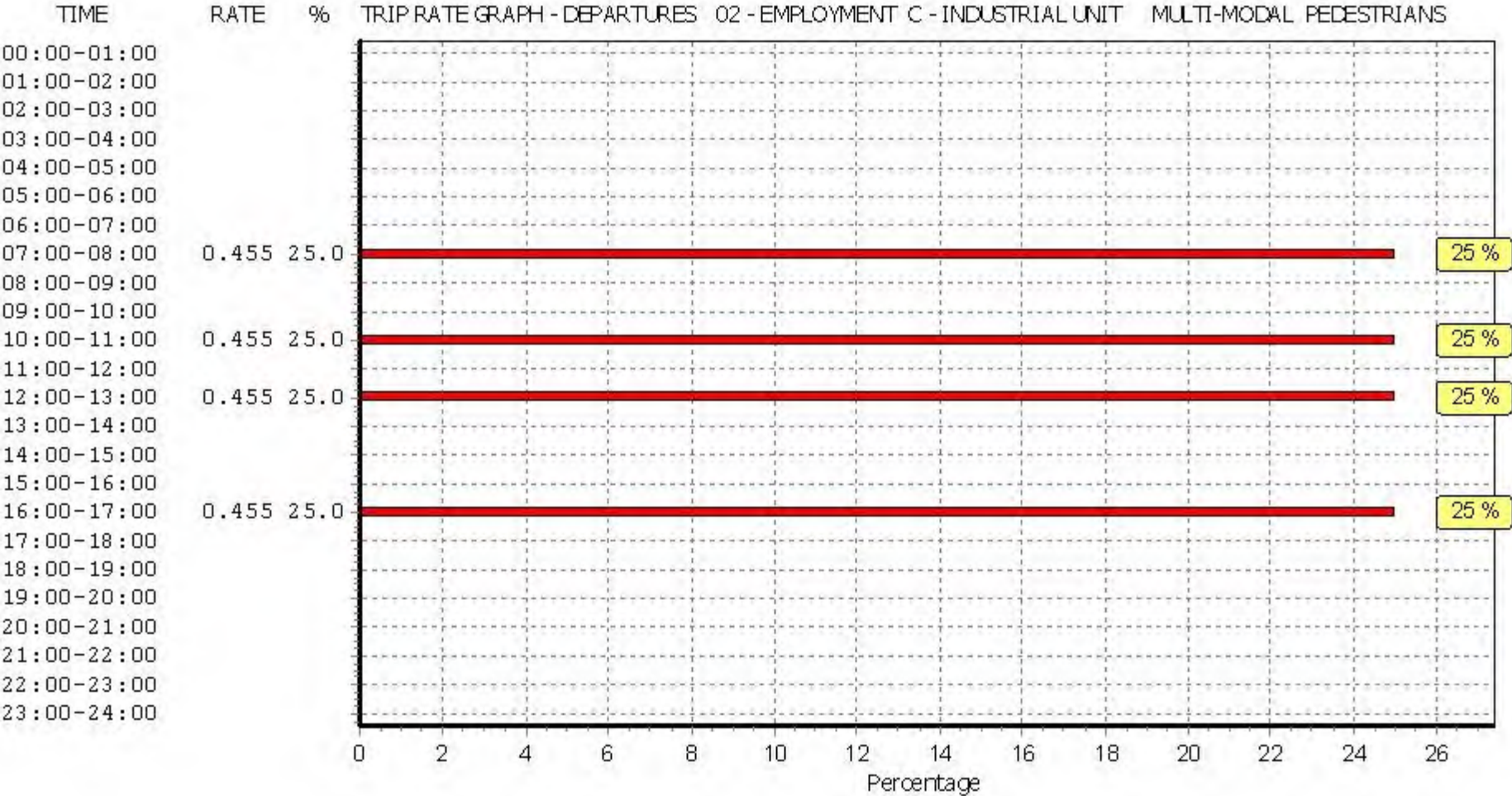
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

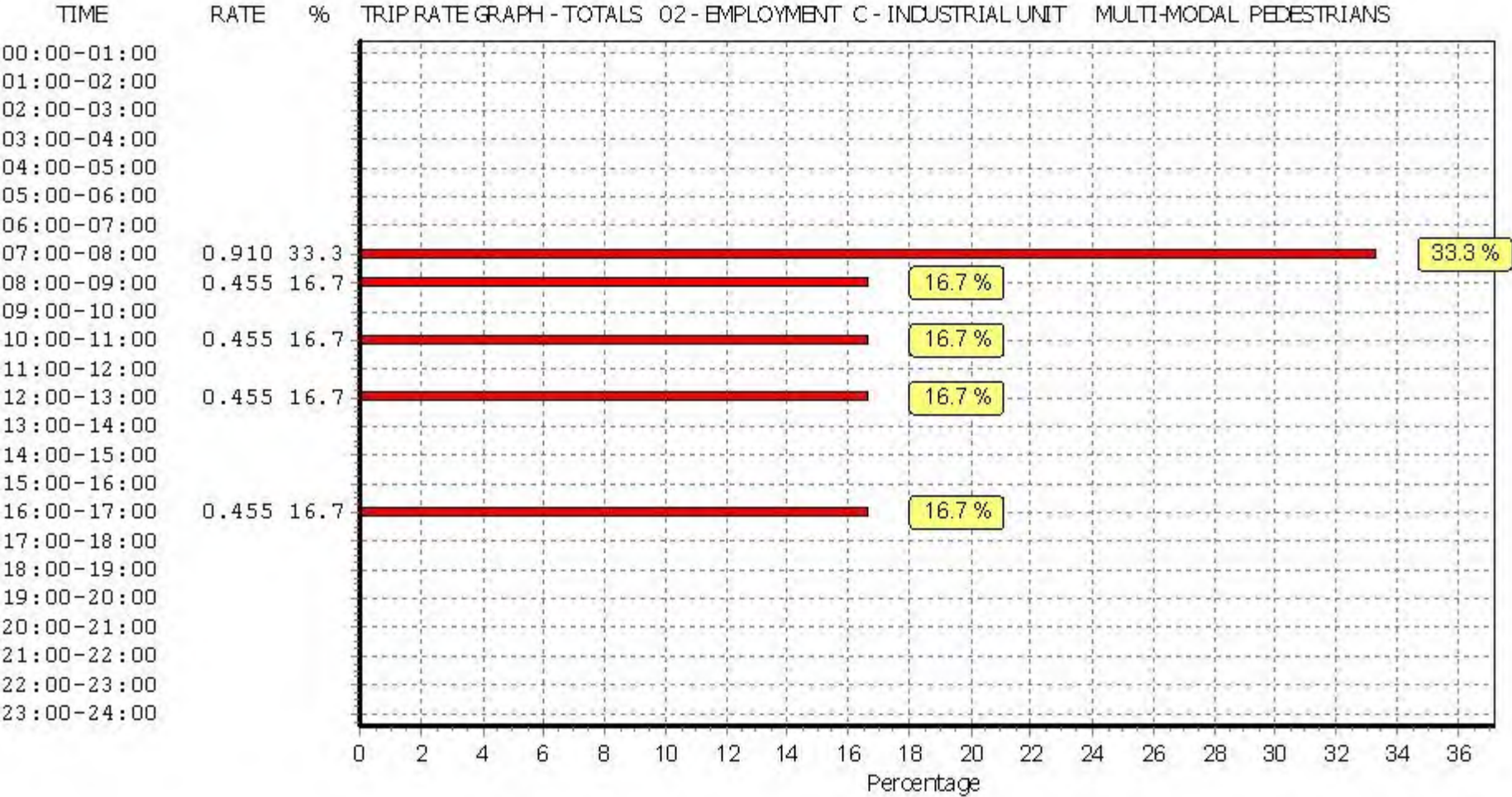
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT

MULTI-MODAL BUS/TRAM PASSENGERS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:		0.000			0.000			0.000	

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

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

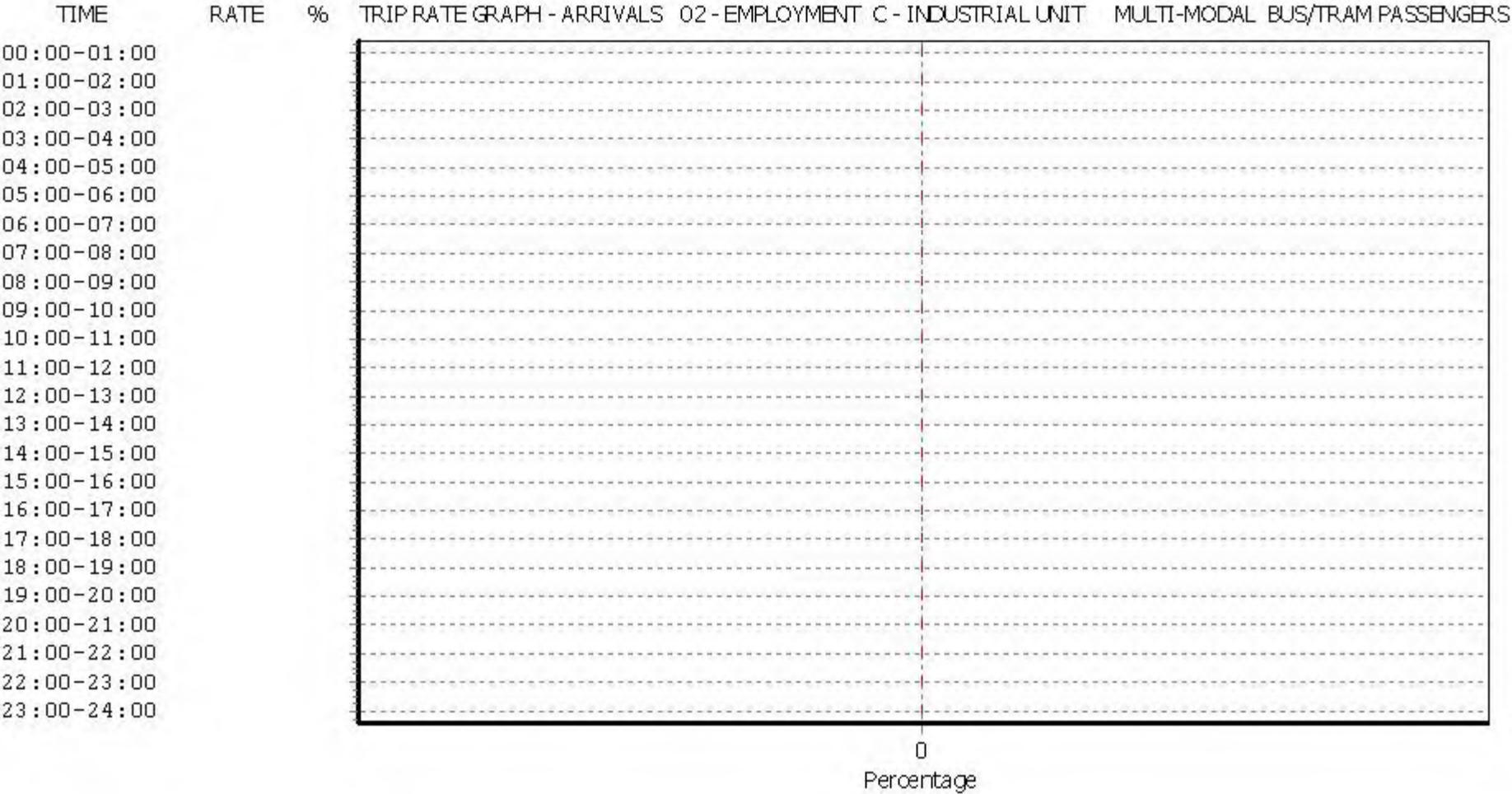
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

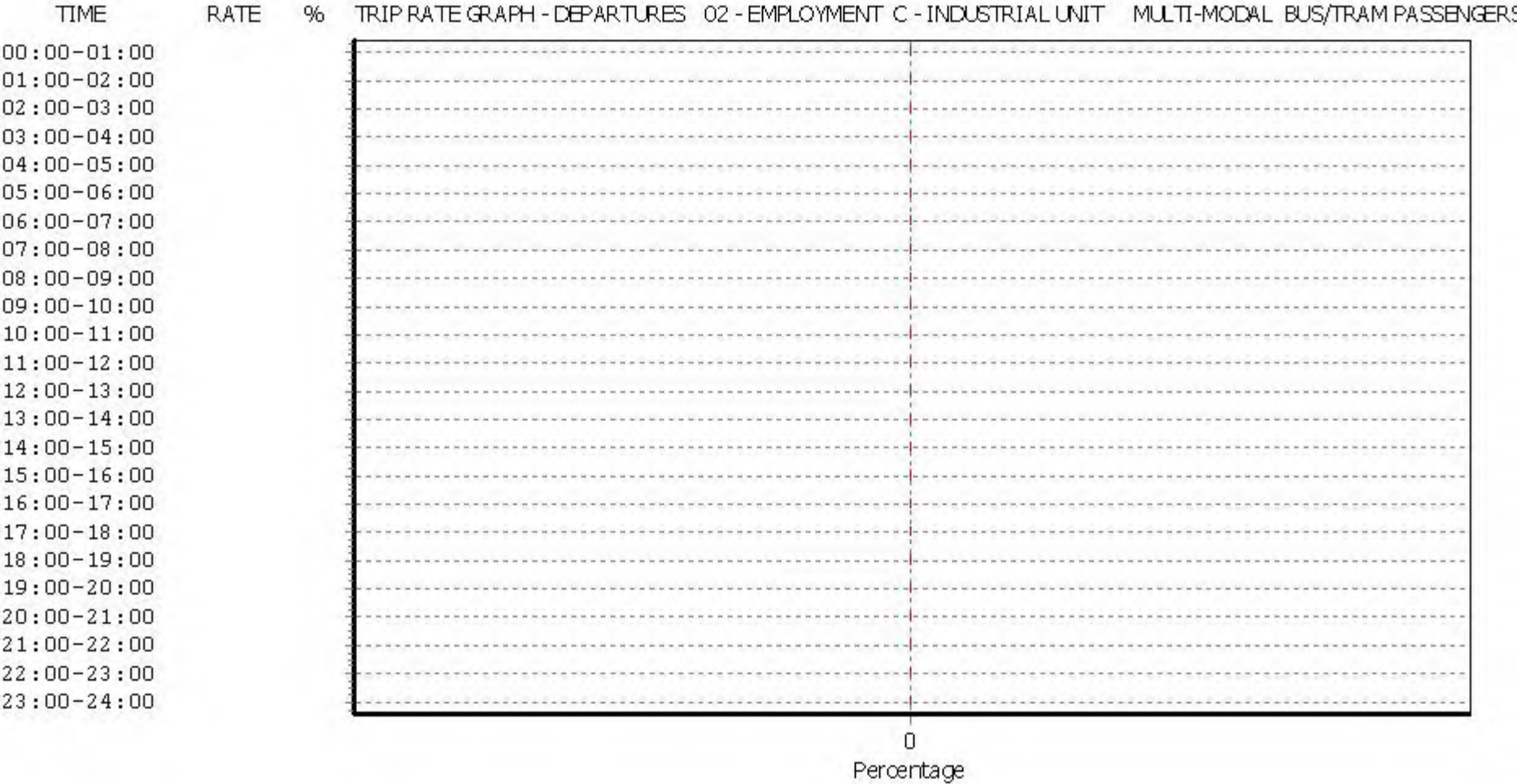
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

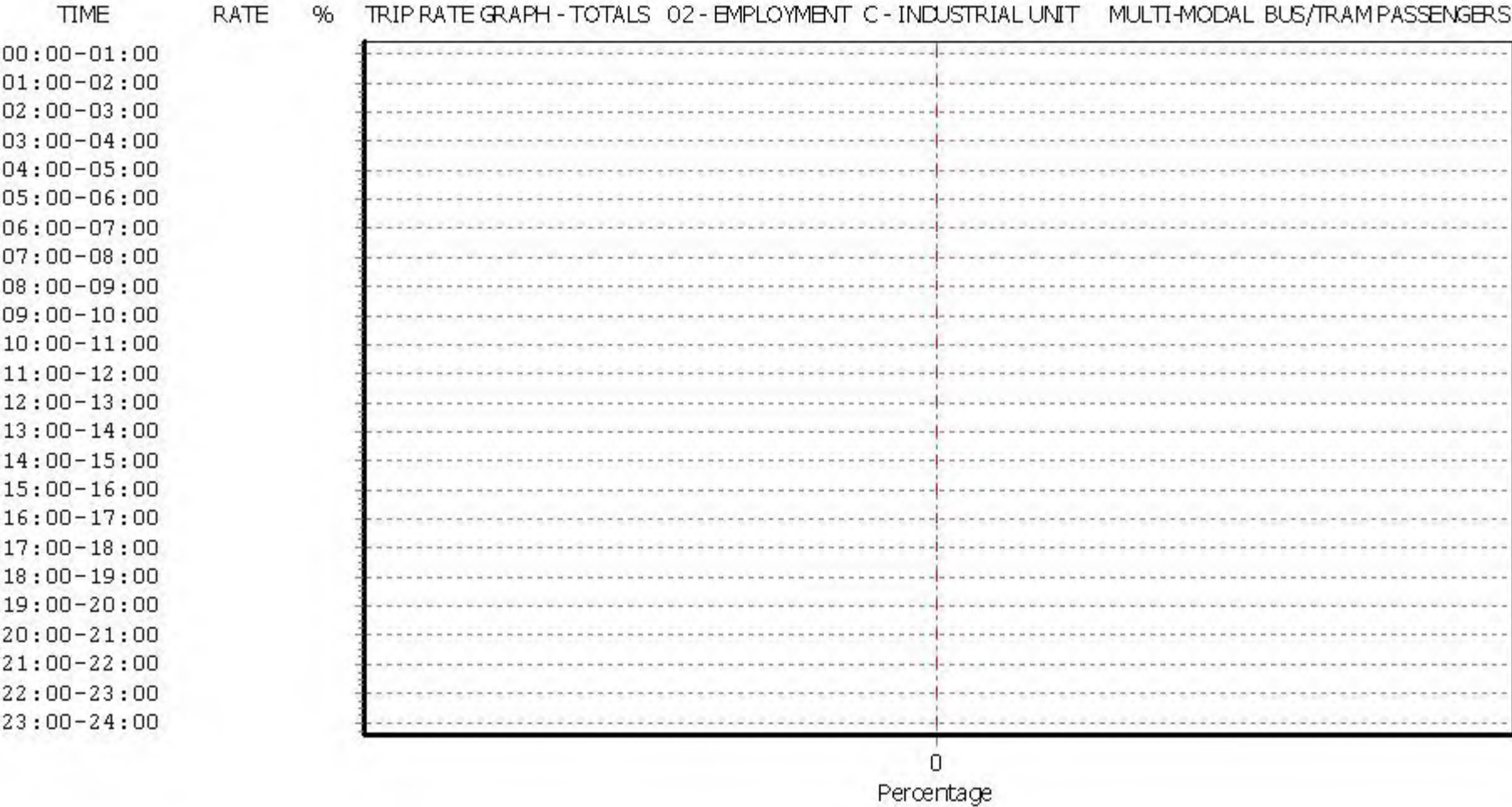
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT

MULTI-MODAL TOTAL RAIL PASSENGERS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:00 - 17:30	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:			0.000			0.455			0.455

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.

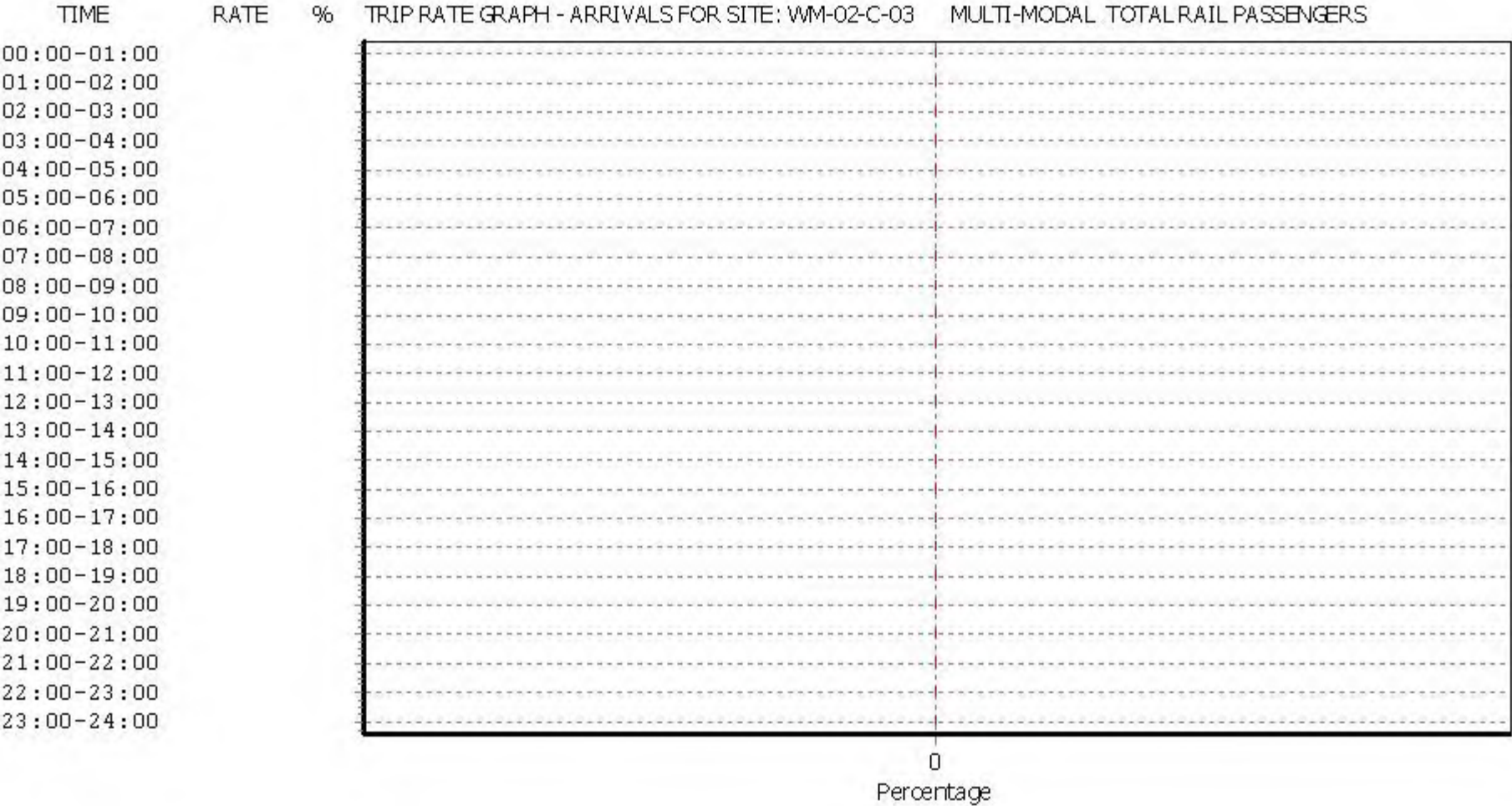
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

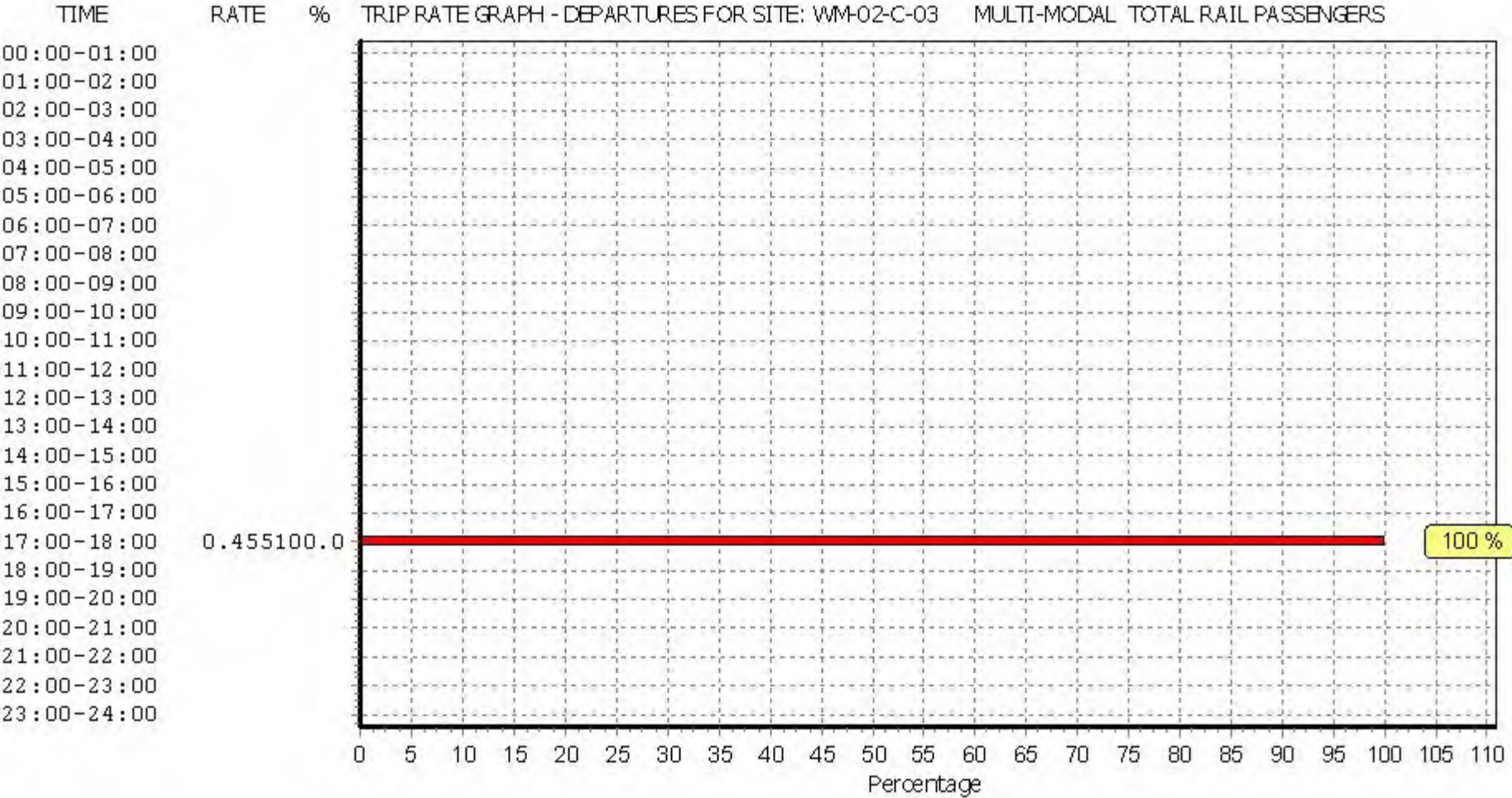
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

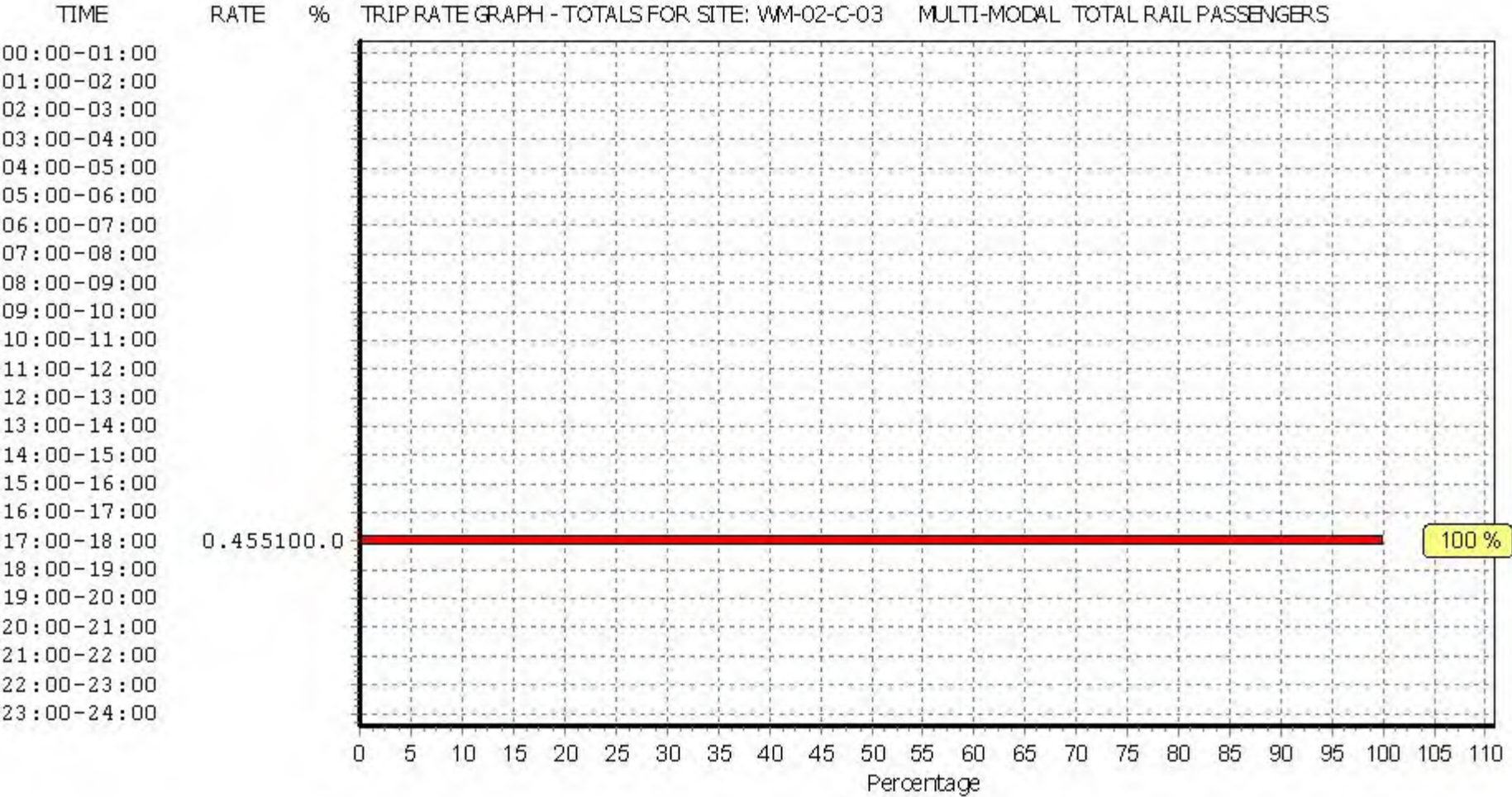
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT

MULTI-MODAL COACH PASSENGERS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:00 - 17:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:			0.000			0.000			0.000

