From: Alistair Baker <>
Sent: 22 January 2018 23:32
To: Planning Comments (SMDC)
Subject: Planning Objection: SMD/2017/0784

Application Reference No. : SMD/2017/0784

Site Address: Land Adjacent 3 Meadow Drive Cheadle Staffordshire

19 Meadow Drive

Cheadle Staffordshire

ST10 1EQ

Submission: Objection to the use of Meadow Drive as access road.

Comments:

1) I strongly object to the new proposed access road 'Meadow Drive' for use on the above application. Access has already been granted on to Bank Street and not Meadow Drive. I am perplexed why this

issue has arisen again, so far no one has given a genuine reason why this has happened? The usage of Meadow Drive as an access road for the new development was given a resounding 'No'

2) I Strongly object to the environmental costs that this amendment would create over many years. The UK govt pledges to be 'a global leader' in air quality How can we achieve this, when small changes like this will create hundreds and thousands of extra miles over coming years, through narrow streets, to peoples journeys who want to access Bank Street who reside in the new development.

3) I Strongly object to the inconvenience and upset which this has caused many local residence over many years. Human rights act 1998 Article (8) States the right in law given to all residents in the uk are entitled to Respect for your private and family life, home and correspondence. On occassions such as this it is The European Court of Human Rights that has the right to question whether authorites had struck a fair balance between the owners of developments and the rights of the community. I question this after the upset that has been caused by Wrekin Housing to the local community of this development. The community who have showen huge support to the safety of our children and other important issues all of which will be impacted on if this application is passed.

Yours Faithfully,

Mr Darren Chappell (BSc)

Supporting Evidence (Below)

1. Air pollution quality UK Govt & 2. Traffic Survey (Cheadle)

1. Air pollution quality UK Govt

Department for Environment Food & Rural Affairs

Department for Transport

UK plan for tackling roadside nitrogen dioxide concentrations

Llywodraeth Cymru
Welsh Government

Department of
Agriculture, Environment
and Rural Affairs
www.daera-ni.gov.uk

Scottish Government
Riaghaltas na h-Alba
gov.scot

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www.gov.uk/defra

Contents

The government's ambition for a better environment and cleaner air

1. Wepledgetobethefirstgenerationtoleavetheenvironmentinabetterstatethanwe inherited it.
2. Cleanairisoneofthemostbasicrequirementsofahealthyenvironmentforusallto live, work, and bring up families. Whilst air quality has improved significantly in recent decades, and will continue to improve thanks to the action we have already taken, there are some parts of our country where there are unacceptable levels of air pollution. This can come from a range of different sources and activities. Many everyday activities such as industrial processes, farming, transport, generating energy and heating homes can have a detrimental effect on air quality. This is a problem we need to tackle.

What the government is doing to deliver clean air

3. Thegovernmenthasalreadytakensignificantactiontoimproveairquality.TheUKwas the first country in the world to announce in 2011 our intention that conventional car and van sales would end by 2040, and for almost every car and van on the road to be a zero emission vehicle by 2050. The UK is already a leader in Europe in terms of electric vehicle manufacture and uptake. In 2016 UK manufactured Nissan Leafs accounted for almost 20% of battery electric car sales across Europe and the UK had the highest sales of battery electric vehicles and plug-in hybrids in the EU.
4. Wearealreadycommittedtoinvestingover£2.7billionoverallinairqualityandcleaner transport. This includes:

- **£1 billion – ultra low emission vehicles (ULEVs).** This includes investing nearly £100m in the UK's charging infrastructure and funding the Plug In Car and Plug In Van Grant Schemes.
- **£290 million – National Productivity Investment Fund.** In the Autumn Statement 2016, a further £290 million was committed for reducing transport emissions which includes £60 million for new buses and £40 million for bus retrofits, £50 million for a Plug In Taxi programme and £80 million for ULEV charging infrastructure.
- **£11 million – Air Quality Grant.** We have awarded over £11 million under our Air Quality Grant scheme to help local authorities improve air quality.

- **£89 million – Green Bus Fund.** The UK government has invested a total of almost £89 million via the Green Bus Fund to help bus companies and local authorities in England to put over 1,200 new low carbon buses on the roads.
- **£27 million – Clean Bus Technology Fund and Clean Vehicle Technology Fund.** Since 2013, government has awarded over £27 million to retrofit almost 3,000 of the oldest vehicles (mainly buses) including through the Clean Bus Technology Fund and the Clean Vehicle Technology Fund.
- **£1.2 billion – Cycling and walking.** In April 2017, the UK government published its Cycling and Walking Investment Strategy which identifies £1.2 billion which may be invested in cycling and walking from 2016-2021.
- **£100 million – National road network.** Through the Road Investment Strategy, the UK government has allocated a ring-fenced £100 million for an Air Quality Fund available through to 2021 for Highways England to help improve air quality on its network.

5. WearedevelopingfurthermeasuresandwillsettheseoutinA:

1. theCleanGrowthPlanwhichtheDepartmentforBusiness,Energyand Industrial Strategy will bring forward in the autumn.
2. afurtherstrategyonthepathwaytozeroemissiontransportforallroadvehicles to be published by March 2018.
3. a wider Clean Air Strategy in 2018 setting out how we will meet our international commitments to significantly reduce emissions of five damaging air pollutants by 2020, and 2030.

Although air pollution has improved, it still poses an urgent health problem

6. Theshifttoultra-lowandzeroemissionvehiclesiswellunderway,andwillcontinueto gather pace over the coming years as we move towards 2040, by which point the government will end the sale of all new conventional petrol and diesel cars and vans. This shift will resolve our air quality problem as combustion engines gradually disappear from the streets of our towns and cities, some as soon as the early 2020s. However, this will not happen quickly enough and the impact that air pollution continues to have on the health of this nation means we must do more, sooner.
7. WethereforehaveaclearambitionandpolicyagendatoimproveairquA,backedup with significant investment. Air quality has improved significantly in recent decades. Since 1970 sulphur dioxide emissions have decreased by 95%, particulate matter by

73%, and nitrogen oxides by 69%. Total UK emissions of nitrogen oxides fell by a further 19% between 2010 and 2015.

8. However,poorairqualitypersistsincertainareasofthecountryasadirectresultofthe failure of the European regulatory system to deliver expected improvements in vehicle emissions. Standards on vehicle engines (known as "Euro Standards"), which should have led to major reductions in emissions of nitrogen dioxide (NO_2) from vehicles, failed to deliver, particularly for diesel vehicles, whose "real world" emissions have proven to be many times higher than laboratory tests. Diesel vehicles on our roads are causing harmful emissions far above what was assumed and contributing to pollution levels that continue to be damaging to public health. Additionally, the Volkswagen scandal showed that deliberate cheating of the emissions tests was built into some vehicles. If those Euro standards had delivered as they were supposed to, we would by now have most of the UK within the legal air quality limits. We need to take specific further action in order to address the immediate health risks presented by poor air quality in particular parts of the country.
9. Thereisincreasingevidencethatairqualityhasanimportanteffectonpublichealth, the economy, and the environment. According to Public Health England, poor air quality is the largest environmental risk to public health in the UK[1]. Evidence from the World Health Organization (WHO) shows that older people, children, people with pre- existing lung and heart conditions, and people on lower incomes may be most at risk[2].

10.Evidence collated by Defra, Public Health England and the Local Government Association[3] shows that short-term exposure to high levels of air pollution can cause a range of adverse health effects including exacerbation of asthma, effects on lung function, increases in hospital admissions and mortality. A review by the World Health Organization concludes that long-term exposure to air pollution reduces life expectancy by increasing deaths from lung, heart and circulatory conditions. There is emerging evidence from the Royal College of Physicians (amongst others) of possible links with a range of other adverse health effects including diabetes, cognitive decline and dementia, and effects on the unborn child[4] [5].

11.As well as having an effect on life-expectancy, air quality also impacts other aspects of health, productivity and wellbeing. Although it is difficult to quantify the economic impact of poor air quality with precision, research commissioned by Defra estimated

[1] Public Health England, '*Estimating local mortality burdens associated with particulate air pollution*', 2014, www.gov.uk/government/publications/estimating-local-mortality-burdens-associated-with-particulate-air-pollution

[2] World Health Organization, '*Review of evidence on health aspects of air pollution – REVIHAAP Project*', 2013 http://www.euro.who.int/__data/assets/pdf_file/0004/193108/REVIHAAP-Final-technical-report-final-version.pdf?ua=1

[3] www.local.gov.uk/sites/default/files/documents/6.3091_DEFRA_AirQualityGuide_9web_0.pdf [4] Ibid.
[5] Royal College of Physicians 'Every breath we take. The lifelong impact of air pollution' (2016).

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that in 2012, poor air quality had a total cost of up to £2.7 billion through its impact on productivity[6].

12.In addition to affecting health, air quality also impacts the environment. Between 2013 and 2015, 44% of sensitive habitats across the UK were estimated to be at risk of significant harm from acidity and 63% from nitrogen deposition[7]. It has also been found that ozone effects ecosystems (by reducing carbon uptake and biomass in sensitive plants and trees) and on agriculture (where crop production has been found to be reduced by up to 9%)[8].

13.Further research continues to improve understanding of the health, economic and environmental effects of air pollution, and although the evidence is subject to change, there is substantial evidence on the health impacts from particulate matter and there is a compelling and growing body of evidence on the effects from other pollutants particularly nitrogen dioxide.

14.We must take action now to tackle NO_2 pollution. Air pollution predominantly affects those living in our major towns and cities due to the concentration of vehicles and other sources of pollution. This continues to have an unnecessary and avoidable impact on people's health, particularly amongst the elderly, people with pre-existing lung and heart conditions, the young, and those on lower incomes.

The government's solution

15.Unlike greenhouse gases, the risk from NO_2 is focused in particular places: it is the build-up of pollution in a particular area that increases the concentration in the air and the associated risks. So intervention needs to be targeted to problem areas, fewer than 100 major roads which national modelling suggests will continue to have air pollution problems in 2021, mostly in cities and towns. The effort to reduce NO_2 also needs to be targeted on the sources that make the biggest contribution to the problem: road vehicles contribute about 80% of NO_2 pollution at the roadside and growth in the number of diesel cars has exacerbated this problem.

16.Given the local nature of the problem, local action is needed to achieve improvements in air quality. As the UK improves air quality nationally, air quality hotspots are going to become even more localised and the importance of action at a local level will increase. Local knowledge is vital to finding solutions for air quality problems that are suited to

[6] Department for Environment, Food and Rural Affairs, '*Valuing the impacts of air quality on productivity*', 2015, https://uk-air.defra.gov.uk/assets/documents/reports/cat19/1511251135_140610_Valuing_the_impacts_of_air_quality_on_productivity_Final_Report_3_0.pdf

[7] Based on a 2013-2015 three-year average. Department for Environment, Food and Rural Affairs, '*Provision of Mapping and Modelling of Critical Loads and Critical Levels Exceedance 2016-19*', 2016.

[8] Ozone factsheets produced by the Natural Environment Research Council, Centre for ecology and Hydrology and the Science & Technology Facilities Council are available at www.ozone-net.org.uk/factsheets

local areas and the communities and businesses affected. A leading role for local authorities is therefore essential.

17.But we also recognise the need for strong national leadership. We will set a clear national framework for the steps that local authorities need to take. We will provide direct financial support to enable local authorities to develop and implement their plans, and pursue national measures to reinforce their efforts. And we will require those local plans to be developed and implemented at pace so that air quality limits are achieved within the shortest time possible.

18.In developing their local plans to tackle the causes of air pollution, local authorities should consider a wide range of innovative options, exploring new technologies and seeking to support the government's industrial strategy so that they can deliver reduced emissions in a way that best meets the needs of their communities and local businesses. Their plans could include a wide range of measures such as: changing road layouts at congestion and air pollution pinch points; encouraging public and private uptake of ULEVs; using innovative retrofitting technologies and new fuels; and, encouraging the use of public transport. If these measures are not sufficient, local plans could include access restrictions on vehicles, such as charging zones or measures to prevent certain vehicles using particular roads at particular times. However, local authorities should bear in mind such access restrictions would only be necessary for a limited period and should be lifted once legal compliance is achieved and there is no risk of legal limits being breached again.

19.We will help local authorities by:

- **Setting up a £255m Implementation Fund**, available to support local authorities to prepare their plans and deliver targeted action to improve air quality. This funding will support the immediate work to conduct feasibility studies and develop and deliver local plans. **£40 million** will be made available immediately to support local authorities to take action to improve air quality in the shortest time possible.
- **Establishing a Clean Air Fund**, which will allow local authorities to bid for additional money to support the implementation of measures to improve air quality. This could include interventions such as improvements to local bus fleets, support for concessionary travel and more sustainable modes of transport such as cycling, or infrastructure changes. These interventions could enable local authorities to avoid the imposition of restrictions on vehicles, such as charging zones. To ensure the Fund fits the specific needs of each local area there will be a competitive process through which local authorities bid for support. Further details will be announced later in the year.
- **£100 million for retrofitting and new low emission buses.** As announced in the 2016 Autumn Statement, the government will provide this funding for a national programme of support for low emission buses in England and Wales, including hundreds of new low emission buses and retrofitting of thousands of older buses.

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The government believes that continued development, promotion and implementation of innovative retrofit technology will be an important element of reducing emissions of NO_x and will help bridge the gap in the journey towards zero emissions by 2050. At a local level, the UK government expects local authorities to consider the impact retrofitting could have on their pollution levels and meeting local air quality objectives. We will set out further plans for how local authorities can access this funding later in the summer.

20.The government is clear that we must maintain discipline on public spending. Measures to improve air quality will therefore be funded through changes to the tax treatment for new diesel vehicles, or through reprioritisation within existing departmental budgets. Further details on changes to the tax regime will be announced later in the year.

Delivering cleaner air in the shortest time possible

21.It is vital that action is taken in the shortest time possible to improve air quality in those areas where air pollution is above legal limits. The government has previously said that relevant local authorities will have up to 18 months to produce their plans. In order to inject additional urgency into this process, we will now require local authorities to set out initial plans 8 months from now, by the end of March 2018. These will be followed by final plans by the end of December 2018. To assist local authorities in meeting these timescales, we will ensure they can immediately draw on our Implementation Fund, as well as central government expertise.

22.Government will assess local plans to ensure they are effective, fair, good value, and deliver the necessary air quality compliance. Government will provide feedback on local authorities' initial plans and will decide whether or not to approve final plans. A local plan will only be approved by government, and thus be considered for appropriate funding support, if:

1. it is likely to cause NO_2 levels in the area to reach legal compliance within the shortest time possible;
2. theeffectsandimpactsonlocalresidentsandbusinesseshavebeenassessed, including on disadvantaged groups, and there are no unintended consequences; and,
3. proposals that require central government funding demonstrate value for money.

23.If the government deems a local plan not to be sufficient, we will require local authorities to implement the measures necessary in their area to deliver the necessary improvement in the shortest time possible.

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Impact on individuals

24.This package of measures will support delivery of our obligations on air quality in the shortest time possible. We are clear, however, that this must be done in a way that does not unfairly penalise ordinary working families who bought diesel vehicles in good faith. This includes those people who purchased diesel vehicles following tax changes made by previous governments which focused on fuel economy and carbon dioxide (CO_2) emissions, rather than NO_2 emissions.

25.Our evidence suggests that exceedances in NO_2 are highly localised – limited, for the most part, to a few problem roads rather than an entire town or city centre. The plans put forward by local authorities should reflect this, ensuring that measures are carefully targeted to minimise their impact on local residents and businesses – and government will be scrutinising local authority plans on this basis.

26.Where there are no other viable options to reduce air pollution to legally-permissible levels in the shortest possible time, some local authorities may decide to introduce access restrictions on vehicles, such as charging zones or other measures to prevent certain vehicles using particular roads at particular times. The Mayor of London has already announced that the GLA will introduce new charges on those using diesel vehicles in central London. While local authorities may deem such action to be necessary, support should be available to the owners of affected vehicles.

27.We will not know the degree to which local plans will impact residents and individuals until local authorities come forward with their plans. In the meantime, the government will work with local authorities and others to consider how to help minimise the impact of such measures on local businesses, residents and those travelling into towns and cities to work where such action is necessary; and will issue a further consultation in autumn to aid development and assessment of options. The measures considered in that consultation will include options to support motorists: in particular private car drivers on lower incomes, or those who may have to switch to a cleaner vehicle. Options considered could include retrofitting, subsidised car club membership, exemptions and discounts from any restrictions, permit schemes for vans or concessionary bus travel.

28.A targeted scrappage scheme will also be considered in this consultation focussing on certain groups of drivers who most need support (such as those on lower incomes or those living in the immediate vicinity of a Clean Air Zone) and providing an incentive to switch to a cleaner vehicle.

29.Following the consultation on the draft Plan, it is clear that a number of issues remain with such mitigation options and in particular with scrappage schemes – analysis of previous schemes has shown poor value for the taxpayer and that they are open to a degree of fraud. We welcome views from stakeholders in the forthcoming consultation on whether it is possible to overcome these issues, alongside any wider options that should be considered. All proposals considered for government support would need to

demonstrate that support can be targeted to those who need it most and that any scheme could be delivered effectively with minimal risk of fraud or abuse. Proposals considered would also need to demonstrate that they offer clear value for taxpayer's money. Finally, given all measures will be funded by relevant taxes on new diesel cars alongside existing departmental budgets, proposals put forward would need to be fair to the taxpayers who would fund any measures.

Making the UK a global leader in air quality

30.We want vehicle manufacturers to show that they can be part of the solution as well as the problem. The UK led the way in Europe in pushing for tough new type approval standards for cars and vans, including the 'real world' driving emissions tests that start to take effect from September this year, alongside tougher laboratory tests. We want to be absolutely sure that these new standards will deliver, and that we see a significant reduction in harmful emissions from new models of cars and vans.

31.These new standards have no effect on existing vehicles on the road, many of which – even some of the newest models – show harmful emissions levels many times greater than the test limits. We have set up a Market Surveillance Unit to increase the checks that we carry out to ensure that new and existing

vehicles on UK roads meet the standards that they were approved to. We will continue to examine all steps that could be taken to ensure manufacturers rectify these failings.

32.As we leave the EU, we want the UK to be a world leader in low emission transport, and will look for opportunities to strengthen further the controls on vehicle emissions which deliver both for the environment and for drivers.

33.We will also move forward with the transition to cleaner technologies and electric vehicles. Our new Automated and Electric Vehicles Bill will enable the UK to retain its position as a global leader in the market for electric vehicles. This will allow the government to require the installation of charge points for electric vehicles at motorway service areas and large fuel retailers, and to make it even easier to use electric vehicle chargepoints across the UK. This drive towards cleaner technology and zero emission transport will be reinforced by both the Clean Growth Plan and the Industrial Strategy, including investment in science and innovation through the Industrial Strategy Challenge Fund.

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2. Traffic Survey (Cheadle)

Transport Study Report

Cheadle Town Centre – Phase 2

COSTCDT6573 /Rep 002 FINAL April 2017

Document Control Sheet

Project Name:	Cheadle Town Centre – Phase 2
Project Number:	COSTCDT6573
Report Title:	Transport Study Report

Report Number:	Rep 002

Issue Prepared Reviewed Approved Status/Amendment

Final Report incorporating SMDC changes to paragraphs 3.6 and 4.2	Name: Lewis McAuliffe Signature: Date: 13/04/2017	Name: Chris Barker Signature: Date: 18/04/2017	Name: Shaun Moore Signature: Date: 21/04/2017
Revision A	Name: Lewis McAuliffe Signature: Date: 12/04/2017	Name: Chris Barker Signature: Date: 20/03/2017	Name: Shaun Moore Signature: Date: 21/03/2017
	Name: Signature: Date:	Name: Signature: Date:	Name: Signature: Date:
	Name: Signature: Date:	Name: Signature: Date:	Name: Signature: Date:

Executive Summary

To meet the objectively assessed needs for future housing, education and new employment land across the town of Cheadle, around 1,095 homes, a Primary School and approximately 7.59 hectares of additional employment land will need to be provided by 2031. This report aims to build on the 2015 “Cheadle Town Centre Transport Study” (Phase 1), and further assess the characteristics of the existing highway network across the town to identify the locations and routes that will be affected by the revised housing and employment land provision. Evaluation has been provided on what impacts the resultant traffic increase has had on journey times, queueing and delay within the town; and mitigation measures have been suggested, in order to remediate the adverse effects brought about by the increase in vehicular trips through the town centre.

In 2015, Amey was jointly commissioned by Staffordshire County Council (SCC) and Staffordshire Moorlands District Council (SMDC) to undertake a transport study to investigate the potential impact of additional vehicular trips on the highway network around Cheadle town centre. As identified in 2015 as part of the Local Plan, approximately 1,320 new homes and approximately 8.86 hectares of additional employment land was identified as needing to be provided by 2026 across Cheadle.

The “Cheadle Town Centre Transport Study” (Phase 1) identified and highlighted the negative impact caused by the new developments on the network, specifically with regard to the PM peak and on specific junctions and routes within the network. Numerous links were identified to be operating close to or at

capacity during the without-development scenario. Of particular note were the A522 Tape Street and B5417 Queen Street links, where prolonged traffic queuing was modelled. Conditions on these links were further exacerbated in the post development scenario with greatly reduced spare capacity and reduced ability to successfully discharge flows

The Preferred Options Sites & Boundaries future housing & employment land allocations were reconsidered following the results of the “Cheadle Town Centre Transport Study” (Phase 1). Amey were subsequently reappointed Staffordshire Moorlands District Council to produce a second transport study, building from the previous, 2015 study, which for the purposes of this report shall be called the “Cheadle Town Centre Phase 2” study.

Contents

Figures

Tables

1 Introduction

1.1 Background

In 2015, Amey was jointly appointed by Staffordshire County Council (SCC) and Staffordshire Moorlands District Council (SMDC) to undertake a transport study. The aim of the study was to investigate the potential impact of trips on the highway network around Cheadle town centre associated to future housing and employment developments proposed under the Local Development Framework (LDF).

As part of the Local Plan, approximately 1,320 new homes and approximately 8.86 hectares of additional employment were identified as needing to be provided /allocated by 2031 across Cheadle. Note the Policy SS5C of the Council's adopted Core Strategy, sets out the prioritisation of 'broad locations' and other areas for future housing, and broad locations for employment land around Cheadle.

The "Cheadle Town Centre Transport Study" report (Phase 1), produced in November 2015, identified and highlighted the potential negative impact caused by the new development on the network, specifically with regard to the PM peak and on specific junctions and routes.

From the previous microsimulation VISSIM modelling analysis undertaken as part of the Phase 1 Study, the following conclusions were drawn:

- • The AM Peak period post development showed slightly varied results concerning journey times, queues and traffic flow. The results were generally deemed negligible and the network within Cheadle remained operating within capacity. It was observed that there was some spare capacity remaining, to accommodate increased flows.

- • During the PM Peak conditions were more constrained; with numerous links already operating near or at capacity, without any additional proposed land allocation flows. Links included the A522 Leek Road (SB) and the A522 Tape Street (southbound). Those routes showed queueing which spanned the entirety of each respective link length.
  The link conditions worsened in the post development scenario leading to further increased queuing on adjacent links such as B5417 Queen Street where queuing was forecast to increase by an average 17 vehicles following development.

Through the course of the modelling appraisal, it was noted the major pinch point on the network was at the A522 Tape Street / Chapel Street / Well Street southbound roundabout approach arm. Vehicles backed up Tape Street to cause large queues and excessive delays to the junctions of A522 Leek Road / A522 Tape Street Roundabout junction and the B5417 Queen Street / A522 Tape Street junction.

Subsequently the Preferred Options Sites & Boundaries future housing & employment land allocations were reconsidered. Amey were commissioned by Staffordshire Moorlands District Council to produce an update to the Transport Study (2015), which for the purposes of this report shall be called the "Cheadle Town Centre Phase 2" study.

An initial scoping meeting for the Cheadle Town Centre Phase 2 study was held with Staffordshire County Council (SCC) on Wednesday 12th October 2016. In the meeting the key parameters regarding the Cheadle Town Centre Phase 2 study were discussed.

The objective of the Transport Study is to redefine and identify the effects of the new 2016 Preferred Options sites and Boundaries spatial distribution for housing and employment developments, as set out in the Core Strategy, in the context of:

- Its impact on the surrounding highway network to Cheadle Town Centre,
- Identifying highway locations that will be impacted by the Sites & Boundaries Preferred Option locations which require further investigation to mitigate, and
- Identifying mitigation where possible and analyse impact.
  As part of the updated Local Plan, the new figures comprise 1,030 new homes and approximately 7.59 hectares of additional employment land as needing to be provided /allocated by 2031 across Cheadle. Note the Policy SS5C of the Council's adopted Core Strategy, sets out the prioritisation of 'broad locations' and other areas for future housing, and broad locations for employment land around Cheadle.

1.2 Site Description

Cheadle is a market town within the Staffordshire Moorlands District area. It is ideally located for visitors to the Moorlands, Trentham and the Alton Towers Resort Theme Park, located just 5 miles east of Cheadle. As such, the town centre attracts volumes of 'through traffic' associated with tourism, leisure and recreation.

A location plan of the surrounding area and notable features is shown in Figure 1.

Peak District National Park

Stoke-on-Trent

JCB Earth- movers Ltd

JCB Compact Products

Cheadle

Alton Towers Theme Park

JCB Finance Ltd

JCB Heavy Products

Figure 1: Site Location and surrounding area

The primary routes of the A521 and A522 run through the town centre, the former of which forms part of the main high street where the majority of the retail outlets are located.

On the west side of the town centre the A521 High Street, Cross Street, Bank Street and The Terrace form a single lane gyratory system which can be seen in Figure 2. The one- way A521 High Street, the two-way A522 Tape Street and A521 Chapel Street from the main routes on the east side of the town centre.

Figure 2: Diagram of the Cheadle Town Centre gyratory

Travelling eastbound along the A521 'The Terrace' & High Street, vehicle overtaking is constrained due to the highway width being as narrow as 3.5 metres at certain points. Consequently goods vehicles unloading can cause disruption to traffic flows and connectivity to other facilities within the town or the shopping environment.

The A522 runs north-south through the town centre, intersecting Chapel Street, the A521 High Street and the B5417 Queen Street. These junctions are critical to the overall functioning of the highway network in and around Cheadle, with any congestion impacting connectivity between the north east quarter of the town and the nearby JCB factories.

2 Study Methodology

2.1 Introduction

In order to achieve the cited objectives, this study utilises the previously calibrated and validated, 2015 "Worst Case", Base Cheadle Town Centre VISSIM model.

The VISSIM model has been used to identify the impacts of additional trips generated by the proposed housing & employment developments and as an early indicator in identifying potential mitigation measures.

Alongside the Cheadle Town Centre VISSIM model, bespoke local junction models have been created for all junctions which have been identified as requiring mitigation to improve either capacity or co-ordination with the adjacent upstream / downstream junction. The following subsections set out the methodology that has been utilised to:

- • Assessment models, years of assessment and scenarios,
- • Cheadle gyratory network,
- • VISSIM network alterations (access / egress points) and Local Junction models,
- • Formulate the necessary TEMPRO growth to apply to the existing, 2015 “Worst Case” VISSIM model,
- • Derive trip generation, distribution for each respective proposed housing & employment development, and
- • Journey Time & Delay Assessment.

2.2 Assessment periods, years of assessment & scenarios

For the purposes of this study, the Cheadle Transport Study modelling has assessed the typical weekday AM (08:00 – 09:00) and PM (17:00 – 18:00) peak periods.

In order to present a logical progression of assessing both, the proposed land allocation, associated housing predicted trip generation & the proposed highways improvements the following scenarios shall be presented as part of the Transport Study for each forecast year, as set out in Table 1.

Table 1: Modelled Scenarios

Year	Scenarios		Description	Model	
				Local	VISSIM
2017	Do-nothing	1	Existing Highway + Growth		X
2031	Reference Case / Do-nothing	2	Existing Highway + (Staffordshire Moorlands Sites & Boundaries Preferred Option)	X	X
	Do-something	3	Existing Highway + identified mitigation + (Staffordshire Moorlands		X

- 2.3 Cheadle Gyratory Network Flow Diagrams
  Network Flow Diagrams have been created for the main arterial routes and gyratory around Cheadle Town Centre to reflect:
    - 2017 background vehicle trip levels,
    - 2031 forecast background vehicle trip levels,
    - Predicted trip generation from the identified preferred options land allocations, and
    - 2031 forecast background vehicle trip + Predicted trip generation from the identified preferred options land allocations.
      The network flow diagrams associated with vehicle trips around Cheadle for each respective peak period in the aforementioned forecast year can be found in Appendix A.

- 2.4 VISSIM network alterations (access / egress points) and Local Modelling

2.4.1 Access Egress points

With regards to the predicted trips generated from the proposed Land allocations and how they shall access / egress the modelled VISSIM network, the trips have been distributed onto the Cheadle Town Centre VISSIM network as follows:

1. CH001, CH132 and the predicted school trips shall access / egress the network off Ayr Grove and Cheltenham Avenue which are both off Ness Grove onto the A522 entry link of the Vissim model (which will be extended Northbound to Ness Grove),
2. CH004 to be accessed through Thorpe Rise, off A521,
3. CH009, and CH024 predicted trips shall access / egress the network off Churchill Road and will access Harborne Road and Froghall Road onto the A522 directly,

4. CH015 will access Leek Road A522 directly,

5. CH002a, CH002b predicted trips shall be distributed 50% to the B5417 via Goodwood Ave and 50% onto the B5032 Ashbourne Rd via Arundel Drive,

6. CH085a, b, c, d and CH128 predicted trips shall access / egress the network on A522 Tean Road (which will be extended Southbound towards Smithy lane due to the severing connectivity at the North); and,

7. CH020 predicted trip shall access / egress the network on A521 (which will be extended to Brookhouse Way).

The identified access / egress points for the predicted trips generated from the proposed Housing & Land can be seen in Appendix B.

2.4.2 Local Modelling

Local modelling tools, such as Junction 9 (ARCADY & PICADY) and LinSig, have been developed to evaluate the capacities of junctions identified in the network as potentially requiring further investigation to identify potential mitigation.

The vehicle demand input used in the local modelling assessments has been derived from the VISSIM output.

Regarding highways standards (refer to the Design Manual for Roads & Bridges TD23/81 Section 6.2 and Webster & Cobb), the junctions being assessed using Junction 9 it is generally accepted that RFC values of 0.85 or below indicate that a junction is operating within the theoretical capacity;

- • a RFC value between 0.85 and 1.0 indicates that the junction continues to operate within the theoretical capacity, however, is beginning to show signs of queuing and delay, and

- • a RFC value of over 1.0 indicates that the junction is operating over the theoretical capacity and problems are likely to be expected in terms to the queuing situation and delay experienced at the junction.
  For the junction being assessed using LinSig, tables will be included to show the Degree of Saturation (DoS) and maximum queue (PCUs) values.

• a DoS value of 90% or lower indicates that the junction is operating within the theoretical capacity,

- • a DoS value between 90% and 100% indicate that the junction continues to operate within the theoretical capacity, however, can begin to show signs of queuing and delay, and

- • a DoS value of 100% or greater indicate that the junction is “saturated” and operating over the theoretical operating capacity.

2.5 Rebase of 2015 base vehicle demand to 2017 & 2031

The Trip End Model Presentation Program (TEMpro v7.2) was used to calculate appropriate vehicle growth factors based on the Cheadle zone (Major Super Output Area (MSOA) Staffordshire Moorlands.

The TEMpro software allows users to view travel forecasts from the National Trip End Model (NTEM) model which forecasts the growth in trip origin-destinations (or productions-attractions) up to 2051. The forecasts take into account national projections of:

- • Population,

- • Employment,

- • Housing,

- • Car ownership, and

- • Trip rates.
  The use of TEMpro forecasts subsequently allows for an estimation of growth at a local level which taking into consideration planned residential and commercial growth in the area.
  TEMpro Growth factors have been calculated for Cheadle, in Staffordshire Moorlands for the period of 2015 to 2017 and 2015 to 2031. The TEMpro rates can be seen in Tables 2 and 3.

Table 2: TEMpro rates: 2015 - 2017

Table 3: TEMpro rates: 2015 - 2031

The aforementioned TEMpro rates were subsequently applied to the 2015 “Worst Case” baseline Cheadle Town Centre VISSIM model vehicle demand; in order to rebase it to a 2017 baseline.

It should be noted The Department of Transport (DfT) were to release revised TEMpro forecast rates for Cheadle in February 2017, however at the point forecast rates were required, the revisions were not available. As such, due to project time constraints, the view was taken for this assessment that the current TEMpro version 7.0 rates for Cheadle would be used and would not be adjusted. This approach would therefore provide a more robust assessment.

2.6 Future Land allocation, Trip Generation & Distribution and Access / Egress

Policy SS5C of the Council’s adopted Core Strategy sets out the prioritisation of ‘broad locations’ around Cheadle for future housing and employment land. The new land allocation and associated housing, employment and education locations as set out in the Staffordshire Moorlands Local Plan: Preferred Options Sites and Boundaries are shown in in Appendix C.

Based on the Preferred Options Sites development data provided by SMDC, forecasts suggest over the next 15 years, there will be a total housing requirement within Cheadle totalling approximately 1,095 residential properties, employment sites, equating to 7.59 ha and a Primary School (1 FE). The quantum of the developments is summarised in Table 4.

Table 4: Cheadle Housing Requirements

Housing Provision	Dwellings
Total requirement	1029
Core Strategy Broad Area 1 - CH001	240
A) New allocations - within the urban area	298
B) New allocations - urban extensions	510
Small sites allowance	150
Total Potential Provision	1198
Slippage Allowance	-103

Total Actual Provision	1095

The Cheadle Preferred Options Sites identifies a number of potential future employment sites (equating, approximately, to the 'broad locations' for employment for Cheadle under Core Strategy Policy SS5C).

As these options collectively exceed 3.6 hectares, not all of these will be required to meet this requirement. Nevertheless, and to reflect a 'worst case scenario' in employment land development terms, the traffic impact of these sites (totalling around 8.86 hectares) has been factored into the 'Future Development' modelling.

2.6.1 Trip Generation

The prospective developments undergoing consideration within Cheadle are identified within the Staffordshire Moorlands Local Plan: Preferred Options Sites and Boundaries document. The generation of vehicular trips associated with the developments have been calculated by utilising the TRICS database.

TRICS is a national (UK and Ireland) trip generation and analysis database which enables users to ascertain the potential levels of trip generation for a user-defined development scenario.

The individual site records within the TRICS database contain, detailed information on a site's local environment and surroundings, the composition and functions of a site, its on- site and off-site parking facilities, and hourly, directional transport count results covering a wide range of transport modes.

The land use categories that have been considered for the Cheadle Preferred Options Sites and Boundaries land allocations shown in Table 5.

Table 5: Land Use Category Selection

Type of Proposed Development	Land Use Category Selected in TRICS
Housing	Residential (A)
Education	Education (D1)
Employment	Average of Industrial (B2) & Warehousing (B8)

It is currently unconfirmed which type of land use will occupy the employment sites, therefore it was agreed with SMDC that the average trip rate for land uses B2 and B8 would be used.

The resulting trip rates for the land uses are displayed in Table 6, with the full TRICS assessment for each land allocation can be found in Appendix D.