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

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

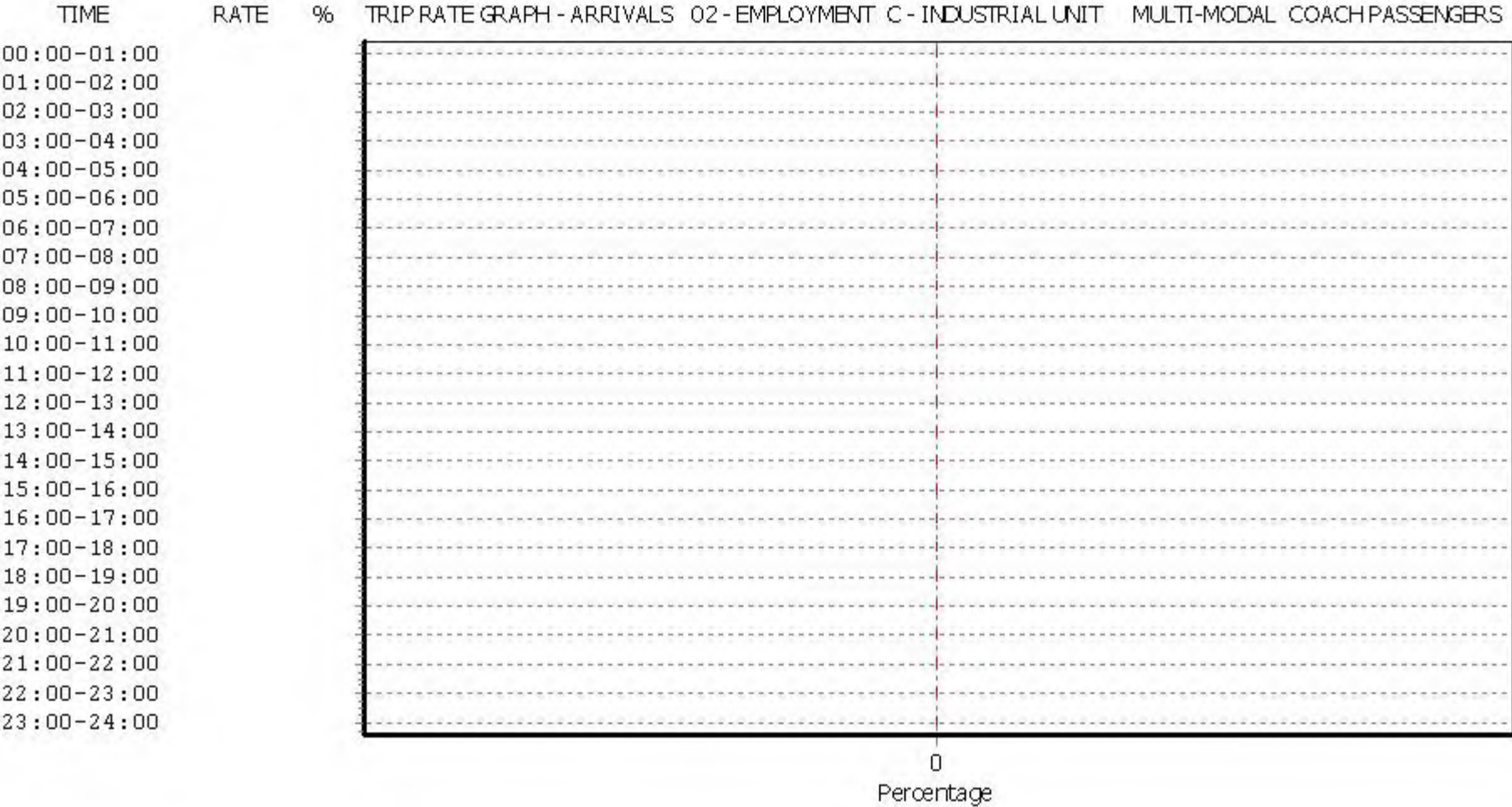
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

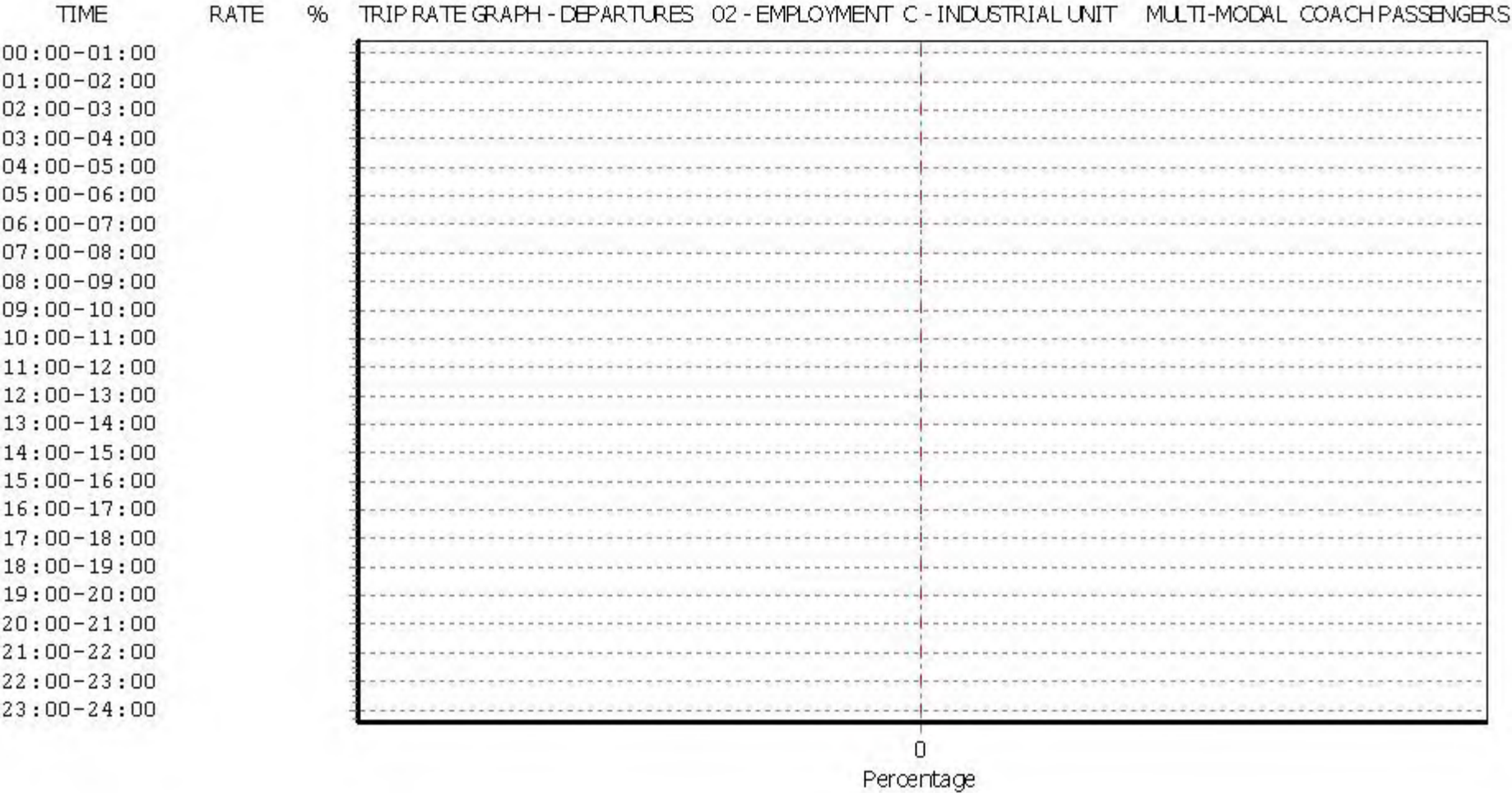
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

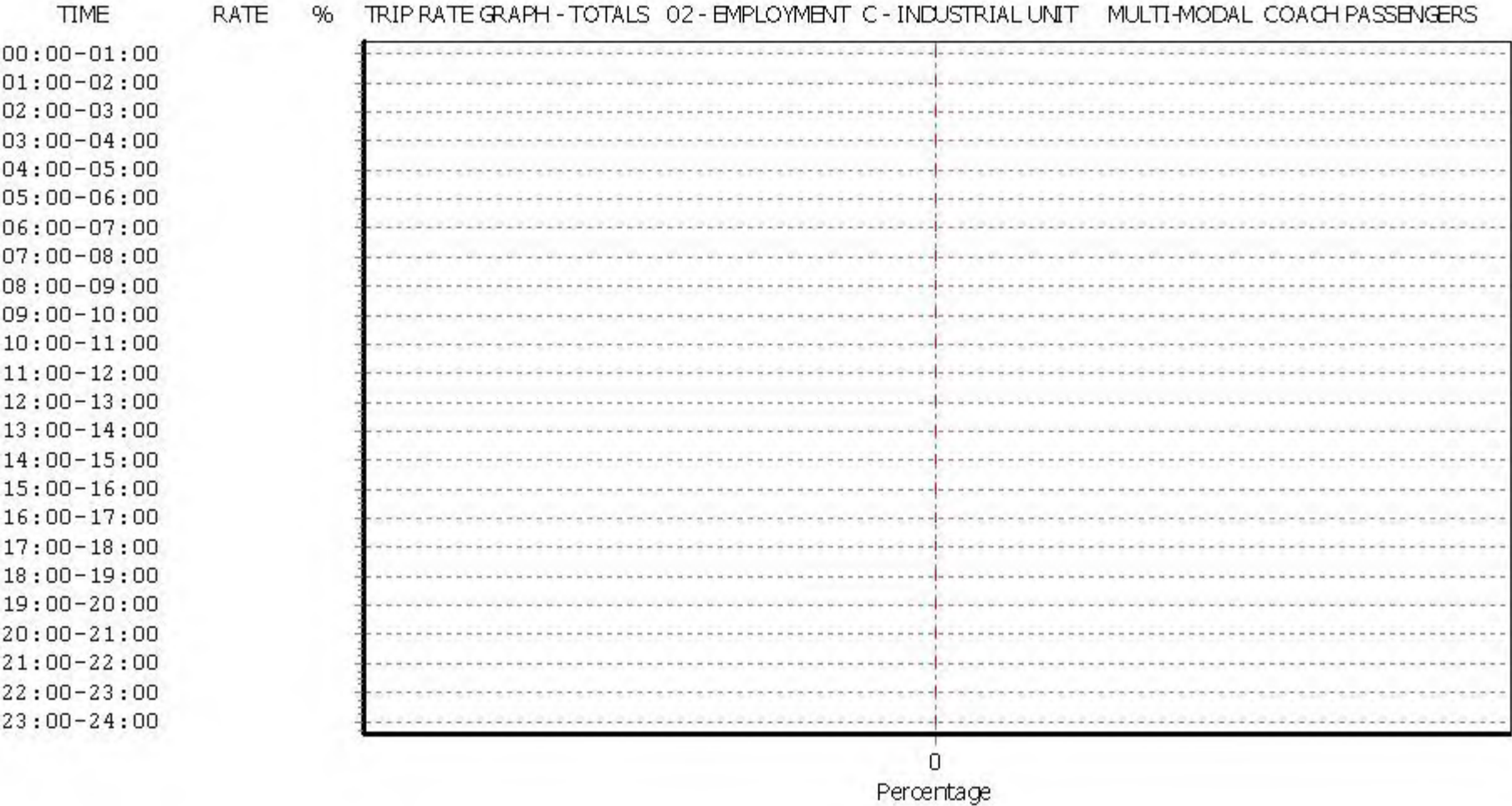
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
07:30 - 08:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:00 - 08:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
08:30 - 09:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:00 - 09:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
09:30 - 10:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:00 - 10:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
10:30 - 11:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:00 - 11:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
11:30 - 12:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:00 - 12:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
12:30 - 13:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:00 - 13:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
13:30 - 14:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:00 - 14:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
14:30 - 15:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:00 - 15:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
15:30 - 16:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:00 - 16:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
16:30 - 17:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
17:00 - 17:30	3	0.73	0.000	3	0.73	0.455	3	0.73	0.455
17:30 - 18:00	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:00 - 18:30	3	0.73	0.000	3	0.73	0.000	3	0.73	0.000
18:30 - 19:00	3	0.73	0.000	3	0.73	0.000	3	0.73	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:			0.000			0.455			0.455

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.

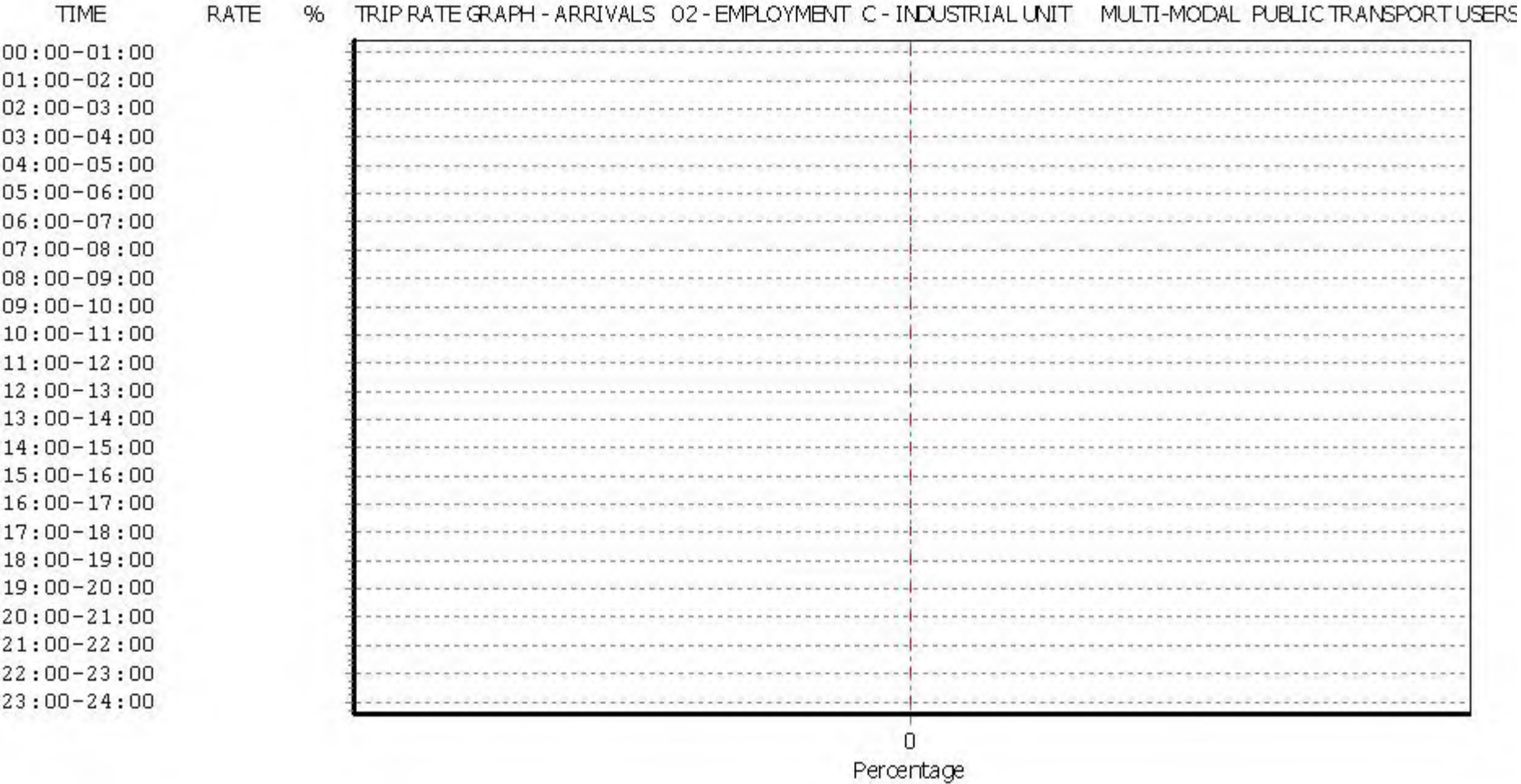
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

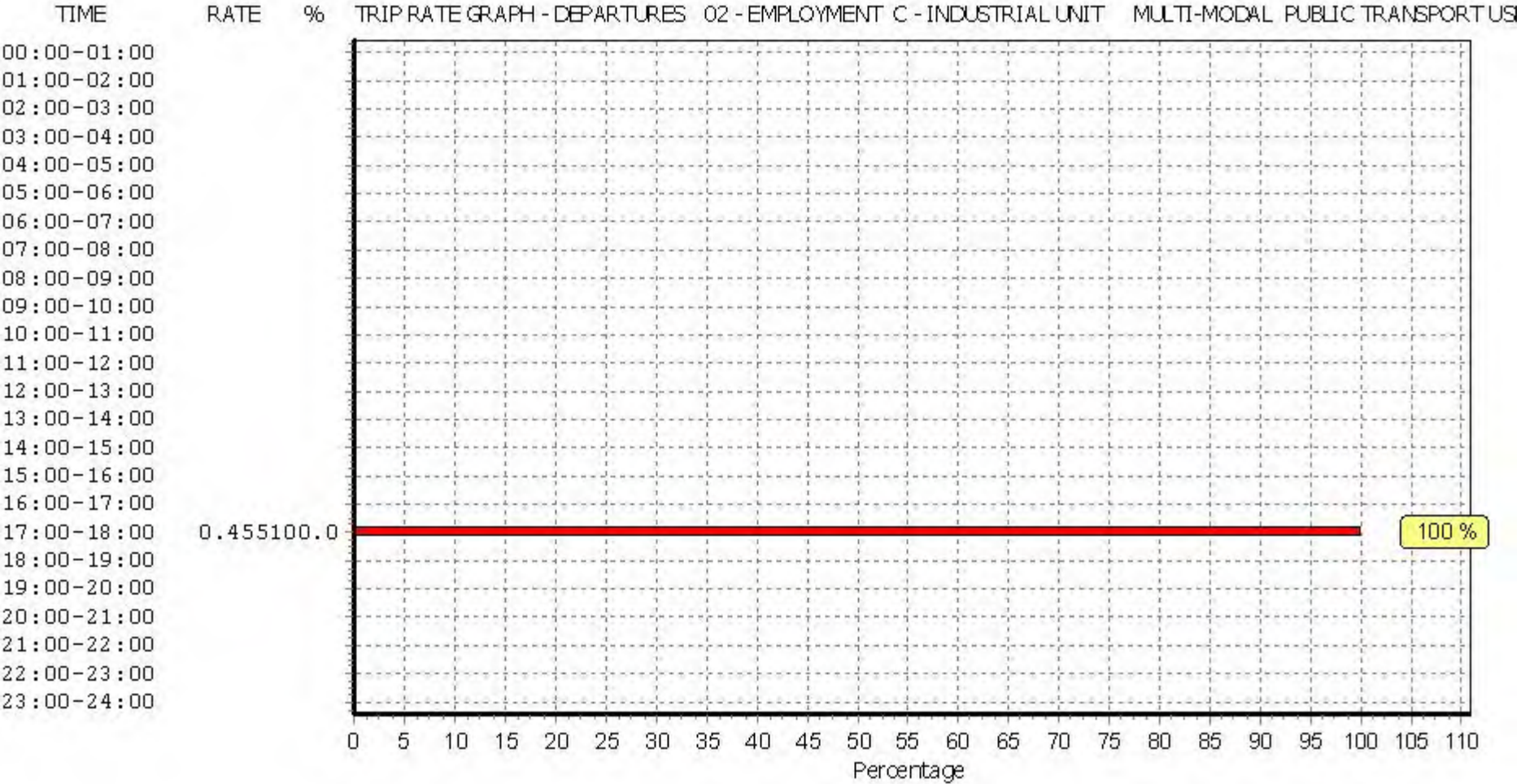
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

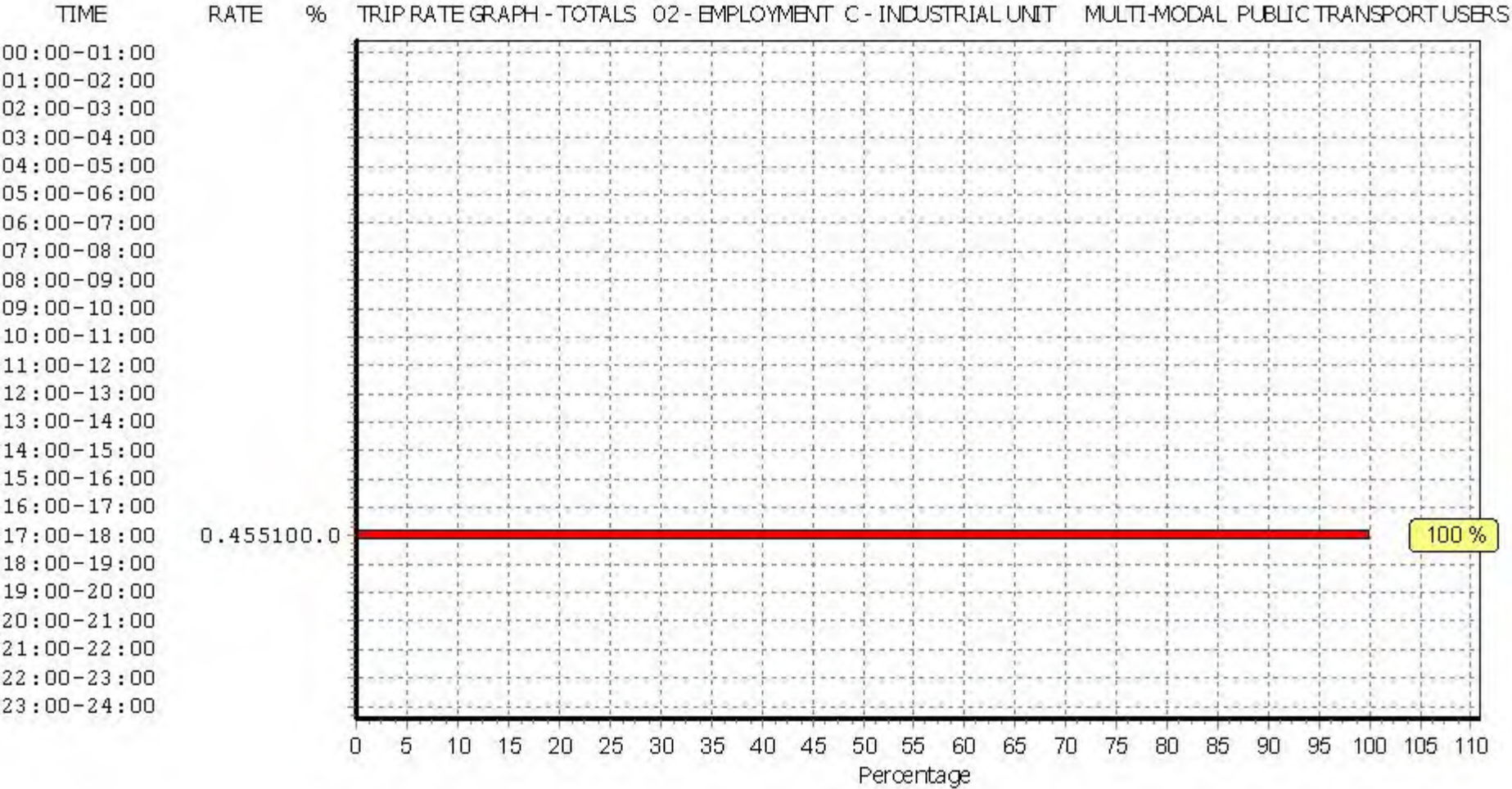
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



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/C - INDUSTRIAL UNIT
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 hect
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	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	3	0.73	6.364	3	0.73	1.364	3	0.73	7.728
07:30 - 08:00	3	0.73	3.636	3	0.73	1.818	3	0.73	5.454
08:00 - 08:30	3	0.73	4.091	3	0.73	2.273	3	0.73	6.364
08:30 - 09:00	3	0.73	7.273	3	0.73	3.636	3	0.73	10.909
09:00 - 09:30	3	0.73	10.909	3	0.73	2.727	3	0.73	13.636
09:30 - 10:00	3	0.73	10.909	3	0.73	6.818	3	0.73	17.727
10:00 - 10:30	3	0.73	2.727	3	0.73	2.727	3	0.73	5.454
10:30 - 11:00	3	0.73	3.182	3	0.73	2.273	3	0.73	5.455
11:00 - 11:30	3	0.73	1.818	3	0.73	2.273	3	0.73	4.091
11:30 - 12:00	3	0.73	7.727	3	0.73	6.364	3	0.73	14.091
12:00 - 12:30	3	0.73	12.727	3	0.73	10.909	3	0.73	23.636
12:30 - 13:00	3	0.73	5.909	3	0.73	6.818	3	0.73	12.727
13:00 - 13:30	3	0.73	3.182	3	0.73	4.545	3	0.73	7.727
13:30 - 14:00	3	0.73	3.636	3	0.73	3.182	3	0.73	6.818
14:00 - 14:30	3	0.73	3.636	3	0.73	2.727	3	0.73	6.363
14:30 - 15:00	3	0.73	1.364	3	0.73	1.818	3	0.73	3.182
15:00 - 15:30	3	0.73	4.545	3	0.73	5.909	3	0.73	10.454
15:30 - 16:00	3	0.73	2.727	3	0.73	5.000	3	0.73	7.727
16:00 - 16:30	3	0.73	3.182	3	0.73	5.909	3	0.73	9.091
16:30 - 17:00	3	0.73	0.000	3	0.73	15.455	3	0.73	15.455
17:00 - 17:30	3	0.73	0.455	3	0.73	2.273	3	0.73	2.728
17:30 - 18:00	3	0.73	0.455	3	0.73	4.545	3	0.73	5.000
18:00 - 18:30	3	0.73	0.455	3	0.73	2.273	3	0.73	2.728
18:30 - 19:00	3	0.73	2.727	3	0.73	1.818	3	0.73	4.545
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:			103.636			105.454			209.090

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

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

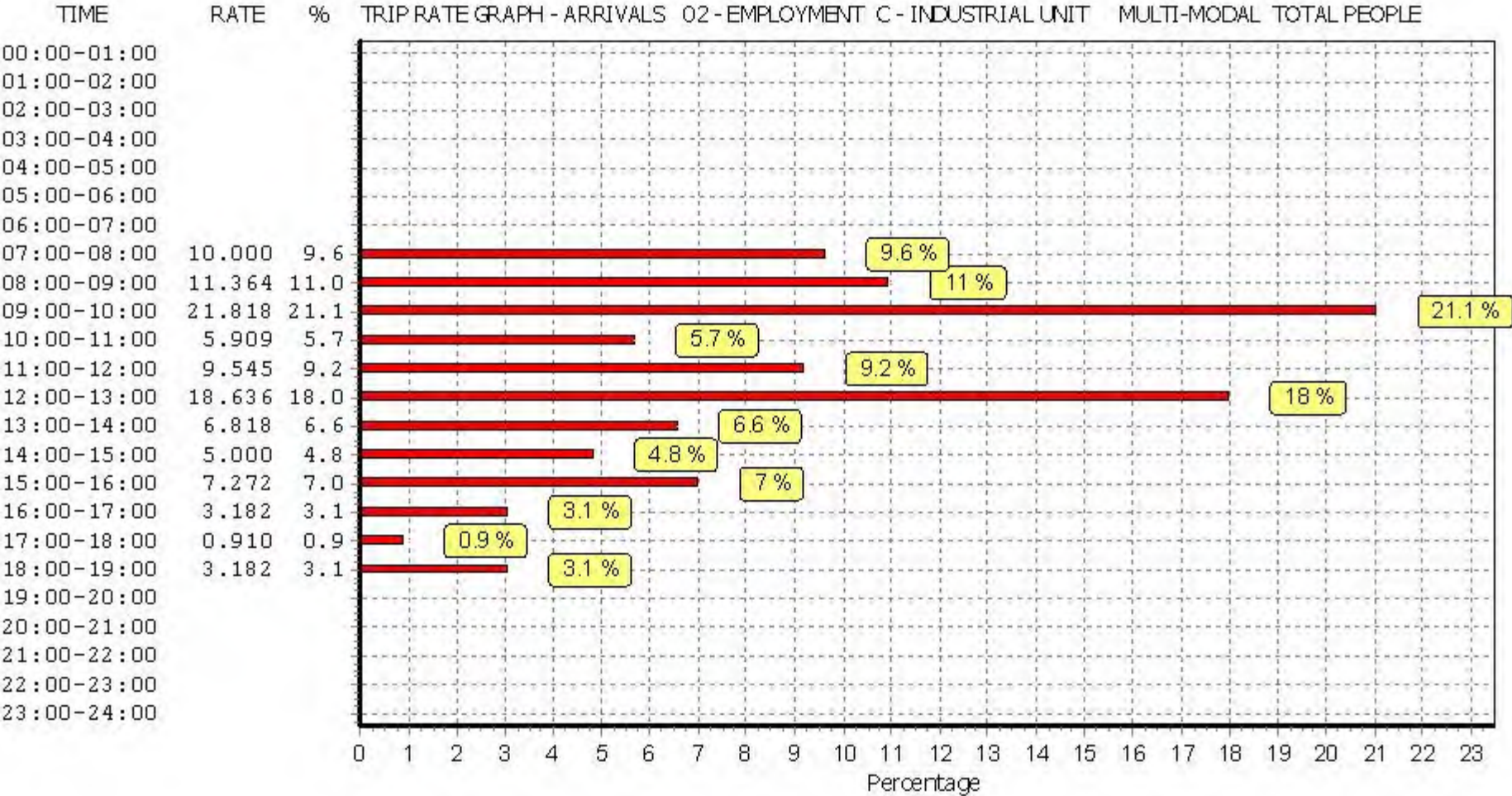
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