Table 6:

Predicted Development figures up to 2031

Proposed Land Use	Site Reference	Number of dwellings	AM				PM			
			ARRIVAL TRIP RATE	DEPT TRIP RATE	TOTAL PEAK ARRIVALS (07:00 - 10:00)	TOTAL PEAK DEPT'S (07:00 - 10:00)	ARRIVAL TRIP RATE	DEPT TRIP RATE	TOTAL PEAK ARRIVALS (16:00 - 19:00)	TOTAL PEAK DEPT'S (16:00 - 19:00)
Housing	New allocations - within the urban area									
	Core Strategy Broad Area 1 – CH001	240	31	84	84	190	81	48	205	134
	CH002a	26	3	9	9	21	9	5	22	15
	CH002b	42	5	15	15	33	14	8	36	24
	CH004	45	6	16	16	36	15	9	38	25
	CH009	16	2	6	6	13	5	3	14	9
	CH013	50	7	18	17	40	17	10	43	28
	CH015	32	4	11	11	25	11	6	27	18
	CH020	42	5	15	15	33	14	8	36	24
	CH024	45	6	16	16	36	15	9	38	25
	Total	538	70	188	187	425	181	107	459	301
	New allocations - urban extensions									
	CH132 (in conjunction with CH001 & School)	80	10	28	28	63	27	16	68	45
	CH085A	120	16	42	42	95	40	24	102	67
	CH085B	70	9	25	24	55	24	14	60	39
	CH085C	125	16	44	44	99	42	25	107	70
	CH085D	95	12	33	33	75	32	19	81	53
	CH128	20	3	7	7	16	7	4	17	11
	Total	510	66	179	177	403	171	101	436	286
Grand Total			83 222 221 502				213 126 542 356			

Proposed Land Use	Site Reference	Development Size	AM				PM			
			ARRIVAL	DEPT TRIP	TOTAL PEAK ARRIVALS	TOTAL PEAK DEPT'S (07:00 -	ARRIVAL	DEPT TRIP	TOTAL PEAK ARRIVALS	TOTAL PEAK DEPT'S (16:00 -

			TRIP RATE	RATE	(07:00 - 10:00)	10:00)	TRIP RATE	RATE	(16:00 - 19:00)	19:00)
Employment	Plus Core Strategy Broad Area EM1 - CH127	(up to 4.27 hectares)	124	33	272	104	20	101	73	581
	Total LV Trips		112	30	245	94	18	91	66	523
	Total HGV Trips		12	3	27	10	2	10	7	58
	Plus Core Strategy Broad Area EM2 – CH019	(up to 3.32 hectares)	97	26	211	81	16	78	57	452
	Total LV Trips		87	23	190	73	14	70	51	407
	Total HGV Trips		10	3	21	8	2	8	6	45
	Total		221	58	483	185	36	179	130	1033
Education (Primary School)	School Site within CH132	210 Pupils	53	40	74	54	28	46	11	12
	Total		53	40	74	54	28	46	11	12
Grand Total			274 98 558 239				64 225 141 1045			

2.6.2

Trip Distribution

Nomis 2011 Census data has been utilised to obtain Journey to Work (JTW) travel data for Cheadle. It is considered that the 2011 Census JTW data for trips in and out of Cheadle is an acceptable method for distributing the proposed committed development trips around the highway network.

Cheadle has been selected as the location of residence, and the places of work outputs chosen at the Lower Super Output Area (LSOA) level. From this output, trips and the trip percentage to their destination of work from Cheadle have been calculated. The complete Origin & Destination vehicle trips to Cheadle can be seen in Appendix E.1.

The proposed land allocation predicted vehicle trips have then been assigned on to the most likely route choice that the vehicles will follow during a weekday journey in the AM peak periods using Google Map's route planner tool.

It has been assumed that vehicles travelling to work during the morning peak (outbound trips) will take the reverse journey for their inbound, evening journey home. The inbound and outbound route choices have been summarised in Appendix E.2 with a disaggregated breakdown into direction or travel shown in Appendix E.3.

2.6.3 Journey Time & Delay Assessment

Vehicle “Journey Time & Delay” are key determinants of a networks performance; as such, these two parameters have been assessed in both the 2031 Reference Case and 2031 Mitigation Case VISSIM model outputs. Comparisons have been made in the AM & PM peaks of between both scenarios in order quantify the time savings provided by the mitigation measures.

Journey Time routes have been split into sections, allowing for vehicle journey time assessments to be carried out for individual sections of the routes, as well as the journey time for the entire corridors, in order to better understand vehicle movements through the town centre and identify pockets of congestion.

The routes which have be assessed as bullet below can be seen in Figure 3:

- • Route 1: Northbound route from A522 Tean Road to A522 Leek Road.
- • Route 2: Southbound route from A522 Leek Road to A522 Tean Road.
- • Route 3: B5032 Ashbourne Road (East) to B5032 Ashbourne Road (West).
- • Route 4: A521 Town End to the Chapel Street junction with A522 Tape Street.
- • Route 5: Chapel Street to A521 Town End.
- • Route 6: A521 Town End to the High Street junction with A522 Leek Road.

Figure 3: Journey Time Routes 2.6.4 Route 1

As shown in Figure 3, Route 1 begins at A522 Tean Road and travels northbound to A522 Leek Road. Route 2 commences at A522 Leek Road and travels southbound to A522 Tean Road. Each route is split into 5 sections to enable analysis of the results to be undertaken from the entire corridor, as well as the individual sections of the route. The sections of the route are comprised of:

- • Section 1 runs from the starting check point at A522 Leek Road at the junction with Highfield avenue to the second check point at the give-way line of the mini- roundabout at A522 Leek road / High street / Tape Street.

- • Section 2 runs from the second check point at the give-way line of the mini- roundabout at A522 Leek road / High street / Tape Street to the third checkpoint at the junction with B5417 Queen Street.

Section 3 runs from the third checkpoint at the junction with B5417 Queen Street to the fourth checkpoint at the give-way line of the roundabout at A522 Tape Street / Well Street / Chapel Street.
Section 4 runs from the fourth checkpoint at the give-way line of the roundabout at A522 Tape Street / Well Street / Chapel Street to the fifth checkpoint at the give-way line of the mini-roundabout at A522 Tape Street / B5032 Ashbourne Road.

Section 5 runs from fifth checkpoint at the give-way line of the mini-roundabout at A522 Tape Street / B5032 Ashbourne Road to the final checkpoint along A522 Tean Road, opposite the recreation ground.

2.6.5 Route 2

This route is the reverse of Route 1; the sections of the route are comprised of:

- • Section 1 runs from the starting check point on the checkpoint along A522 Tean Road, opposite the recreation ground to the second check point at the give-way
  line of the mini-roundabout at A522 Tape Street / B5032 Ashbourne Road.

- • Section 2 runs from the second check point at give-way line of the mini- roundabout at A522 Tape Street / B5032 Ashbourne Road to the third checkpoint at the give-way line of the roundabout at A522 Tape Street / Well Street / Chapel Street

- • Section 3 runs from the third checkpoint at the give-way line of the roundabout at A522 Tape Street / Well Street / Chapel Street to the fourth checkpoint on the A522 Tape Street at the junction with B5417 Queen Street.

- • Section 4 runs from the fourth checkpoint on the A522 Tape Street at the junction with B5417 Queen Street to the fifth checkpoint after the mini-roundabout at A522 Leek road / High street / Tape Street, at the start of Leek Road.

- • Section 5 runs from the fifth checkpoint after the mini-roundabout at A522 Leek road / High street / Tape Street, at the start of Leek Road to the final checkpoint further to the North on Leek Road; at the junction with Highfield Avenue.

- 2.6.6 Route 3
  This route commences on the B5032 Ashbourne Road (East) approximately at the junction with Rockingham Drive and concludes to the West, at the junction between the B5032 Ashbourne Road (West) and A522 Tean Road.

- 2.6.7 Route 4
  This route commences at A521 Town End and concludes at the Chapel Street junction with A522 Tape Street in an eastbound direction of travel. Route 5 traverses the gyratory in the opposite direction, spanning from Chapel Street to A521 Town End. Each route is split into multiple sections via journey time checkpoints to enable analysis of the results to be undertaken from the entire corridor, as well as the individual sections of the route. The sections of the route are comprised of:
  - o • Section 1 runs from the starting check point at A521 Town End to the second check point at Watt Place, at the junction with the gyratory.
  - o • Section 2 runs from the second check point at Watt Place, to the third check point at the junction with Cross Street.
  - o • Section 3 runs from the third check point at the beginning of Cross Street to the fourth check point at the end of Cross Street, where it meets the junction with Chapel Street.
  - o • Section 4 runs from the fourth check point at the end of Cross Street, where it meets the junction with Chapel Street, to the fifth; and final, check point on A522 Tape Street, after the roundabout with Well Street / Chapel Street.

- 2.6.8 Route 5
  Chapel Street to A521 Town End. The sections of the route are comprised of:
  - o • Section 1 runs from the starting check point on A522 Tape Street, at the give-way line of the Tape Street (S) approach arm to the Tape Street / Well Street / Chapel Street roundabout after the roundabout with. A521 Town End to the second check point at Watt Place, at the

junction with the gyratory.

- Section 2 runs from the second check point at Watt Place, to the third check point at the junction with Cross Street.

- 2.6.9 Route 6
  This route commences at A521 Town End and concludes at the High Street junction with A522 Leek Road.

- 2.6.10 Queue Length Assessment
  Average and maximum vehicle queue lengths are also key determinants of a networks performance; as such, these two parameters have been assessed in all three modelled scenarios; the 2017 Base, 2031 Reference Case and 2031 Mitigation Case VISSIM model outputs. Comparisons have been made in the AM & PM peaks of between both scenarios in order quantify the time savings provided by the mitigation measures.
  The queues in VISSIM are reported on a link basis rather than a turning movement basis, so for turns that share a link, the same queue results will be reported. These maximum queues could potentially have only been sustained for short periods of time within the reported peak hour, therefore the average queue length should be considered in addition to the maximum queue length. The closer the average queue length is to the maximum queue length, the longer the maximum queue length is sustained.

3 Modelling

- 3.1 Introduction
  As part of the Local Development Framework (LDF), additional housing and employment land must be allocated for construction by 2031 across Cheadle.
  As such, the following chapter sets out the scenarios in which modelling assessments have been undertaken to identify the impacts of the predicted trip generation of the land allocation. The results of each assessment have been analysed and conclusions drawn against the following modelling outputs:

  - Flow (Veh/h),

  - Average Queue Length (m),

- Maximum Queue Length (m) and vehicle,

- Journey Time (s) & Delay (s).
  The Scenarios which have been assessed in 2017 and 2031 are set out in the following section.

- 3.2 2017 (Do – Nothing) VISSIM Base Model
  The Do-Nothing Base model was adopted from the previous '2015 Cheadle Town Centre Study', Worst Case 2015 Model scenario (refer to '2015 Cheadle Town Centre Study' document).
  The previous model was calibrated and validated to a 2015 baseline, however in order to assess current traffic conditions the vehicle trip demand within the 2015 Cheadle Town Centre Study', Worst Case 2015 Model was uplifted by applying the TEMpro Growth rates to 2017 as highlighted in Section 2.5, to both the AM and PM peaks, respectively.

3.2.1 2017 Base AM & PM VISSIM queue results

A detailed breakdown of the Flow and Queue Length results for both the AM and PM Reference Case can be seen in Table 7.

Table 7: 2017 Base AM & PM Peak – Flow and Queue Length

2017 Base (Without Highway Improvement)															
Junction	Approach Arm	Movement	AM						PM						
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies				
A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	576	26	6	1	93	16	628	0	76	13	347	58
	A522 Tape Street (NB)	Right: to A522 Leek Road (NB)	357	11	0	0	64	11	379	0	0	0	59	10
	A521 High Street	Straight: to A522 Leek Road (NB)	167	10	1	0	31	5	216	7	2	0	50	8
		Right: to A522 Tape Street (SB)	163	9					188	0				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	235	7	4	1	57	10	293	5	170	28	346	58
		Right: to A522 Tape Street (NB)	20	6					17	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	334	5	3	1	52	9	362	0	13	2	48	8
		Right: to B5417 Queen Street	94	1					125	0				

	A522 Tape Street (SB)	Left: to B5417 Queen Street	79	12	0	0	30	5	84	0	0	0	24	4
		Straight: to A522 Tape Street (SB)	658	24					732	0				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	96	0	3	1	116	19	113	0	231	39	253	42
		Straight: to A522 Tape Street (SB)	397	23					591	3				
		Right: to A521 Chapel Street	317	8					300	2				
	Well Street	Left: to A522 Tape Street (SB)	42	0	0	0	15	3	92	0	28	5	73	12
		Straight: to A521 Chapel Street	51	2					130	0				
		Right: to A522 Tape Street (NB)	45	0					139	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	227	16	10	2	149	25	266	5	17	3	153	26
		Straight: to A522 Tape Street (NB)	382	6					356	0				
		Right: to Well Street	56	0					71	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	2	0	0	0	20	3	3	0	3	1	104	17
		Straight: to Well Street	61	0					61	0				
		Right: to A522 Tape Street (SB)	185	0					244	0				
A522 Tape Street / B5032 Ashbourne Road	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	215	3	1	0	49	8	64	0	6	1	183	31
		Straight: to A522 Tape Street (SB)	413	20					287	1				
	B5032 Ashbourne Road	Left: to Tape Street (SB)	67	1	0	0	19	3	241	0	1	0	41	7
		Right: to A522 Tape Street (NB)	144	4					0	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	519	18	2	0	167	28	639	2	17	3	169	28
		Right: to B5032 Ashbourne Road	66	0					0	0				

A521 High Street / Tape Street

In the AM Peak the highest average queue length experienced at this junction is of 6m, which is on the A522 Leek Road arm. As 1 Passenger Car Unit (PCU) is equivalent to a length of 6 metres, it should be noted that a queue length of 6m equates to approximately a single vehicle.

In the PM peak, the highest queue is again experienced on the A522 Leek Road arm, with an average queue length 76m which equates to 13 vehicles. This is attributable to the high southbound flow on this link in the PM peak period.

B5417 Queen Street / A522 Tape Street

In the AM Peak the highest average queue length experienced at this junction is of 4m, which is on the B5417 Queen Street arm, which means that this arm is free from queueing for the most of the peak period.

In the PM peak, the highest queue is again experienced on the B5417 Queen Street arm, with an average queue length 170m which equates to 28 vehicles.

The through flow of the southbound moving vehicles from A522 Leek Road presents a recurring problem further downstream of this link, causing queueing to take place on B5417 Queen Street in the PM peak, as the vehicles cannot pull out under the high flow and lack of gap time to access the main carriageway.

A522 Tape Street / Well Street / A521 Chapel Street

In the AM Peak the highest average queue length experienced at this junction is of 10m, which is on the A522 Tape Street (NB) arm, equating to approximately 2 vehicles.

Conversely, In the PM peak, the highest queue is experienced on the A522 Tape Street (SB) arm, with an average queue length 231m which equates to 39 vehicles.

The PM Peak scenario reflects far greater queueing at this junction than in the AM peak. The PM peak scenario features higher overall traffic volumes and therefore causes intensified queueing at the pinch points identified.

A522 Tape Street / B5032 Ashbourne Road

In the AM Peak, there is no queuing present on any of the arms of this junction, on average.

In the PM peak, the highest average queue length of 17m is recorded at A522 Tape Street arm (NB), equating to approximately 3 vehicles.

Due to the overall network receiving higher flow conditions during the PM peak, the identified pinch point locations receive increased effects under these higher traffic volumes, albeit the queuing here does not pose any problems to the adjacent junctions or overall network.

3.2.2 AM & PM 2017 Base VISSIM Model Journey time and Delay results

A detailed breakdown of the Journey Time and Delay results for both the AM and PM Reference Case can be seen in Table 8.

Table 8: 2017 Base AM & PM Peak - Travel Time and Delay

2017 Base (Without Highway Improvement)							
Route	Direction	Route Section	Modelled Distance (m)	AM		PM	
				Modelled Time (sec)	Modelled Delay (sec)	Modelled Time (sec)	Modelled Delay (sec)
A522 Leek Road to A522 Tean Rd	Southbound	Southbound Corridor 1	485.5	53.3	9.5	99.3	55.7
		Southbound Corridor 2	36.9	9.6	3.9	14.9	9.1

		Southbound Corridor 3	227.1	36.4	14.4	75.5	53.6
		Southbound Corridor 4	117.8	21.8	8.1	30	16.9
		Southbound Corridor 5	277.9	26.5	1.6	27.1	2.2
		Total	1145.2	147.6	37.5	246.8	137.5
A522 Tean Road to A522 Leek Road	Northbound	Northbound Corridor 1	254.4	32.9	9.6	42.9	19.6
		Northbound Corridor 2	95.3	23	12.2	26	15.2
		Northbound Corridor 3	253.5	33.5	9.5	31.5	7.4
		Northbound Corridor 4	36.4	7.7	2	7.8	2.2
		Northbound Corridor 5	500.7	44.5	0.8	44.6	0.9
		Total	1140.3	141.6	34.1	152.8	45.3
B5032 Ashbourne Road	Westbound	Westbound Corridor	690	63.2	2.6	66.1	5.5
		Total	690	63.2	2.6	66.1	5.5
A521 Chapel Street / A522 Tape Street Junction to A521 Town End / Lid Lane Junction	Westbound	Westbound Corridor 1	428	66.1	10.1	65.7	10.2
		Westbound Corridor 2	293	26.4	0.5	26.9	1
		Total	721	92.5	10.6	92.6	11.2
A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street Junction	Easttbound	Eastbound Corridor 1	298	27.2	1.5	27.1	1.3
		Eastbound Corridor 2	132	20.7	1.8	20.3	1.8
		Eastbound Corridor 3	63	10.7	1.2	10.8	2.3
		Eastbound Corridor 4	204	32.9	3.4	38.9	9.2
		Total	697	91.5	7.9	97.1	14.6
A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road Junction	Northeast	Northeast Corridor 1	298	27.2	1.5	27.1	1.3
		Northeast Corridor 2	386	56.5	3.3	57.7	4.3
		Total	684	83.7	4.8	84.8	5.6

A522 Leek Road to A522 Tean Road (Southbound)

The southbound corridor has a total length of 1145.2m and in the AM Peak it can be seen that and takes a total journey time of 147.6 seconds, which equates to an average speed achieved of 7.75 metres per second (approximately 17.3 miles per hour).