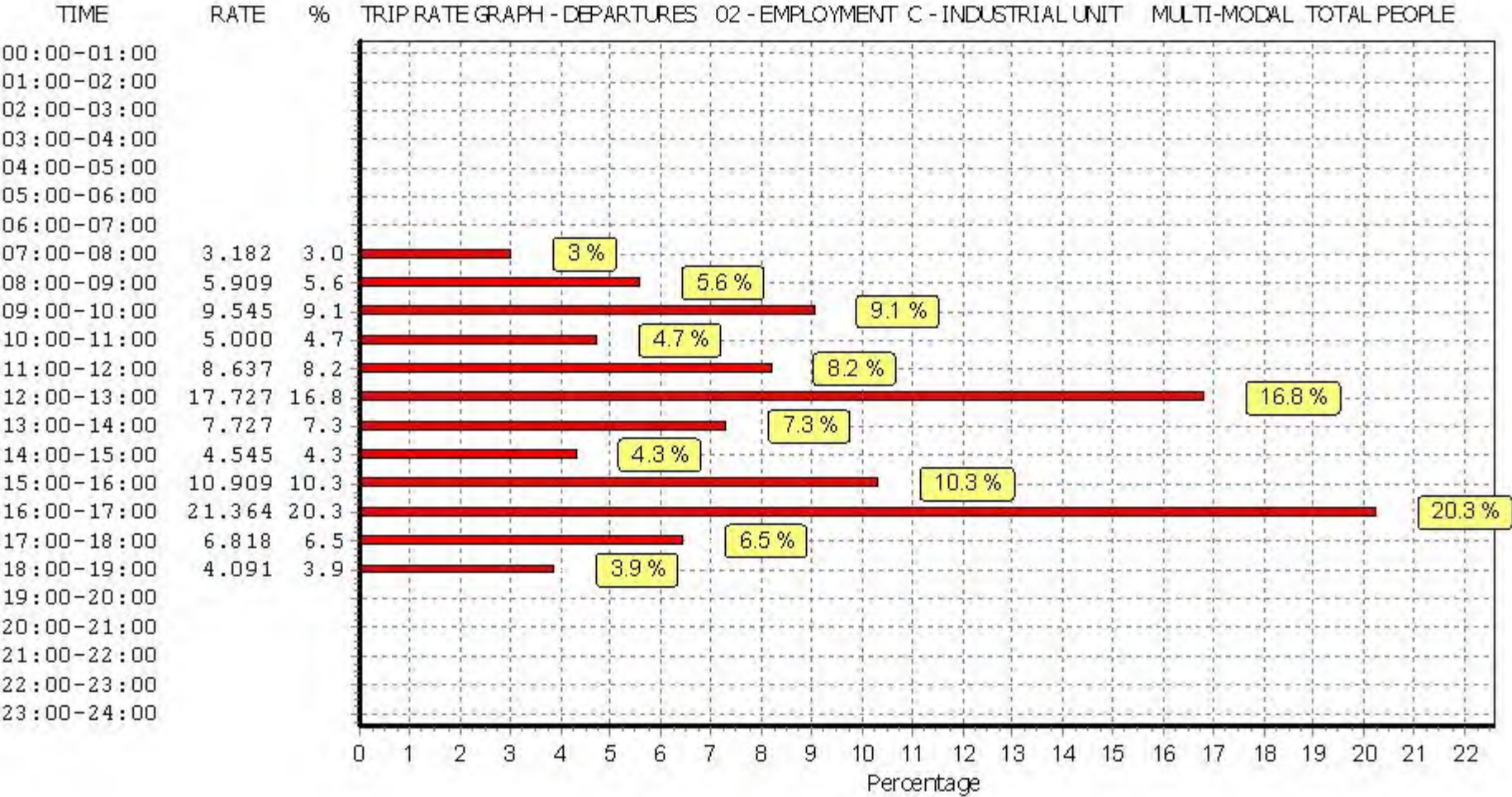
Parameter summary

Trip rate parameter range selected:	0.62 to 0.95 (units: hect)
Survey date date range:	01/01/10 - 06/07/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

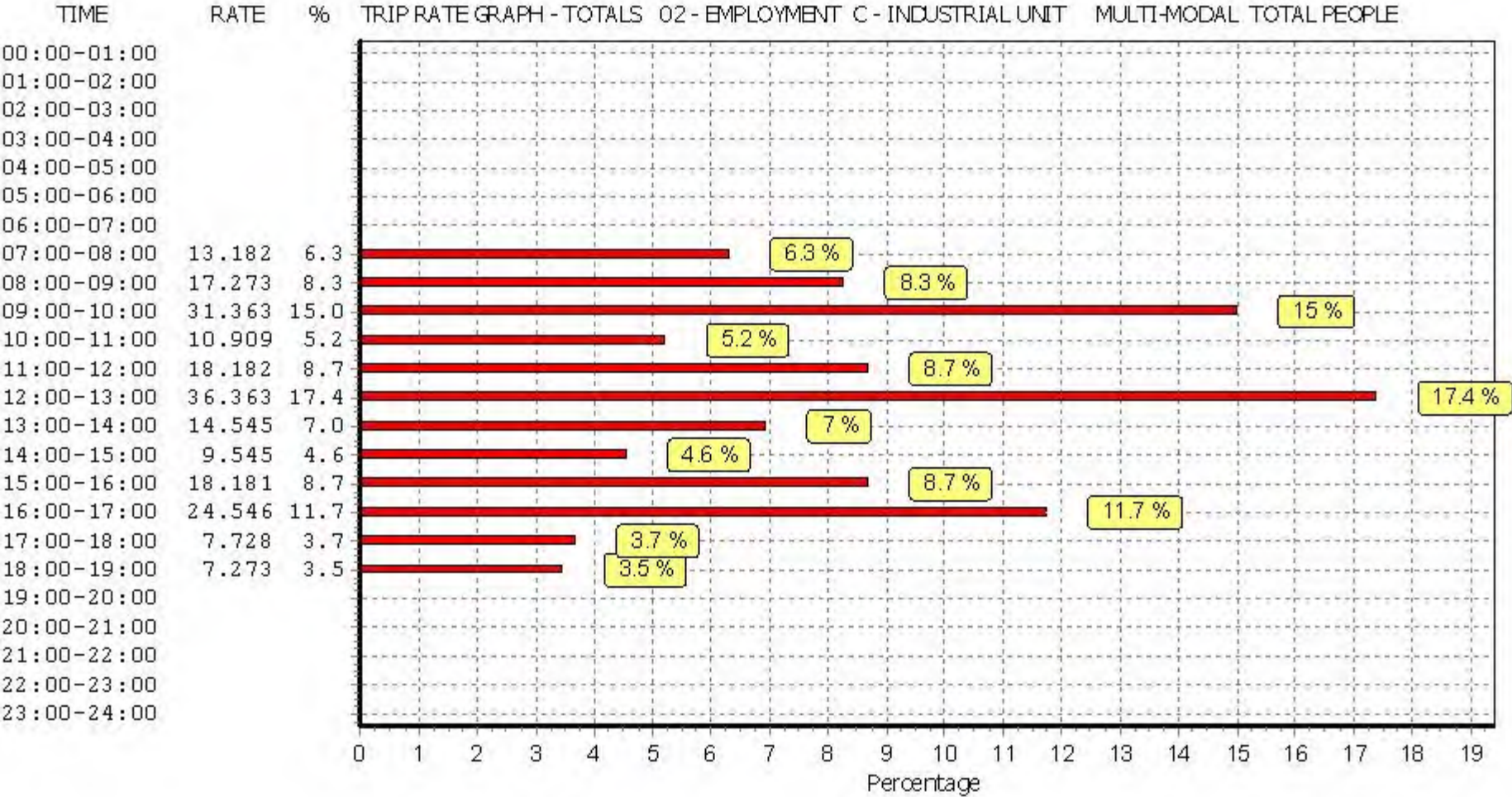
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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

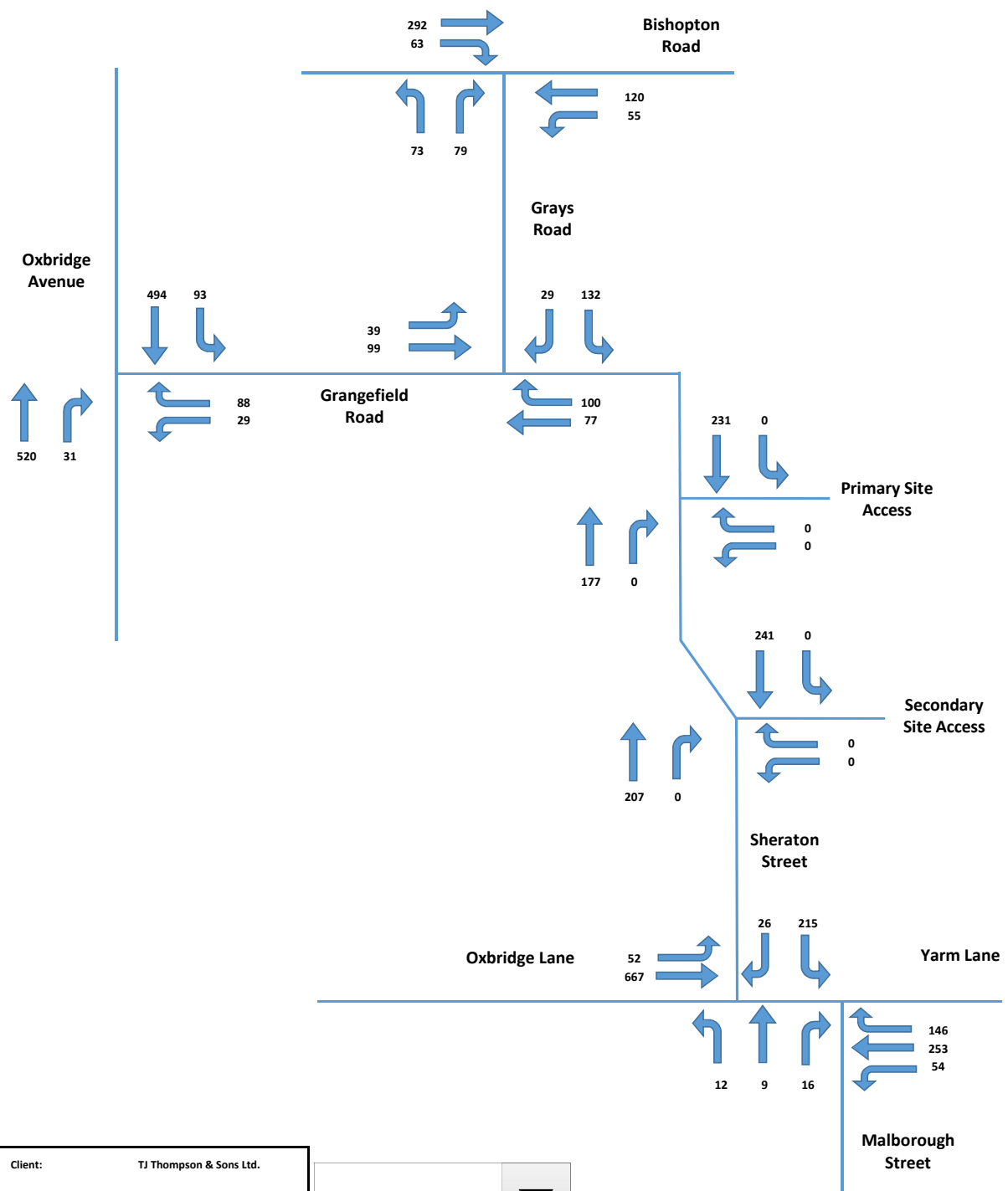


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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



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

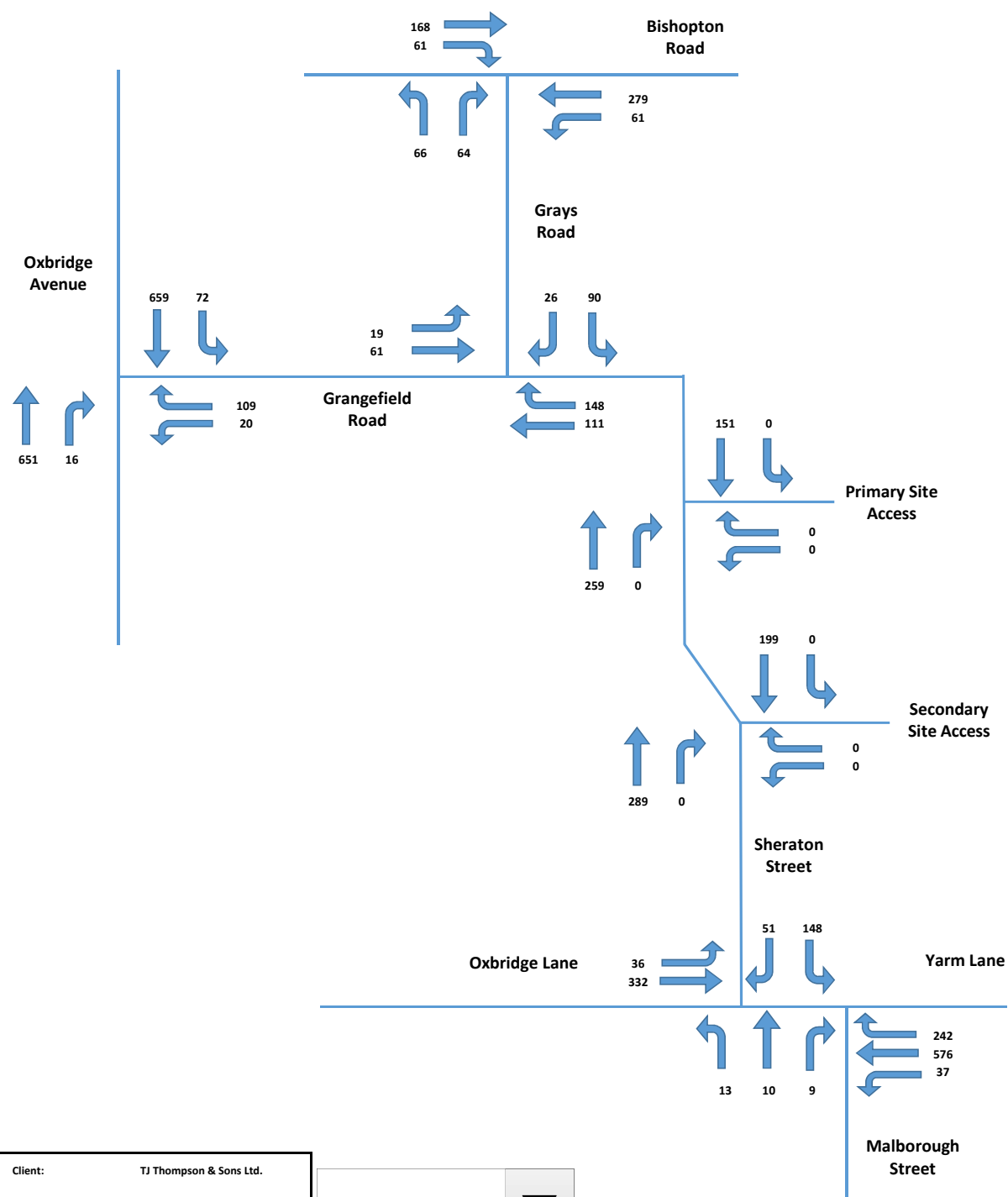
APPENDIX E – Traffic Flow Diagrams



Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

2018 Base AM

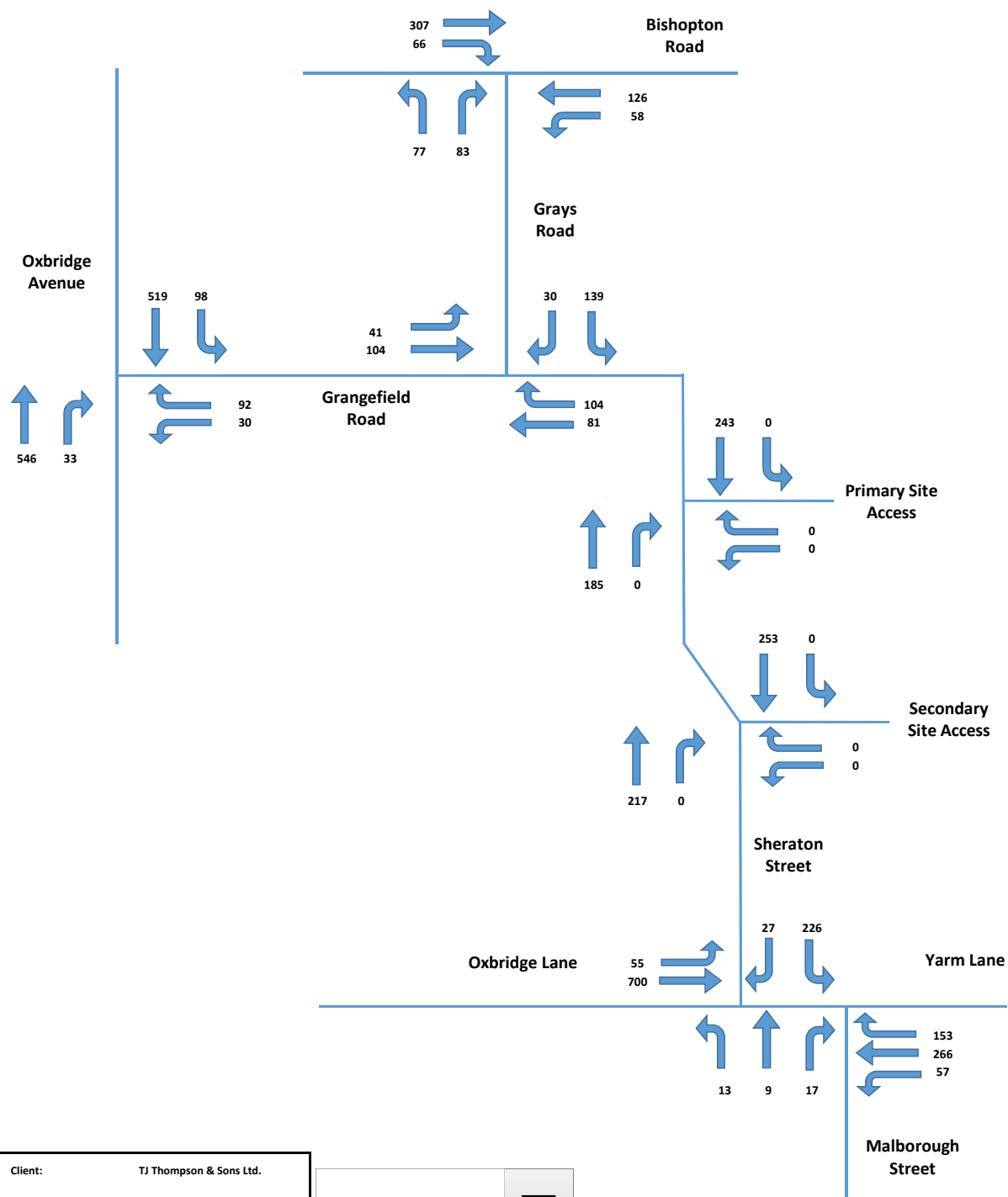




Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

2018 Base PM

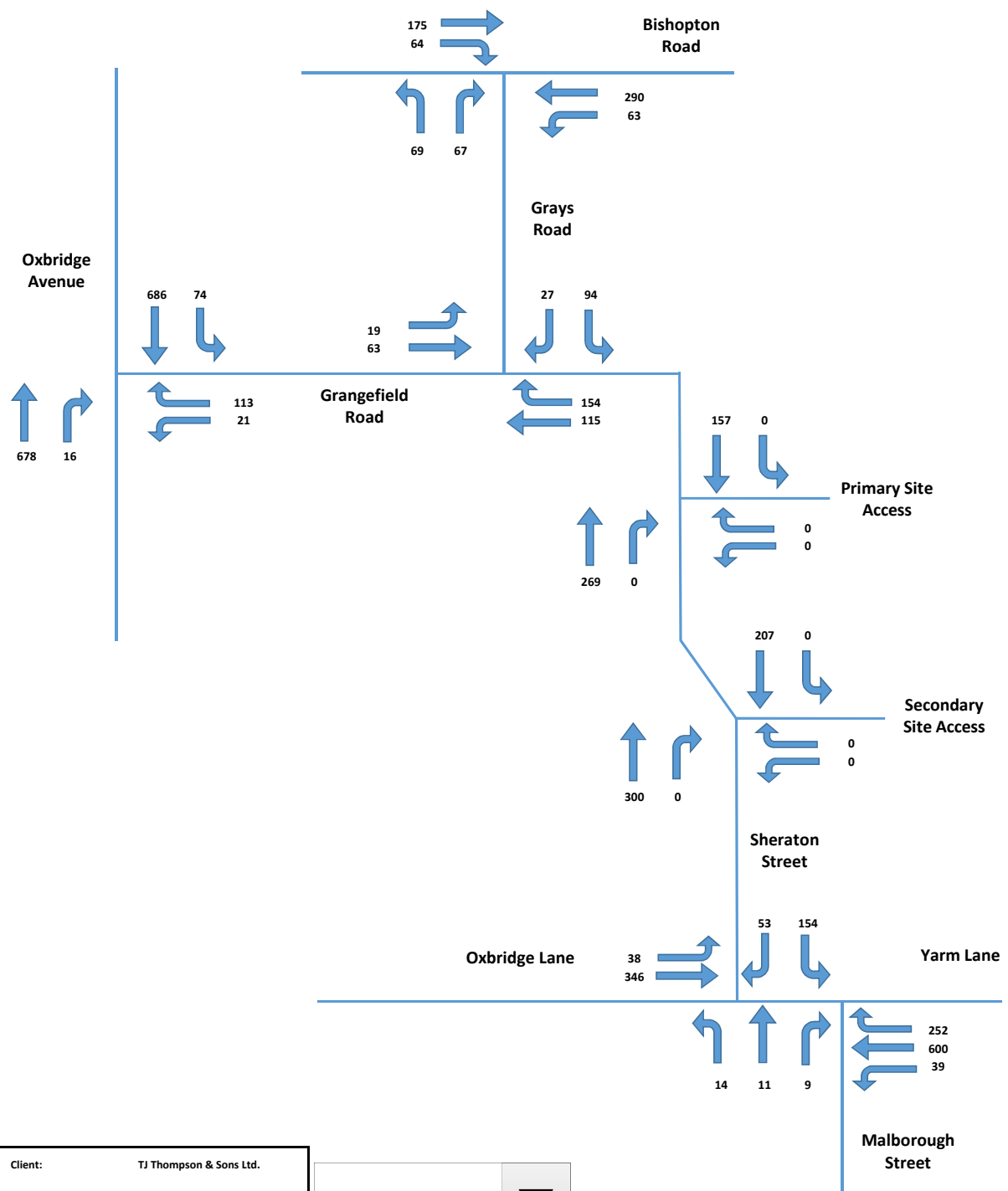




Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

2023 AM

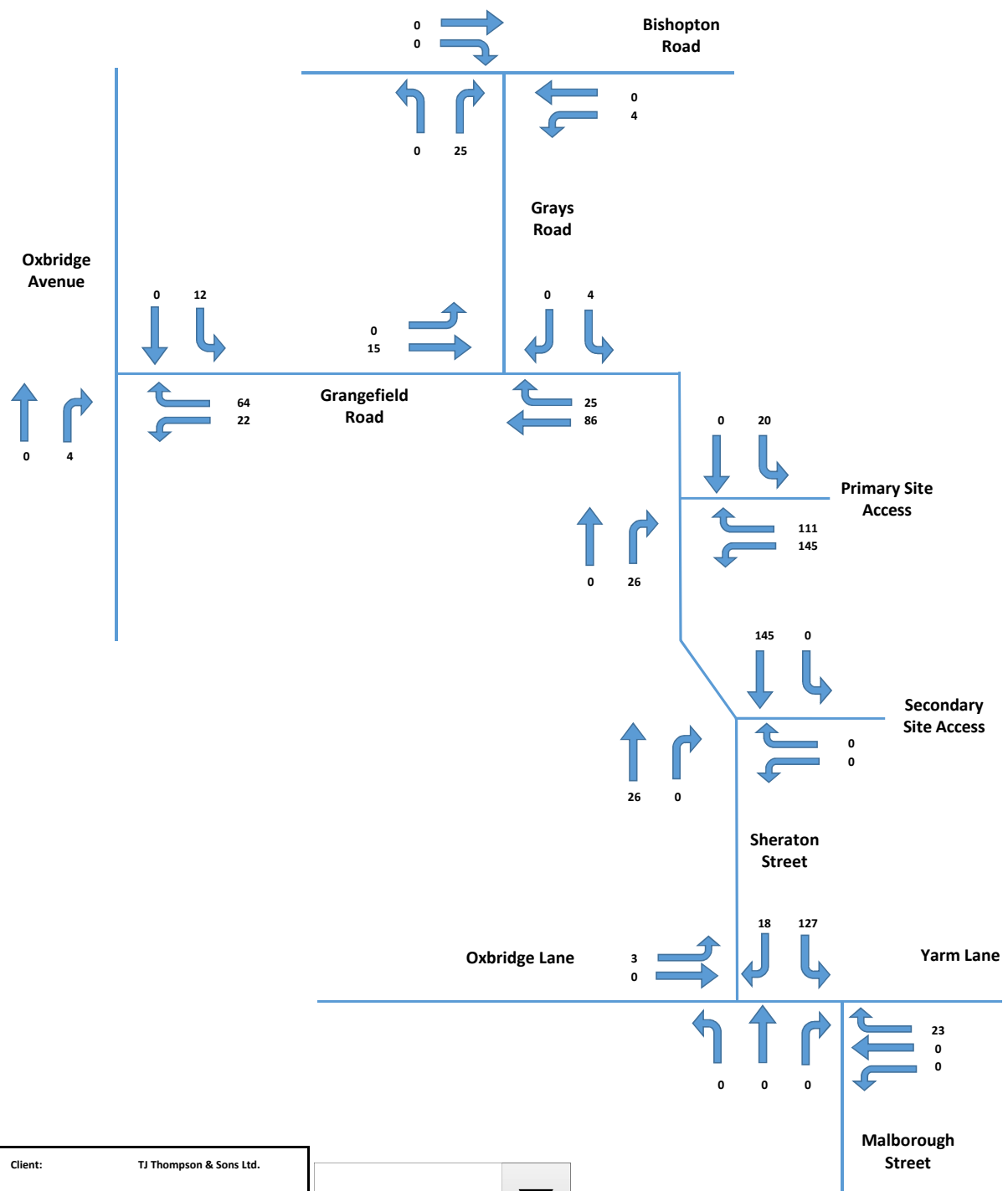




Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

2023 PM

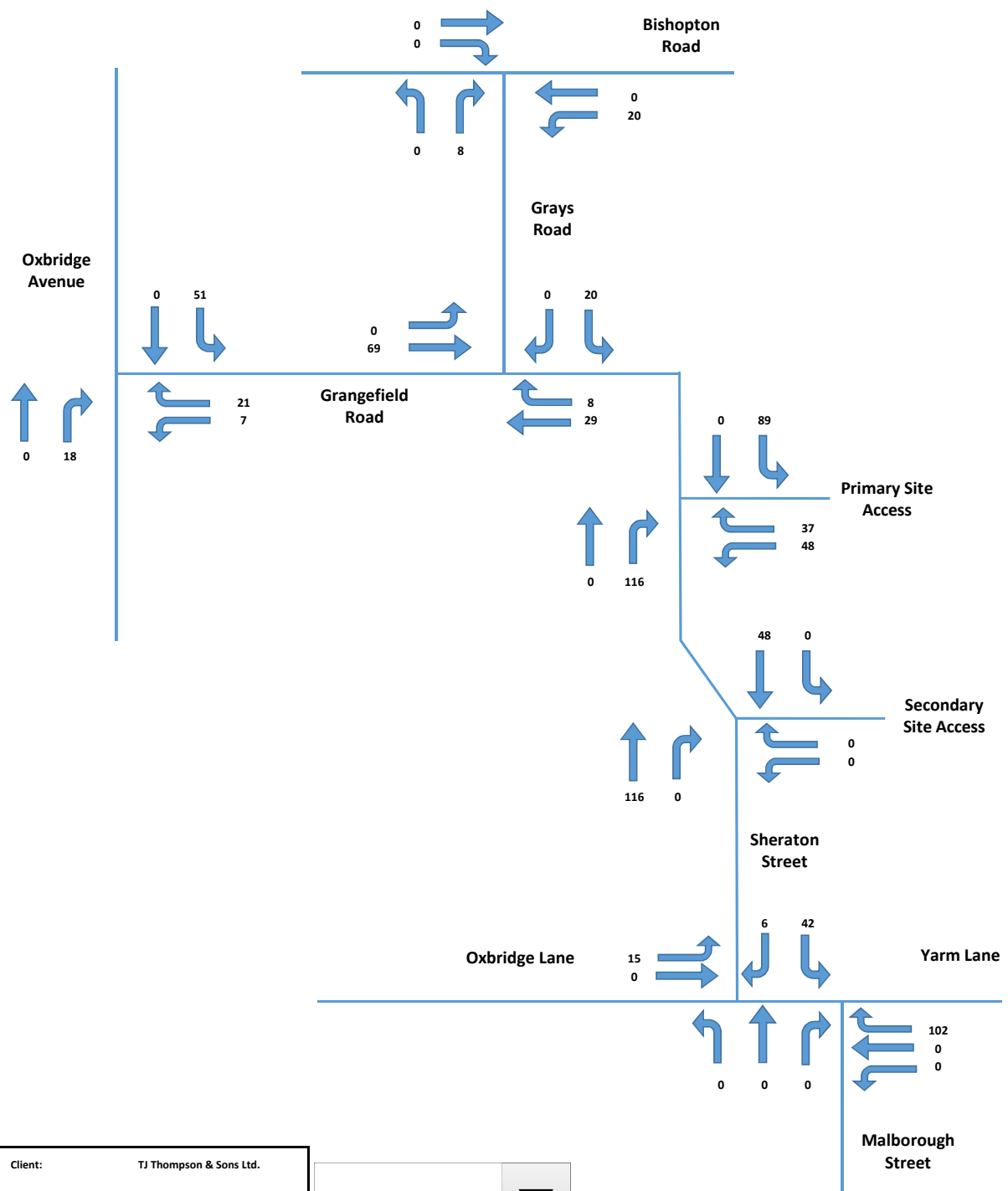




Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

Dev AM

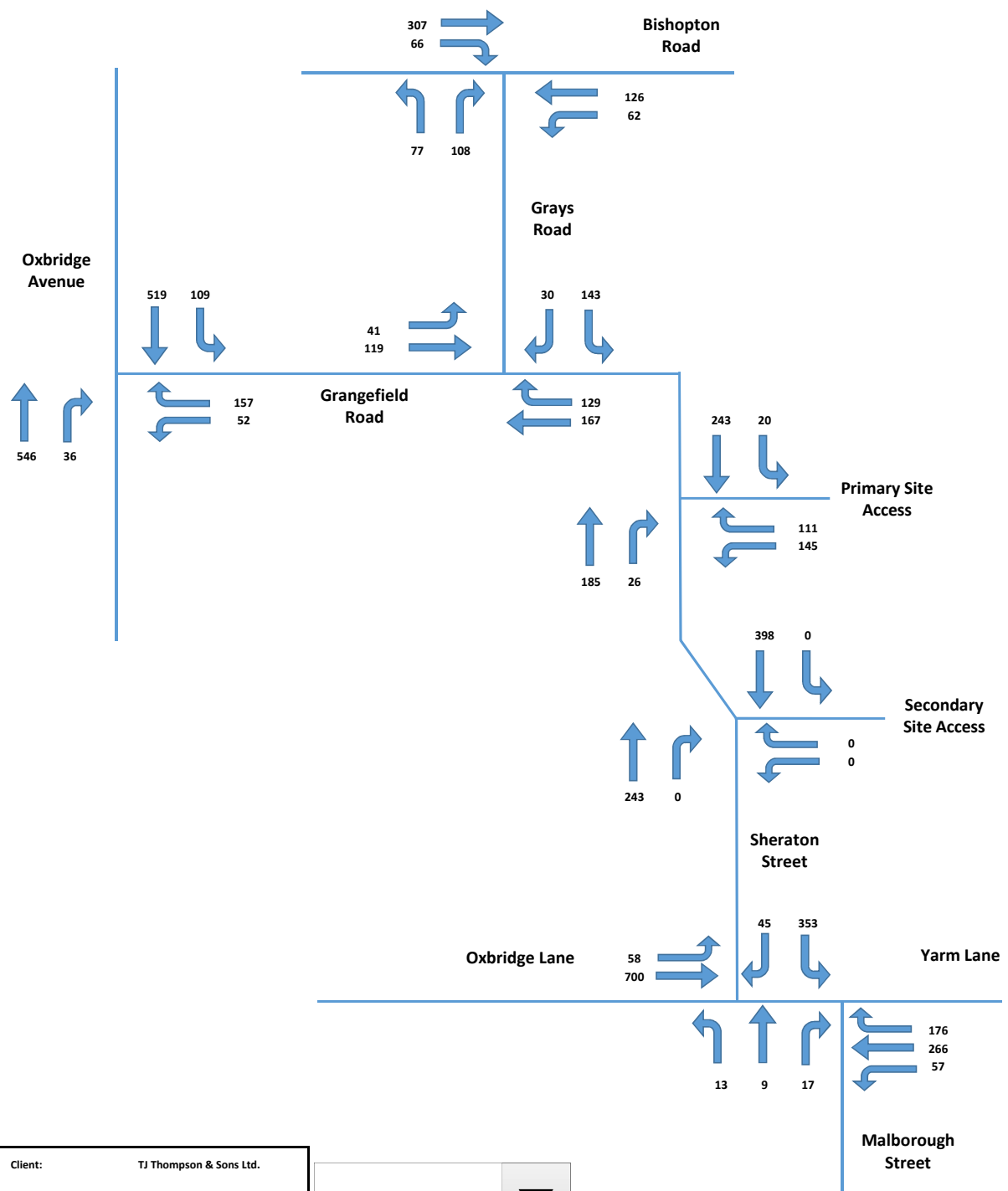




Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

Dev PM

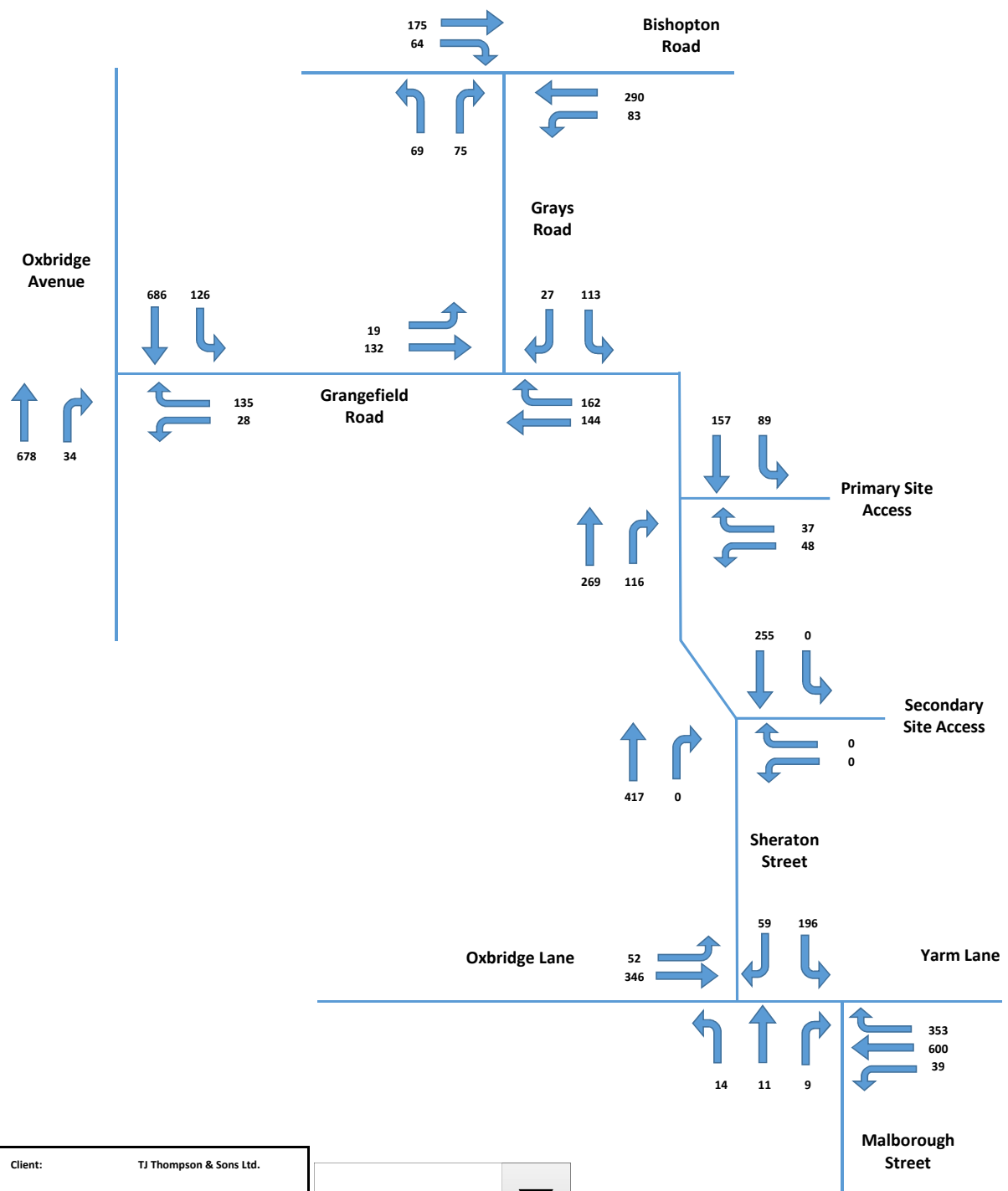




Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

2023 + Dev AM





Client: TJ Thompson & Sons Ltd.
 Project: Millfeild Works, Stockton
 Title: Traffic Flow Diagram

2023 + Dev PM



APPENDIX F – Modelling Output

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947

© Copyright TRL Limited, 2017

For sales and distribution information, program advice and maintenance, contact TRL:

+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 1b - Primary Site Access_Grangefield Road.j9

Path: N:\PROJECTS\2018\Development and Infrastructure\Millfield Works, Stockton\Modelling\Junctions9

Report generation date: 19/06/2018 09:16:06

- »Existing Layout - 2018 Base, AM
- »Existing Layout - 2018 Base, PM
- »Existing Layout - 2023, AM
- »Existing Layout - 2023, PM
- »Existing Layout - 2023 + Development, AM
- »Existing Layout - 2023 + Development, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2018 Base								
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Existing Layout - 2023								
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Existing Layout - 2023 + Development								
Stream B-C	0.3	7.55	0.25	A	0.1	5.64	0.08	A
Stream B-A	0.3	9.70	0.25	A	0.1	8.48	0.09	A
Stream C-AB	0.1	6.57	0.05	A	0.3	7.77	0.22	A

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

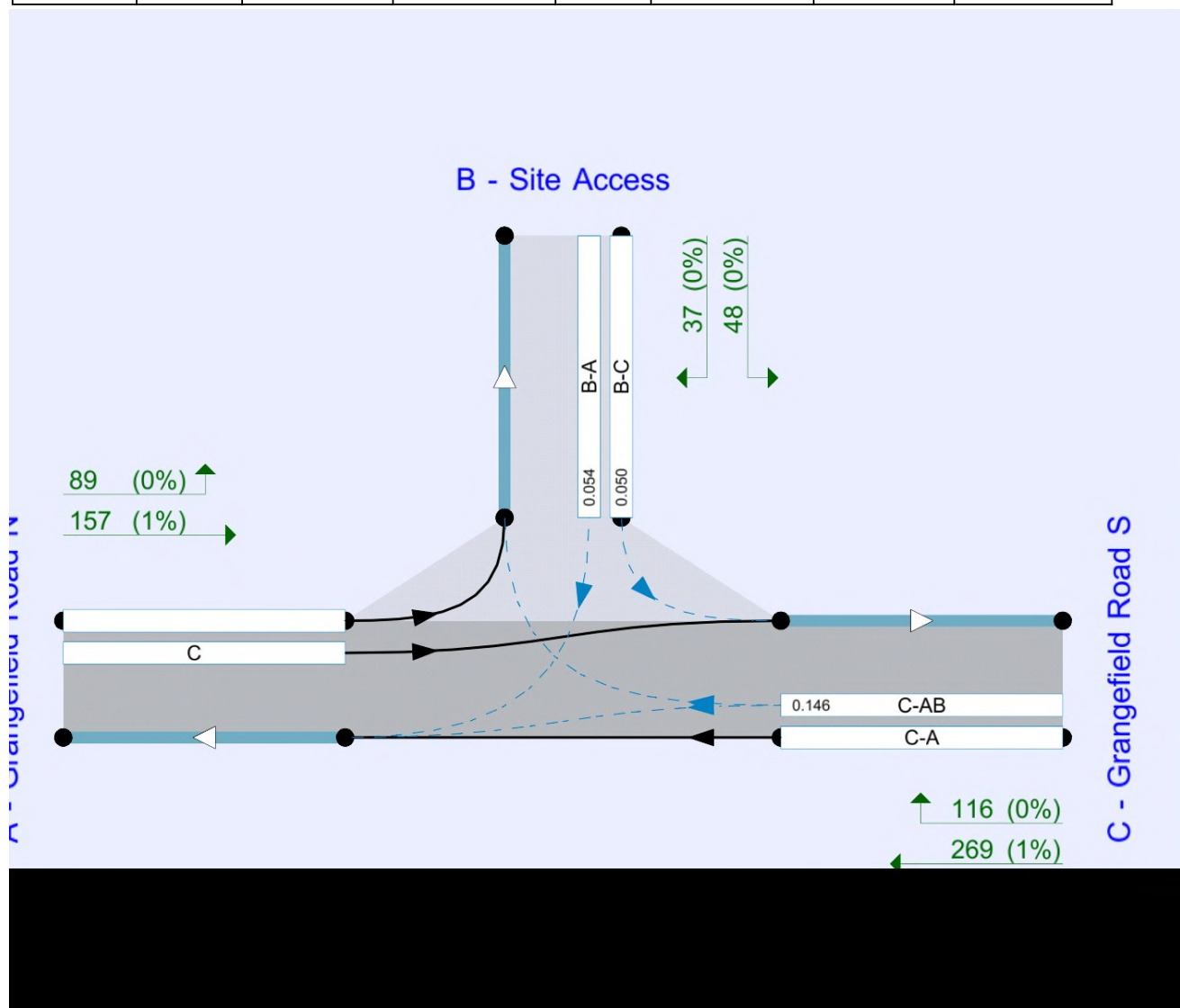
File summary

File Description

Title	Primary Site Access / Grangefield Road
Location	Stockton-on-Tees
Site number	1b
Date	09/05/2018
Version	
Status	(new file)
Identifier	
Client	TJ Thomson & Son Ltd
Jobnumber	18C59
Enumerator	ADSYSTRA\pickering
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓		
D3	Development	AM	ONE HOUR	07:45	09:15	15			
D4	Development	PM	ONE HOUR	16:15	17:45	15			
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓		
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓		
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

Analysis Set Details

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

Existing Layout - 2018 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Primary Access / Grangefield Road	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Grangefield Road N		Major
B	Site Access		Minor
C	Grangefield Road S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Grangefield Road S	7.45			120.0	✓	2.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane plus flare	10.00	5.15	3.37	3.34	3.33	✓	1.00	140	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	631	0.108	0.272	0.171	0.389
1	B-C	755	0.108	0.274	-	-
1	C-B	643	0.234	0.234	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road N		ONE HOUR	✓	231	100.000
B - Site Access		ONE HOUR	✓	0	100.000
C - Grangefield Road S		ONE HOUR	✓	177	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	A - Grangefield Road N	0	0	231
	B - Site Access	0	0	0
	C - Grangefield Road S	177	0	0

Proportions

	To			
From		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	A - Grangefield Road N	0.00	0.00	1.00
	B - Site Access	0.33	0.33	0.33
	C - Grangefield Road S	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	A - Grangefield Road N	0	0	2
	B - Site Access	0	0	0
	C - Grangefield Road S	1	0	0

Average PCU Per Veh

	To			
From		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	A - Grangefield Road N	1.000	1.000	1.020
	B - Site Access	1.000	1.000	1.000
	C - Grangefield Road S	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Grangefield Road N	174	174
	B - Site Access	0	0
	C - Grangefield Road S	133	133
08:00-08:15	A - Grangefield Road N	208	208
	B - Site Access	0	0
	C - Grangefield Road S	159	159
08:15-08:30	A - Grangefield Road N	254	254
	B - Site Access	0	0
	C - Grangefield Road S	195	195
08:30-08:45	A - Grangefield Road N	254	254
	B - Site Access	0	0
	C - Grangefield Road S	195	195
08:45-09:00	A - Grangefield Road N	208	208
	B - Site Access	0	0
	C - Grangefield Road S	159	159
09:00-09:15	A - Grangefield Road N	174	174
	B - Site Access	0	0
	C - Grangefield Road S	133	133

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					162	244
A-B					0	0
A-C					212	318

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	707	0.000	0	0.0	0.0	0.000	A
B-A	0	0	561	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1212	0.000	0	0.0	0.0	0.000	A
C-A	133	33			133				
A-B	0	0			0				
A-C	174	43			174				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	698	0.000	0	0.0	0.0	0.000	A
B-A	0	0	547	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1196	0.000	0	0.0	0.0	0.000	A
C-A	159	40			159				
A-B	0	0			0				
A-C	208	52			208				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	685	0.000	0	0.0	0.0	0.000	A
B-A	0	0	529	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1174	0.000	0	0.0	0.0	0.000	A
C-A	195	49			195				
A-B	0	0			0				
A-C	254	64			254				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	685	0.000	0	0.0	0.0	0.000	A
B-A	0	0	529	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1174	0.000	0	0.0	0.0	0.000	A
C-A	195	49			195				
A-B	0	0			0				
A-C	254	64			254				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	698	0.000	0	0.0	0.0	0.000	A
B-A	0	0	547	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1196	0.000	0	0.0	0.0	0.000	A
C-A	159	40			159				
A-B	0	0			0				
A-C	208	52			208				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	707	0.000	0	0.0	0.0	0.000	A
B-A	0	0	561	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1212	0.000	0	0.0	0.0	0.000	A
C-A	133	33			133				
A-B	0	0			0				
A-C	174	43			174				

Existing Layout - 2018 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Primary Access / Grangefield Road	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road N		ONE HOUR	✓	151	100.000
B - Site Access		ONE HOUR	✓	0	100.000
C - Grangefield Road S		ONE HOUR	✓	259	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0	0	151
	B - Site Access	0	0	0
	C - Grangefield Road S	259	0	0

Proportions

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0.00	0.00	1.00
	B - Site Access	0.33	0.33	0.33
	C - Grangefield Road S	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0	0	1
	B - Site Access	0	0	0
	C - Grangefield Road S	1	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	1.000	1.000	1.010
	B - Site Access	1.000	1.000	1.000
	C - Grangefield Road S	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Grangefield Road N	114	114
	B - Site Access	0	0
	C - Grangefield Road S	195	195
16:30-16:45	A - Grangefield Road N	136	136
	B - Site Access	0	0
	C - Grangefield Road S	233	233
16:45-17:00	A - Grangefield Road N	166	166
	B - Site Access	0	0
	C - Grangefield Road S	285	285
17:00-17:15	A - Grangefield Road N	166	166
	B - Site Access	0	0
	C - Grangefield Road S	285	285
17:15-17:30	A - Grangefield Road N	136	136
	B - Site Access	0	0
	C - Grangefield Road S	233	233
17:30-17:45	A - Grangefield Road N	114	114
	B - Site Access	0	0
	C - Grangefield Road S	195	195

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					238	356
A-B					0	0
A-C					139	208

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	723	0.000	0	0.0	0.0	0.000	A
B-A	0	0	567	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1240	0.000	0	0.0	0.0	0.000	A
C-A	195	49			195				
A-B	0	0			0				
A-C	114	28			114				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	717	0.000	0	0.0	0.0	0.000	A
B-A	0	0	554	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1230	0.000	0	0.0	0.0	0.000	A
C-A	233	58			233				
A-B	0	0			0				
A-C	136	34			136				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	709	0.000	0	0.0	0.0	0.000	A
B-A	0	0	537	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1215	0.000	0	0.0	0.0	0.000	A
C-A	285	71			285				
A-B	0	0			0				
A-C	166	42			166				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	709	0.000	0	0.0	0.0	0.000	A
B-A	0	0	537	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1215	0.000	0	0.0	0.0	0.000	A
C-A	285	71			285				
A-B	0	0			0				
A-C	166	42			166				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	717	0.000	0	0.0	0.0	0.000	A
B-A	0	0	554	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1230	0.000	0	0.0	0.0	0.000	A
C-A	233	58			233				
A-B	0	0			0				
A-C	136	34			136				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	723	0.000	0	0.0	0.0	0.000	A
B-A	0	0	567	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1240	0.000	0	0.0	0.0	0.000	A
C-A	195	49			195				
A-B	0	0			0				
A-C	114	28			114				

Existing Layout - 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Primary Access / Grangefield Road	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road N		ONE HOUR	✓	243	100.000
B - Site Access		ONE HOUR	✓	0	100.000
C - Grangefield Road S		ONE HOUR	✓	185	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0	0	243
	B - Site Access	0	0	0
	C - Grangefield Road S	185	0	0

Proportions

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0.00	0.00	1.00
	B - Site Access	0.33	0.33	0.33
	C - Grangefield Road S	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0	0	2
	B - Site Access	0	0	0
	C - Grangefield Road S	1	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	1.000	1.000	1.020
	B - Site Access	1.000	1.000	1.000
	C - Grangefield Road S	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Grangefield Road N	183	183
	B - Site Access	0	0
	C - Grangefield Road S	139	139
08:00-08:15	A - Grangefield Road N	218	218
	B - Site Access	0	0
	C - Grangefield Road S	166	166
08:15-08:30	A - Grangefield Road N	268	268
	B - Site Access	0	0
	C - Grangefield Road S	204	204
08:30-08:45	A - Grangefield Road N	268	268
	B - Site Access	0	0
	C - Grangefield Road S	204	204
08:45-09:00	A - Grangefield Road N	218	218
	B - Site Access	0	0
	C - Grangefield Road S	166	166
09:00-09:15	A - Grangefield Road N	183	183
	B - Site Access	0	0
	C - Grangefield Road S	139	139

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					170	255
A-B					0	0
A-C					223	334

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	705	0.000	0	0.0	0.0	0.000	A
B-A	0	0	558	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1207	0.000	0	0.0	0.0	0.000	A
C-A	139	35			139				
A-B	0	0			0				
A-C	183	46			183				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	695	0.000	0	0.0	0.0	0.000	A
B-A	0	0	543	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1191	0.000	0	0.0	0.0	0.000	A
C-A	166	42			166				
A-B	0	0			0				
A-C	218	55			218				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	681	0.000	0	0.0	0.0	0.000	A
B-A	0	0	524	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1168	0.000	0	0.0	0.0	0.000	A
C-A	204	51			204				
A-B	0	0			0				
A-C	268	67			268				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	681	0.000	0	0.0	0.0	0.000	A
B-A	0	0	524	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1168	0.000	0	0.0	0.0	0.000	A
C-A	204	51			204				
A-B	0	0			0				
A-C	268	67			268				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	695	0.000	0	0.0	0.0	0.000	A
B-A	0	0	543	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1191	0.000	0	0.0	0.0	0.000	A
C-A	166	42			166				
A-B	0	0			0				
A-C	218	55			218				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	705	0.000	0	0.0	0.0	0.000	A
B-A	0	0	558	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1207	0.000	0	0.0	0.0	0.000	A
C-A	139	35			139				
A-B	0	0			0				
A-C	183	46			183				

Existing Layout - 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Primary Access / Grangefield Road	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road N		ONE HOUR	✓	157	100.000
B - Site Access		ONE HOUR	✓	0	100.000
C - Grangefield Road S		ONE HOUR	✓	269	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0	0	157
	B - Site Access	0	0	0
	C - Grangefield Road S	269	0	0

Proportions

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0.00	0.00	1.00
	B - Site Access	0.33	0.33	0.33
	C - Grangefield Road S	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	0	0	1
	B - Site Access	0	0	0
	C - Grangefield Road S	1	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
From	A - Grangefield Road N	1.000	1.000	1.010
	B - Site Access	1.000	1.000	1.000
	C - Grangefield Road S	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Grangefield Road N	118	118
	B - Site Access	0	0
	C - Grangefield Road S	203	203
16:30-16:45	A - Grangefield Road N	141	141
	B - Site Access	0	0
	C - Grangefield Road S	242	242
16:45-17:00	A - Grangefield Road N	173	173
	B - Site Access	0	0
	C - Grangefield Road S	296	296
17:00-17:15	A - Grangefield Road N	173	173
	B - Site Access	0	0
	C - Grangefield Road S	296	296
17:15-17:30	A - Grangefield Road N	141	141
	B - Site Access	0	0
	C - Grangefield Road S	242	242
17:30-17:45	A - Grangefield Road N	118	118
	B - Site Access	0	0
	C - Grangefield Road S	203	203

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.00	0.00	0.0	A	0	0
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					247	370
A-B					0	0
A-C					144	216

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	722	0.000	0	0.0	0.0	0.000	A
B-A	0	0	564	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1238	0.000	0	0.0	0.0	0.000	A
C-A	203	51			203				
A-B	0	0			0				
A-C	118	30			118				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	716	0.000	0	0.0	0.0	0.000	A
B-A	0	0	551	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1227	0.000	0	0.0	0.0	0.000	A
C-A	242	60			242				
A-B	0	0			0				
A-C	141	35			141				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	707	0.000	0	0.0	0.0	0.000	A
B-A	0	0	533	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1212	0.000	0	0.0	0.0	0.000	A
C-A	296	74			296				
A-B	0	0			0				
A-C	173	43			173				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	707	0.000	0	0.0	0.0	0.000	A
B-A	0	0	533	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1212	0.000	0	0.0	0.0	0.000	A
C-A	296	74			296				
A-B	0	0			0				
A-C	173	43			173				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	716	0.000	0	0.0	0.0	0.000	A
B-A	0	0	551	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1227	0.000	0	0.0	0.0	0.000	A
C-A	242	60			242				
A-B	0	0			0				
A-C	141	35			141				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	0	0	722	0.000	0	0.0	0.0	0.000	A
B-A	0	0	564	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1238	0.000	0	0.0	0.0	0.000	A
C-A	203	51			203				
A-B	0	0			0				
A-C	118	30			118				

Existing Layout - 2023 + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Primary Access / Grangefield Road	T-Junction	Two-way	3.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road N		ONE HOUR	✓	263	100.000
B - Site Access		ONE HOUR	✓	256	100.000
C - Grangefield Road S		ONE HOUR	✓	211	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	0	20	243
	B - Site Access	111	0	145
	C - Grangefield Road S	185	26	0

Proportions

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	0.00	0.08	0.92
	B - Site Access	0.43	0.00	0.57
	C - Grangefield Road S	0.88	0.12	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	0	0	2
	B - Site Access	0	0	0
	C - Grangefield Road S	1	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	1.000	1.000	1.020
	B - Site Access	1.000	1.000	1.000
	C - Grangefield Road S	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Grangefield Road N	198	198
	B - Site Access	193	193
	C - Grangefield Road S	159	159
08:00-08:15	A - Grangefield Road N	236	236
	B - Site Access	230	230
	C - Grangefield Road S	190	190
08:15-08:30	A - Grangefield Road N	290	290
	B - Site Access	282	282
	C - Grangefield Road S	232	232
08:30-08:45	A - Grangefield Road N	290	290
	B - Site Access	282	282
	C - Grangefield Road S	232	232
08:45-09:00	A - Grangefield Road N	236	236
	B - Site Access	230	230
	C - Grangefield Road S	190	190
09:00-09:15	A - Grangefield Road N	198	198
	B - Site Access	193	193
	C - Grangefield Road S	159	159

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.25	7.55	0.3	A	133	200
B-A	0.25	9.70	0.3	A	102	153
C-AB	0.05	6.57	0.1	A	24	36
C-A					170	255
A-B					18	28
A-C					223	334

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	109	27	683	0.160	108	0.0	0.2	6.252	A
B-A	84	21	537	0.156	83	0.0	0.2	7.909	A
C-AB	20	5	597	0.033	19	0.0	0.0	6.227	A
C-A	139	35			139				
A-B	15	4			15				
A-C	183	46			183				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	130	33	665	0.196	130	0.2	0.2	6.731	A
B-A	100	25	519	0.192	100	0.2	0.2	8.569	A
C-AB	23	6	588	0.040	23	0.0	0.0	6.369	A
C-A	166	42			166				
A-B	18	4			18				
A-C	218	55			218				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	160	40	637	0.251	159	0.2	0.3	7.539	A
B-A	122	31	493	0.248	122	0.2	0.3	9.680	A
C-AB	29	7	576	0.050	29	0.0	0.1	6.572	A
C-A	204	51			204				
A-B	22	6			22				
A-C	268	67			268				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	160	40	636	0.251	160	0.3	0.3	7.551	A
B-A	122	31	493	0.248	122	0.3	0.3	9.700	A
C-AB	29	7	576	0.050	29	0.1	0.1	6.572	A
C-A	204	51			204				
A-B	22	6			22				
A-C	268	67			268				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	130	33	664	0.196	131	0.3	0.2	6.750	A
B-A	100	25	519	0.192	100	0.3	0.2	8.592	A
C-AB	23	6	588	0.040	23	0.1	0.0	6.370	A
C-A	166	42			166				
A-B	18	4			18				
A-C	218	55			218				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	109	27	683	0.160	109	0.2	0.2	6.280	A
B-A	84	21	537	0.156	84	0.2	0.2	7.944	A
C-AB	20	5	597	0.033	20	0.0	0.0	6.233	A
C-A	139	35			139				
A-B	15	4			15				
A-C	183	46			183				

Existing Layout - 2023 + Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Primary Access / Grangefield Road	T-Junction	Two-way	2.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road N		ONE HOUR	✓	246	100.000
B - Site Access		ONE HOUR	✓	85	100.000
C - Grangefield Road S		ONE HOUR	✓	385	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	0	89	157
	B - Site Access	37	0	48
	C - Grangefield Road S	269	116	0

Proportions

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	0.00	0.36	0.64
	B - Site Access	0.44	0.00	0.56
	C - Grangefield Road S	0.70	0.30	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	0	0	1
	B - Site Access	0	0	0
	C - Grangefield Road S	1	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road N	B - Site Access	C - Grangefield Road S
	From			
	A - Grangefield Road N	1.000	1.000	1.010
	B - Site Access	1.000	1.000	1.000
	C - Grangefield Road S	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Grangefield Road N	185	185
	B - Site Access	64	64
	C - Grangefield Road S	290	290
16:30-16:45	A - Grangefield Road N	221	221
	B - Site Access	76	76
	C - Grangefield Road S	346	346
16:45-17:00	A - Grangefield Road N	271	271
	B - Site Access	94	94
	C - Grangefield Road S	424	424
17:00-17:15	A - Grangefield Road N	271	271
	B - Site Access	94	94
	C - Grangefield Road S	424	424
17:15-17:30	A - Grangefield Road N	221	221
	B - Site Access	76	76
	C - Grangefield Road S	346	346
17:30-17:45	A - Grangefield Road N	185	185
	B - Site Access	64	64
	C - Grangefield Road S	290	290

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.08	5.64	0.1	A	44	66
B-A	0.09	8.48	0.1	A	34	51
C-AB	0.22	7.77	0.3	A	108	162
C-A					245	368
A-B					82	123
A-C					144	216

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	36	9	716	0.050	36	0.0	0.1	5.291	A
B-A	28	7	515	0.054	28	0.0	0.1	7.382	A
C-AB	88	22	604	0.146	87	0.0	0.2	6.952	A
C-A	202	50			202				
A-B	67	17			67				
A-C	118	30			118				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	43	11	706	0.061	43	0.1	0.1	5.432	A
B-A	33	8	494	0.067	33	0.1	0.1	7.809	A
C-AB	106	26	599	0.176	105	0.2	0.2	7.288	A
C-A	241	60			241				
A-B	80	20			80				
A-C	141	35			141				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	53	13	691	0.076	53	0.1	0.1	5.638	A
B-A	41	10	465	0.088	41	0.1	0.1	8.473	A
C-AB	131	33	595	0.220	131	0.2	0.3	7.758	A
C-A	293	73			293				
A-B	98	24			98				
A-C	173	43			173				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	53	13	691	0.076	53	0.1	0.1	5.639	A
B-A	41	10	465	0.088	41	0.1	0.1	8.478	A
C-AB	131	33	595	0.220	131	0.3	0.3	7.767	A
C-A	293	73			293				
A-B	98	24			98				
A-C	173	43			173				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	43	11	706	0.061	43	0.1	0.1	5.434	A
B-A	33	8	494	0.067	33	0.1	0.1	7.817	A
C-AB	106	26	599	0.176	106	0.3	0.2	7.300	A
C-A	241	60			241				
A-B	80	20			80				
A-C	141	35			141				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	36	9	716	0.050	36	0.1	0.1	5.298	A
B-A	28	7	515	0.054	28	0.1	0.1	7.393	A
C-AB	88	22	605	0.146	88	0.2	0.2	6.977	A
C-A	202	50			202				
A-B	67	17			67				
A-C	118	30			118				