In the PM peak it can be seen that journey times are much longer, recording a complete journey of the southbound corridor in 246.8 seconds. The average speed through the southbound corridor is 4.64 metres per second (approximately 10.4 miles per hour).

The first section of the southbound corridor takes the greatest amount of time to travel; this is partly due to it comprising of the longest distance of the 5 sections but also due to the congestion at this location, as noted in the queue and delay results.

A522 Tean Road to A522 Leek Road (Northbound)

The northbound corridor has a total length of 1140.3m and in the AM peak it can be seen that takes a total journey time of 141.6 seconds, which equates to an average speed of 8 metres per second (approximately 17.9 miles per hour).

Conversely, the PM peak slightly longer, recording a complete journey of the northbound corridor in 152.8 seconds. The average speed through the corridor is 7.5 metres per second (approximately 16.7 miles per hour).

The sections of the route which take the greatest amount of time to travel are those which feature junctions; the mini-roundabout junction at A522 Tape Street / B5032 Ashbourne Road, Tape Street / Well Street / Chapel Street roundabout and the mini- roundabout between Leek Road / Tape Street / High Street causing the congestion.

B5032 Ashbourne Road

The westbound corridor has a total length of 690m and in the AM peak it can be seen that takes a total journey time of 63.2 seconds, which equates to an average speed of 10.9 metres per second (approximately 24.3 miles per hour).

In the PM peak it can be seen that takes a total journey time of 66.1 seconds, which equates to an average speed of 10.4 metres per second (approximately 23.3 miles per hour).

Due to the overall network receiving higher flow conditions in the PM peak, vehicle movements around the network as a whole are slower than in the AM peak.

A521 Chapel Street / A522 Tape Street Junction to Town End / Lid Lane

The westbound corridor has a total length of 721m and in the AM peak it can be seen that takes a total journey time of 92.5 seconds, which equates to an average speed of 7.8 metres per second (approximately 17.4 miles per hour).

In the PM peak it can be seen that takes a total journey time of 92.6 seconds, which equates to an average speed of 7.8 metres per second (approximately 17.4 miles per hour).

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street

The westbound corridor has a total length of 697m and in the AM peak it can be seen that takes a total journey time of 91.5 seconds, which equates to an average speed of 7.6 metres per second (approximately 16.9 miles per hour).

In the PM peak it can be seen that takes a total journey time of 92.6 seconds, which equates to an average speed of 7.2 metres per second (approximately 17.2 miles per hour).

This route takes a similar time to travel, with vehicles achieving the same average speeds, in both the AM and PM peak period, despite the overall flow conditions being different between the two. The comparable travel time indicates that this section of the model runs smoothly with only minimal delays.

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road

The westbound corridor has a total length of 684m and in the AM peak it can be seen that takes a total journey time of 83.7 seconds, which equates to an average speed of 8.2 metres per second (approximately 18.3 miles per hour).

In the PM peak it can be seen that takes a total journey time of 84.8 seconds, which equates to an average speed of 8.1 metres per second (approximately 18.1 miles per hour).

3.2.3 Summary of results

The results of the modelled 2017 background traffic levels suggest that the AM peak is free flowing, with the network operating well within capacity. The PM peak scenario however, features some pinch point locations where queueing occurs, but despite some congestion, the town centre network operates within capacity. The largest queues during the PM were recorded on A522 Tape Street (SB), which consisted of an average queue of 39 vehicles. Queuing was also experienced on B5417 Queen Street, consisting of an average queue of 28 vehicles across the PM peak.

In comparison, the PM peak journey times were longer than those of the AM peak, across all journey time routes. The greater travel time experienced in the PM peak can be attributable to the higher vehicle flows in the PM time period. For most journey time routes, the PM peak is only marginally longer; however, this is not the case for the A522 Leek Road to A522 Tean Road (Southbound) route, which takes 100 seconds longer to travel during the PM. Again, this is likely to be caused by the increase in vehicles on the network during the PM time period, which in turn creates a pinch point on Tape Street (SB), triggered by congestion at the Tape Street / Chapel Street / Well Street roundabout.

3.3 2031 Reference Case VISSIM Model

The ‘2015 Cheadle Town Centre Study’, vehicle trip demand from the Worst Case 2015 Model was uplifted, to form a forecast 2031 vehicle trip demand. Again, this was done by applying TEMpro growth factors (refer to section 2.2) to bring it in line with the end of the Local Plan period.

In addition to factoring the 2015 vehicle demand to 2031, the predicted trip generated from the proposed land allocations identified in the ‘Staffordshire Moorlands Local Plan: Preferred Options sites and Boundaries’ (2016) document have been assigned to the vehicle demand within the model.

3.3.1 Reference case AM & PM VISSIM queue results

A detailed breakdown of the Flow and Queue Length results for both the AM and PM Reference Case can be seen in Table 9.

Table 9: 2031 Reference Case AM & PM Peak – Flow and Queue Length

Reference Case (Without Highway Improvement)															
Junction	Approach Arm	Movement	AM						PM						
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies				
A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	786	26	411	69	895	149	580	5	571	95	883	147
	A522 Tape Street (NB)	Right: to A522 Leek Road (NB)	401	10	0	0	59	10	499	0	0	0	66	11
	A521 High Street	Straight: to A522 Leek Road (NB)	250	15	1	0	49	8	418	12	7	1	163	27
		Right: to A522 Tape Street (SB)	169	9					193	0				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	236	7	153	26	346	58	262	5	270	45	356	59
		Right: to A522 Tape Street (NB)	30	6					20	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	371	4	9	2	53	9	481	0	20	3	55	9
		Right: to B5417 Queen Street	68	1					135	0				
	A522 Tape Street (SB)	Left: to B5417 Queen Street	87	12	5	1	102	17	74	0	89	15	102	17
		Straight: to A522 Tape Street (SB)	866	24					699	5				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	96	0	64	11	254	42	97	0	232	39	258	43
		Straight: to A522 Tape Street (SB)	481	23					573	3				
		Right: to A521 Chapel Street	438	8					275	6				
	Well Street	Left: to A522 Tape Street (SB)	43	0	1	0	18	3	103	0	47	8	73	12
		Straight: to A521 Chapel Street	52	2					135	0				
		Right: to A522 Tape Street (NB)	49	0					154	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	159	19	11	2	101	17	287	5	34	6	160	27
		Straight: to A522 Tape Street (NB)	379	5					471	0				
		Right: to Well Street	39	0					80	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	3	0	0	0	24	4	3	0	4	1	127	21
		Straight: to Well Street	68	0					69	0				
		Right: to A522 Tape Street (SB)	193	0					264	0				
A522 Tape Street / B5032 Ashbourne	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	219	3	0	0	27	5	260	1	12	2	145	24

Road		Straight: to A522 Tape Street (SB)	501	20					680	2				
	B5032 Ashbourne Road	Left: to Tape Street (SB)	75	1	0	0	34	6	77	0	8	1	118	20
		Right: to A522 Tape Street (NB)	156	4					260	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	417	20	143	24	172	29	581	5	82	14	169	28
		Right: to B5032 Ashbourne Road	39	0					97	0				

A521 High Street / Tape Street

In the AM Peak the highest average queue length experienced at this junction is of 411m, which is on the A522 Leek Road arm which equates to approximately 70 vehicles.

In the PM peak, the highest queue is again experienced on the A522 Leek Road arm, with an average queue length 571m which equates to 95 vehicles. This is attributable to the high southbound flow on this link in both the AM and PM peak periods.

B5417 Queen Street / A522 Tape Street

In the AM Peak the highest average queue length experienced at this junction is of 153m, which is on the B5417 Queen Street arm, equating to approximately 26 vehicles.

In the PM peak, the highest queue is again experienced on the B5417 Queen Street arm, with an average queue length 270m which equates to 45 vehicles.

The through flow of the southbound moving vehicles from A522 Leek Road presents a recurring problem further downstream of this link, causing queueing to take place on B5417 Queen Street, as the vehicles cannot pull out under the high flow and lack of gap time to access the main carriageway.

A522 Tape Street / Well Street / A521 Chapel Street

In the AM Peak the highest average queue length experienced at this junction is of 64m, which is on the A522 Tape Street (SB) arm, equating to approximately 11 vehicles.

In the PM peak, the highest queue is again experienced on the A522 Tape Street (SB) arm, with an average queue length of 232m which equates to 39 vehicles.

The PM Peak scenario reflects the same problematic junctions as identified in the AM peak, only with increased results. The PM peak scenario features higher overall traffic volumes and therefore causes intensified queuing at the identified pinch points.

A522 Tape Street / B5032 Ashbourne Road

In the AM Peak, the highest average queue length was recorded on the A522 Tape Street arm, in the northbound direction, with the average queue length of 143m; equating to approximately 24 vehicles.

In the PM peak, the highest average queue length of 82m is again recorded at A522 Tape Street arm (NB), equating to approximately 14 vehicles.

Due to the overall network receiving higher flow conditions, the identified pinch point locations receive increased effects under these higher traffic volumes. The heavy queuing here blocks back along Tape Street (NB) to the South of the network. These vehicles have to give-way to the right at the mini-roundabout, which severely disrupts the flow on the mainline.

3.3.2 AM & PM Reference Case VISSIM Model Journey time and Delay results

A detailed breakdown of the Journey Time and Delay results for both the AM and PM Reference Case can be seen in Table 10.

Table 10: 2031 Reference Case AM & PM Peak - Travel Time and Delay

Reference Case (Without Highway Improvement)							
Route	Direction	Route Section	Modelled Distance (m)	AM		PM	
				Modelled Time (sec)	Modelled Delay (sec)	Modelled Time (sec)	Modelled Delay (sec)
A522 Leek Road to A522 Tean Rd	Southbound	Southbound Corridor 1	485.5	136.3	92.7	332.1	288.5
		Southbound Corridor 2	36.9	12.5	6.8	18.3	12.8
		Southbound Corridor 3	227.1	45.6	23.7	78.2	56.3
		Southbound Corridor 4	117.8	21.6	8.2	31.9	19
		Southbound Corridor 5	277.9	28.2	3.3	27.9	3
		Total	1145.2	244.2	134.7	488.4	379.6
A522 Tean Road to A522 Leek Road	Northbound	Northbound Corridor 1	254.4	227.9	204.8	89.4	65.9
		Northbound Corridor 2	95.3	24.3	13.5	32.1	21.5
		Northbound Corridor 3	253.5	35.1	11.1	32.7	8.8
		Northbound Corridor 4	36.4	7.6	2	7.7	2.1
		Northbound Corridor 5	500.7	50	6.3	52.9	9.1
		Total	1140.3	344.9	237.7	214.8	107.4
B5032 Ashbourne Road	Westbound	Westbound Corridor	690	63.7	3.1	75.3	14.7

		Total	690	63.7	3.1	75.3	14.7
A521 Chapel Street / A522 Tape Street Junction to A521 Town End / Lid Lane Junction	Westbound	Westbound Corridor 1	428	65.4	10.4	67	11.5
		Westbound Corridor 2	293	26.4	0.4	26.9	0.9
		Total	721	91.8	10.8	93.9	12.4
A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street Junction	Easttbound	Eastbound Corridor 1	298	27.9	2.2	27.8	2.1
		Eastbound Corridor 2	132	20.5	2.4	20	1.5
		Eastbound Corridor 3	63	9.6	1	9.7	1
		Eastbound Corridor 4	204	34.1	4.7	39.3	9.7
		Total	697	92.1	10.3	96.8	14.3
A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road Junction	Northeast	Northeast Corridor 1	298	27.9	2.2	27.8	2.1
		Northeast Corridor 2	386	59	5.9	64.7	11.6
		Total	684	86.9	8.1	92.5	13.7

A522 Leek Road to A522 Tean Road (Southbound)

The southbound corridor has a total length of 1145.2m and in the AM Peak it can be seen that and takes a total journey time of 244.2 seconds, which equates to an average speed achieved of 4.69 metres per second (approximately 10.5 miles per hour).

In the PM peak it can be seen that journey times are much longer in the southbound direction, recording a complete journey of the southbound corridor in 488.4 seconds. The average speed through the southbound corridor is 2.34 metres per second (approximately 5.1 miles per hour).

The first section of the southbound corridor takes the greatest amount of time to travel; this is partly due to it comprising of the longest distance of the 5 sections but also due to the congestion at this location, as noted in the queue and delay results.

A522 Tean Road to A522 Leek Road (Northbound)

The northbound corridor has a total length of 1140.3m and in the AM peak it can be seen that takes a total journey time of 344.9 seconds, which equates to an average speed of 3.3 metres per second (approximately 7.4 miles per hour).

Conversely, the PM peak is much shorter, recording a complete journey of the northbound corridor in 214.8 seconds. The average speed through the corridor is 5.3 metres per second (approximately 11.9 miles per hour).

The first section of the route takes the greatest amount of time to travel, which is due to the congestion at this location, incurring at the mini-roundabout junction at A522 Tape Street / B5032 Ashbourne Road.

B5032 Ashbourne Road

The westbound corridor has a total length of 690m and in the AM peak it can be seen that takes a total journey time of 63.7 seconds, which equates to an average speed of 10.8 metres per second (approximately 24.1 miles per hour).

In the PM peak it can be seen that takes a total journey time of 75.3 seconds, which equates to an average speed of 9.2 metres per second (approximately 20.6 miles per hour).

Due to the overall network receiving higher flow conditions in the PM peak, vehicle movements around the network as a whole are slower than in the AM peak.

A521 Chapel Street / A522 Tape Street Junction to Town End / Lid Lane

The westbound corridor has a total length of 721m and in the AM peak it can be seen that takes a total journey time of 91.8 seconds, which equates to an average speed of 7.8 metres per second (approximately 17.4 miles per hour).

In the PM peak it can be seen that takes a total journey time of 93.9 seconds, which equates to an average speed of 7.7 metres per second (approximately 17.2 miles per hour).

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street

The westbound corridor has a total length of 697m and in the AM peak it can be seen that takes a total journey time of 92.1 seconds, which equates to an average speed of 7.6 metres per second (approximately 16.9 miles per hour).

In the PM peak it can be seen that takes a total journey time of 96.8 seconds, which equates to an average speed of 7.2 metres per second (approximately 17.2 miles per hour).

This route takes a similar time to travel, with vehicles achieving the same average speeds, in both the AM and PM peak period, despite the overall flow conditions being different between the two. The comparable travel time indicates that this section of the model runs smoothly with only minimal delays.

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road

The westbound corridor has a total length of 684m and in the AM peak it can be seen that takes a total journey time of 86.9 seconds, which equates to an average speed of 7.9 metres per second (approximately 17.7 miles per hour).

In the PM peak it can be seen that takes a total journey time of 92.5 seconds, which equates to an average speed of 7.4 metres per second (approximately 16.6 miles per hour).

3.3.3 Summary of results

During the Reference Case scenario, the highway network remains the same as in the 2017 Base scenario; however, there are two notable changes which produce an increase in traffic on the network. The 2017 background traffic levels have been factored up to create the 2031 background traffic (see section 2.5), in addition to this, the site specific developments have also been included (see section 2.6). When these two elements are coupled, the negative effects on the network are experienced at various pinch points that are identified in the preceding queue length and journey time results.

In particular the A522 Leek Road receives large delays in both the AM and PM time periods, as vehicles struggle to access the town centre from the North. The delays and queues experienced on this link are triggered by the congestion further south on A522 Tape Street at the two roundabouts; the A522 Tape Street / Well Street / A521 Chapel Street roundabout and the A522 Tape Street / B5032 Ashbourne Road mini-roundabout.

The blocking back, northwards, on A522 Tape Street, caused by the aforementioned roundabouts, also causes extensive queuing on B5417 Queen Street in both the AM and PM time periods.

A522 Tape Street (NB) shows signs of heavy queuing and experiences delays. The delays here are due to the mini-roundabout between A522 Tape Street and B5032 Ashbourne Road. The mini-roundabout disrupts the high north/south vehicle flows on the principal route when cars egress from B5032 Ashbourne Road. Consequently, B5032 Ashbourne Road experiences very little queuing and delay, whereas A522 Tape Street (NB) experiences sizable queues and lengthy delays.

In contrast to the 2017 Base AM scenario, which experienced a largely free flowing network, the 2031 Reference Case AM sees extensive queues and delays. The 2017 Base PM scenario already featured queueing and delay but these results increase in the 2031 Reference Case PM scenario. The increase to queues and delays in the 2031 Reference Case models should largely be associated with the overall network having to contend with much higher traffic volumes.

3.4 2031 Reference Case Junctions 9 Local Models

From the VISSIM modelling it has been identified that the Tape Street / Ashbourne Round roundabout is a pinch point for traffic on the network. As such the existing mini- roundabout junction configuration has been assessed to predict the overall performance of the junction, in both the AM and PM peak periods.

The junction assessment subsequently identified the predicted junction capacity as well as allowing the formulation of potential junction improvements to increase its capacity to accommodate the future year traffic growth demand. The following parameters have been obtained from the modelling assessment:

- • Queue,
- • Delay (seconds),
- • Ratio to Flow Capacity (RFC), and

- Junction Delay (seconds).

3.4.1 Existing A522 Tape Street / B5032 Ashbourne Road Roundabout

The existing mini-roundabout configuration comprises of a 3-arm approach and is situated at the junction between A522 Tape Street and B5032 Ashbourne Road and can be seen in Figure 4.

Figure 4: Existing 3 arm roundabout – A522 Tape Street / B5032 Ashbourne Road

For the purposes of this junction assessment, the same vehicle trip demand used for the Reference Case VISSIM modelling has been used in the Junctions 9 assessment. The AM and PM peak modelling results for Tape St / Ashbourne roundabout are shown in Table 11.

Table 11: Existing Roundabout ARCADY results 2031 Future Year + COMDEV

From the modelling assessment of vehicle trips, the results indicate that Tape Street North and Tape St South both operate over capacity in the AM peak with queues of 8 and 28 vehicles respectively. In contrast the Ashbourne Road arm of the junction operates under capacity with a 1 vehicle queue and an RFC of 0.49.

Junction 4 - Mini Roundabout - Ashbourne Rd/Tape St								
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
A - Tape St N	8	33.41	0.9		171	612.11	1.28	
B - Ashbourne Rd	1	13.94	0.49	67.79	3	32.99	0.77	475.78
C - Tape St S	28	120.09	1.03		101	462.2	1.24	

Similarly to the AM peak, Tape Street North and South approach arms operate over capacity in the PM peak. Both approach arms have queues of 171 & 101 vehicles respectively, with RFC's of 1.28 and 1.24. Again, the Ashbourne Road arm operates within capacity with queues of 3 and an RFC of 0.77.

3.4.2 Proposed Priority T-Junction Option – A522 Tape Street / B5032 Ashbourne Road

In an aim to mitigate the additional vehicle trips traversing the Cheadle network an option to reform the existing mini-roundabout to a priority T-Junction has been assessed. The proposed design has been revisited from the 'Cheadle Traffic Review' (Staffordshire County Council 2015). The design incorporates a single lane dedicated left and right approach from Ashbourne Road onto the A522 Tape Street.

The priority junction allows a modest increase in storage capacity while also allowing multiple concurrent movements out of Ashbourne Road. The design also provides better free-flowing vehicle moment along Tape Street and can be seen in Figure 5.

Figure 5: Proposed Priority T-Junction – A522 Tape Street / B5032 Ashbourne Road

The proposed design of the A522 Tape Street / Ashbourne Road has been assessed using PICADY. The PICADY model results for the proposed design are shown in Table 12.

Table 12: 2031 Future Year + COMDEV - 2031 Do Something

Junction 4 - Priority Junction - Ashbourne Rd/Tape St									
		AM				PM			
		Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
A - Tape St N	Stream B-C	0	11	0.19		0	14.29	0.23	
B - Ashbourne Rd	Stream B-A	3	68	0.78	6.9	96	2072.79	2.27	231.08
C - Tape St S	Stream C-AB	0	8	0.19		0	8.93	0.29	

In the AM peak, the results indicate that the junction offers much more capacity for the Tape Street major arm of the junction with no queuing and RFCs of 0.19 and 0.19 for both north & southbound movements.

The increase in capacity along the major arm of Tape Street is at the detriment of the Ashbourne Road minor road which has an RFC of 0.78 equating to a queue of 68 vehicles.

During the PM peak, the Tape Street major arm again benefits from having increased capacity with no queueing and RFC's of 0.23 & 0.29 for the respective north & southbound movements.

The Ashbourne Road arm however is greatly over capacity with an RFC of 2.27 and queues of 96 vehicles.

Summary and Comparison

The results show that the proposed priority T- junction design for the A522 Tape Street / B5032 Ashbourne Road junction model performs better overall than the existing mini roundabout. Queuing and delays along the A522 Tape Street are lower than the queues experienced under the existing junction arrangement as the proposed design allows the free movement of vehicles away from the town centre and improves vehicle throughput along Tape Street.

Whilst Tape Street shows improvement in the proposed scheme design, it is to the detriment of the minor arm of Ashbourne Road in the PM peak. Queues have arisen from 3 vehicles in the PM peaks to 96 vehicles.

The increase in queue along the Ashbourne Road in the PM peak can be attributed to there not being sufficient gap time for vehicles to exit onto Tape Street due to the increased free flow. Overall however network performance benefits as traffic flows operate better with a priority junction along the major link than the mini roundabout.

3.5 Other mitigations considered & assessed

- ### 3.5.1 A522 Tape Street and B5032 Ashbourne Road Signalised T-junction

  The A522 Tape Street and B5032 Ashbourne Road junction had also been considered as a signalised T-junction, which operates on two signal stages. The preliminary assessment of this design option showed that the link between this junction and the adjacent, upstream junction with A5222 / Well Street / Chapel Street is not of sufficient length to accommodate the volume of queueing vehicles.
  The consequence of utilising traffic signals at this junction, creates a blocking-back effect onto the link and subsequent upstream roundabout, which in turn prevents vehicles from entering the roundabout and causes further queueing on all approach arms.
  From observing the VISSIM model it could be seen that the identified problem occurred during the first 15 minutes of the peak hour. The issue proceeded to cause the entire network to enter grid lock state; therefore this solution is not seen to be feasible and has been removed from any further modelling assessment.

- ### 3.5.2 Signal Coordination along A522

  Another alternative mitigation solution of implementing traffic signals to coordinated vehicle platooning through the A522 Leek Road / High Street / Tape Street junction, and A522 Tape Street / Queen Street junction has also been considered. When assessed this option indicated a negative practical reserve capacity (PRC) of -19.5% for the AM and - 28.4% for the PM, respectively.
  As this option did not provide sufficient junction capacity it has not been taken forward and considered in detail within the Do – something VISSIM appraisal.
  Signalisation of this part of the corridor has identified the high vehicular flow in the southbound direction, towards the Tape Street / Well Street / Chapel Street roundabout junction. The inability of the signalised option to improve vehicle flow with an acceptable level of delay presents the need for an alternative form of mitigation. The alternative will need to increase capacity at this stretch of the carriage due to the high level of vehicle flow from the North of the town centre at A522 Leek Road.

3.5.3 Southbound Lane on the A522

As identified in the analysis of the local model results for the proposed priority T-junction at A522 Tape Street / B5032 Ashbourne Road, this option facilitates the southbound vehicle movement much better than the existing mini-roundabout. In the scenario featuring of the T-junction, the major road benefits from being uninterrupted, this in turn, benefits the overall network performance, as traffic can navigate the network more fluidly than in the existing scenario.

In order to maximise the potential of the T-junction, and to try to improve journey times and reduce congestion of vehicles travelling from A522 Leek Road in the North, to the A522 Tean Road in the South, we needed to test how it would cope with an even greater southbound flow. By providing an additional southbound lane on the A522, between the junction with the car park and the A522 / Well Street / Chapel Street roundabout (See Figure 6), the southbound vehicle flow would be increased and allow more vehicles to enter the model in the North, at A522 Leek Road.

Figure 6: Additional southbound lane on A522 Tape Street

3.6 Mitigation to be appraised in the Do – something VISSIM modelling

As the only mitigation solutions to offer benefit of the reduction of congestion within the town centre the following network changes have subsequently been made to the Do – something VISSIM model network:

1. From the Junctions 9 investigation of the Tape Street / B5032 Ashbourne Road mini-roundabout (see Section 3.4.2) it was identified that the junction operated better if it was reverted to a priority T-junction arrangement as shown in Figure 7.

Figure 7: Proposed Priority T-Junction – A522 Tape Street / B5032 Ashbourne Road

2. An additional southbound lane on the A522, between the junction with the car park and south of the pedestrian crossing the A5222 / Well Street / Chapel Street roundabout junction, stretching approximately 140m metres in length (see Section 3.5.3). It should be noted that this option would likely require CPO of land effecting local business.

3.7 2031 Do – Something (Mitigation case) VISSIM Model

The Do-Something (Mitigation Case) model has been built from the Reference Case model. It is the view that the package of mitigation measures which have been appraised will be implemented within the model to holistically improve the Cheadle gyratory operation and subsequent network performance.

3.7.1 AM & PM VISSIM Model Queue results

A detailed breakdown of the Flow and Queue Length, Journey Time and Delay results for both the AM and PM Mitigation Case can be seen in Table 13.

Table 13: 2031 Mitigation Case AM & PM Peak – Flow and Queue Length

Mitigation Case (With Highway Improvement)															
Junction	Approach Arm	Movement	AM						PM						
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies				
A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	816	26	258	43	779	130	833	9	131	22	478	80
	A522 Tape Street (NB)	Right: to A522 Leek Road (NB)	474	10	0	0	60	10	446	0	0	0	70	12
	A521 High Street	Straight: to A522 Leek Road (NB)	251	15	1	0	51	9	418	12	1	0	81	14
		Right: to A522 Tape Street (SB)	170	8					200	0				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	253	9	41	7	146	24	280	3	155	26	356	59
		Right: to A522 Tape Street (NB)	33	6					21	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	442	4	7	1	53	9	424	0	4	1	48	8
		Right: to B5417 Queen Street	84	1					96	0				
	A522 Tape Street (SB)	Left: to B5417 Queen Street	88	11	2	0	66	11	100	0	14	2	102	17
		Straight: to A522 Tape Street (SB)	898	24					931	9				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	100	0	7	1	109	18	120	0	80	13	252	42
		Straight: to A522 Tape Street (SB)	519	25					704	3				
		Right: to A521 Chapel Street	444	8					360	10				
	Well Street	Left: to A522 Tape Street (SB)	44	0	1	0	20	3	94	0	15	3	73	12
		Straight: to A521 Chapel Street	51	2					138	0				
		Right: to A522 Tape Street (NB)	48	0					150	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	210	18	197	33	266	44	188	5	252	42	269	45
		Straight: to A522 Tape Street (NB)	471	5					364	0				
		Right: to Well Street	53	0					52	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	3	0	1	0	22	4	3	0	2	0	38	6
		Straight: to Well Street	68	0					69	0				
		Right: to A522 Tape Street (SB)	197	0					258	0				
A522 Tape Street / B5032 Ashbourne	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	230	4	0	0	0	0	296	1	0	0	0	0

Road		Straight: to A522 Tape Street (SB)	530	21					763	2				
	B5032 Ashbourne Road	Left: to Tape Street (SB)	44	1	561	94	774	129	15	0	721	120	774	129
		Right: to A522 Tape Street (NB)	62	1					31	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	672	22	133	22	176	29	572	5	164	27	179	30
		Right: to B5032 Ashbourne Road	77	0					86	0				

A521 High Street / Tape Street

In the AM Peak the highest average queue length experienced at this junction is of 258m, which is on the A522 Leek Road and equates to approximately 43 vehicles.

In the PM peak, the highest queue is again experienced on the A522 Leek Road arm, with an average queue length 131m which equates to 22 vehicles. This is attributable to the high southbound flow on this link in both the AM and PM peak periods.

B5417 Queen Street / A522 Tape Street

In the AM Peak the highest average queue length experienced at this junction is of 41m, which is on the B5417 Queen Street arm, equating to approximately 7 vehicles.

In the PM peak, the highest queue is experienced on the B5417 Queen Street arm, with an average queue length 155m which equates to 26 vehicles.

The recurring problem of heavy flow in the southbound direction has been somewhat reduced following the package of mitigation measures, which has in turn, reduced the queue on B5417 Queen Street where vehicles are now able to exit the junction.

A522 Tape Street / Well Street / A521 Chapel Street

In the AM Peak the highest average queue length experienced at this junction is of 197m, which is on the A522 Tape Street (NB) arm, equating to approximately 33 vehicles.

In the PM peak, the highest queue is again experienced on the A522 Tape Street (NB) arm, with an average queue length 252m which equates to 42 vehicles.

The PM Peak scenario reflects the same problematic junctions as identified in the AM peak, only with worse results. The PM peak scenario features higher overall traffic volumes and therefore causes increased queuing at the pinch points that have been identified. The heavy queuing here blocks back along Tape Street (NB) to the South of the network. These vehicles are caused to give-way to the right at the mini-roundabout, which disrupts the flow on the mainline.

A522 Tape Street / B5032 Ashbourne Road

In the AM Peak, the highest average queue length was recorded on the B5032 Ashbourne Road, with the average queue length of 561m; equating to approximately 94 vehicles.

In the PM peak, the highest average queue length of 721m is again recorded at A522 Tape Street arm (NB), equating to approximately 120 vehicles.

B5032 Ashbourne Road experiences large queues because of the conversion of the former mini-roundabout into a T-junction. This is due to increased north/south flow on the major road, which causes an increased difficulty of access onto the main carriageway due to reduced gap time and the platooning north/south vehicle flow.

3.7.2 AM & PM Mitigation Case VISSIM Model Journey time results

A detailed breakdown of the Journey Time and Delay results for both the AM and PM Mitigation Case can be seen in Table 14.

Table 14: 2031 Mitigation Case AM & PM Peak - Travel Time and Delay

Mitigation Case (With Highway Improvement)							
Route	Direction	Route Section	Modelled Distance (m)	AM		PM	
				Modelled Time (sec)	Modelled Delay (sec)	Modelled Time (sec)	Modelled Delay (sec)
A522 Leek Road to A522 Tean Rd	Southbound	Southbound Corridor 1	485.5	110.3	66.7	98.4	54.6
		Southbound Corridor 2	36.9	11.5	5.8	10.5	5
		Southbound Corridor 3	227.1	38.9	17	64.9	43
		Southbound Corridor 4	117.8	15.4	4	16.6	4.6
		Southbound Corridor 5	277.9	27.1	3.8	25.3	1.8
		Total	1145.2	203.2	97.3	215.7	109
A522 Tean Road to A522 Leek Road	Northbound	Northbound Corridor 1	254.4	112.4	90.7	132	110.3
		Northbound Corridor 2	95.3	36.7	26.8	34.8	24.8
		Northbound Corridor 3	253.5	36	12	33.6	9.5
		Northbound Corridor 4	36.4	8	2.4	8	2.3
		Northbound Corridor 5	500.7	51.8	7.9	53.2	9.4

		Total	1140.3	244.9	139.8	261.6	156.3
B5032 Ashbourne Road	Westbound	Westbound Corridor	690	1305.2	1245.1	2332.5	2273
		Total	690	1305.2	1245.1	2332.5	2273
A521 Chapel Street / A522 Tape Street Junction to A521 Town End / Lid Lane Junction	Westbound	Westbound Corridor 1	428	65.5	10.5	65.1	9.9
		Westbound Corridor 2	293	26.4	0.5	26.8	0.9
		Total	721	91.9	11	91.9	10.8
A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street Junction	Easttbound	Eastbound Corridor 1	298	27.9	2.3	27.8	2
		Eastbound Corridor 2	132	20.7	2.6	20.5	1.5
		Eastbound Corridor 3	63	11.8	2.4	9.1	0.5
		Eastbound Corridor 4	204	34.6	5.1	34.8	5.3
		Total	697	95	12.4	92.2	9.3
A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road Junction	Northeast	Northeast Corridor 1	298	27.9	2.3	27.8	2
		Northeast Corridor 2	386	59.8	6.6	60.5	7
		Total	684	87.7	8.9	88.3	9

A522 Leek Road to A522 Tean Road (Southbound)

The southbound corridor has a total length of 1145.2m in the AM Peak it can be seen that and takes a total journey time of 203.2 seconds, which equates to an average speed achieved of 5.63 metres per second (approximately 12.6 miles per hour).

In the PM peak it can be seen that journey times are slightly longer in the southbound direction, recording a complete journey of the southbound corridor in 215.7 seconds. The average speed through the southbound corridor is 5.3 metres per second (approximately 11.9 miles per hour).

The first section of the southbound corridor takes the greatest amount of time to travel; this is partly due to it comprising of the longest distance of the 5 sections but also due to the congestion at this location, as noted in the queue and delay results.

A522 Tean Road to A522 Leek Road (Northbound)

The northbound corridor has a total length of 1140.3m and in the AM peak it can be seen that it takes a total journey time of 244.9 seconds, which equates to an average speed of 4.65 metres per second (approximately 10.4 miles per hour).

Conversely, the northbound direction of travel in the PM peak is much shorter, recording a complete journey of the northbound corridor in 231.6 seconds. The average speed through the northbound corridor is 4.35 metres per second (approximately 9.7 miles per hour).

The first section of the route takes the greatest amount of time to travel, which is due to the congestion at this location, incurring at the mini-roundabout junction at A522 Tape Street / B5032 Ashbourne Road.

B5032 Ashbourne Road

The westbound corridor has a total length of 690m and in the AM peak it can be seen that takes a total journey time of 1305.2 seconds (22 Minutes), which equates to an average speed of 0.5 metres per second (approximately 1.1 miles per hour).

In the PM peak it can be seen that takes a total journey time of 2332.5 seconds, which equates to an average speed of 0.29 metres per second (approximately 0.6 miles per hour).

Due to the overall network receiving higher flow conditions in the PM peak, vehicle movements around the network as a whole are slower than in the AM peak; however, the B5032 Ashbourne Road also experiences large queues because of the conversion of the former mini-roundabout into a T-junction. This is due to increased north/south flow on the major road and the increased difficulty of access onto the main carriageway.

A521 Chapel Street / A522 Tape Street Junction to Town End / Lid Lane

The westbound corridor has a total length of 721m and in the AM peak it can be seen that takes a total journey time of 91.9 seconds, which equates to an average speed of 7.8 metres per second (approximately 17.4 miles per hour).

In the PM peak it can be seen that it also takes a total journey time of 91.9 seconds, which equates to an average speed of 7.8 metres per second (approximately 17.4 miles per hour).

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street

The westbound corridor has a total length of 697m and in the AM peak it can be seen that takes a total journey time of 95 seconds, which equates to an average speed of 7.3 metres per second (approximately 16.3 miles per hour).

In the PM peak it can be seen that takes a total journey time of 92.2 seconds, which equates to an average speed of 7.6 metres per second (approximately 17 miles per hour).

This route takes a similar time to travel, with vehicles achieving the same average speeds, in both the AM and PM peak period, despite the overall flow conditions being different between the two. The comparable travel time indicates that this section of the model runs smoothly with only minimal delays.

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road

The westbound corridor has a total length of 684m and in the AM peak it can be seen that takes a total journey time of 87.8 seconds, which equates to an average speed of 7.8 metres per second (approximately 17.4 miles per hour).

In the PM peak it can be seen that takes a total journey time of 88.3 seconds, which equates to an average speed of 7.7 metres per second (approximately 17.2 miles per hour).