Basic Results Summary

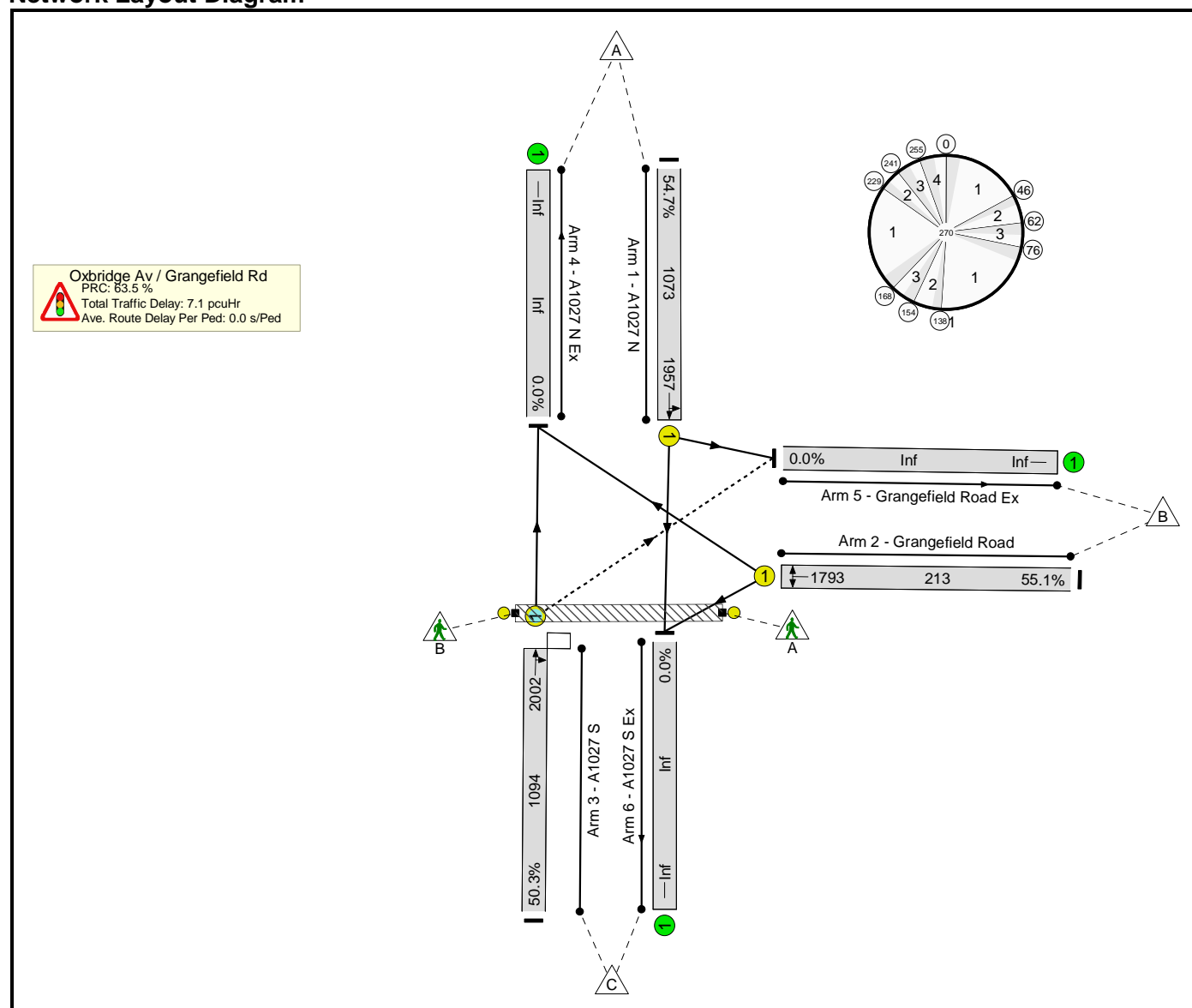
Basic Results Summary

User and Project Details

Project:	Millfield Works
Title:	
Location:	Stockton-on-Tees
Client:	TJ Thompson & Sons Ltd.
Date Started:	11/06/18
Additional detail:	
File name:	2 - Oxbridge Av_Grangerfield Rd - 3 Stage.lsg3x
Author:	jp
Company:	SYSTRA
Address:	Newcastle

Scenario 1: '2018 Base AM' (FG1: '2018 Base AM', Plan 3: 'Cycle Stage Every 3')

Network Layout Diagram



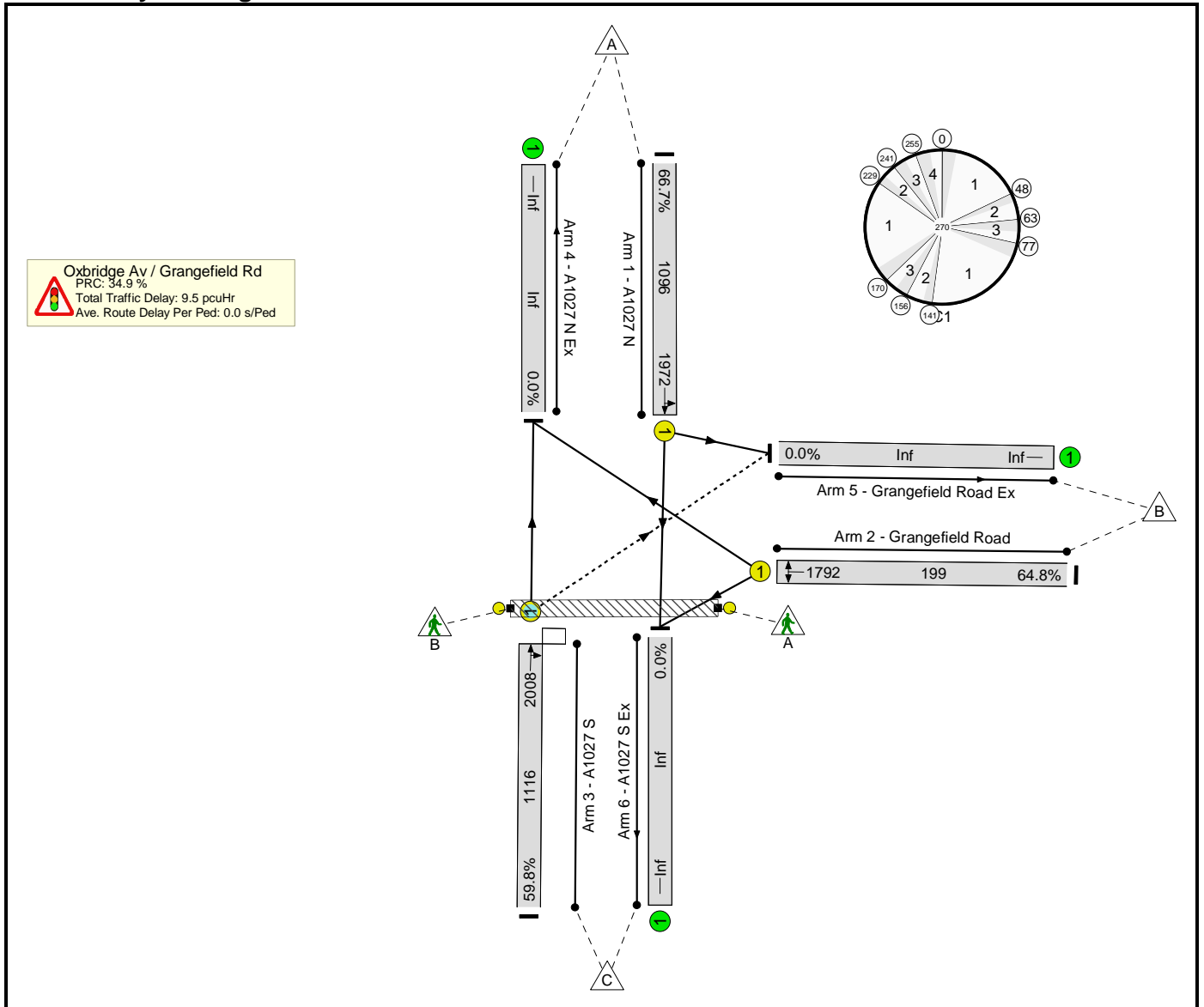
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	55.1%	31	0	0	7.1	-	-
Oxbridge Av / Grangefield Rd	-	-	-		-	-	-	-	-	-	55.1%	31	0	0	7.1	-	-
1/1	A1027 N Left Ahead	U	A		3	145	-	587	1957	1073	54.7%	-	-	-	2.8	17.0	11.7
2/1	Grangefield Road Right Left	U	B		3	29	-	117	1793	213	55.1%	-	-	-	1.8	56.0	3.4
3/1	A1027 S Ahead Right	O	C		3	145	-	551	2002	1094	50.3%	31	0	0	2.5	16.6	10.6
Ped Link: P1	A1027 S	-	D		3	21	-	0	-	5600	0.0%	-	-	-	0.0	0.0	0.0
C1				PRC for Signalled Lanes (%):			63.5	Total Delay for Signalled Lanes (pcuHr):				7.14	Cycle Time (s): 270				
				PRC Over All Lanes (%):			63.5	Total Delay Over All Lanes(pcuHr):				7.14					

Basic Results Summary

Scenario 2: '2018 Base PM' (FG2: '2018 Base PM', Plan 3: 'Cycle Stage Every 3')

Network Layout Diagram

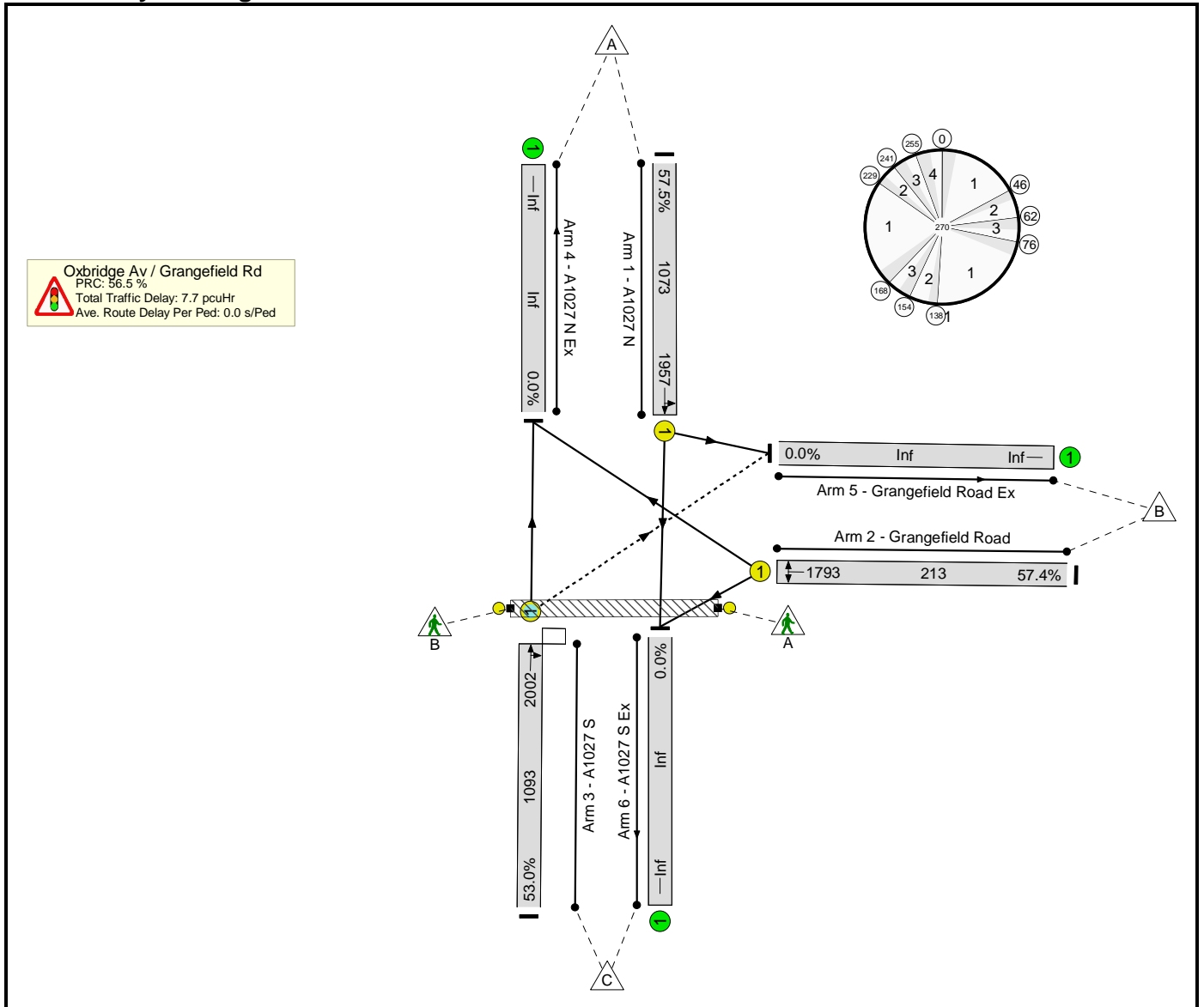


Network Results

Basic Results Summary

Scenario 3: '2023 AM' (FG5: '2023 AM', Plan 3: 'Cycle Stage Every 3')

Network Layout Diagram

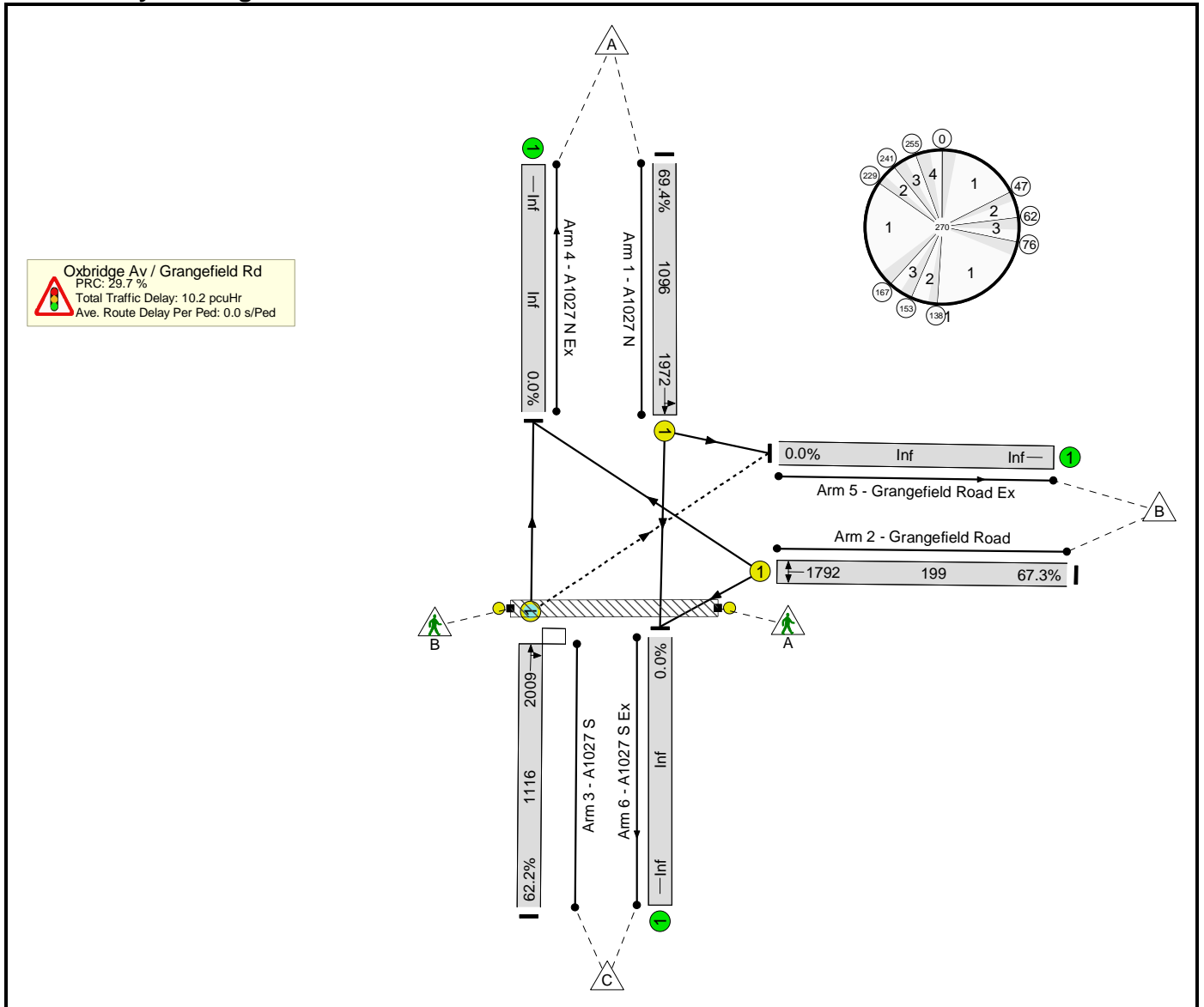


Network Results

Basic Results Summary

Scenario 4: '2023 PM' (FG6: '2023 PM', Plan 3: 'Cycle Stage Every 3')

Network Layout Diagram

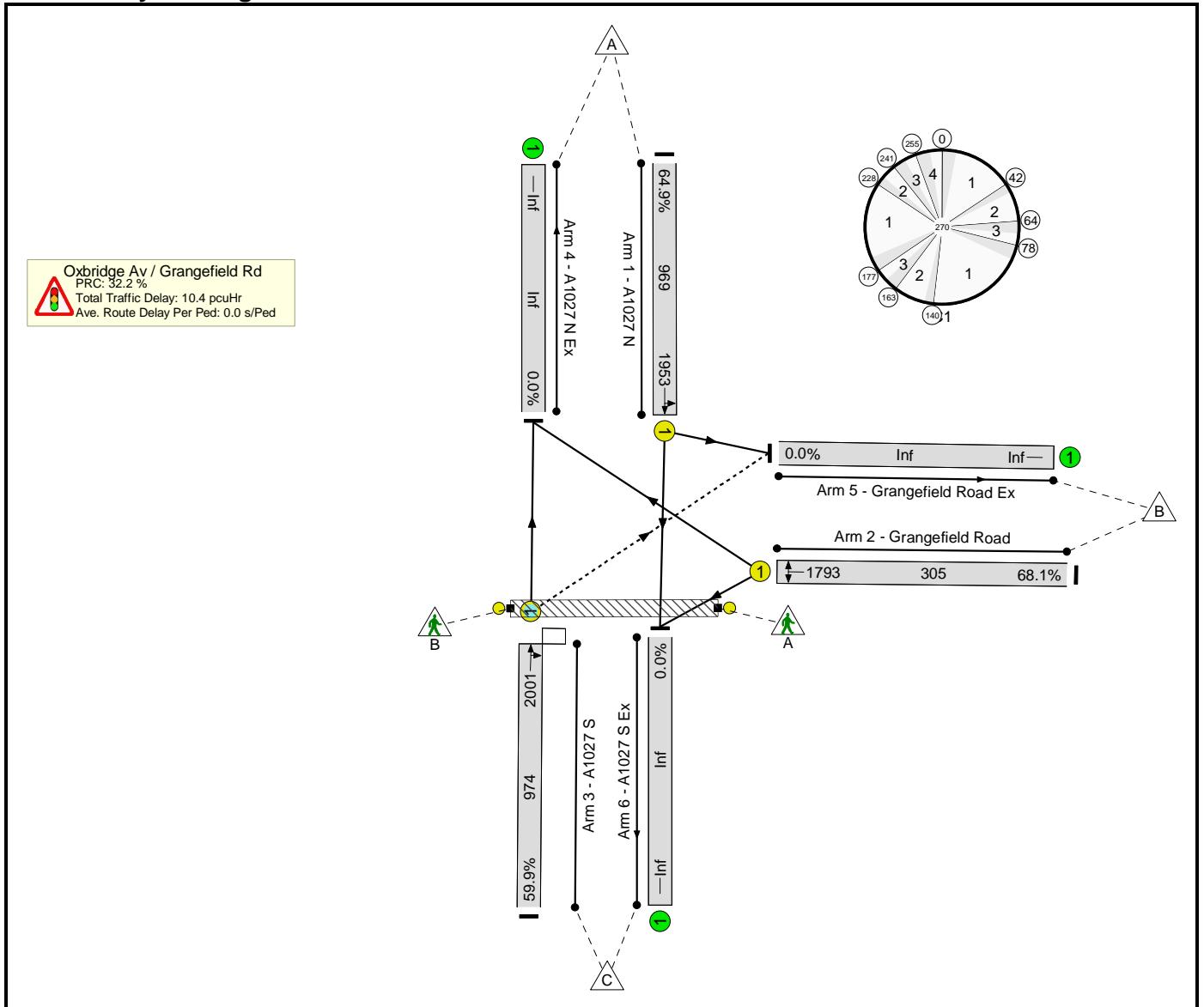


Network Results

Basic Results Summary

Scenario 5: '2023 + Dev AM' (FG7: '2023 + Dev AM', Plan 3: 'Cycle Stage Every 3')

Network Layout Diagram



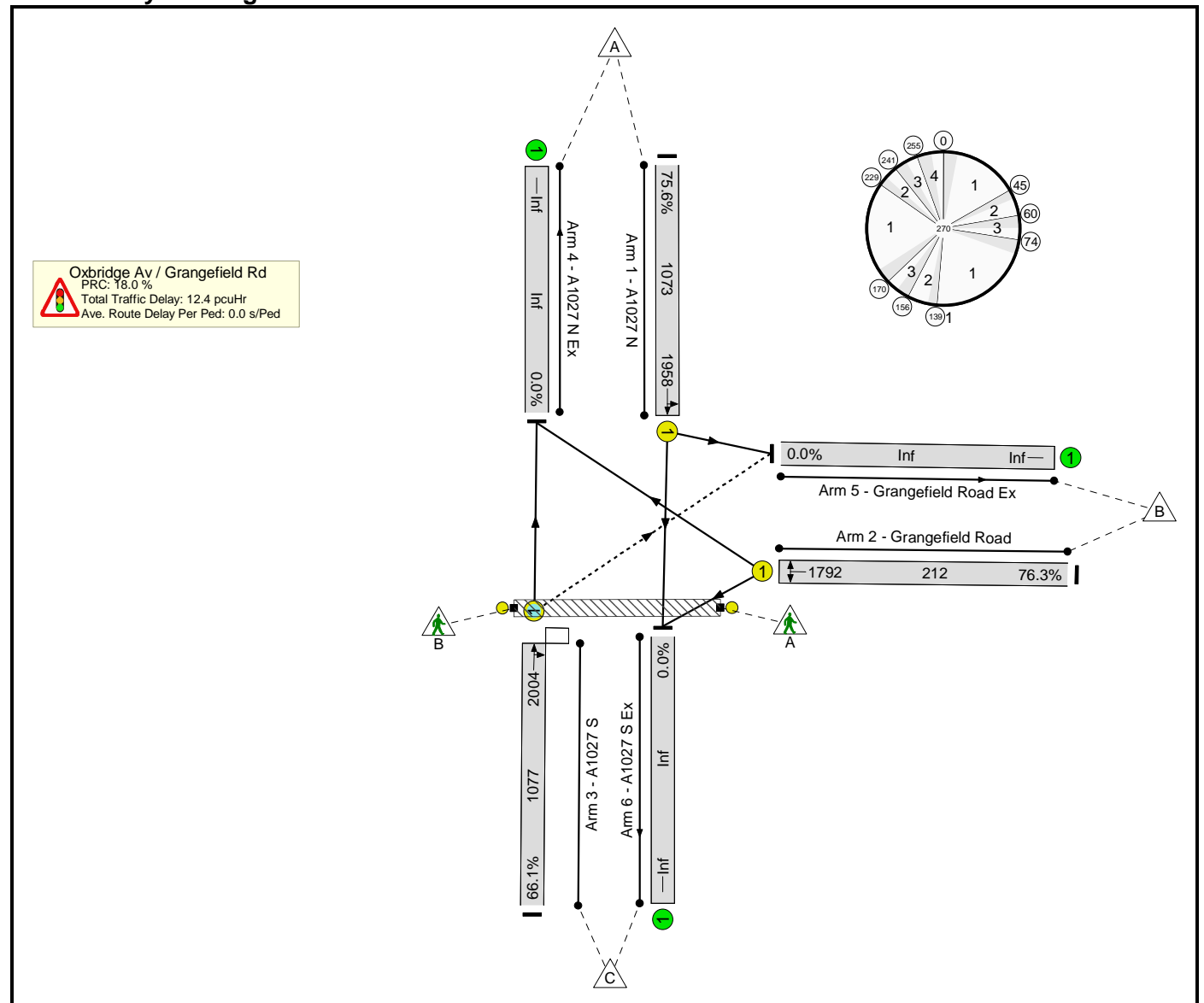
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	68.1%	37	0	0	10.4	-	-
Oxbridge Av / Grangefield Rd	-	-	-		-	-	-	-	-	-	68.1%	37	0	0	10.4	-	-
1/1	A1027 N Left Ahead	U	A		3	131	-	629	1953	969	64.9%	-	-	-	3.9	22.2	13.5
2/1	Grangefield Road Right Left	U	B		3	43	-	208	1793	305	68.1%	-	-	-	3.1	53.4	6.2
3/1	A1027 S Ahead Right	O	C		3	131	-	583	2001	974	59.9%	37	0	0	3.5	21.5	11.9
Ped Link: P1	A1027 S	-	D		3	21	-	0	-	5600	0.0%	-	-	-	0.0	0.0	0.0
C1				PRC for Signalled Lanes (%):			32.2	Total Delay for Signalled Lanes (pcuHr):				10.43	Cycle Time (s): 270				
				PRC Over All Lanes (%):			32.2	Total Delay Over All Lanes(pcuHr):				10.43					

Basic Results Summary

Scenario 6: '2023 + Dev PM' (FG8: '2023 + Dev PM', Plan 3: 'Cycle Stage Every 3')

Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	76.3%	31	0	3	12.4	-	-
Oxbridge Av / Grangefield Rd	-	-	-		-	-	-	-	-	-	76.3%	31	0	3	12.4	-	-
1/1	A1027 N Left Ahead	U	A		3	145	-	811	1958	1073	75.6%	-	-	-	5.1	22.7	19.8
2/1	Grangefield Road Right Left	U	B		3	29	-	162	1792	212	76.3%	-	-	-	3.2	72.2	5.6
3/1	A1027 S Ahead Right	O	C		3	145	-	712	2004	1077	66.1%	31	0	3	4.0	20.1	15.6
Ped Link: P1	A1027 S	-	D		3	21	-	0	-	5600	0.0%	-	-	-	0.0	0.0	0.0
C1				PRC for Signalled Lanes (%):			18.0	Total Delay for Signalled Lanes (pcuHr):				12.35	Cycle Time (s): 270				
				PRC Over All Lanes (%):			18.0	Total Delay Over All Lanes(pcuHr):				12.35					

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947

© Copyright TRL Limited, 2017

For sales and distribution information, program advice and maintenance, contact TRL:

+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 3a - Oxbridge Lane_Sheraton Street.j9

Path: N:\PROJECTS\2018\Development and Infrastructure\Millfield Works, Stockton\Modelling\Junctions9

Report generation date: 18/06/2018 11:52:46

»Existing Layout - 2018 Base, AM

»Existing Layout - 2018 Base, PM

»Existing Layout - 2023, AM

»Existing Layout - 2023, PM

»Existing Layout - 2023 + Development, AM

»Existing Layout - 2023 + Development, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2018 Base								
Stream B-ACD	0.1	9.83	0.10	A	0.1	10.62	0.09	B
Stream AB-CD	0.5	9.48	0.31	A	0.8	8.81	0.42	A
Stream D-AB	1.0	15.30	0.49	C	0.4	9.53	0.30	A
Stream D-C	0.2	19.95	0.14	C	0.3	19.92	0.24	C
Stream CD-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Existing Layout - 2023								
Stream B-ACD	0.1	10.28	0.11	B	0.1	10.96	0.10	B
Stream AB-CD	0.5	9.95	0.33	A	0.9	9.09	0.44	A
Stream D-AB	1.2	16.99	0.53	C	0.5	9.95	0.32	A
Stream D-C	0.2	22.31	0.16	C	0.3	21.73	0.26	C
Stream CD-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Existing Layout - 2023 + Development								
Stream B-ACD	0.1	11.21	0.12	B	0.1	12.34	0.11	B
Stream AB-CD	0.6	10.61	0.38	B	2.0	11.73	0.62	B
Stream D-AB	6.5	64.86	0.90	F	0.7	12.60	0.43	B
Stream D-C	1.4	114.93	0.64	F	0.6	32.31	0.37	D
Stream CD-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A

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

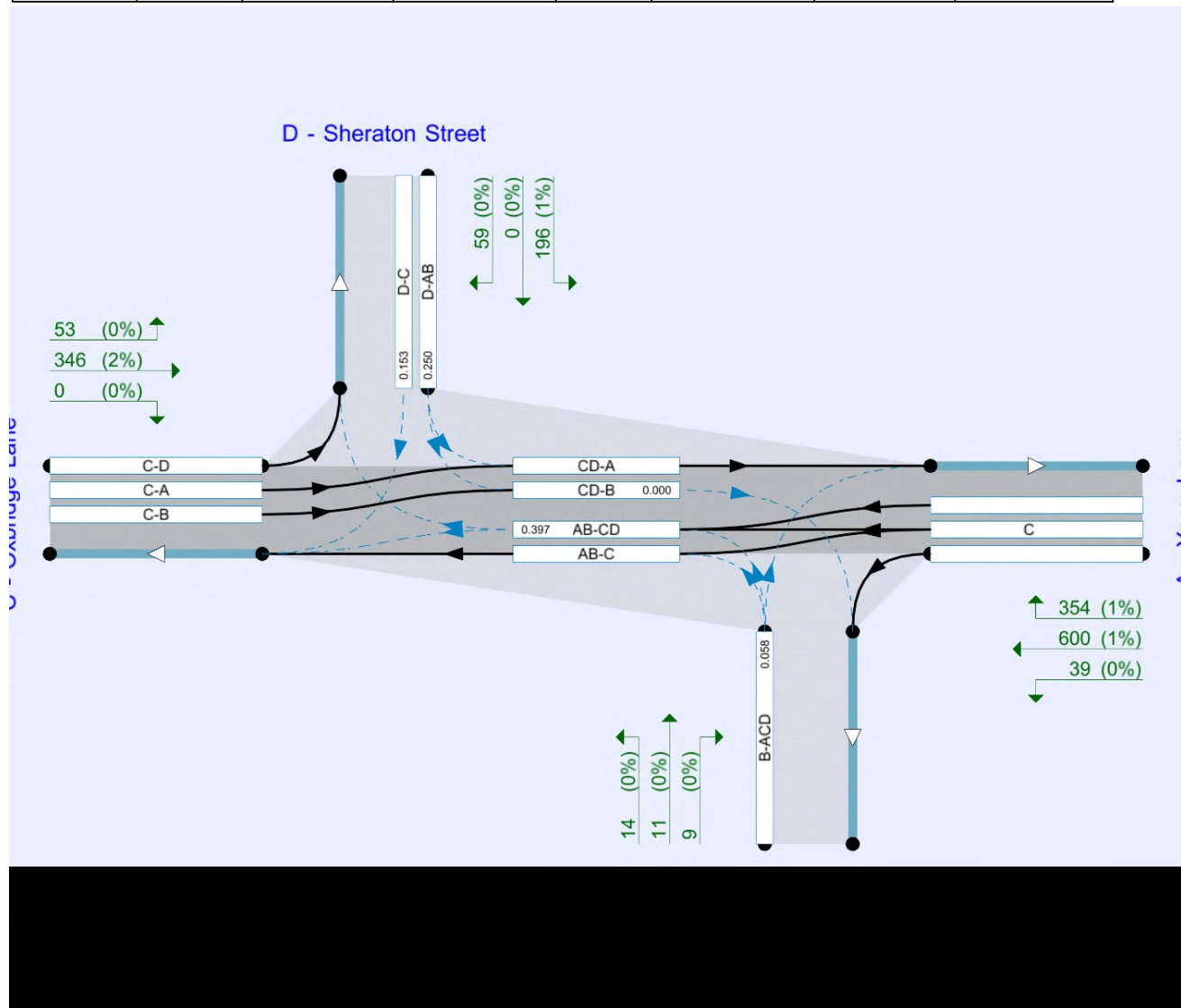
File summary

File Description

Title	Oxbridge Lane / Sheraton Street / Marlborough Street
Location	Stockton-on-Tees
Site number	3a
Date	25/05/2018
Version	
Status	(new file)
Identifier	
Client	TJ Thomson & Son Ltd
Jobnumber	18C59
Enumerator	ADSYSTRA\pickering
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓		
D3	Development	AM	ONE HOUR	07:45	09:15	15			
D4	Development	PM	ONE HOUR	16:15	17:45	15			
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓		
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓		
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

Analysis Set Details

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

Existing Layout - 2018 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Oxbridge Lane / Sheraton Street / Marlborough Street	Left-Right Stagger	Two-way	2.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Yarm Lane		Major
B	Marlborough Road		Minor
C	Oxbridge Lane		Major
D	Sheraton Street		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Yarm Lane	6.60		✓	3.00	250.0	✓	3.00
C - Oxbridge Lane	7.00				250.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Marlborough Road	One lane	3.75								29	54
D - Sheraton Street	One lane plus flare		10.00	4.74	3.34	3.12	3.09	✓	1.00	61	38

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B
1	AB-D	781	-	-	-	-	-	0.295	0.295	0.295	-	-
1	B-A	552	0.096	0.243	0.243	-	-	0.153	0.347	-	0.153	0.347
1	B-CD	707	0.104	0.262	0.262	-	-	-	-	-	-	-
1	CD-B	719	0.266	0.266	0.266	-	-	-	-	-	-	-
1	D-AB	697	-	-	-	-	-	0.263	0.263	0.104	-	-
1	D-C	504	-	0.142	0.323	0.142	0.323	0.226	0.226	0.089	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Yarm Lane		ONE HOUR	✓	453	100.000
B - Marlborough Road		ONE HOUR	✓	37	100.000
C - Oxbridge Lane		ONE HOUR	✓	719	100.000
D - Sheraton Street		ONE HOUR	✓	241	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From A - Yarm Lane	0	54	253	146
From B - Marlborough Road	16	0	12	9
From C - Oxbridge Lane	667	0	0	52
From D - Sheraton Street	215	0	26	0

Proportions

	To			
	A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From A - Yarm Lane	0.00	0.12	0.56	0
From B - Marlborough Road	0.43	0.00	0.32	0
From C - Oxbridge Lane	0.93	0.00	0.00	0
From D - Sheraton Street	0.89	0.00	0.11	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From A - Yarm Lane	0	0	4	1
From B - Marlborough Road	0	0	0	0
From C - Oxbridge Lane	1	0	0	0
From D - Sheraton Street	3	0	0	0

Average PCU Per Veh

	To			
	A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From A - Yarm Lane	1.000	1.000	1.040	1.
From B - Marlborough Road	1.000	1.000	1.000	1.
From C - Oxbridge Lane	1.010	1.000	1.000	1.
From D - Sheraton Street	1.030	1.000	1.000	1.