3.7.3 Summary of results

During the Mitigation Case scenario, the highway network has received two notable infrastructure changes, which collectively provide a fundamental mitigation solution to offset the increase in traffic up to 2031.

The 2031 year of assessment features factored up 2017 background traffic levels, to create the 2031 background traffic, as stated in section 2.5 and in addition to this, the site specific developments have also been included (see section 2.6). When these two elements are combined, the negative effects on the network are experienced at various pinch points that are identified in the preceding queue length and journey time results.

Similarly to the 2031 Reference Case model results, the A522 Leek Road receives queues and delays in both the AM and PM time periods, as vehicles struggle access the town centre from the North.

The mitigation options however mean the delays and queues experienced on this link are largely reduced. There is still congestion experienced at the A522 Tape Street / Well Street / A521 Chapel Street roundabout but due to the introduction of an additional southbound lane on A522 Tape Street it is moving smoothly.

The blocking back is still occurring, northwards, on A522 Tape Street, caused by the aforementioned roundabout and therefore queueing on B5417 Queen Street in both the AM and PM time periods is present, although this is less than that of the Reference Case. The queuing on B5417 Queen Street is more notable in the PM peak, with an average queue of 26 vehicles, as opposed to the 7 vehicles in the AM.

The previous heavy queuing and delays, experienced in the Reference Case model on the A522 Tape Street (NB), due to the mini-roundabout between A522 Tape Street and B5032 Ashbourne Road have been significantly reduced. The mini-roundabout disrupted the high north/south vehicle flow on the principal route, which consequently caused the A522 Tape Street (NB) to experience sizable queues and lengthy delays.

The mini-roundabout has been converted into a priority T-junction as part of the mitigation works, which has alleviated much of the queueing on the major road. This has come at the detriment of the minor road, B5032 Ashbourne Road which now experiences queuing and delay, as vehicles struggle to pull out onto the main road due to insufficient gap time.

In contrast to the 2031 Reference Case, which experienced extensive queues and delays, The 2031 Mitigation Case scenario presents benefits which are twofold, as it largely alleviates much of the queuing, and in addition, the mitigation measures allow a greater number of vehicles to enter the network than in the Reference Case model.

The overall network performance is increased and can therefore facilitate a much greater number of vehicles. The negative implication of the mitigation works comes in the form of increased queueing and delay on B5032 Ashbourne Road, which experiences some delay through the junction conversion to a priority T-junction.

3.8 Do – Something Mitigation Case & 2017 Base Comparison

An assessment of the modelled queue length between the 2017 base year and 2031 Mitigation Case scenarios has been undertaken, to establish the impact of the queues at the approach to the junctions between the two different scenarios. Queue length comparisons being drawn between the two scenarios are not directly comparable, as there are two variables to be compared here; the increase in traffic over time and highway characteristic. Despite these factors being different, a comparison of this nature will provide an indication of the difference in queue levels in the Town Centre.

3.8.1 AM Peak Queue Lengths

The AM model output result comparison between the 2017 base year and 2031 Mitigation Case is show in Table 15.

During the AM Peak, the model outputs show that the average queue length has increased by 252m in length in the Mitigation Case (approximately 42 vehicles) and the maximum queue length recorded, has increased by 686m (approximately 114 vehicles) on the A522 Leek Road (N) approach arm. The level of increase from the 2017 Base to the 2031 Mitigation Case is due to the higher vehicle demand associated with the future background growth, coupled with the identified committed development trips travelling through this link. The other approach arms: the A522 Tape Street (S) and A521 High Street, show minimal difference in queue length between the scenarios.

The output results on the B5417 Queen Street shows a small increase in average and maximum queue length in the 2031 Mitigation Case, by 37ms (approximately 6 vehicles) and 89ms (approximately 15 vehicles) respectively. The level of increase is considered insignificant when considering the large increase to total traffic on the network. The A522 Tape Street north and south approach arms have negligible difference between the two scenarios and both show free flowing traffic.

Three approach arms at the A522 Tape Street / A521 Chapel Street / Well street roundabout has negligible changes in overall average queues and maximum queues. Only the A522 Tape Street (S) arm has a higher increase in average and maximum queues; the queue length results show an increase of 187m (31 vehicles) and 117m (20 vehicles), respectively. The overall increase in queues can be considered as small when considering the overall performance of the junction.

The B5032 Ashbourne Road approach arm has a significant increase in queue length as indicated by the model output results. The overall average and maximum queue length has increased by 561m (94 vehicles) and 755m (126 vehicles), respectively. This level of increase is caused by the much higher and

uninterrupted flow on A522 Tape Street (S). The addition of the T-junction, forming part of the mitigation package, has favoured the principal north/south movement at the expense of the minor road, Ashbourne Road.

3.8.2 PM Peak Queue Lengths

The PM model output result comparison between the 2017 base year and 2031 Mitigation Case is show in Table 16.

The PM Peak model output shows that the majority of the approach arms along the A522 corridor have insignificant differences in overall queue length between the two scenarios. When taking into consideration that the level of traffic demand in the 2031 PM is significantly higher, in comparison to 2017 PM base scenario, this presents a favourable result.

The most notable and significant increase in queue length is at B5032 Ashbourne Road. The average queue length on B5032 Ashbourne Road has increased by 720m (120 vehicles) and the subsequent maximum queue length over the peak hour is 733m (122 vehicles). The B5032 Ashbourne Road approach arm shows the same queuing problems as described in section 3.8.1. The major benefits of the converting the existing mini- roundabout to a priority T-junctions as part of the mitigation package of measures favours the principle north/south movement at the detriment of the minor arm.

Table 15: 2017 Base Year and 2031 AM Peak Mitigation Case – Modelled Flow and Queue Length Comparison

2017 and 2031 AM Peak - Modelled Queue Length Comparison																					
Junction	Approach Arm	Movement	2017 Base (Without Highway Improvement)						2031 Mitigation Case (With Highway Improvement)						Difference					
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies					Lights	Heavies				
A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	576	26	6	1	93	16	816	26	258	43	779	130	240	0	252	42	686	114
	A522 Tape Street (NB)	Right: to A522 Leek Road (NB)	357	11	0	0	64	11	474	10	0	0	60	10	117	-1	0	0	-4	-1
	A521 High Street	Straight: to A522 Leek Road (NB)	167	10	1	0	31	5	251	15	1	0	51	9	84	5	0	0	20	3
		Right: to A522 Tape Street (SB)	163	9					170	8					7	-1				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	235	7	4	1	57	10	253	9	41	7	146	24	18	2	37	6	89	15
		Right: to A522 Tape Street (NB)	20	6					33	6					13	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	334	5	3	1	52	9	442	4	7	1	53	9	108	-1	4	1	1	0
		Right: to B5417 Queen Street	94	1					84	1					-10	0				
	A522 Tape Street	Left: to B5417 Queen Street	79	12	0	0	30	5	88	11	2	0	66	11	9	-1	2	0	36	6

	(SB)	Straight: to A522 Tape Street (SB)	658	24					898	24					240	0				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	96	0	3	1	116	19	100	0	7	1	109	18	4	0	4	1	-7	-1
		Straight: to A522 Tape Street (SB)	397	23					519	25					122	2				
		Right: to A521 Chapel Street	317	8					444	8					127	0				
	Well Street	Left: to A522 Tape Street (SB)	42	0	0	0	15	3	44	0	1	0	20	3	2	0	1	0	5	1
		Straight: to A521 Chapel Street	51	2					51	2					0	0				
		Right: to A522 Tape Street (NB)	45	0					48	0					3	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	227	16	10	2	149	25	210	18	197	33	266	44	-17	2	187	31	117	20
		Straight: to A522 Tape Street (NB)	382	6					471	5					89	-1				
		Right: to Well Street	56	0					53	0					-3	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	2	0	0	0	20	3	3	0	1	0	22	4	1	0	1	0	2	0
		Straight: to Well Street	61	0					68	0					7	0				
		Right: to A522 Tape Street (SB)	185	0					197	0					12	0				
A522 Tape Street / B5032 Ashbourne Road	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	215	3	1	0	49	8	230	4	0	0	0	0	15	1	-1	0	-49	-8
		Straight: to A522 Tape Street (SB)	413	20					530	21					117	1				
	B5032 Ashbourne Road	Left: to Tape Street (SB)	67	1	0	0	19	3	44	1	561	94	774	129	-23	0	561	94	755	126
		Right: to A522 Tape Street (NB)	144	4					62	1					-82	-3				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	519	18	2	0	167	28	672	22	133	22	176	29	153	4	131	22	9	2
		Right: to B5032 Ashbourne Road	66	0					77	0					11	0				

Table 16: 2017 Base Year and 2031 PM Peak Mitigation Case – Modelled Flow and Queue Length Comparison

2017 and 2031 PM Peak - Modelled Queue Length Comparison																				
Junction	Approach Arm	Movement	2017 Base (Without Highway Improvement)						2031 Mitigation Case (With Highway Improvement)						Difference					
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies					Lights	Heavies				

A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	628	0	76	13	347	58	833	9	131	22	478	80	205	9	55	9	131	22
	A522 Tape Street (NB)	Right: to A522 Leek Road (NB)	379	0	0	0	59	10	446	0	0	0	70	12	67	0	0	0	11	2
	A521 High Street	Straight: to A522 Leek Road (NB)	216	7	2	0	50	8	418	12	1	0	81	14	202	5	-1	0	31	5
		Right: to A522 Tape Street (SB)	188	0					200	0					12	0				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	293	5	170	28	346	58	280	3	155	26	356	59	-13	-2	-15	-3	10	2
		Right: to A522 Tape Street (NB)	17	0					21	0					4	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	362	0	13	2	48	8	424	0	4	1	48	8	62	0	-9	-2	0	0
		Right: to B5417 Queen Street	125	0					96	0					-29	0				
	A522 Tape Street (SB)	Left: to B5417 Queen Street	84	0	0	0	24	4	100	0	14	2	102	17	16	0	14	2	78	13
		Straight: to A522 Tape Street (SB)	732	0					931	9					199	9				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	113	0	231	39	253	42	120	0	80	13	252	42	7	0	-151	-25	-1	0
		Straight: to A522 Tape Street (SB)	591	3					704	3					113	0				
		Right: to A521 Chapel Street	300	2					360	10					60	8				
	Well Street	Left: to A522 Tape Street (SB)	92	0	28	5	73	12	94	0	15	3	73	12	2	0	-13	-2	0	0
		Straight: to A521 Chapel Street	130	0					138	0					8	0				
		Right: to A522 Tape Street (NB)	139	0					150	0					11	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	266	5	17	3	153	26	188	5	252	42	269	45	-78	0	235	39	116	19
		Straight: to A522 Tape Street (NB)	356	0					364	0					8	0				
		Right: to Well Street	71	0					52	0					-19	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	3	0	3	1	104	17	3	0	2	0	38	6	0	0	-1	0	-66	-11
		Straight: to Well Street	61	0					69	0					8	0				
		Right: to A522 Tape Street (SB)	244	0					258	0					14	0				
A522 Tape Street / B5032 Ashbourne Road	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	64	0	6	1	183	31	296	1	0	0	0	0	232	1	-6	-1	-183	-31
		Straight: to A522 Tape Street (SB)	287	1					763	2					476	1				
	B5032 Ashbourne Road	Left: to Tape Street (SB)	241	0	1	0	41	7	15	0	721	120	774	129	-226	0	720	120	733	122
		Right: to A522 Tape Street (NB)	0	0					31	0					31	0				

	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	639	2	17	3	169	28	572	5	164	27	179	30	-67	3	147	25	10	2
		Right: to B5032 Ashbourne Road	0	0					86	0					86	0				

3.9 Do – Something Mitigation Case & Reference Case Vissim Comparison

The outputs from the following assessments provide a comparison between the '2031 Reference Case' and '2031 Mitigation Case' scenarios.
The assessment has been used to indicate performance related benefits and dis- benefits to the network in Cheadle Town Centre, following the implementation of mitigation measures. The findings are presented in the following paragraphs.

- 3.9.1 AM Peak Traffic Flows
  Examination of traffic flows during the AM Peak reveals that the Mitigation Case model facilitates an increase in traffic along a number of links through Cheadle, in comparison to the Reference Case. Of particular note is the A522 Tape Street corridor, in both the northbound and southbound directions. A significant increase in vehicular flow was observed at A522 Tape Street at the junction with Ashbourne Road, where increases by 255 vehicles in the northbound direction and 38 vehicles turning right onto Ashbourne Road.
  The increase in vehicle flow on A522 Tape Street comes at the detriment of B5032 Ashbourne Road, whereby the conversion of the former mini-roundabout into a T- junction allows 125 less vehicles to enter the network from Ashbourne Road.
  The remaining routes showed lesser increases with many only exhibiting negligible differences.
  Despite the network accommodating 661 more vehicles in the Mitigation Case scenario, the modelled flows show that the network generally operates within capacity.

- 3.9.2 AM Peak Queue Lengths
  The effects of the mitigation infrastructure show some improvements to queue lengths along a number of links within the town centre during the AM Peak. Of particular note are flows along A522 Leek Road (N), which post mitigation are forecast to receive a considerable reduction from an average queue length of 411m to 258m (reduction of 153 metres). Assuming an average length of 6 metres is approximately one Passenger Car Unit (PCU), the decrease of 153m following mitigation measures equates to an approximate queue reduction of 126 vehicles.

Other notable average queue length reductions are also witnessed on B5417 Queen Street and A522 Tape Street of 112m and 57m, respectively. These two reductions equate to approximately a 19 vehicle reduction on B54217 Queen Street and 10 vehicles on A522 Tape Street.

Conversely, several links and arms exhibit an increase in queuing following the mitigation measures. Of note is the A522 Tape Street (S) which exhibits an increase in modelled average queue length from 11m to 197m (a 31 vehicle increase). This is attributable to vehicles giving way to the significant increase to southbound traffic volumes approaching the Tape Street/Chapel Street/Well Street roundabout.

Another increase in average queue length is observed on B5032 Ashbourne Road, increasing from 0 to 561m, equating to approximately 94 vehicles. This is caused by the much higher and uninterrupted flow on A522 Tape Street (S). The addition of the T- junction, forming part of the mitigation package, has favoured the principal north/south movement at the expense of the minor road, Ashbourne Road.

3.9.3 PM Peak Traffic Flows

Examination of traffic flows during the PM Peak reveals that the Mitigation Case model facilitates a significant increase in traffic, along a number of links through Cheadle, in comparison to the Reference Case. Of particular note is the A522 Leek Road (SB) movement where an increase from 580 to 833 light vehicles is observed (a 253 vehicle increase). Increases in vehicle levels are also experienced further down this corridor, at A522 Tape Street (SB), which shows increases of 232 light vehicles.

In the northbound direction of however, there is a decrease in vehicles, which presents a trade off against the increased southbound movement. These decreases are as a result of the increased flow which is accommodated by the additional southbound lane along Tape Street.

The extra traffic assigned onto the network during the PM Peak hour, resulting from the increased southbound flow, restricts the vehicle movements from the A522 Tape Street (NB) approach arm of the Tape Street/Chapel Street/Well Street roundabout. This is because vehicles are giving way to a higher vehicle flow in the Mitigation Case scenario.

Similarly to the AM, the B5032 Ashbourne Road also experiences large queues due to increased north/south flow on the major road. This is compounded with the increased difficulty accessing the main carriageway due to of the conversion of the former mini- roundabout into a T-junction.

Despite the increased queueing on Ashbourne Road, the Mitigation Case scenario allows 185 additional vehicles to pass through the network during the peak hour.

3.9.4 PM Peak Queue Lengths

The PM Peak results resemble the same trends as shown in the AM Peak, whereby A522 Leek Road (N) experiences a significant queue reduction between the two modelled scenarios. The queue on this link has an average queue length of 571m, reduced to 131m, thereby receiving a reduction of 440m following the implementation of the mitigation strategy. Assuming an average length of 6 metres is approximately one Passenger Car Unit (PCU), this queue length saving is the equivalent of 73 vehicles. Again, similarly to the AM assessment, queue length reductions are substantial on B5417 Queen Street and A522 Tape Street; reducing queues by 115m and 152m, respectively.

The junctions and links which experience an increase to average queue length, are again, similar to the AM scenario. The A522 Tape Street (S) experiences an increase in modelled average queue length from 32m to 252m (a 36 vehicle increase) and this is again is attributable to effects of the higher southbound traffic volumes approaching the Tape Street/Chapel Street/Well Street roundabout.

Another increase in average queue length is observed on B5032 Ashbourne Road increasing from 8m to 721m, equating to approximately 120 vehicles. This is caused by the much higher and uninterrupted flow on A522 Tape Street (S). The causation again being the new T-junction, forming part of the mitigation package, which has favoured the principal north/south movement on Tape Street at the expense of the minor road, Ashbourne Road.

A complete list of the average and maximum queue length modelled AM and PM outputs for the Reference Case model is shown in Table 17, and Mitigation Case model is shown in Table 18.