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Yarm Lane	341	341
	B - Marlborough Road	28	28
	C - Oxbridge Lane	541	541
	D - Sheraton Street	181	181
08:00-08:15	A - Yarm Lane	407	407
	B - Marlborough Road	33	33
	C - Oxbridge Lane	646	646
	D - Sheraton Street	217	217
08:15-08:30	A - Yarm Lane	499	499
	B - Marlborough Road	41	41
	C - Oxbridge Lane	792	792
	D - Sheraton Street	265	265
08:30-08:45	A - Yarm Lane	499	499
	B - Marlborough Road	41	41
	C - Oxbridge Lane	792	792
	D - Sheraton Street	265	265
08:45-09:00	A - Yarm Lane	407	407
	B - Marlborough Road	33	33
	C - Oxbridge Lane	646	646
	D - Sheraton Street	217	217
09:00-09:15	A - Yarm Lane	341	341
	B - Marlborough Road	28	28
	C - Oxbridge Lane	541	541
	D - Sheraton Street	181	181

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.10	9.83	0.1	A	34	51
A-B					50	74
A-C					232	348
A-D					134	201
AB-CD	0.31	9.48	0.5	A	144	215
AB-C					242	363
D-AB	0.49	15.30	1.0	C	197	296
D-C	0.14	19.95	0.2	C	24	36
C-D					48	72
C-A					612	918
C-B					0	0
CD-A					809	1214
CD-B	0.00	0.00	0.0	A	0	0

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	28	7	484	0.058	28	0.0	0.1	7.885	A
A-B	41	10			41				
A-C	190	48			190				
A-D	110	27			110				
AB-CD	117	29	623	0.188	116	0.0	0.2	7.152	A
AB-C	199	50			199				
D-AB	162	40	552	0.293	160	0.0	0.4	9.433	A
D-C	20	5	313	0.062	19	0.0	0.1	12.237	B
C-D	39	10			39				
C-A	502	126			502				
C-B	0	0			0				
CD-A	662	166			662				
CD-B	0	0	628	0.000	0	0.0	0.0	0.000	A

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	33	8	453	0.074	33	0.1	0.1	8.584	A
A-B	49	12			49				
A-C	227	57			227				
A-D	131	33			131				
AB-CD	140	35	594	0.236	140	0.2	0.3	7.995	A
AB-C	237	59			237				
D-AB	193	48	522	0.370	193	0.4	0.6	11.235	B
D-C	23	6	271	0.086	23	0.1	0.1	14.503	B
C-D	47	12			47				
C-A	600	150			600				
C-B	0	0			0				
CD-A	792	198			792				
CD-B	0	0	610	0.000	0	0.0	0.0	0.000	A

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	41	10	407	0.100	41	0.1	0.1	9.819	A
A-B	59	15			59				
A-C	279	70			279				
A-D	161	40			161				
AB-CD	173	43	557	0.311	173	0.3	0.5	9.450	A
AB-C	289	72			289				
D-AB	237	59	479	0.494	235	0.6	1.0	15.107	C
D-C	29	7	210	0.136	28	0.1	0.2	19.819	C
C-D	57	14			57				
C-A	734	184			734				
C-B	0	0			0				
CD-A	970	242			970				
CD-B	0	0	586	0.000	0	0.0	0.0	0.000	A

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	41	10	407	0.100	41	0.1	0.1	9.830	A
A-B	59	15			59				
A-C	279	70			279				
A-D	161	40			161				
AB-CD	173	43	557	0.311	173	0.5	0.5	9.478	A
AB-C	289	72			289				
D-AB	237	59	479	0.494	237	1.0	1.0	15.298	C
D-C	29	7	209	0.137	29	0.2	0.2	19.950	C
C-D	57	14			57				
C-A	734	184			734				
C-B	0	0			0				
CD-A	971	243			971				
CD-B	0	0	586	0.000	0	0.0	0.0	0.000	A

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	33	8	452	0.074	33	0.1	0.1	8.598	A
A-B	49	12			49				
A-C	227	57			227				
A-D	131	33			131				
AB-CD	140	35	594	0.236	141	0.5	0.3	8.029	A
AB-C	238	59			238				
D-AB	193	48	522	0.370	195	1.0	0.6	11.392	B
D-C	23	6	271	0.086	24	0.2	0.1	14.590	B
C-D	47	12			47				
C-A	600	150			600				
C-B	0	0			0				
CD-A	794	199			794				
CD-B	0	0	610	0.000	0	0.0	0.0	0.000	A

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	28	7	484	0.058	28	0.1	0.1	7.902	A
A-B	41	10			41				
A-C	190	48			190				
A-D	110	27			110				
AB-CD	117	29	623	0.188	117	0.3	0.2	7.191	A
AB-C	199	50			199				
D-AB	162	40	551	0.294	163	0.6	0.4	9.555	A
D-C	20	5	312	0.063	20	0.1	0.1	12.302	B
C-D	39	10			39				
C-A	502	126			502				
C-B	0	0			0				
CD-A	665	166			665				
CD-B	0	0	628	0.000	0	0.0	0.0	0.000	A

Existing Layout - 2018 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Oxbridge Lane / Sheraton Street / Marlborough Street	Left-Right Stagger	Two-way	1.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Yarm Lane		ONE HOUR	✓	855	100.000
B - Marlborough Road		ONE HOUR	✓	32	100.000
C - Oxbridge Lane		ONE HOUR	✓	368	100.000
D - Sheraton Street		ONE HOUR	✓	199	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
	A - Yarm Lane	0	37	576	242
	B - Marlborough Road	9	0	13	10
	C - Oxbridge Lane	332	0	0	36
	D - Sheraton Street	148	0	51	0

Proportions

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	She St
	A - Yarm Lane	0.00	0.04	0.67	0
	B - Marlborough Road	0.28	0.00	0.41	0
	C - Oxbridge Lane	0.90	0.00	0.00	0
	D - Sheraton Street	0.74	0.00	0.26	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	0	0	1	1
	B - Marlborough Road	0	0	0	0
	C - Oxbridge Lane	2	0	0	0
	D - Sheraton Street	1	0	0	0

Average PCU Per Veh

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	1.000	1.000	1.010	1.010
	B - Marlborough Road	1.000	1.000	1.000	1.000
	C - Oxbridge Lane	1.020	1.000	1.000	1.000
	D - Sheraton Street	1.010	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Yarm Lane	644	644
	B - Marlborough Road	24	24
	C - Oxbridge Lane	277	277
	D - Sheraton Street	150	150
16:30-16:45	A - Yarm Lane	769	769
	B - Marlborough Road	29	29
	C - Oxbridge Lane	331	331
	D - Sheraton Street	179	179
16:45-17:00	A - Yarm Lane	941	941
	B - Marlborough Road	35	35
	C - Oxbridge Lane	405	405
	D - Sheraton Street	219	219
17:00-17:15	A - Yarm Lane	941	941
	B - Marlborough Road	35	35
	C - Oxbridge Lane	405	405
	D - Sheraton Street	219	219
17:15-17:30	A - Yarm Lane	769	769
	B - Marlborough Road	29	29
	C - Oxbridge Lane	331	331
	D - Sheraton Street	179	179
17:30-17:45	A - Yarm Lane	644	644
	B - Marlborough Road	24	24
	C - Oxbridge Lane	277	277
	D - Sheraton Street	150	150

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.09	10.62	0.1	B	29	44
A-B					34	51
A-C					529	793
A-D					222	333
AB-CD	0.42	8.81	0.8	A	241	362
AB-C					531	796
D-AB	0.30	9.53	0.4	A	136	204
D-C	0.24	19.92	0.3	C	47	70
C-D					33	50
C-A					305	457
C-B					0	0
CD-A					440	660
CD-B	0.00	0.00	0.0	A	0	0

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	24	6	467	0.052	24	0.0	0.1	8.117	A
A-B	28	7			28				
A-C	434	108			434				
A-D	182	46			182				
AB-CD	192	48	709	0.271	191	0.0	0.4	6.995	A
AB-C	441	110			441				
D-AB	111	28	601	0.185	111	0.0	0.2	7.403	A
D-C	38	10	330	0.116	38	0.0	0.1	12.302	B
C-D	27	7			27				
C-A	250	62			250				
C-B	0	0			0				
CD-A	360	90			360				
CD-B	0	0	547	0.000	0	0.0	0.0	0.000	A

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	29	7	429	0.067	29	0.1	0.1	8.994	A
A-B	33	8			33				
A-C	518	129			518				
A-D	218	54			218				
AB-CD	233	58	704	0.331	233	0.4	0.5	7.708	A
AB-C	523	131			523				
D-AB	133	33	580	0.229	133	0.2	0.3	8.129	A
D-C	46	11	291	0.157	46	0.1	0.2	14.642	B
C-D	32	8			32				
C-A	298	75			298				
C-B	0	0			0				
CD-A	431	108			431				
CD-B	0	0	514	0.000	0	0.0	0.0	0.000	A

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	35	9	374	0.094	35	0.1	0.1	10.612	B
A-B	41	10			41				
A-C	634	159			634				
A-D	266	67			266				
AB-CD	298	74	711	0.419	297	0.5	0.8	8.766	A
AB-C	628	157			628				
D-AB	163	41	545	0.299	162	0.3	0.4	9.488	A
D-C	56	14	237	0.237	56	0.2	0.3	19.781	C
C-D	40	10			40				
C-A	366	91			366				
C-B	0	0			0				
CD-A	528	132			528				
CD-B	0	0	468	0.000	0	0.0	0.0	0.000	A

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	35	9	374	0.094	35	0.1	0.1	10.620	B
A-B	41	10			41				
A-C	634	159			634				
A-D	266	67			266				
AB-CD	298	74	711	0.419	298	0.8	0.8	8.811	A
AB-C	628	157			628				
D-AB	163	41	545	0.299	163	0.4	0.4	9.527	A
D-C	56	14	237	0.237	56	0.3	0.3	19.920	C
C-D	40	10			40				
C-A	366	91			366				
C-B	0	0			0				
CD-A	528	132			528				
CD-B	0	0	468	0.000	0	0.0	0.0	0.000	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	29	7	429	0.067	29	0.1	0.1	9.005	A
A-B	33	8			33				
A-C	518	129			518				
A-D	218	54			218				
AB-CD	233	58	704	0.331	234	0.8	0.5	7.759	A
AB-C	523	131			523				
D-AB	133	33	579	0.230	134	0.4	0.3	8.168	A
D-C	46	11	291	0.158	46	0.3	0.2	14.755	B
C-D	32	8			32				
C-A	298	75			298				
C-B	0	0			0				
CD-A	432	108			432				
CD-B	0	0	514	0.000	0	0.0	0.0	0.000	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	24	6	467	0.052	24	0.1	0.1	8.129	A
A-B	28	7			28				
A-C	434	108			434				
A-D	182	46			182				
AB-CD	192	48	709	0.271	193	0.5	0.4	7.053	A
AB-C	441	110			441				
D-AB	111	28	600	0.186	112	0.3	0.2	7.447	A
D-C	38	10	329	0.117	39	0.2	0.1	12.391	B
C-D	27	7			27				
C-A	250	62			250				
C-B	0	0			0				
CD-A	362	90			362				
CD-B	0	0	547	0.000	0	0.0	0.0	0.000	A

Existing Layout - 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Oxbridge Lane / Sheraton Street / Marlborough Street	Left-Right Stagger	Two-way	2.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Yarm Lane		ONE HOUR	✓	476	100.000
B - Marlborough Road		ONE HOUR	✓	39	100.000
C - Oxbridge Lane		ONE HOUR	✓	755	100.000
D - Sheraton Street		ONE HOUR	✓	253	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
	A - Yarm Lane	0	57	266	153
	B - Marlborough Road	17	0	13	9
	C - Oxbridge Lane	700	0	0	55
	D - Sheraton Street	226	0	27	0

Proportions

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	She St
	A - Yarm Lane	0.00	0.12	0.56	0
	B - Marlborough Road	0.44	0.00	0.33	0
	C - Oxbridge Lane	0.93	0.00	0.00	0
	D - Sheraton Street	0.89	0.00	0.11	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	0	0	4	1
	B - Marlborough Road	0	0	0	0
	C - Oxbridge Lane	1	0	0	0
	D - Sheraton Street	3	0	0	0

Average PCU Per Veh

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	1.000	1.000	1.040	1.000
	B - Marlborough Road	1.000	1.000	1.000	1.000
	C - Oxbridge Lane	1.010	1.000	1.000	1.000
	D - Sheraton Street	1.030	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Yarm Lane	358	358
	B - Marlborough Road	29	29
	C - Oxbridge Lane	568	568
	D - Sheraton Street	190	190
08:00-08:15	A - Yarm Lane	428	428
	B - Marlborough Road	35	35
	C - Oxbridge Lane	679	679
	D - Sheraton Street	227	227
08:15-08:30	A - Yarm Lane	524	524
	B - Marlborough Road	43	43
	C - Oxbridge Lane	831	831
	D - Sheraton Street	279	279
08:30-08:45	A - Yarm Lane	524	524
	B - Marlborough Road	43	43
	C - Oxbridge Lane	831	831
	D - Sheraton Street	279	279
08:45-09:00	A - Yarm Lane	428	428
	B - Marlborough Road	35	35
	C - Oxbridge Lane	679	679
	D - Sheraton Street	227	227
09:00-09:15	A - Yarm Lane	358	358
	B - Marlborough Road	29	29
	C - Oxbridge Lane	568	568
	D - Sheraton Street	190	190

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	10.28	0.1	B	36	54
A-B					52	78
A-C					244	366
A-D					140	211
AB-CD	0.33	9.95	0.5	A	150	226
AB-C					254	381
D-AB	0.53	16.99	1.2	C	207	311
D-C	0.16	22.31	0.2	C	25	37
C-D					50	76
C-A					642	963
C-B					0	0
CD-A					849	1274
CD-B	0.00	0.00	0.0	A	0	0

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	29	7	475	0.062	29	0.0	0.1	8.069	A
A-B	43	11			43				
A-C	200	50			200				
A-D	115	29			115				
AB-CD	122	31	615	0.199	121	0.0	0.2	7.338	A
AB-C	210	52			210				
D-AB	170	43	544	0.313	168	0.0	0.5	9.814	A
D-C	20	5	303	0.067	20	0.0	0.1	12.717	B
C-D	41	10			41				
C-A	527	132			527				
C-B	0	0			0				
CD-A	695	174			695				
CD-B	0	0	623	0.000	0	0.0	0.0	0.000	A

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	35	9	442	0.079	35	0.1	0.1	8.848	A
A-B	51	13			51				
A-C	239	60			239				
A-D	138	34			138				
AB-CD	147	37	585	0.251	146	0.2	0.3	8.272	A
AB-C	250	62			250				
D-AB	203	51	513	0.396	202	0.5	0.7	11.906	B
D-C	24	6	258	0.094	24	0.1	0.1	15.373	C
C-D	49	12			49				
C-A	629	157			629				
C-B	0	0			0				
CD-A	832	208			832				
CD-B	0	0	605	0.000	0	0.0	0.0	0.000	A

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	43	11	393	0.109	43	0.1	0.1	10.269	B
A-B	63	16			63				
A-C	293	73			293				
A-D	168	42			168				
AB-CD	182	46	548	0.333	182	0.3	0.5	9.907	A
AB-C	303	76			303				
D-AB	249	62	467	0.533	247	0.7	1.1	16.698	C
D-C	30	7	192	0.155	29	0.1	0.2	22.108	C
C-D	61	15			61				
C-A	771	193			771				
C-B	0	0			0				
CD-A	1018	254			1018				
CD-B	0	0	579	0.000	0	0.0	0.0	0.000	A

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	43	11	393	0.109	43	0.1	0.1	10.284	B
A-B	63	16			63				
A-C	293	73			293				
A-D	168	42			168				
AB-CD	182	46	548	0.333	182	0.5	0.5	9.945	A
AB-C	303	76			303				
D-AB	249	62	467	0.533	249	1.1	1.2	16.989	C
D-C	30	7	191	0.156	30	0.2	0.2	22.310	C
C-D	61	15			61				
C-A	771	193			771				
C-B	0	0			0				
CD-A	1019	255			1019				
CD-B	0	0	579	0.000	0	0.0	0.0	0.000	A

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	35	9	441	0.079	35	0.1	0.1	8.868	A
A-B	51	13			51				
A-C	239	60			239				
A-D	138	34			138				
AB-CD	147	37	585	0.251	147	0.5	0.3	8.311	A
AB-C	250	62			250				
D-AB	203	51	513	0.396	205	1.2	0.7	12.125	B
D-C	24	6	257	0.094	25	0.2	0.1	15.495	C
C-D	49	12			49				
C-A	629	157			629				
C-B	0	0			0				
CD-A	834	209			834				
CD-B	0	0	605	0.000	0	0.0	0.0	0.000	A

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	29	7	475	0.062	29	0.1	0.1	8.085	A
A-B	43	11			43				
A-C	200	50			200				
A-D	115	29			115				
AB-CD	122	31	616	0.199	123	0.3	0.3	7.379	A
AB-C	210	52			210				
D-AB	170	43	544	0.313	171	0.7	0.5	9.962	A
D-C	20	5	302	0.067	20	0.1	0.1	12.796	B
C-D	41	10			41				
C-A	527	132			527				
C-B	0	0			0				
CD-A	698	175			698				
CD-B	0	0	623	0.000	0	0.0	0.0	0.000	A

Existing Layout - 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Oxbridge Lane / Sheraton Street / Marlborough Street	Left-Right Stagger	Two-way	1.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Yarm Lane		ONE HOUR	✓	891	100.000
B - Marlborough Road		ONE HOUR	✓	34	100.000
C - Oxbridge Lane		ONE HOUR	✓	384	100.000
D - Sheraton Street		ONE HOUR	✓	207	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
	A - Yarm Lane	0	39	600	252
	B - Marlborough Road	9	0	14	11
	C - Oxbridge Lane	346	0	0	38
	D - Sheraton Street	154	0	53	0

Proportions

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	She St
	A - Yarm Lane	0.00	0.04	0.67	0
	B - Marlborough Road	0.26	0.00	0.41	0
	C - Oxbridge Lane	0.90	0.00	0.00	0
	D - Sheraton Street	0.74	0.00	0.26	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	0	0	1	1
	B - Marlborough Road	0	0	0	0
	C - Oxbridge Lane	2	0	0	0
	D - Sheraton Street	1	0	0	0

Average PCU Per Veh

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	1.000	1.000	1.010	1.010
	B - Marlborough Road	1.000	1.000	1.000	1.000
	C - Oxbridge Lane	1.020	1.000	1.000	1.000
	D - Sheraton Street	1.010	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Yarm Lane	671	671
	B - Marlborough Road	26	26
	C - Oxbridge Lane	289	289
	D - Sheraton Street	156	156
16:30-16:45	A - Yarm Lane	801	801
	B - Marlborough Road	31	31
	C - Oxbridge Lane	345	345
	D - Sheraton Street	186	186
16:45-17:00	A - Yarm Lane	981	981
	B - Marlborough Road	37	37
	C - Oxbridge Lane	423	423
	D - Sheraton Street	228	228
17:00-17:15	A - Yarm Lane	981	981
	B - Marlborough Road	37	37
	C - Oxbridge Lane	423	423
	D - Sheraton Street	228	228
17:15-17:30	A - Yarm Lane	801	801
	B - Marlborough Road	31	31
	C - Oxbridge Lane	345	345
	D - Sheraton Street	186	186
17:30-17:45	A - Yarm Lane	671	671
	B - Marlborough Road	26	26
	C - Oxbridge Lane	289	289
	D - Sheraton Street	156	156

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.10	10.96	0.1	B	31	47
A-B					36	54
A-C					551	826
A-D					231	347
AB-CD	0.44	9.09	0.9	A	254	381
AB-C					551	826
D-AB	0.32	9.95	0.5	A	141	212
D-C	0.26	21.73	0.3	C	49	73
C-D					35	52
C-A					317	476
C-B					0	0
CD-A					459	688
CD-B	0.00	0.00	0.0	A	0	0

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	26	6	463	0.055	25	0.0	0.1	8.222	A
A-B	29	7			29				
A-C	452	113			452				
A-D	190	47			190				
AB-CD	201	50	707	0.284	199	0.0	0.4	7.139	A
AB-C	459	115			459				
D-AB	116	29	597	0.194	115	0.0	0.2	7.535	A
D-C	40	10	322	0.124	39	0.0	0.1	12.730	B
C-D	29	7			29				
C-A	260	65			260				
C-B	0	0			0				
CD-A	375	94			375				
CD-B	0	0	540	0.000	0	0.0	0.0	0.000	A

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	31	8	423	0.072	30	0.1	0.1	9.166	A
A-B	35	9			35				
A-C	539	135			539				
A-D	227	57			227				
AB-CD	245	61	703	0.348	244	0.4	0.5	7.905	A
AB-C	544	136			544				
D-AB	138	35	574	0.241	138	0.2	0.3	8.336	A
D-C	48	12	281	0.170	47	0.1	0.2	15.392	C
C-D	34	9			34				
C-A	311	78			311				
C-B	0	0			0				
CD-A	449	112			449				
CD-B	0	0	505	0.000	0	0.0	0.0	0.000	A

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	37	9	366	0.102	37	0.1	0.1	10.950	B
A-B	43	11			43				
A-C	661	165			661				
A-D	277	69			277				
AB-CD	316	79	716	0.441	314	0.5	0.8	9.036	A
AB-C	650	162			650				
D-AB	170	42	536	0.317	169	0.3	0.5	9.902	A
D-C	58	15	224	0.260	58	0.2	0.3	21.536	C
C-D	42	10			42				
C-A	381	95			381				
C-B	0	0			0				
CD-A	550	137			550				
CD-B	0	0	457	0.000	0	0.0	0.0	0.000	A

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	37	9	366	0.102	37	0.1	0.1	10.961	B
A-B	43	11			43				
A-C	661	165			661				
A-D	277	69			277				
AB-CD	316	79	716	0.441	316	0.8	0.9	9.088	A
AB-C	650	162			650				
D-AB	170	42	535	0.317	170	0.5	0.5	9.954	A
D-C	58	15	224	0.261	58	0.3	0.3	21.727	C
C-D	42	10			42				
C-A	381	95			381				
C-B	0	0			0				
CD-A	550	138			550				
CD-B	0	0	457	0.000	0	0.0	0.0	0.000	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	31	8	423	0.072	31	0.1	0.1	9.181	A
A-B	35	9			35				
A-C	539	135			539				
A-D	227	57			227				
AB-CD	245	61	704	0.348	246	0.9	0.6	7.966	A
AB-C	544	136			544				
D-AB	138	35	573	0.242	139	0.5	0.3	8.384	A
D-C	48	12	280	0.170	48	0.3	0.2	15.535	C
C-D	34	9			34				
C-A	311	78			311				
C-B	0	0			0				
CD-A	450	113			450				
CD-B	0	0	505	0.000	0	0.0	0.0	0.000	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	26	6	463	0.055	26	0.1	0.1	8.235	A
A-B	29	7			29				
A-C	452	113			452				
A-D	190	47			190				
AB-CD	201	50	707	0.284	202	0.6	0.4	7.203	A
AB-C	459	115			459				
D-AB	116	29	596	0.195	116	0.3	0.2	7.588	A
D-C	40	10	321	0.124	40	0.2	0.1	12.837	B
C-D	29	7			29				
C-A	260	65			260				
C-B	0	0			0				
CD-A	377	94			377				
CD-B	0	0	540	0.000	0	0.0	0.0	0.000	A

Existing Layout - 2023 + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Oxbridge Lane / Sheraton Street / Marlborough Street	Left-Right Stagger	Two-way	9.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Yarm Lane		ONE HOUR	✓	499	100.000
B - Marlborough Road		ONE HOUR	✓	39	100.000
C - Oxbridge Lane		ONE HOUR	✓	758	100.000
D - Sheraton Street		ONE HOUR	✓	398	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
	A - Yarm Lane	0	57	266	176
	B - Marlborough Road	17	0	13	9
	C - Oxbridge Lane	700	0	0	58
	D - Sheraton Street	353	0	45	0

Proportions

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	She St
	A - Yarm Lane	0.00	0.11	0.53	0
	B - Marlborough Road	0.44	0.00	0.33	0
	C - Oxbridge Lane	0.92	0.00	0.00	0
	D - Sheraton Street	0.89	0.00	0.11	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	0	0	4	1
	B - Marlborough Road	0	0	0	0
	C - Oxbridge Lane	1	0	0	0
	D - Sheraton Street	2	0	0	0

Average PCU Per Veh

	To				
		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From	A - Yarm Lane	1.000	1.000	1.040	1.000
	B - Marlborough Road	1.000	1.000	1.000	1.000
	C - Oxbridge Lane	1.010	1.000	1.000	1.000
	D - Sheraton Street	1.019	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Yarm Lane	376	376
	B - Marlborough Road	29	29
	C - Oxbridge Lane	571	571
	D - Sheraton Street	300	300
08:00-08:15	A - Yarm Lane	449	449
	B - Marlborough Road	35	35
	C - Oxbridge Lane	681	681
	D - Sheraton Street	358	358
08:15-08:30	A - Yarm Lane	549	549
	B - Marlborough Road	43	43
	C - Oxbridge Lane	835	835
	D - Sheraton Street	438	438
08:30-08:45	A - Yarm Lane	549	549
	B - Marlborough Road	43	43
	C - Oxbridge Lane	835	835
	D - Sheraton Street	438	438
08:45-09:00	A - Yarm Lane	449	449
	B - Marlborough Road	35	35
	C - Oxbridge Lane	681	681
	D - Sheraton Street	358	358
09:00-09:15	A - Yarm Lane	376	376
	B - Marlborough Road	29	29
	C - Oxbridge Lane	571	571
	D - Sheraton Street	300	300

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.12	11.21	0.1	B	36	54
A-B					52	78
A-C					244	366
A-D					162	242
AB-CD	0.38	10.61	0.6	B	173	259
AB-C					253	380
D-AB	0.90	64.86	6.5	F	324	486
D-C	0.64	114.93	1.4	F	41	62
C-D					53	80
C-A					642	963
C-B					0	0
CD-A					966	1448
CD-B	0.00	0.00	0.0	A	0	0

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	29	7	459	0.064	29	0.0	0.1	8.361	A
A-B	43	11			43				
A-C	200	50			200				
A-D	133	33			133				
AB-CD	140	35	616	0.227	139	0.0	0.3	7.592	A
AB-C	209	52			209				
D-AB	266	66	535	0.497	262	0.0	1.0	13.242	B
D-C	34	8	273	0.124	33	0.0	0.1	14.980	B
C-D	44	11			44				
C-A	527	132			527				
C-B	0	0			0				
CD-A	789	197			789				
CD-B	0	0	619	0.000	0	0.0	0.0	0.000	A

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	35	9	422	0.083	35	0.1	0.1	9.309	A
A-B	51	13			51				
A-C	239	60			239				
A-D	158	40			158				
AB-CD	168	42	586	0.287	168	0.3	0.4	8.659	A
AB-C	249	62			249				
D-AB	317	79	499	0.636	314	1.0	1.7	19.610	C
D-C	40	10	206	0.196	40	0.1	0.2	21.622	C
C-D	52	13			52				
C-A	629	157			629				
C-B	0	0			0				
CD-A	944	236			944				
CD-B	0	0	599	0.000	0	0.0	0.0	0.000	A

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	43	11	366	0.117	43	0.1	0.1	11.130	B
A-B	63	16			63				
A-C	293	73			293				
A-D	194	48			194				
AB-CD	210	53	552	0.381	209	0.4	0.6	10.561	B
AB-C	301	75			301				
D-AB	389	97	439	0.886	374	1.7	5.3	48.499	E
D-C	50	12	93	0.535	47	0.2	1.0	74.342	F
C-D	64	16			64				
C-A	771	193			771				
C-B	0	0			0				
CD-A	1145	286			1145				
CD-B	0	0	572	0.000	0	0.0	0.0	0.000	A

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	43	11	364	0.118	43	0.1	0.1	11.214	B
A-B	63	16			63				
A-C	293	73			293				
A-D	194	48			194				
AB-CD	210	53	553	0.381	210	0.6	0.6	10.613	B
AB-C	301	75			301				
D-AB	389	97	434	0.896	384	5.3	6.5	64.864	F
D-C	50	12	77	0.643	48	1.0	1.4	114.929	F
C-D	64	16			64				
C-A	771	193			771				
C-B	0	0			0				
CD-A	1155	289			1155				
CD-B	0	0	572	0.000	0	0.0	0.0	0.000	A

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	35	9	419	0.084	35	0.1	0.1	9.389	A
A-B	51	13			51				
A-C	239	60			239				
A-D	158	40			158				
AB-CD	168	42	587	0.287	169	0.6	0.4	8.715	A
AB-C	249	62			249				
D-AB	317	79	493	0.643	335	6.5	2.0	25.485	D
D-C	40	10	192	0.211	45	1.4	0.3	25.282	D
C-D	52	13			52				
C-A	629	157			629				
C-B	0	0			0				
CD-A	965	241			965				
CD-B	0	0	599	0.000	0	0.0	0.0	0.000	A