Table 17: 2031 AM Peak – Modelled Flow and Queue Length Comparison

2031 AM Peak - Modelled Queue Length Comparison																			
Junction	Approach Arm	Movement	Reference Case (Without Highway Improvement)						Mitigation Case (With Highway Improvement)						Difference					
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies					Lights	Heavies				
A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	786	26	411	69	895	149	816	26	258	43	779	130	30	0	-153	-26	-116	-19
	A522 Tape Street (NB)	Right: to A522 Leek Road (NB)	401	10	0	0	59	10	474	10	0	0	60	10	73	0	0	0	1	0
	A521 High Street	Straight: to A522 Leek Road (NB)	250	15	1	0	49	8	251	15	1	0	51	9	1	0	0	0	2	0
		Right: to A522 Tape Street (SB)	169	9					170	8					1	-1				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	236	7	153	26	346	58	253	9	41	7	146	24	17	2	-112	-19	-200	-33
		Right: to A522 Tape Street (NB)	30	6					33	6					3	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	371	4	9	2	53	9	442	4	7	1	53	9	71	0	-2	0	0	0
		Right: to B5417 Queen Street	68	1					84	1					16	0				
	A522 Tape Street (SB)	Left: to B5417 Queen Street	87	12	5	1	102	17	88	11	2	0	66	11	1	-1	-3	-1	-36	-6
		Straight: to A522 Tape Street (SB)	866	24					898	24					32	0				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	96	0	64	11	254	42	100	0	7	1	109	18	4	0	-57	-10	-145	-24
		Straight: to A522 Tape Street	481	23					519	25					38	2				

		(SB)																			
		Right: to A521 Chapel Street	438	8					444	8					6	0				
	Well Street	Left: to A522 Tape Street (SB)	43	0					44	0					1	0				
		Straight: to A521 Chapel Street	52	2	1	0	18	3	51	2	1	0	20	3	-1	0	0	0	2	0
		Right: to A522 Tape Street (NB)	49	0					48	0					-1	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	159	19					210	18					51	-1				
		Straight: to A522 Tape Street (NB)	379	5	11	2	101	17	471	5	197	33	266	44	92	0	186	31	165	28
		Right: to Well Street	39	0					53	0					14	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	3	0					3	0					0	0				
		Straight: to Well Street	68	0	0	0	24	4	68	0	1	0	22	4	0	0	1	0	-2	0
		Right: to A522 Tape Street (SB)	193	0					197	0					4	0				
A522 Tape Street / B5032 Ashbourne Road	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	219	3					230	4					11	1				
		Straight: to A522 Tape Street (SB)	501	20	0	0	27	5	530	21	0	0	0	0	29	1	0	0	-27	-5
	B5032 Ashbourne Road	Left: to Tape Street (SB)	75	1					44	1					-31	0				
		Right: to A522 Tape Street (NB)	156	4	0	0	34	6	62	1	561	94	774	129	-94	-3	561	94	740	123
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	417	20					672	22					255	2				
		Right: to B5032 Ashbourne Road	39	0	143	24	172	29	77	0	133	22	176	29	38	0	-10	-2	4	1

Table 18: 2031 PM Peak – Modelled Flow and Queue Length Comparison

2031 PM Peak - Modelled Queue Length Comparison																				
Junction	Approach Arm	Movement	Reference Case (Without Highway Improvement)						Mitigation Case (With Highway Improvement)						Difference					
			Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)	Flow (veh/h)		Average Queue Length (m)	Average Queue (Vehicles)	Maximum Queue Length (m)	Maximum Queue (Vehicles)
			Lights	Heavies					Lights	Heavies					Lights	Heavies				
A521 High Street / A522 Tape Street	A522 Leek Road (SB)	Left: to A522 Tape Street (SB)	580	5	571	95	883	147	833	9	131	22	478	80	253	4	-440	-73	-405	-68
	A522 Tape Street	Right: to A522 Leek Road (NB)	499	0	0	0	66	11	446	0	0	0	70	12	-53	0	0	0	4	1

	(NB)																			
	A521 High Street	Straight: to A522 Leek Road (NB)	418	12	7	1	163	27	418	12	1	0	81	14	0	0	-6	-1	-82	-14
		Right: to A522 Tape Street (SB)	193	0					200	0					7	0				
B5417 Queen Street / A522 Tape Street	B5417 Queen Street	Left: to A522 Tape Street (SB)	262	5	270	45	356	59	280	3	155	26	356	59	18	-2	-115	-19	0	0
		Right: to A522 Tape Street (NB)	20	0					21	0					1	0				
	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	481	0	20	3	55	9	424	0	4	1	48	8	-57	0	-16	-3	-7	-1
		Right: to B5417 Queen Street	135	0					96	0					-39	0				
	A522 Tape Street (SB)	Left: to B5417 Queen Street	74	0	89	15	102	17	100	0	14	2	102	17	26	0	-75	-13	0	0
		Straight: to A522 Tape Street (SB)	699	5					931	9					232	4				
A522 Tape Street / Well Street / A521 Chapel Street	A522 Tape Street (SB)	Left: to Well Street	97	0	232	39	258	43	120	0	80	13	252	42	23	0	-152	-25	-6	-1
		Straight: to A522 Tape Street (SB)	573	3					704	3					131	0				
		Right: to A521 Chapel Street	275	6					360	10					85	4				
	Well Street	Left: to A522 Tape Street (SB)	103	0	47	8	73	12	94	0	15	3	73	12	-9	0	-32	-5	0	0
		Straight: to A521 Chapel Street	135	0					138	0					3	0				
		Right: to A522 Tape Street (NB)	154	0					150	0					-4	0				
	A522 Tape Street (NB)	Left: to A521 Chapel Street	287	5	34	6	160	27	188	5	252	42	269	45	-99	0	218	36	109	18
		Straight: to A522 Tape Street (NB)	471	0					364	0					-107	0				
		Right: to Well Street	80	0					52	0					-28	0				
	A521 Chapel Street	Left: to A522 Tape Street (NB)	3	0	4	1	127	21	3	0	2	0	38	6	0	0	-2	0	-89	-15
		Straight: to Well Street	69	0					69	0					0	0				
		Right: to A522 Tape Street (SB)	264	0					258	0					-6	0				
A522 Tape Street / B5032 Ashbourne Road	A522 Tape Street (SB)	Left: to B5032 Ashbourne Road	260	1	12	2	145	24	296	1	0	0	0	0	36	0	-12	-2	-145	-24
		Straight: to A522 Tape Street (SB)	680	2					763	2					83	0				
	B5032 Ashbourne Road	Left: to Tape Street (SB)	77	0	8	1	118	20	15	0	721	120	774	129	-62	0	713	119	656	109
		Right: to A522 Tape Street (NB)	260	0					31	0					-229	0				

	A522 Tape Street (NB)	Straight: to A522 Tape Street (NB)	581	5	82	14	169	28	572	5	164	27	179	30	-9	0	82	14	10	2
		Right: to B5032 Ashbourne Road	97	0					86	0					-11	0				

3.9.5 AM Peak Travel Time & Delay

The comparative AM peak Travel time & Delays are shown in Table 19.

Table 19: 2031 AM Peak Travel Time and Delay Comparison

Route

B5032 Ashbourne Road

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street Junction

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road Junction

Direction

Westbound

Northeast

Route Section

Southbound Corridor 1

Total

Modelled Distance (m)

485.5

Reference Case (Without Highway Improvement)

136.3

Modelled Delay (sec)

92.7

Mitigation Case (With Highway Improvement)

110.3

Modelled Delay (sec)

66.7

Modelled Time (sec)

-26

Difference

Modelled Time (sec)

Modelled Time (sec)

Modelled Delay (sec)

-26

Southbound Corridor 2

36.9

12.5

6.8

11.5

-1

A522 Leek Road to A522 Tean Rd

Southbound

Southbound Corridor 3

227.1

45.6

23.7

38.9

5.8

17

-6.7

-1

-6.7

Southbound Corridor 4

117.8

277.9

21.6

8.2

15.4

4

-6.2

-4.2

Southbound Corridor 5

28.2

3.3

27.1

3.8

-1.1

0.5

A522 Tean Road to A522 Leek Road

Northbound

Total

Northbound Corridor 1

Northbound Corridor 4

1145.2

254.4

36.4

244.2

227.9

7.6

134.7

204.8

11.1

2

203.2

112.4

36

8

97.3

90.7

12

2.4

-41

-115.5

0.9

0.4

-37.4

-114.1

Northbound Corridor 2

95.3

24.3

13.5

36.7

26.8

12.4

13.3

Northbound Corridor 3

253.5

35.1

0.9

0.4

Northbound Corridor 5

500.7

50

6.3

51.8

7.9

1.8

1.6

1140.3

344.9

237.7

244.9

139.8

-100

-97.9

Westbound Corridor

Total

Northeast Corridor 1

690

298

63.7

20.5

27.9

59

3.1

2.4

10.3

2.2

5.9

1305.2

20.7

27.9

59.8

1245.1

2.6

12.4

2.3

6.6

1241.5

0.2

0

0.8

1242

A521 Chapel Street / A522 Tape Street Junction to A521 Town End / Lid Lane Junction

Total

Westbound Corridor 1

690

428

63.7

65.4

3.1

10.4

1305.2

65.5

1245.1

10.5

1241.5

0.1

1242

0.1

Westbound

Westbound Corridor 2

Total

Eastbound Corridor 1

293

721

298

26.4

27.9

0.4

10.8

2.2

26.4

27.9

0.5

11

2.3

0

0

0.1

91.8

91.9

0.1

0.2

0.1

Eastbound Corridor 2

132

0.2

Easttbound

Eastbound Corridor 3

63

9.6

1

11.8

2.4

2.2

1.4

Eastbound Corridor 4

204

34.1

4.7

34.6

5.1

0.5

0.4

697

92.1

95

2.9

2.1

0.1

Northeast Corridor 2

386

0.7

Total

684

86.9

8.1

87.7

8.9

0.8

0.8

A522 Leek Road to A522 Tean Road

For the southbound direction of travel, the greatest differences are seen in Corridor Section 1, which has an average journey time saving of 26 seconds and a reduction in delay of 26 seconds. The following four corridor sections also some marginal present time savings.

A522 Tean Road to A522 Leek Road

The northbound direction of travel shows that Corridor Section 1 presents the most time saving of the five corridor sections. As this route is travelling in the opposing direction to the southbound movement, Corridor Section 1 begins at the southern part of the town centre, at A522 Leek Road. Corridor sections 2 to 5 do not present any notable changes to that of the Reference Case scenario.

B5032 Ashbourne Road

B5032 Ashbourne Road experiences a significant increase to journey time and delay in the mitigation case model. The increased delay is caused by the conversion of the former mini-roundabout at A522 Tape Street / B5032Ashbourne Road into a T-junction, which sees a substantial increase in flow on A522 Tape Street, as the detriment of B5032 Ashbourne Road.

A521 Chapel Street / A522 Tape Street Junction to Town End / Lid Lane

This route takes the same length of time to travel in the Reference Case and Mitigation Case models, despite the Mitigation Case model allowing a greater number of vehicles to enter the network. The comparable travel time indicates that this section of the model runs smoothly with only minimal delays.

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street

Similarly, this route takes a comparable length of time to travel in both the Reference Case and Mitigation Case models. The Mitigation Case model is marginally slower and featuring slightly greater delay but this can be attributable to the Mitigation Case model being able to accommodate a greater number of vehicles within the hour period, due to the mitigation measures. The corresponding results for this route indicate that this section of the model is free flowing with only minimal delays.

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road

Similarly, this route takes a comparable length of time to travel in both the Reference Case and Mitigation Case models, despite the Mitigation Case model allowing a greater number of vehicles to enter the network. The corresponding results for this route indicate that this section of the model runs smoothly with only minimal delays.

3.9.6 PM Peak Travel Time & Delay

The comparative PM peak Travel time & Delays are shown in Table 20.

Table 20: 2031 PM Peak Travel Time and Delay Comparison

Route

B5032 Ashbourne Road

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street Junction

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road Junction

Direction

Westbound

Easttbound

Northeast

Route Section

Southbound Corridor 1

Total

Modelled Distance (m)

485.5

Reference Case (Without Highway Improvement)

332.1

Modelled Delay (sec)

288.5

Mitigation Case (With Highway Improvement)

98.4

Modelled Delay (sec)

54.6

Modelled Time (sec)

-233.7

Difference

Modelled Time (sec)

Modelled Time (sec)

Modelled Delay (sec)

-233.9

Southbound Corridor 2

36.9

18.3

12.8

10.5

5

-7.8

-7.8

A522 Leek Road to A522 Tean Rd

Southbound

Southbound Corridor 3

Southbound Corridor 4

Southbound Corridor 5

227.1

117.8

78.2

31.9

27.9

56.3

19

3

64.9

16.6

25.3

43

4.6

1.8

-13.3

-15.3

-2.6

-13.3

-14.4

277.9

-1.2

A522 Tean Road to A522 Leek Road

Northbound

Total

Northbound Corridor 1

Northbound Corridor 4

1145.2

254.4

36.4

488.4

89.4

7.7

379.6

65.9

8.8

2.1

215.7

132

33.6

8

109

110.3

9.5

2.3

-272.7

42.6

0.9

0.3

-270.6

44.4

Northbound Corridor 2

95.3

32.1

21.5

34.8

24.8

2.7

3.3

Northbound Corridor 3

253.5

32.7

0.7

0.2

Northbound Corridor 5

500.7

52.9

9.1

53.2

9.4

0.3

0.3

1140.3

214.8

107.4

261.6

156.3

46.8

48.9

Westbound Corridor

Eastbound Corridor 2

Eastbound Corridor 4

Total

Northeast Corridor 1

690

204

298

75.3

39.3

27.8

64.7

14.7

1.5

9.7

14.3

2.1

11.6

2332.5

34.8

27.8

60.5

2273

1.5

5.3

9.3

2

7

2257.2

0.5

-4.5

0

-4.2

2258.3

A521 Chapel Street / A522 Tape Street Junction to A521 Town End / Lid Lane Junction

Total

Westbound Corridor 1

690

428

75.3

67

14.7

11.5

2332.5

65.1

2273

9.9

2257.2

-1.9

2258.3

-1.6

Westbound

Westbound Corridor 2

Total

Eastbound Corridor 1

293

721

298

26.9

27.8

0.9

12.4

2.1

26.8

27.8

0.9

10.8

2

-0.1

0

0

93.9

91.9

-2

-1.6

-0.1

132

20

20.5

0

Eastbound Corridor 3

63

9.7

1

9.1

0.5

-0.6

-0.5

-4.4

697

96.8

92.2

-4.6

-5

-0.1

Northeast Corridor 2

386

-4.6

Total

684

92.5

13.7

88.3

9

-4.2

-4.7

A522 Leek Road to A522 Tean Road

The southbound direction of travel also presents the most benefit in the PM peak period. The greatest differences are seen in Corridor Section 1, which has an average journey time saving of 234 seconds and a reduction in delay of 234 seconds. The following four corridor sections also some marginal present time savings.

A522 Tean Road to A522 Leek Road

Conversely to the AM scenario, the northbound direction of travel shows that Corridor Section 1 presents the largest increase to journey time of the five corridor sections. As this route is travelling in the opposing direction to the southbound movement, and can be attributed to vehicles giving way to the significant increase to southbound traffic volumes approaching the Tape Street/Chapel Street/Well Street roundabout. Corridor sections 2 to 5 do not present any notable changes to that of the Reference Case scenario.

B5032 Ashbourne Road

B5032 Ashbourne Road again experiences a significant increase to journey time and delay in the mitigation case model. Similarly to the AM Peak Period, the increased delay is caused by the conversion of the former mini-roundabout at A522 Tape Street / B5032Ashbourne Road into a T-junction, which sees a substantial increase in flow on A522 Tape Street, as the detriment of B5032 Ashbourne Road.

A521 Chapel Street / A522 Tape Street Junction to Town End / Lid Lane

In contrast to the AM peak result, a slightly faster journey time is experience for this route in the Mitigation Case model. The time saving can be attributable to the installation of the mitigation measures, which also allows the Mitigation Case model to grant more vehicles with access to the network. The comparable travel time indicates that this section of the model runs reasonably well with only minimal delays.

A521 Town End / Lid Lane Junction to A521 Chapel Street / A522 Tape Street

Similarly, the Mitigation Case model is marginally faster than the Reference Case for this route, and features a slightly lower delay, which can be attributable to the installation of the mitigation measures. The corresponding results for this route indicate that this section of the model is free flowing with only minimal delays.

A521 Town End / Lid Lane Junction to A521 High Street / A522 Leek Road

Again, this route takes less time to complete in the Mitigation Case model, despite the Mitigation Case model allowing a greater number of vehicles to enter the network. The corresponding results for this route indicate that this section of the model runs reasonably well with only minimal delays.

Travel Time and Delay Conclusions

The greatest benefits on the southbound movement are seen in the first corridor section and this can be attributed the mitigation measure of an additional southbound lane on the A522, between the junction with the car park and the Tape Street / Well Street / Chapel Street roundabout junction.

Southbound Corridor section 1 directly precedes the stretch of the network which features the additional lane and therefore receives the most time saving. The additional lane facilitates a higher volume of southbound vehicles and therefore alleviates congestion of southbound moving vehicles on the link further upstream of the mitigation measure, which causes the southbound movement to have increased benefits. The first corridor section is also the longest of the five sections of the complete corridor and therefore more distance is covered with more scope for benefit.

The time savings on the northbound route come from the mitigation of the Tape Street roundabout (reversion to a T-junction). By changing the configuration of this junction, the flow on the major road, A522 Tape Street, is uninterrupted; providing a greater vehicular flow into the Town Centre from the South.

Conversely, this negatively affects the vehicles travelling westbound on B5032 Ashbourne Road, as the T-junction offers this movement less capacity than the former mini-roundabout. Essentially the major road North / South corridor is now free flowing but at the detriment to Ashbourne Road, due to the vehicles waiting to pull out because of the high traffic flow and lack of enough gap time.

Vehicle speeds stay consistent throughout the western side of the Town Centre. This section of the model contains the gyratory system, and features in the last three journey time and delay routes. During the AM scenario, the Mitigation Case model is marginally slower and features a slightly greater delay, which could be resulting from the Mitigation measures favouring the North / South movement at the detriment to those giving way at the Tape Street / Well Street / Chapel Street roundabout junction.

In contrast the PM peak results show that a slightly faster journey time is experienced on the last three journey time and delay routes in the Mitigation Case model despite more vehicles present on the network. Under higher flow conditions in the PM peak, the time saving; attributable to the installation of the mitigation measures, becomes more apparent, and as delays are minimal and infrequent in this area, it indicates that vehicles do not experience congestion or delay in this part of town.

3.10 Modelling Summary

The results of the modelled 2017 background traffic levels showed that the AM peak is largely free flowing, with the network operating well within capacity. The PM peak scenario however featured some pinch point locations where queuing occurred, but despite marginal congestion, the town centre network operated within capacity. The largest queues were recorded during the PM and this was on A522 Tape Street (SB), which consisted of an average queue of 39 vehicles, and B5417 Queen Street, consisting of an average queue 28 vehicles across the PM peak.