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	29	7	458	0.064	29	0.1	0.1	8.392	A
A-B	43	11			43				
A-C	200	50			200				
A-D	133	33			133				
AB-CD	140	35	616	0.227	140	0.4	0.3	7.644	A
AB-C	209	52			209				
D-AB	266	66	534	0.497	269	2.0	1.0	14.032	B
D-C	34	8	270	0.126	34	0.3	0.1	15.344	C
C-D	44	11			44				
C-A	527	132			527				
C-B	0	0			0				
CD-A	796	199			796				
CD-B	0	0	619	0.000	0	0.0	0.0	0.000	A

Existing Layout - 2023 + Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Oxbridge Lane / Sheraton Street / Marlborough Street	Left-Right Stagger	Two-way	3.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Yarm Lane		ONE HOUR	✓	993	100.000
B - Marlborough Road		ONE HOUR	✓	34	100.000
C - Oxbridge Lane		ONE HOUR	✓	399	100.000
D - Sheraton Street		ONE HOUR	✓	255	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
From A - Yarm Lane	0	39	600	354
From B - Marlborough Road	9	0	14	11
From C - Oxbridge Lane	346	0	0	53
From D - Sheraton Street	196	0	59	0

Proportions

	To			
	A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	Sheraton Street
From A - Yarm Lane	0.00	0.04	0.60	0
From B - Marlborough Road	0.26	0.00	0.41	0
From C - Oxbridge Lane	0.87	0.00	0.00	0
From D - Sheraton Street	0.77	0.00	0.23	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
	A - Yarm Lane	0	0	1	1
	B - Marlborough Road	0	0	0	0
	C - Oxbridge Lane	2	0	0	0
	D - Sheraton Street	1	0	0	0

Average PCU Per Veh

	To				
From		A - Yarm Lane	B - Marlborough Road	C - Oxbridge Lane	D - Sheraton Street
	A - Yarm Lane	1.000	1.000	1.010	1.000
	B - Marlborough Road	1.000	1.000	1.000	1.000
	C - Oxbridge Lane	1.020	1.000	1.000	1.000
	D - Sheraton Street	1.008	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Yarm Lane	748	748
	B - Marlborough Road	26	26
	C - Oxbridge Lane	300	300
	D - Sheraton Street	192	192
16:30-16:45	A - Yarm Lane	893	893
	B - Marlborough Road	31	31
	C - Oxbridge Lane	359	359
	D - Sheraton Street	229	229
16:45-17:00	A - Yarm Lane	1093	1093
	B - Marlborough Road	37	37
	C - Oxbridge Lane	439	439
	D - Sheraton Street	281	281
17:00-17:15	A - Yarm Lane	1093	1093
	B - Marlborough Road	37	37
	C - Oxbridge Lane	439	439
	D - Sheraton Street	281	281
17:15-17:30	A - Yarm Lane	893	893
	B - Marlborough Road	31	31
	C - Oxbridge Lane	359	359
	D - Sheraton Street	229	229
17:30-17:45	A - Yarm Lane	748	748
	B - Marlborough Road	26	26
	C - Oxbridge Lane	300	300
	D - Sheraton Street	192	192

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	12.34	0.1	B	31	47
A-B					36	54
A-C					551	826
A-D					325	487
AB-CD	0.62	11.73	2.0	B	382	573
AB-C					516	774
D-AB	0.43	12.60	0.7	B	180	270
D-C	0.37	32.31	0.6	D	54	81
C-D					49	73
C-A					317	476
C-B					0	0
CD-A					497	746
CD-B	0.00	0.00	0.0	A	0	0

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	26	6	440	0.058	25	0.0	0.1	8.679	A
A-B	29	7			29				
A-C	452	113			452				
A-D	267	67			267				
AB-CD	286	72	722	0.397	284	0.0	0.7	8.222	A
AB-C	451	113			451				
D-AB	148	37	591	0.250	146	0.0	0.3	8.132	A
D-C	44	11	291	0.153	44	0.0	0.2	14.508	B
C-D	40	10			40				
C-A	260	65			260				
C-B	0	0			0				
CD-A	407	102			407				
CD-B	0	0	520	0.000	0	0.0	0.0	0.000	A

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	31	8	395	0.077	30	0.1	0.1	9.877	A
A-B	35	9			35				
A-C	539	135			539				
A-D	318	80			318				
AB-CD	359	90	740	0.486	358	0.7	1.0	9.476	A
AB-C	521	130			521				
D-AB	176	44	563	0.313	176	0.3	0.5	9.352	A
D-C	53	13	244	0.217	53	0.2	0.3	18.786	C
C-D	48	12			48				
C-A	311	78			311				
C-B	0	0			0				
CD-A	487	122			487				
CD-B	0	0	481	0.000	0	0.0	0.0	0.000	A

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	37	9	329	0.114	37	0.1	0.1	12.317	B
A-B	43	11			43				
A-C	661	165			661				
A-D	390	97			390				
AB-CD	500	125	812	0.617	497	1.0	1.9	11.482	B
AB-C	577	144			577				
D-AB	216	54	506	0.426	215	0.5	0.7	12.400	B
D-C	65	16	177	0.366	64	0.3	0.5	31.412	D
C-D	58	15			58				
C-A	381	95			381				
C-B	0	0			0				
CD-A	596	149			596				
CD-B	0	0	428	0.000	0	0.0	0.0	0.000	A

17:00 - 17:15

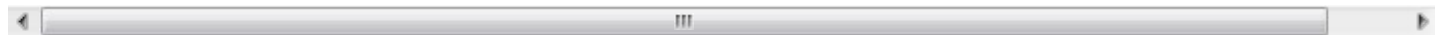
Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	37	9	329	0.114	37	0.1	0.1	12.337	B
A-B	43	11			43				
A-C	661	165			661				
A-D	390	97			390				
AB-CD	501	125	812	0.617	500	1.9	2.0	11.730	B
AB-C	577	144			577				
D-AB	216	54	503	0.429	216	0.7	0.7	12.605	B
D-C	65	16	176	0.369	65	0.5	0.6	32.308	D
C-D	58	15			58				
C-A	381	95			381				
C-B	0	0			0				
CD-A	597	149			597				
CD-B	0	0	428	0.000	0	0.0	0.0	0.000	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	31	8	395	0.077	31	0.1	0.1	9.896	A
A-B	35	9			35				
A-C	539	135			539				
A-D	318	80			318				
AB-CD	359	90	740	0.486	363	2.0	1.1	9.728	A
AB-C	521	130			521				
D-AB	176	44	561	0.314	177	0.7	0.5	9.478	A
D-C	53	13	242	0.219	54	0.6	0.3	19.236	C
C-D	48	12			48				
C-A	311	78			311				
C-B	0	0			0				
CD-A	488	122			488				
CD-B	0	0	481	0.000	0	0.0	0.0	0.000	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-ACD	26	6	440	0.058	26	0.1	0.1	8.695	A
A-B	29	7			29				
A-C	452	113			452				
A-D	267	67			267				
AB-CD	286	72	722	0.397	288	1.1	0.7	8.382	A
AB-C	451	113			451				
D-AB	148	37	590	0.250	148	0.5	0.3	8.220	A
D-C	44	11	290	0.153	45	0.3	0.2	14.722	B
C-D	40	10			40				
C-A	260	65			260				
C-B	0	0			0				
CD-A	409	102			409				
CD-B	0	0	520	0.000	0	0.0	0.0	0.000	A



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

Filename: 4 - Grays Road_Grangefield Road.j9

Path: N:\PROJECTS\2018\Development and Infrastructure\Millfield Works, Stockton\Modelling\Junctions9

Report generation date: 18/06/2018 12:39:25

- »Existing Layout - 2018 Base, AM
- »Existing Layout - 2018 Base, PM
- »Existing Layout - 2023, AM
- »Existing Layout - 2023, PM
- »Existing Layout - 2023 + Development, AM
- »Existing Layout - 2023 + Development, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2018 Base								
Stream B-AC	0.4	7.46	0.27	A	0.2	6.88	0.19	A
Stream C-AB	0.2	5.98	0.17	A	0.4	6.26	0.25	A
Existing Layout - 2023								
Stream B-AC	0.4	7.63	0.28	A	0.3	6.97	0.20	A
Stream C-AB	0.2	6.03	0.18	A	0.4	6.34	0.26	A
Existing Layout - 2023 + Development								
Stream B-AC	0.4	7.89	0.29	A	0.3	7.47	0.24	A
Stream C-AB	0.4	6.01	0.24	A	0.5	6.57	0.29	A

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

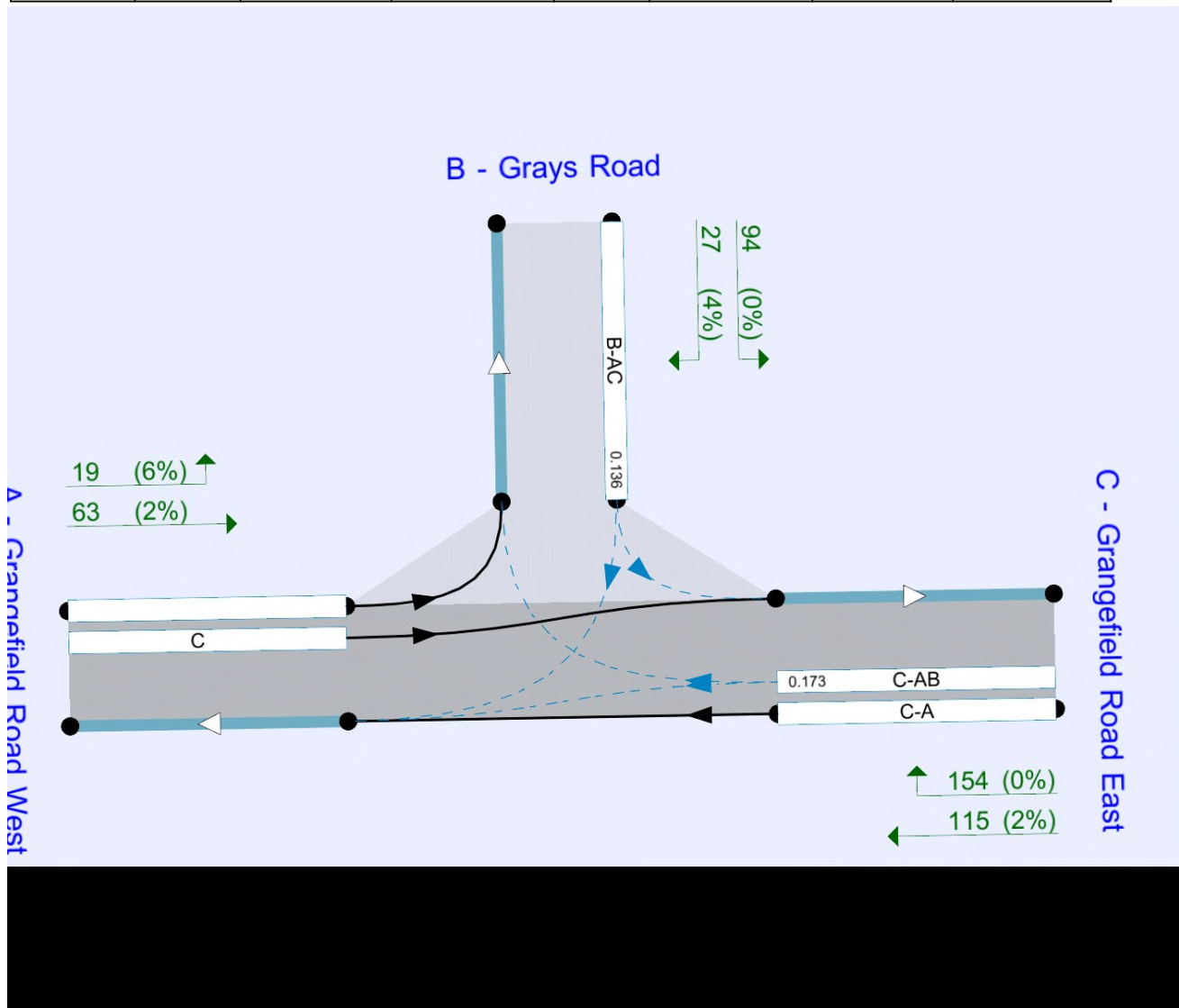
File summary

File Description

Title	Grangefield Road / Grays Road
Location	Stockton-on-Tees
Site number	4
Date	09/05/2018
Version	
Status	(new file)
Identifier	
Client	TJ Thomson & Son Ltd
Jobnumber	18C59
Enumerator	ADSYSTRA\pickering
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓		
D3	Development	AM	ONE HOUR	07:45	09:15	15			
D4	Development	PM	ONE HOUR	16:15	17:45	15			
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓		
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓		
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

Analysis Set Details

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

Existing Layout - 2018 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Grangefield Road / Grays Road	T-Junction	Two-way	3.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Grangefield Road West		Major
B	Grays Road		Minor
C	Grangefield Road East		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Grangefield Road East	7.84			250.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Grays Road	One lane	4.66	18	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	581	0.097	0.246	0.155	0.351
1	B-C	750	0.106	0.267	-	-
1	C-B	719	0.256	0.256	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road West		ONE HOUR	✓	138	100.000
B - Grays Road		ONE HOUR	✓	161	100.000
C - Grangefield Road East		ONE HOUR	✓	177	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	39	99
	B - Grays Road	29	0	132
	C - Grangefield Road East	77	100	0

Proportions

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0.00	0.28	0.72
	B - Grays Road	0.18	0.00	0.82
	C - Grangefield Road East	0.44	0.56	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	0	3
	B - Grays Road	0	0	1
	C - Grangefield Road East	1	1	0

Average PCU Per Veh

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	1.000	1.000	1.030
	B - Grays Road	1.000	1.000	1.010
	C - Grangefield Road East	1.010	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Grangefield Road West	104	104
	B - Grays Road	121	121
	C - Grangefield Road East	133	133
08:00-08:15	A - Grangefield Road West	124	124
	B - Grays Road	145	145
	C - Grangefield Road East	159	159
08:15-08:30	A - Grangefield Road West	152	152
	B - Grays Road	177	177
	C - Grangefield Road East	195	195
08:30-08:45	A - Grangefield Road West	152	152
	B - Grays Road	177	177
	C - Grangefield Road East	195	195
08:45-09:00	A - Grangefield Road West	124	124
	B - Grays Road	145	145
	C - Grangefield Road East	159	159
09:00-09:15	A - Grangefield Road West	104	104
	B - Grays Road	121	121
	C - Grangefield Road East	133	133

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.27	7.46	0.4	A	148	222
C-AB	0.17	5.98	0.2	A	102	153
C-A					60	91
A-B					36	54
A-C					91	136

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	121	30	679	0.178	120	0.0	0.2	6.483	A
C-AB	82	20	728	0.112	81	0.0	0.1	5.624	A
C-A	51	13			51				
A-B	29	7			29				
A-C	75	19			75				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	145	36	673	0.215	145	0.2	0.3	6.866	A
C-AB	99	25	730	0.136	99	0.1	0.2	5.766	A
C-A	60	15			60				
A-B	35	9			35				
A-C	89	22			89				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	177	44	664	0.267	177	0.3	0.4	7.452	A
C-AB	125	31	733	0.170	124	0.2	0.2	5.977	A
C-A	70	18			70				
A-B	43	11			43				
A-C	109	27			109				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	177	44	664	0.267	177	0.4	0.4	7.461	A
C-AB	125	31	733	0.170	125	0.2	0.2	5.983	A
C-A	70	18			70				
A-B	43	11			43				
A-C	109	27			109				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	145	36	673	0.215	145	0.4	0.3	6.884	A
C-AB	99	25	730	0.136	100	0.2	0.2	5.772	A
C-A	60	15			60				
A-B	35	9			35				
A-C	89	22			89				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	121	30	679	0.178	121	0.3	0.2	6.510	A
C-AB	82	20	728	0.112	82	0.2	0.1	5.631	A
C-A	51	13			51				
A-B	29	7			29				
A-C	75	19			75				

Existing Layout - 2018 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Grangefield Road / Grays Road	T-Junction	Two-way	4.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road West		ONE HOUR	✓	80	100.000
B - Grays Road		ONE HOUR	✓	116	100.000
C - Grangefield Road East		ONE HOUR	✓	259	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	19	61
	B - Grays Road	26	0	90
	C - Grangefield Road East	111	148	0

Proportions

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0.00	0.24	0.76
	B - Grays Road	0.22	0.00	0.78
	C - Grangefield Road East	0.43	0.57	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	6	2
	B - Grays Road	4	0	0
	C - Grangefield Road East	2	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	1.000	1.060	1.020
	B - Grays Road	1.040	1.000	1.000
	C - Grangefield Road East	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Grangefield Road West	60	60
	B - Grays Road	87	87
	C - Grangefield Road East	195	195
16:30-16:45	A - Grangefield Road West	72	72
	B - Grays Road	104	104
	C - Grangefield Road East	233	233
16:45-17:00	A - Grangefield Road West	88	88
	B - Grays Road	128	128
	C - Grangefield Road East	285	285
17:00-17:15	A - Grangefield Road West	88	88
	B - Grays Road	128	128
	C - Grangefield Road East	285	285
17:15-17:30	A - Grangefield Road West	72	72
	B - Grays Road	104	104
	C - Grangefield Road East	233	233
17:30-17:45	A - Grangefield Road West	60	60
	B - Grays Road	87	87
	C - Grangefield Road East	195	195

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.19	6.88	0.2	A	106	160
C-AB	0.25	6.26	0.4	A	158	236
C-A					80	120
A-B					17	26
A-C					56	84

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	87	22	672	0.130	87	0.0	0.1	6.200	A
C-AB	125	31	754	0.166	124	0.0	0.2	5.722	A
C-A	70	17			70				
A-B	14	4			14				
A-C	46	11			46				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	104	26	665	0.157	104	0.1	0.2	6.471	A
C-AB	153	38	761	0.201	153	0.2	0.3	5.931	A
C-A	80	20			80				
A-B	17	4			17				
A-C	55	14			55				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	128	32	656	0.195	127	0.2	0.2	6.870	A
C-AB	194	48	771	0.251	193	0.3	0.4	6.249	A
C-A	91	23			91				
A-B	21	5			21				
A-C	67	17			67				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	128	32	656	0.195	128	0.2	0.2	6.876	A
C-AB	194	48	771	0.251	194	0.4	0.4	6.257	A
C-A	91	23			91				
A-B	21	5			21				
A-C	67	17			67				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	104	26	665	0.157	104	0.2	0.2	6.482	A
C-AB	153	38	761	0.201	154	0.4	0.3	5.949	A
C-A	80	20			80				
A-B	17	4			17				
A-C	55	14			55				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	87	22	672	0.130	87	0.2	0.2	6.217	A
C-AB	125	31	754	0.166	126	0.3	0.2	5.746	A
C-A	70	17			70				
A-B	14	4			14				
A-C	46	11			46				

Existing Layout - 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Grangefield Road / Grays Road	T-Junction	Two-way	3.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road West		ONE HOUR	✓	145	100.000
B - Grays Road		ONE HOUR	✓	169	100.000
C - Grangefield Road East		ONE HOUR	✓	185	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	41	104
	B - Grays Road	30	0	139
	C - Grangefield Road East	81	104	0

Proportions

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0.00	0.28	0.72
	B - Grays Road	0.18	0.00	0.82
	C - Grangefield Road East	0.44	0.56	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	0	3
	B - Grays Road	0	0	1
	C - Grangefield Road East	1	1	0

Average PCU Per Veh

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	1.000	1.000	1.030
	B - Grays Road	1.000	1.000	1.010
	C - Grangefield Road East	1.010	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Grangefield Road West	109	109
	B - Grays Road	127	127
	C - Grangefield Road East	139	139
08:00-08:15	A - Grangefield Road West	130	130
	B - Grays Road	152	152
	C - Grangefield Road East	166	166
08:15-08:30	A - Grangefield Road West	160	160
	B - Grays Road	186	186
	C - Grangefield Road East	204	204
08:30-08:45	A - Grangefield Road West	160	160
	B - Grays Road	186	186
	C - Grangefield Road East	204	204
08:45-09:00	A - Grangefield Road West	130	130
	B - Grays Road	152	152
	C - Grangefield Road East	166	166
09:00-09:15	A - Grangefield Road West	109	109
	B - Grays Road	127	127
	C - Grangefield Road East	139	139

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.28	7.63	0.4	A	155	233
C-AB	0.18	6.03	0.2	A	107	160
C-A					63	95
A-B					38	56
A-C					95	143

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	127	32	678	0.188	126	0.0	0.2	6.563	A
C-AB	85	21	728	0.117	85	0.0	0.1	5.646	A
C-A	54	13			54				
A-B	31	8			31				
A-C	78	20			78				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	152	38	672	0.226	152	0.2	0.3	6.979	A
C-AB	104	26	730	0.142	104	0.1	0.2	5.802	A
C-A	62	16			62				
A-B	37	9			37				
A-C	93	23			93				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	186	47	662	0.281	186	0.3	0.4	7.614	A
C-AB	130	33	733	0.178	130	0.2	0.2	6.026	A
C-A	73	18			73				
A-B	45	11			45				
A-C	115	29			115				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	186	47	662	0.281	186	0.4	0.4	7.626	A
C-AB	130	33	734	0.178	130	0.2	0.2	6.033	A
C-A	73	18			73				
A-B	45	11			45				
A-C	115	29			115				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	152	38	671	0.226	152	0.4	0.3	6.995	A
C-AB	104	26	731	0.142	104	0.2	0.2	5.807	A
C-A	62	16			62				
A-B	37	9			37				
A-C	93	23			93				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	127	32	678	0.188	127	0.3	0.2	6.593	A
C-AB	86	21	728	0.117	86	0.2	0.1	5.658	A
C-A	54	13			54				
A-B	31	8			31				
A-C	78	20			78				

Existing Layout - 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Grangefield Road / Grays Road	T-Junction	Two-way	4.20	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road West		ONE HOUR	✓	82	100.000
B - Grays Road		ONE HOUR	✓	121	100.000
C - Grangefield Road East		ONE HOUR	✓	269	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	19	63
	B - Grays Road	27	0	94
	C - Grangefield Road East	115	154	0

Proportions

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0.00	0.23	0.77
	B - Grays Road	0.22	0.00	0.78
	C - Grangefield Road East	0.43	0.57	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	0	6	2
	B - Grays Road	4	0	0
	C - Grangefield Road East	2	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From				
	A - Grangefield Road West	1.000	1.060	1.020
	B - Grays Road	1.040	1.000	1.000
	C - Grangefield Road East	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Grangefield Road West	62	62
	B - Grays Road	91	91
	C - Grangefield Road East	203	203
16:30-16:45	A - Grangefield Road West	74	74
	B - Grays Road	109	109
	C - Grangefield Road East	242	242
16:45-17:00	A - Grangefield Road West	90	90
	B - Grays Road	133	133
	C - Grangefield Road East	296	296
17:00-17:15	A - Grangefield Road West	90	90
	B - Grays Road	133	133
	C - Grangefield Road East	296	296
17:15-17:30	A - Grangefield Road West	74	74
	B - Grays Road	109	109
	C - Grangefield Road East	242	242
17:30-17:45	A - Grangefield Road West	62	62
	B - Grays Road	91	91
	C - Grangefield Road East	203	203

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	6.97	0.3	A	111	167
C-AB	0.26	6.34	0.4	A	165	247
C-A					82	123
A-B					17	26
A-C					58	87

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	91	23	671	0.136	90	0.0	0.2	6.250	A
C-AB	131	33	756	0.173	130	0.0	0.2	5.761	A
C-A	72	18			72				
A-B	14	4			14				
A-C	47	12			47				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	109	27	664	0.164	109	0.2	0.2	6.537	A
C-AB	160	40	763	0.210	160	0.2	0.3	5.983	A
C-A	82	20			82				
A-B	17	4			17				
A-C	57	14			57				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	133	33	654	0.204	133	0.2	0.3	6.962	A
C-AB	203	51	773	0.262	203	0.3	0.4	6.323	A
C-A	93	23			93				
A-B	21	5			21				
A-C	69	17			69				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	133	33	654	0.204	133	0.3	0.3	6.969	A
C-AB	203	51	773	0.262	203	0.4	0.4	6.337	A
C-A	93	23			93				
A-B	21	5			21				
A-C	69	17			69				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	109	27	664	0.164	109	0.3	0.2	6.546	A
C-AB	160	40	763	0.210	161	0.4	0.3	6.000	A
C-A	81	20			81				
A-B	17	4			17				
A-C	57	14			57				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	91	23	671	0.136	91	0.2	0.2	6.267	A
C-AB	131	33	756	0.173	131	0.3	0.2	5.783	A
C-A	71	18			71				
A-B	14	4			14				
A-C	47	12			47				

Existing Layout - 2023 + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Grangefield Road / Grays Road	T-Junction	Two-way	3.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road West		ONE HOUR	✓	160	100.000
B - Grays Road		ONE HOUR	✓	173	100.000
C - Grangefield Road East		ONE HOUR	✓	296	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
	From			
	A - Grangefield Road West	0	41	119
	B - Grays Road	30	0	143
	C - Grangefield Road East	167	129	0

Proportions

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
	From			
	A - Grangefield Road West	0.00	0.26	0.74
	B - Grays Road	0.17	0.00	0.83
	C - Grangefield Road East	0.56	0.44	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
	From			
	A - Grangefield Road West	0	0	3
	B - Grays Road	0	0	1
	C - Grangefield Road East	0	1	0

Average PCU Per Veh

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
	From			
	A - Grangefield Road West	1.000	1.000	1.026
	B - Grays Road	1.000	1.000	1.010
	C - Grangefield Road East	1.005	1.008	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Grangefield Road West	120	120
	B - Grays Road	130	130
	C - Grangefield Road East	223	223
08:00-08:15	A - Grangefield Road West	144	144
	B - Grays Road	156	156
	C - Grangefield Road East	266	266
08:15-08:30	A - Grangefield Road West	176	176
	B - Grays Road	190	190
	C - Grangefield Road East	326	326
08:30-08:45	A - Grangefield Road West	176	176
	B - Grays Road	190	190
	C - Grangefield Road East	326	326
08:45-09:00	A - Grangefield Road West	144	144
	B - Grays Road	156	156
	C - Grangefield Road East	266	266
09:00-09:15	A - Grangefield Road West	120	120
	B - Grays Road	130	130
	C - Grangefield Road East	223	223

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.29	7.89	0.4	A	159	238
C-AB	0.24	6.01	0.4	A	149	223
C-A					123	184
A-B					38	56
A-C					109	164

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	130	33	671	0.194	129	0.0	0.2	6.683	A
C-AB	116	29	766	0.152	115	0.0	0.2	5.574	A
C-A	107	27			107				
A-B	31	8			31				
A-C	90	22			90				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	156	39	663	0.235	155	0.2	0.3	7.147	A
C-AB	144	36	775	0.186	144	0.2	0.3	5.745	A
C-A	122	31			122				
A-B	37	9			37				
A-C	107	27			107				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	190	48	651	0.293	190	0.3	0.4	7.871	A
C-AB	185	46	789	0.235	185	0.3	0.4	6.007	A
C-A	140	35			140				
A-B	45	11			45				
A-C	131	33			131				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	190	48	651	0.293	190	0.4	0.4	7.885	A
C-AB	186	46	789	0.235	186	0.4	0.4	6.015	A
C-A	140	35			140				
A-B	45	11			45				
A-C	131	33			131				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	156	39	663	0.235	156	0.4	0.3	7.168	A
C-AB	144	36	775	0.186	145	0.4	0.3	5.757	A
C-A	122	30			122				
A-B	37	9			37				
A-C	107	27			107				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	130	33	671	0.194	131	0.3	0.2	6.715	A
C-AB	116	29	766	0.152	117	0.3	0.2	5.593	A
C-A	106	27			106				
A-B	31	8			31				
A-C	90	22			90				

Existing Layout - 2023 + Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Grangefield Road / Grays Road	T-Junction	Two-way	3.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Grangefield Road West		ONE HOUR	✓	151	100.000
B - Grays Road		ONE HOUR	✓	141	100.000
C - Grangefield Road East		ONE HOUR	✓	306	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From	A - Grangefield Road West	0	19	132
	B - Grays Road	27	0	114
	C - Grangefield Road East	144	162	0

Proportions

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From	A - Grangefield Road West	0.00	0.13	0.87
	B - Grays Road	0.19	0.00	0.81
	C - Grangefield Road East	0.47	0.53	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From	A - Grangefield Road West	0	6	1
	B - Grays Road	4	0	0
	C - Grangefield Road East	2	0	0

Average PCU Per Veh

	To			
		A - Grangefield Road West	B - Grays Road	C - Grangefield Road East
From	A - Grangefield Road West	1.000	1.060	1.009
	B - Grays Road	1.040	1.000	1.000
	C - Grangefield Road East	1.016	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Grangefield Road West	114	114
	B - Grays Road	106	106
	C - Grangefield Road East	230	230
16:30-16:45	A - Grangefield Road West	136	136
	B - Grays Road	127	127
	C - Grangefield Road East	275	275
16:45-17:00	A - Grangefield Road West	166	166
	B - Grays Road	155	155
	C - Grangefield Road East	337	337
17:00-17:15	A - Grangefield Road West	166	166
	B - Grays Road	155	155
	C - Grangefield Road East	337	337
17:15-17:30	A - Grangefield Road West	136	136
	B - Grays Road	127	127
	C - Grangefield Road East	275	275
17:30-17:45	A - Grangefield Road West	114	114
	B - Grays Road	106	106
	C - Grangefield Road East	230	230

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.24	7.47	0.3	A	129	194
C-AB	0.29	6.57	0.5	A	181	271
C-A					100	150
A-B					17	26
A-C					121	182

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	106	27	664	0.160	105	0.0	0.2	6.489	A
C-AB	142	36	756	0.188	141	0.0	0.3	5.858	A
C-A	88	22			88				
A-B	14	4			14				
A-C	99	25			99				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	127	32	654	0.194	127	0.2	0.2	6.876	A
C-AB	176	44	764	0.230	175	0.3	0.3	6.125	A
C-A	100	25			100				
A-B	17	4			17				
A-C	119	30			119				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	155	39	640	0.242	155	0.2	0.3	7.464	A
C-AB	225	56	775	0.290	224	0.3	0.5	6.549	A
C-A	112	28			112				
A-B	21	5			21				
A-C	145	36			145				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	155	39	640	0.242	155	0.3	0.3	7.474	A
C-AB	225	56	775	0.290	225	0.5	0.5	6.565	A
C-A	112	28			112				
A-B	21	5			21				
A-C	145	36			145				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	127	32	654	0.194	127	0.3	0.2	6.890	A
C-AB	176	44	764	0.230	176	0.5	0.4	6.149	A
C-A	99	25			99				
A-B	17	4			17				
A-C	119	30			119				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	106	27	663	0.160	106	0.2	0.2	6.511	A
C-AB	143	36	757	0.188	143	0.4	0.3	5.885	A
C-A	88	22			88				
A-B	14	4			14				
A-C	99	25			99				

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

Filename: 5 - Grays Road_Bishopton Lane.j9

Path: N:\PROJECTS\2018\Development and Infrastructure\Millfield Works, Stockton\Modelling\Junctions9

Report generation date: 18/06/2018 12:45:29

- »Existing Layout - 2018 Base, AM
- »Existing Layout - 2018 Base, PM
- »Existing Layout - 2023, AM
- »Existing Layout - 2023, PM
- »Existing Layout - 2023 + Development, AM
- »Existing Layout - 2023 + Development, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2018 Base								
Stream B-C	0.1	6.39	0.12	A	0.1	6.64	0.12	A
Stream B-A	0.2	9.58	0.19	A	0.2	9.74	0.16	A
Stream C-B	0.1	7.01	0.12	A	0.1	7.52	0.12	A
Existing Layout - 2023								
Stream B-C	0.2	6.49	0.13	A	0.1	6.75	0.12	A
Stream B-A	0.2	9.84	0.20	A	0.2	9.96	0.17	A
Stream C-B	0.1	7.08	0.13	A	0.1	7.62	0.13	A
Existing Layout - 2023 + Development								
Stream B-C	0.2	6.81	0.14	A	0.1	6.89	0.13	A
Stream B-A	0.3	10.41	0.26	B	0.2	10.17	0.19	B
Stream C-B	0.1	7.09	0.13	A	0.1	7.69	0.13	A

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

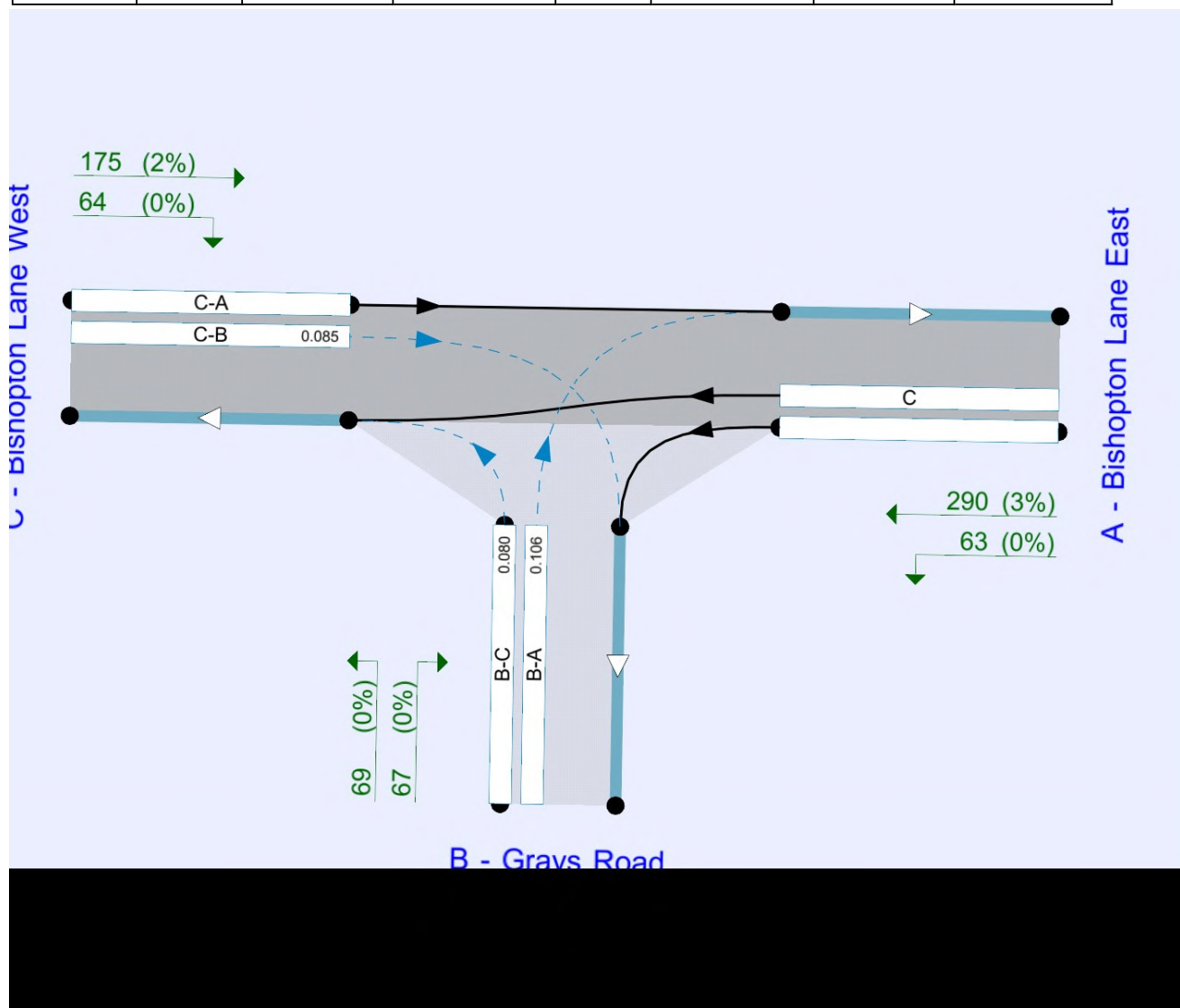
File summary

File Description

Title	Grays Road / Bishopton Lane
Location	Stockton-on-Tees
Site number	3
Date	09/05/2018
Version	
Status	(new file)
Identifier	
Client	TJ Thomson & Son Ltd
Jobnumber	18C59
Enumerator	ADSYSTRA\pickering
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓		
D3	Development	AM	ONE HOUR	07:45	09:15	15			
D4	Development	PM	ONE HOUR	16:15	17:45	15			
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓		
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓		
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

Analysis Set Details

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

Existing Layout - 2018 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
5	Grays Road / Bishopton Lane	T-Junction	Two-way	2.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Bishopton Lane East		Major
B	Grays Road		Minor
C	Bishopton Lane West		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Bishopton Lane West	9.45			84.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Grays Road	One lane plus flare	10.00	6.08	3.86	3.64	3.64	✓	1.00	28	48

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
5	B-A	565	0.088	0.221	0.139	0.316
5	B-C	717	0.093	0.236	-	-
5	C-B	623	0.205	0.205	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bishopton Lane East		ONE HOUR	✓	175	100.000
B - Grays Road		ONE HOUR	✓	152	100.000
C - Bishopton Lane West		ONE HOUR	✓	355	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From				
	A - Bishopton Lane East	0	55	120
	B - Grays Road	79	0	73
	C - Bishopton Lane West	292	63	0

Proportions

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From				
	A - Bishopton Lane East	0.00	0.31	0.69
	B - Grays Road	0.52	0.00	0.48
	C - Bishopton Lane West	0.82	0.18	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From				
	A - Bishopton Lane East	0	0	2
	B - Grays Road	0	0	0
	C - Bishopton Lane West	6	0	0

Average PCU Per Veh

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From				
	A - Bishopton Lane East	1.000	1.000	1.020
	B - Grays Road	1.000	1.000	1.000
	C - Bishopton Lane West	1.060	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Bishopton Lane East	132	132
	B - Grays Road	114	114
	C - Bishopton Lane West	267	267
08:00-08:15	A - Bishopton Lane East	157	157
	B - Grays Road	137	137
	C - Bishopton Lane West	319	319
08:15-08:30	A - Bishopton Lane East	193	193
	B - Grays Road	167	167
	C - Bishopton Lane West	391	391
08:30-08:45	A - Bishopton Lane East	193	193
	B - Grays Road	167	167
	C - Bishopton Lane West	391	391
08:45-09:00	A - Bishopton Lane East	157	157
	B - Grays Road	137	137
	C - Bishopton Lane West	319	319
09:00-09:15	A - Bishopton Lane East	132	132
	B - Grays Road	114	114
	C - Bishopton Lane West	267	267

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	6.39	0.1	A	67	100
B-A	0.19	9.58	0.2	A	72	109
C-A					268	402
C-B	0.12	7.01	0.1	A	58	87
A-B					50	76
A-C					110	165

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	55	14	670	0.082	55	0.0	0.1	5.848	A
B-A	59	15	496	0.120	59	0.0	0.1	8.230	A
C-A	220	55			220				
C-B	47	12	596	0.080	47	0.0	0.1	6.558	A
A-B	41	10			41				
A-C	90	23			90				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	66	16	659	0.100	66	0.1	0.1	6.063	A
B-A	71	18	482	0.147	71	0.1	0.2	8.753	A
C-A	263	66			263				
C-B	57	14	590	0.096	57	0.1	0.1	6.744	A
A-B	49	12			49				
A-C	108	27			108				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	80	20	644	0.125	80	0.1	0.1	6.386	A
B-A	87	22	463	0.188	87	0.2	0.2	9.566	A
C-A	321	80			321				
C-B	69	17	583	0.119	69	0.1	0.1	7.003	A
A-B	61	15			61				
A-C	132	33			132				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	80	20	644	0.125	80	0.1	0.1	6.391	A
B-A	87	22	463	0.188	87	0.2	0.2	9.578	A
C-A	321	80			321				
C-B	69	17	583	0.119	69	0.1	0.1	7.006	A
A-B	61	15			61				
A-C	132	33			132				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	66	16	659	0.100	66	0.1	0.1	6.068	A
B-A	71	18	482	0.147	71	0.2	0.2	8.767	A
C-A	263	66			263				
C-B	57	14	590	0.096	57	0.1	0.1	6.747	A
A-B	49	12			49				
A-C	108	27			108				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	55	14	670	0.082	55	0.1	0.1	5.858	A
B-A	59	15	496	0.120	60	0.2	0.1	8.256	A
C-A	220	55			220				
C-B	47	12	596	0.080	48	0.1	0.1	6.571	A
A-B	41	10			41				
A-C	90	23			90				

Existing Layout - 2018 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
5	Grays Road / Bishopton Lane	T-Junction	Two-way	2.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bishopton Lane East		ONE HOUR	✓	340	100.000
B - Grays Road		ONE HOUR	✓	130	100.000
C - Bishopton Lane West		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0	61	279
	B - Grays Road	64	0	66
	C - Bishopton Lane West	168	61	0

Proportions

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0.00	0.18	0.82
	B - Grays Road	0.49	0.00	0.51
	C - Bishopton Lane West	0.73	0.27	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0	0	3
	B - Grays Road	0	0	0
	C - Bishopton Lane West	2	0	0

Average PCU Per Veh

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	1.000	1.000	1.030
	B - Grays Road	1.000	1.000	1.000
	C - Bishopton Lane West	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Bishopton Lane East	256	256
	B - Grays Road	98	98
	C - Bishopton Lane West	172	172
16:30-16:45	A - Bishopton Lane East	306	306
	B - Grays Road	117	117
	C - Bishopton Lane West	206	206
16:45-17:00	A - Bishopton Lane East	374	374
	B - Grays Road	143	143
	C - Bishopton Lane West	252	252
17:00-17:15	A - Bishopton Lane East	374	374
	B - Grays Road	143	143
	C - Bishopton Lane West	252	252
17:15-17:30	A - Bishopton Lane East	306	306
	B - Grays Road	117	117
	C - Bishopton Lane West	206	206
17:30-17:45	A - Bishopton Lane East	256	256
	B - Grays Road	98	98
	C - Bishopton Lane West	172	172

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	6.64	0.1	A	61	91
B-A	0.16	9.74	0.2	A	59	88
C-A					154	231
C-B	0.12	7.52	0.1	A	56	84
A-B					56	84
A-C					256	384

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	50	12	651	0.076	49	0.0	0.1	5.984	A
B-A	48	12	479	0.101	48	0.0	0.1	8.342	A
C-A	126	32			126				
C-B	46	11	570	0.081	46	0.0	0.1	6.858	A
A-B	46	11			46				
A-C	210	53			210				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	59	15	636	0.093	59	0.1	0.1	6.245	A
B-A	58	14	463	0.124	57	0.1	0.1	8.879	A
C-A	151	38			151				
C-B	55	14	560	0.098	55	0.1	0.1	7.126	A
A-B	55	14			55				
A-C	251	63			251				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	73	18	615	0.118	73	0.1	0.1	6.640	A
B-A	70	18	440	0.160	70	0.1	0.2	9.727	A
C-A	185	46			185				
C-B	67	17	546	0.123	67	0.1	0.1	7.516	A
A-B	67	17			67				
A-C	307	77			307				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	73	18	614	0.118	73	0.1	0.1	6.644	A
B-A	70	18	440	0.160	70	0.2	0.2	9.737	A
C-A	185	46			185				
C-B	67	17	546	0.123	67	0.1	0.1	7.519	A
A-B	67	17			67				
A-C	307	77			307				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	59	15	636	0.093	59	0.1	0.1	6.250	A
B-A	58	14	463	0.124	58	0.2	0.1	8.895	A
C-A	151	38			151				
C-B	55	14	560	0.098	55	0.1	0.1	7.132	A
A-B	55	14			55				
A-C	251	63			251				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	50	12	650	0.076	50	0.1	0.1	5.996	A
B-A	48	12	479	0.101	48	0.1	0.1	8.363	A
C-A	126	32			126				
C-B	46	11	570	0.081	46	0.1	0.1	6.871	A
A-B	46	11			46				
A-C	210	53			210				

Existing Layout - 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
5	Grays Road / Bishopton Lane	T-Junction	Two-way	2.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bishopton Lane East		ONE HOUR	✓	184	100.000
B - Grays Road		ONE HOUR	✓	160	100.000
C - Bishopton Lane West		ONE HOUR	✓	373	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0	58	126
	B - Grays Road	83	0	77
	C - Bishopton Lane West	307	66	0

Proportions

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0.00	0.32	0.68
	B - Grays Road	0.52	0.00	0.48
	C - Bishopton Lane West	0.82	0.18	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0	0	2
	B - Grays Road	0	0	0
	C - Bishopton Lane West	6	0	0

Average PCU Per Veh

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	1.000	1.000	1.020
	B - Grays Road	1.000	1.000	1.000
	C - Bishopton Lane West	1.060	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Bishopton Lane East	139	139
	B - Grays Road	120	120
	C - Bishopton Lane West	281	281
08:00-08:15	A - Bishopton Lane East	165	165
	B - Grays Road	144	144
	C - Bishopton Lane West	335	335
08:15-08:30	A - Bishopton Lane East	203	203
	B - Grays Road	176	176
	C - Bishopton Lane West	411	411
08:30-08:45	A - Bishopton Lane East	203	203
	B - Grays Road	176	176
	C - Bishopton Lane West	411	411
08:45-09:00	A - Bishopton Lane East	165	165
	B - Grays Road	144	144
	C - Bishopton Lane West	335	335
09:00-09:15	A - Bishopton Lane East	139	139
	B - Grays Road	120	120
	C - Bishopton Lane West	281	281

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.13	6.49	0.2	A	71	106
B-A	0.20	9.84	0.2	A	76	114
C-A					282	423
C-B	0.13	7.08	0.1	A	61	91
A-B					53	80
A-C					116	173

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	58	14	668	0.087	58	0.0	0.1	5.898	A
B-A	62	16	492	0.127	62	0.0	0.1	8.357	A
C-A	231	58			231				
C-B	50	12	594	0.084	49	0.0	0.1	6.602	A
A-B	44	11			44				
A-C	95	24			95				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	69	17	656	0.106	69	0.1	0.1	6.133	A
B-A	75	19	478	0.156	74	0.1	0.2	8.922	A
C-A	276	69			276				
C-B	59	15	589	0.101	59	0.1	0.1	6.799	A
A-B	52	13			52				
A-C	113	28			113				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	85	21	639	0.133	85	0.1	0.2	6.488	A
B-A	91	23	457	0.200	91	0.2	0.2	9.822	A
C-A	338	85			338				
C-B	73	18	581	0.125	73	0.1	0.1	7.077	A
A-B	64	16			64				
A-C	139	35			139				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	85	21	639	0.133	85	0.2	0.2	6.493	A
B-A	91	23	457	0.200	91	0.2	0.2	9.836	A
C-A	338	85			338				
C-B	73	18	581	0.125	73	0.1	0.1	7.080	A
A-B	64	16			64				
A-C	139	35			139				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	69	17	656	0.106	69	0.2	0.1	6.139	A
B-A	75	19	478	0.156	75	0.2	0.2	8.943	A
C-A	276	69			276				
C-B	59	15	589	0.101	59	0.1	0.1	6.802	A
A-B	52	13			52				
A-C	113	28			113				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	58	14	667	0.087	58	0.1	0.1	5.912	A
B-A	62	16	492	0.127	63	0.2	0.1	8.387	A
C-A	231	58			231				
C-B	50	12	594	0.084	50	0.1	0.1	6.615	A
A-B	44	11			44				
A-C	95	24			95				

Existing Layout - 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
5	Grays Road / Bishopton Lane	T-Junction	Two-way	2.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bishopton Lane East		ONE HOUR	✓	353	100.000
B - Grays Road		ONE HOUR	✓	136	100.000
C - Bishopton Lane West		ONE HOUR	✓	239	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0	63	290
	B - Grays Road	67	0	69
	C - Bishopton Lane West	175	64	0

Proportions

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0.00	0.18	0.82
	B - Grays Road	0.49	0.00	0.51
	C - Bishopton Lane West	0.73	0.27	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	0	0	3
	B - Grays Road	0	0	0
	C - Bishopton Lane West	2	0	0

Average PCU Per Veh

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
From	A - Bishopton Lane East	1.000	1.000	1.030
	B - Grays Road	1.000	1.000	1.000
	C - Bishopton Lane West	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Bishopton Lane East	266	266
	B - Grays Road	102	102
	C - Bishopton Lane West	180	180
16:30-16:45	A - Bishopton Lane East	317	317
	B - Grays Road	122	122
	C - Bishopton Lane West	215	215
16:45-17:00	A - Bishopton Lane East	389	389
	B - Grays Road	150	150
	C - Bishopton Lane West	263	263
17:00-17:15	A - Bishopton Lane East	389	389
	B - Grays Road	150	150
	C - Bishopton Lane West	263	263
17:15-17:30	A - Bishopton Lane East	317	317
	B - Grays Road	122	122
	C - Bishopton Lane West	215	215
17:30-17:45	A - Bishopton Lane East	266	266
	B - Grays Road	102	102
	C - Bishopton Lane West	180	180

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	6.75	0.1	A	63	95
B-A	0.17	9.96	0.2	A	61	92
C-A					161	241
C-B	0.13	7.62	0.1	A	59	88
A-B					58	87
A-C					266	399

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52	13	648	0.080	52	0.0	0.1	6.038	A
B-A	50	13	475	0.106	50	0.0	0.1	8.451	A
C-A	132	33			132				
C-B	48	12	568	0.085	48	0.0	0.1	6.915	A
A-B	47	12			47				
A-C	218	55			218				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	16	632	0.098	62	0.1	0.1	6.317	A
B-A	60	15	459	0.131	60	0.1	0.1	9.031	A
C-A	157	39			157				
C-B	58	14	558	0.103	57	0.1	0.1	7.199	A
A-B	57	14			57				
A-C	261	65			261				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76	19	610	0.125	76	0.1	0.1	6.743	A
B-A	74	18	435	0.170	74	0.1	0.2	9.950	A
C-A	193	48			193				
C-B	70	18	543	0.130	70	0.1	0.1	7.616	A
A-B	69	17			69				
A-C	319	80			319				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76	19	609	0.125	76	0.1	0.1	6.748	A
B-A	74	18	435	0.170	74	0.2	0.2	9.963	A
C-A	193	48			193				
C-B	70	18	543	0.130	70	0.1	0.1	7.619	A
A-B	69	17			69				
A-C	319	80			319				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	16	632	0.098	62	0.1	0.1	6.324	A
B-A	60	15	459	0.131	60	0.2	0.2	9.045	A
C-A	157	39			157				
C-B	58	14	558	0.103	58	0.1	0.1	7.205	A
A-B	57	14			57				
A-C	261	65			261				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52	13	647	0.080	52	0.1	0.1	6.051	A
B-A	50	13	475	0.106	51	0.2	0.1	8.475	A
C-A	132	33			132				
C-B	48	12	568	0.085	48	0.1	0.1	6.928	A
A-B	47	12			47				
A-C	218	55			218				

Existing Layout - 2023 + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
5	Grays Road / Bishopton Lane	T-Junction	Two-way	2.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D3

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bishopton Lane East		ONE HOUR	✓	188	100.000
B - Grays Road		ONE HOUR	✓	185	100.000
C - Bishopton Lane West		ONE HOUR	✓	373	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	0	62	126
	B - Grays Road	108	0	77
	C - Bishopton Lane West	307	66	0

Proportions

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	0.00	0.33	0.67
	B - Grays Road	0.58	0.00	0.42
	C - Bishopton Lane West	0.82	0.18	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	0	0	2
	B - Grays Road	0	0	0
	C - Bishopton Lane West	6	0	0

Average PCU Per Veh

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	1.000	1.000	1.020
	B - Grays Road	1.000	1.000	1.000
	C - Bishopton Lane West	1.060	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Bishopton Lane East	142	142
	B - Grays Road	139	139
	C - Bishopton Lane West	281	281
08:00-08:15	A - Bishopton Lane East	169	169
	B - Grays Road	166	166
	C - Bishopton Lane West	335	335
08:15-08:30	A - Bishopton Lane East	207	207
	B - Grays Road	204	204
	C - Bishopton Lane West	411	411
08:30-08:45	A - Bishopton Lane East	207	207
	B - Grays Road	204	204
	C - Bishopton Lane West	411	411
08:45-09:00	A - Bishopton Lane East	169	169
	B - Grays Road	166	166
	C - Bishopton Lane West	335	335
09:00-09:15	A - Bishopton Lane East	142	142
	B - Grays Road	139	139
	C - Bishopton Lane West	281	281

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.14	6.81	0.2	A	71	106
B-A	0.26	10.41	0.3	B	99	149
C-A					282	423
C-B	0.13	7.09	0.1	A	61	91
A-B					57	85
A-C					116	173

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	58	14	648	0.089	58	0.0	0.1	6.094	A
B-A	81	20	501	0.162	81	0.0	0.2	8.557	A
C-A	231	58			231				
C-B	50	12	594	0.084	49	0.0	0.1	6.610	A
A-B	47	12			47				
A-C	95	24			95				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	69	17	634	0.109	69	0.1	0.1	6.371	A
B-A	97	24	486	0.200	97	0.2	0.2	9.257	A
C-A	276	69			276				
C-B	59	15	588	0.101	59	0.1	0.1	6.809	A
A-B	56	14			56				
A-C	113	28			113				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	85	21	613	0.138	85	0.1	0.2	6.808	A
B-A	119	30	465	0.256	119	0.2	0.3	10.389	B
C-A	338	85			338				
C-B	73	18	580	0.125	73	0.1	0.1	7.090	A
A-B	68	17			68				
A-C	139	35			139				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	85	21	613	0.138	85	0.2	0.2	6.814	A
B-A	119	30	465	0.256	119	0.3	0.3	10.412	B
C-A	338	85			338				
C-B	73	18	580	0.125	73	0.1	0.1	7.092	A
A-B	68	17			68				
A-C	139	35			139				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	69	17	634	0.109	69	0.2	0.1	6.379	A
B-A	97	24	486	0.200	97	0.3	0.3	9.283	A
C-A	276	69			276				
C-B	59	15	588	0.101	59	0.1	0.1	6.815	A
A-B	56	14			56				
A-C	113	28			113				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	58	14	647	0.090	58	0.1	0.1	6.109	A
B-A	81	20	500	0.162	82	0.3	0.2	8.599	A
C-A	231	58			231				
C-B	50	12	594	0.084	50	0.1	0.1	6.620	A
A-B	47	12			47				
A-C	95	24			95				

Existing Layout - 2023 + Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
5	Grays Road / Bishopton Lane	T-Junction	Two-way	2.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2023 + Development	PM	ONE HOUR	16:15	17:45	15	✓	Simple	D8+D4

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bishopton Lane East		ONE HOUR	✓	373	100.000
B - Grays Road		ONE HOUR	✓	144	100.000
C - Bishopton Lane West		ONE HOUR	✓	239	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	0	83	290
	B - Grays Road	75	0	69
	C - Bishopton Lane West	175	64	0

Proportions

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	0.00	0.22	0.78
	B - Grays Road	0.52	0.00	0.48
	C - Bishopton Lane West	0.73	0.27	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	0	0	3
	B - Grays Road	0	0	0
	C - Bishopton Lane West	2	0	0

Average PCU Per Veh

	To			
		A - Bishopton Lane East	B - Grays Road	C - Bishopton Lane West
	From			
	A - Bishopton Lane East	1.000	1.000	1.030
	B - Grays Road	1.000	1.000	1.000
	C - Bishopton Lane West	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A - Bishopton Lane East	281	281
	B - Grays Road	108	108
	C - Bishopton Lane West	180	180
16:30-16:45	A - Bishopton Lane East	335	335
	B - Grays Road	129	129
	C - Bishopton Lane West	215	215
16:45-17:00	A - Bishopton Lane East	411	411
	B - Grays Road	159	159
	C - Bishopton Lane West	263	263
17:00-17:15	A - Bishopton Lane East	411	411
	B - Grays Road	159	159
	C - Bishopton Lane West	263	263
17:15-17:30	A - Bishopton Lane East	335	335
	B - Grays Road	129	129
	C - Bishopton Lane West	215	215
17:30-17:45	A - Bishopton Lane East	281	281
	B - Grays Road	108	108
	C - Bishopton Lane West	180	180

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.13	6.89	0.1	A	63	95
B-A	0.19	10.17	0.2	B	69	103
C-A					161	241
C-B	0.13	7.69	0.1	A	59	88
A-B					76	114
A-C					266	399

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52	13	639	0.081	52	0.0	0.1	6.125	A
B-A	56	14	478	0.118	56	0.0	0.1	8.523	A
C-A	132	33			132				
C-B	48	12	565	0.085	48	0.0	0.1	6.956	A
A-B	62	16			62				
A-C	218	55			218				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	16	622	0.100	62	0.1	0.1	6.423	A
B-A	67	17	461	0.146	67	0.1	0.2	9.154	A
C-A	157	39			157				
C-B	58	14	554	0.104	57	0.1	0.1	7.252	A
A-B	75	19			75				
A-C	261	65			261				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76	19	599	0.127	76	0.1	0.1	6.883	A
B-A	83	21	436	0.189	82	0.2	0.2	10.159	B
C-A	193	48			193				
C-B	70	18	538	0.131	70	0.1	0.1	7.688	A
A-B	91	23			91				
A-C	319	80			319				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76	19	599	0.127	76	0.1	0.1	6.888	A
B-A	83	21	436	0.189	83	0.2	0.2	10.173	B
C-A	193	48			193				
C-B	70	18	538	0.131	70	0.1	0.1	7.693	A
A-B	91	23			91				
A-C	319	80			319				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	16	622	0.100	62	0.1	0.1	6.432	A
B-A	67	17	461	0.146	68	0.2	0.2	9.170	A
C-A	157	39			157				
C-B	58	14	554	0.104	58	0.1	0.1	7.256	A
A-B	75	19			75				
A-C	261	65			261				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52	13	638	0.081	52	0.1	0.1	6.138	A
B-A	56	14	478	0.118	57	0.2	0.1	8.550	A
C-A	132	33			132				
C-B	48	12	565	0.085	48	0.1	0.1	6.967	A
A-B	62	16			62				
A-C	218	55			218				

SYSTRA provides advice on transport, to central, regional and local government, agencies, developers, operators and financiers.

A diverse group of results-oriented people, we are part of a strong team of professionals worldwide. Through client business planning, customer research and strategy development we create solutions that work for real people in the real world.

For more information visit www.systra.co.uk

Birmingham – Newhall Street

5th Floor, Lancaster House, Newhall St,
Birmingham, B3 1NQ
T: +44 (0)121 233 7680 F: +44 (0)121 233 7681

Birmingham – Innovation Court

Innovation Court, 121 Edmund Street, Birmingham B3 2HJ
T: +44 (0)121 230 6010

Bristol

10 Victoria Street, Bristol, BS1 6BN
T: +44 (0)117 922 9040

Dublin

2nd Floor, Riverview House, 21-23 City Quay
Dublin 2, Ireland
T: +353 (0) 1 905 3961

Edinburgh – Thistle Street

Prospect House, 5 Thistle Street, Edinburgh EH2 1DF
United Kingdom
T: +44 (0)131 220 6966

Edinburgh – Manor Place

37 Manor Place, Edinburgh, EH3 7EB
Telephone +44 (0)131 225 7900 Fax: +44 (0)131 225 9229

Glasgow – St Vincent St

Seventh Floor, 124 St Vincent Street
Glasgow G2 5HF United Kingdom
T: +44 (0)141 225 4400

Glasgow – West George Street

250 West George Street, Glasgow, G2 4QY
T: +44 (0)141 221 4030 F: +44 (0)800 066 4367

Leeds

100 Wellington Street, Leeds, LS1 1BA
T: +44 (0)113 397 9740 F: +44 (0)113 397 9741

Liverpool

Cotton Exchange, Bixteth Street, Liverpool, L3 9LQ
T: +44 (0)151 230 1930

London

3rd Floor, 5 Old Bailey, London EC4M 7BA United Kingdom
T: +44 (0)203 714 4400

Manchester – 16th Floor, City Tower

16th Floor, City Tower, Piccadilly Plaza
Manchester M1 4BT United Kingdom
T: +44 (0)161 831 5600

Newcastle

PO Box 438, Newcastle upon Tyne, NE3 9BT
United Kingdom
T: +44 (0)191 2136157

Perth

13 Rose Terrace, Perth PH1 5HA
T: +44 (0)1738 621 377 F: +44 (0)1738 632 887

Reading

Soane Point, 6-8 Market Place, Reading,
Berkshire, RG1 2EG
T: +44 (0)118 334 5510

Woking

Dukes Court, Duke Street
Woking, Surrey GU21 5BH United Kingdom
T: +44 (0)1483 728051 F: +44 (0)1483 755207

Other locations:

France:

Bordeaux, Lille, Lyon, Marseille, Paris

Northern Europe:

Astana, Copenhagen, Kiev, London, Moscow, Riga, Wroclaw

Southern Europe & Mediterranean: Algiers, Baku, Bucharest,

Madrid, Rabat, Rome, Sofia, Tunis

Middle East:

Cairo, Dubai, Riyadh

Asia Pacific:

Bangkok, Beijing, Brisbane, Delhi, Hanoi, Hong Kong, Manila,
Seoul, Shanghai, Singapore, Shenzhen, Taipei

Africa:

Abidjan, Douala, Johannesburg, Kinshasa, Libreville, Nairobi

Latin America:

Lima, Mexico, Rio de Janeiro, Santiago, São Paulo

North America:

Little Falls, Los Angeles, Montreal, New-York, Philadelphia,
Washington

The SYSTRA logo is displayed in a large, bold, red, sans-serif font. The letters are closely spaced, and the overall style is modern and professional.