During the Reference Case scenario, the highway network remained similar to the 2017 Base scenario; however, there were two notable changes which produced a sizable increase in the traffic levels on the network. The 2017 background traffic levels were factored up to create the 2031 background traffic (see section 2.5) and the site specific developments were also included (see section 2.6). When these two elements were combined, negative effects were witnessed on the network, seeing increased effects at the pinch points of A522 Leek Road (N), the A522 Tape Street / Well Street / A521 Chapel Street roundabout and the A522 Tape Street / B5032 Ashbourne Road mini- roundabout.

The package of mitigation measures, including the additional southbound lane on the A522, between the junction with the car park and the Tape Street / Well Street / Chapel Street roundabout junction, and the priority T-junction at A522 Tape Street / B5032 Ashbourne Road assisted in improving the flow of the heavy southbound vehicle movement through the town centre.

From the options that have been investigated, including signalisation, the two finalised mitigation measures, when used together, best accommodate the future year 2031 background traffic levels with the addition of committed development trips. Despite the queuing on Ashbourne Road, the package of mitigation works benefits the overall network performance, as the network can accommodate a greater number of vehicles in this configuration, whilst maintaining a free flowing town centre gyratory and keeping vehicles moving North and Southbound on the A522.

Overall the package of mitigation measures not only allows the gyratory system to operate freely under future traffic conditions but it also permits considerably more vehicles to enter the network during the modelling simulation, when compared to the Reference Case model. The fundamental increase to

capacity on Tape Street in the southbound direction of travel allows more vehicles from the North at A522 Leek Road, to enter the network in the mitigation case, in both the AM and PM time periods. The increased capacity in the southbound direction comes at the detriment to the B5032 Ashbourne Road, which experiences queuing as a result of the mitigation measures. The increase in queue along the Ashbourne Road can be attributed to there being minimal gap time for vehicles to exit onto Tape Street due to the increased free flow of the major road.

In should be noted that whilst the package of mitigation measures does provide some additional capacity to the overall network, it should not be considered the total solution to the Cheadle Town Centre traffic problem.

4 Additional Infrastructure Information

4.1 A50 to Cheadle Link

No indicative route has been provided so comments can only be made on the possible strategic impact of a route from the A50 to Cheadle. Currently there are existing links from the A50 to Cheadle which include:-

- • A50 to A521 Uttoxeter Road, to A521 Cheadle Road, to A521 Delphouse Road, to A521 The Green, to A521 Town End, to A521 High Street.

- • A50 to A521 Uttoxeter Road, to Cheadle Road, to Draycott Cross Road, to A521 The Green, to A521 Town End, to A521 High Street.

- • A50 to A521 Uttoxeter Road to Draycott Road to A522 Cheadle Road to A522 Tean Road.
  These routes could possibly be upgraded / improved in terms of width etc to meet standards for a high quality ‘bypass’ type road, however the costs associated with this would be very high. The cost would include costs for land and CPO costs for residential and business properties that are situated close to the road edge in some locations.

A brand new route (not utilising the existing road network) that links the A50 to Cheadle would have the benefits of removing an element of through traffic off villages such as Tean, however unless the route also went to the east or west of Cheadle town centre and as a result removed through traffic travelling north to south and vice versa, then the benefit to Cheadle town centre itself would likely to be negligible. Indeed there could be negative impact on Cheadle as a better and quicker link to Cheadle itself could induce more traffic into the town and High Street, Tean Road etc.

The cost to construct such a length of new, high quality infrastructure would likely be very high, possibly running into hundreds of millions of pounds. This cost is likely to offset any cost benefits of the scheme and as such it is unlikely that a business case seeking funding from the Department for Transport showing a high benefit to cost ration (BCR) would be derived for this proposal following further detailed analysis including transport modelling and environmental assessment. It should be noted this view is based on experience of previous projects and not on actual evidence following detailed assessment.

4.2 Professional view regarding Link Road

Currently there is no link between the A522 Tean Road and A521 / Brookhouse Way, due to it being severed by a disused railway line. The railway line is in third party ownership and a bridge will be required to connect a link road through.

Currently this option has not been tested and all trips from the proposed developments: CH085a, CH085b, CH085c, CH085d; and, CH128 have therefore been distributed onto A522, at the south of the development site. Those trips wishing to go northbound will make their way through the town centre.

It should be noted that as part of the Land Off Brookhouse Way Outline planning approval for a mixed development with associated open space, highways and landscaping, the extension to Brookhouse Way will provide a section of a spine road to traverse up to the edge of the disused railway line. Such a road would not initially link the A521 and A522 but could form part of a future link road to do so.

It has been calculated that 48% of the predicted trips (209 vehicles) across both peaks from the Mobberley Site (CH085a, CH085b, CH085c, CH085d; and, CH128 land allocations), will travel northbound and currently, these have been modelled to utilise the A522 Tean Road.

A proposed link between the A521 and A522 would then allow a percentage of the 52% of predicted trips which use the A522 to traverse (south to westbound and vice versa) the A521 as opposed to solely the A522.

It is our view however, that the quantum of trips generated by the proposed Mobberley Site which use the proposed link between A521 and A522 (with 15%westbound or 37% southbound) will have minimal effect in improving congestion within Cheadle Town Centre. This is due to the fact such trips whether traveling south to west (or vice versa) will travel away from the town centre.

The strategic route of the A50 provides a direct means of access to Stoke-on-Trent and the M6, to the West of Cheadle, and Uttoxeter in the South-East. It is unlikely that vehicles travelling between these two locations would detour through Cheadle, when the A50 is already the most direct choice for vehicles.

The link road does have the potential however, to serve the dwellings south of Rakeway Road by facilitating traffic to the A521 to travel westbound, negating the need for them to travel directly through the town centre to access this movement. The predicted land allocation trip generation percentages can be seen in Table 21.

Table 21: Direction of travel for egressing vehicles

It is considered that a modelling exercise utilising a dynamically assigned microsimulation model or macro model should be used to better predict the trip transference between the proposed land allocations and existing A521 and A522, and the interaction of the proposed link road, should a more in depth appraisal be required.

It is the view that the proposed Link Road, as identified in the Staffordshire Moorlands Local Plan: Preferred Options Sites and Boundaries document would not be a solution on its own. Rather, further connections to the proposed link road around the town, would potentially offer a longer term solution providing a more suitable alternative. The rationale being that additional highway infrastructure could be funded by the developer, as specified as part of the development. This could be implemented so that over a period of time, such roads would connect, forming an Outer Distributor Road network around Cheadle which could reduce vehicle throughput and congestion in the town centre.

5 Existing Public Transport, Cycling & Pedestrian Provision

5.1.1 Public Transport

Public transport provision has been reviewed to ascertain the current offer within Cheadle and to determine the suitability of services in terms of potential patronage from the proposed developments.

Existing bus services operating within the Cheadle area are shown below in Figure 8 with details of route and frequency shown in Table 22.

Figure 8: Map showing bus services within Cheadle and the surrounding area.

Table 22: Public Transport services status along High Street, Cheadle

Service	Company	Route	Frequency	Bus Stop	Comments
30	D&G Bus	Leek	Every 2 hours	ABC	
		Hanley		DFG	
32	First Potteries	Hanley /	Every 1⁄2 hour	ACFG	
		Uttoxeter		BDFG	
123	Bennetts Travel	Hammersley Hayes	Hourly from 0845 - 1443	AB	
		Lightwood / Rakeway		A	Changed bus type to comply with DDA regulations.

					Accesses Cross Street

Current services into Cheadle: • First Potteries

o 32 between Hanley and Uttoxeter; and,
o 32A between Hanley, Uttoxeter and Alton Towers (This service is due to

be discontinued) • D&G Bus

o 30 to Leek, • Bennetts Travel

o 123 to Hammersley Hayes;

o Between Lightwood and Rakeway. This element of the service is routed along Cross Street, which is a contravention of the TRO. It is suggested the TRO be amended to include buses as an exemption.

Currently only one service, the Bennetts 123 serves residential areas with a low frequency and operates as a 'hail and ride' service. Residential customers from areas not serviced by the Bennetts service 123 have to make their way to the nearest bus stop on the A521 or A522, which in adverse weather would not encourage possible passengers to abandon personal vehicles and switch to a more sustainable mode of travel. We are also informed that bus operators have been reducing services recently apparently due to low passenger numbers.

An example of this is D&G Buses having withdrawn the 31 service and Potteries First Bus who will withdraw the 32A service on 23rd April 2017.

Positive aspects of Cheadle Bus services

The positives of the current bus services are the good access to most residential areas by Bennett's service 123, however, this is a limited operation and when new developments are built it will be a good incentive to increase the current route to include a wider passenger base.

High Street has a good service with bus operators covering the working day sufficiently and delivering customers to the main shopping area.

Negative aspects of Cheadle Bus services

Currently only Bennett's 123 service, serves the main residential areas.

SCC bus stop policy states a walking distance of no more than 350m in urban areas before a bus stop is reached which is achieved at present as long as the hail and ride service continues.

5.2 Bus Services operating by proposed developments

The existing services have been reviewed in relation to their proximity to the proposed development sites.

Bus services near to CH009 & CH024

Bennett's Service 123 - Cheadle Town Service 123 serves Ness Grove close to the site, hourly from 0930 to 1330.

Bus services near to CH001, CH004 & CH132

Bennett's Service 123 - Cheadle Town Service 123 serves Ness Grove close to the site, hourly from 0930 to 1330.

D&G Bus 30 - Currently runs from Leek bus station to Cheadle, High Street along A521 Froghall Road, onto A521 Leek Road, onto A522 Tape Street, onto Chapel Street, onto Bank Street, onto Watt Place, onto A521 High Street and then returns to A521 Leek Road onto A521 Froghall Road back to Leek Bus Station. The service operates every two hours, but does not access the area of the developments.

First Bus Potteries 32 - Currently runs from Hanley bus station to Cheadle, High Street along A521 Froghall Road, onto A521 Leek Road, onto A522 Tape Street, onto Chapel Street, onto Bank Street, onto Watt Place, onto A521 High Street and then returns to A521 Leek Road onto A521 Froghall Road back to Leek Bus Station.

The service operates every twenty minutes, but does not access the area of the developments.

Bus services near to CH002a & CH002b

Bennett's Service 123 - Cheadle Town Service 123 serves Kingfisher Crescent and Oulton Road close to the site, hourly from 0930 to 1330.

Bus services near to CH085a, CH085b, CH085c, CH085d & CH128

First Bus Potteries 32 - Currently runs from Hanley bus station to Cheadle, High Street along A521 Froghall Road, onto A521 Leek Road, onto A522 Tape Street, onto Chapel Street, onto Bank Street, onto Watt Place, onto A521 High Street and then returns to A521 Leek Road onto A521 Froghall Road back to Leek Bus Station.

The service operates hourly, but does not access the area of the developments.

Bennett's Service 123 - Cheadle Town Service 123 serves Wedgwood Road close to the site, hourly from 0930 to 1330.

Bus services near to CH013

The nearest bus service will be D&G Service 30, which will serve Glebe Road in Cheadle 3 times per day. The nearest bus stop is north of the development in Cheadle Town centre, which is greater than the SCC guidance distance of 350m to the nearest urban bus stop.

Recommendation

For every development that comes forward for planning approval, a Transport Assessment and Travel Plan will be required as part of the submission documents. These documents will consider the current provision of public transport in further detail and suggest possible improvements to enhance the offer locally with the potential to increase bus patronage and reduce car journeys on the network. It is recommended that the developers liaise with SCC and bus operators through the planning process to ensure developments have good access to public transport provision.

Currently the proposed developments CH013, CH085a, CH085b, CH085c and CH085d would be beyond the 350m urban allowance from the nearest bus stop or 'hail and ride' service. This would require the developer to provide a DDA compliant bus stop at a location to meet SCC's policy.

5.2.1 Cycling in Cheadle

During the site visits undertaken as part of this study, low levels of cycling were observed. This was however only a snapshot and could be due to the topography of Cheadle which is surrounded by steep gradients.

In terms of existing cycle infrastructure, there are minimal designated / signed cycle routes in and around the Cheadle area. Roads are of narrow widths as are most footways; thereby making it difficult to create shared use footways and on carriageway marked cycle routes.

Currently Staffordshire County Council is installing a cycle route linking the A522 Chapel Street, Cheadle [St. Georges Church] to Froghall via A521. The entire route will be signed as an on-carriageway route but without road markings. Therefore, northern developments CH001, CH004, CH132, CH009, CH015 and CH024 will be required to submit a Travel Plan showing a link to the A521 Froghall Road Cycle route.

Proposed developments and potential cycle routes

All developments will have to consider improvements to sustainable travel and connectivity as part of their planning submission and internal layouts of developments should promote cycling and walking.

Developments accessed off the A521 Froghall Rd - [North of Cheadle]

CH001 Ayr Road & Donkey Lane

Ayr Road [D1269] is an illuminated 30mph residential only carriageway accessed via a non-traffic calmed estate. The estate has a mixture of single and double sided footways which do not have lowered pedestrian crossing points signified with tactile paving at side roads. Vehicle access is via multiple roads to link with the A521. Road widths are consistent along its length from development CH001, linking to development CH132. All residential properties have driveways, permitting an on carriageway cycle route, signed by upright signage but without on carriageway road markings to complement Staffordshire County Councils A521 Froghall Road cycle route.

Donkey Lane has private road status and unless the road is adopted onto Staffordshire County Councils Asset Register a cycle route would not be permitted.

CH132 Cheltenham Avenue

Cheltenham Avenue [D1269] is an illuminated 30mph residential only carriageway accessed via a non-traffic calmed estate. The estate has footways on both sides which do not have lowered pedestrian crossing points signified with tactile paving at side roads, relying on footway traffic using resident driveways as crossing points. All residential properties have driveways, which would permit an on carriageway cycle route, signed by upright signage but without on carriageway road markings to complement Staffordshire County Council's A521 Froghall Road cycle route. Vehicle access is via one road link onto A521 Froghall Road.

CH004 - Thorpe Rise

Thorpe Rise [D1271] is an illuminated 30mph residential only carriageway. The estate has footways on both sides which do not have lowered pedestrian crossing points signified with tactile paving at side roads. Vehicle access to the estate is via the A521. Road widths are narrow but consistent along its length to the development CH004. All residential properties have driveways, permitting an on carriageway cycle route, signed by upright signage but without on carriageway road markings to complement Staffordshire County Councils A521 Froghall Road cycle route.

Developments accessed off the A521 Froghall Rd, A522 Leek Rd & B5417 Queen St - [Route north of Cheadle]

CH009 & CH024 – Churchill Road

Churchill Road [D1150] is an illuminated 30mph residential only carriageway accessed via a non-traffic calmed estate. The estate has footways on both sides which do not have lowered pedestrian crossing points signified with tactile paving at side roads, relying on footway traffic to use resident driveways as crossing points. Vehicle access is via the A521 Froghall Road, A522 Leek Road and the B5041 Queen Street. Not all residential properties have driveways, resulting in on-street parking, however the carriageway width is sufficient permitting an on carriageway cycle route, signed by upright signage but without on carriageway road markings.

CH015 – A522 Leek Road & Harborne Road

A522 Leek Road forms part of the cycle route linking Cheadle to Froghall. The developer should supply a Travel Plan including a cycle route which complements Staffordshire County Councils A521 Froghall Road cycle route.

Project Name Cheadle Town Centre – Phase 2 Document Title Transport Study Report

Harborne Road [D1150] is an illuminated 30mph residential only carriageway accessed via a non-traffic calmed estate. The estate has footways on both sides which do not have lowered pedestrian crossing points signified with tactile paving at side roads, relying on footway traffic to use resident driveways as crossing points. Vehicle access is direct onto A522 Leek Road. Not all residential properties have driveways, resulting in on street parking, however the carriageway width is sufficient permitting an on carriageway cycle route, signed by upright signage but without on carriageway road markings.

Developments accessed off the B5032 Ashbourne Rd / B5417 Queen St - [East of Cheadle]

B5032 Ashbourne Road is an illuminated 30mph single two way carriageway a mixture of single and double sided footways which do not have lowered pedestrian crossing points, relying on footway traffic to use resident driveways as crossing points. Road widths vary but it would permit an on carriageway cycle route, signed by upright signage but without on carriageway road markings.

CH002A & CH002B - Arundel Drive

Arundel Drive [D1241] is an illuminated 30mph residential only carriageway accessed via a traffic calmed estate. The estate is relatively new with a mixture of single and double sided footways which do not have lowered pedestrian crossing points, relying on footway traffic to use resident driveways as crossing points. Vehicle access is via a single road link onto A5032 Ashbourne Road, however cycle routes could be constructed at four locations to give full access to the residential estate. Road widths vary but it would permit an on carriageway cycle route, signed by upright signage but without on carriageway road markings.

Developments accessed off the A522 Tape St & A522 Tean Road- [Route south of Cheadle]

A522 is an illuminated variable 40 / 30mph single two way carriageway with a mixture of single and double sided footways which do not have lowered pedestrian crossing points signified with tactile paving at side roads. Footways widths vary along its length, however, widths are sufficient in most areas to permit an on footway shared cycle route, with measures being put in place where the footways narrow.

It was noted a Speed Indication Device was present at the 40mph to 30mph change of speed which indicated speeds above 40mph, making it difficult to design a safe on carriageway cycle route, without special measures being incorporated to reduce speeds.

CH013-Birchwood Grove (A522 Tape Street)

Birchwood Grove has private road status. It is an illuminated 30mph new build residential only carriageway accessed via an established housing estate which is traffic calmed. Unless the road is to be adopted a cycle route would not be permitted.

Vehicle access is via multiple roads linking with the A521 and A522. It would be difficult to design a continuous cycle route as the carriageway and footways are narrow throughout the area, resulting in vehicles being double parked and using the footways.

Painsley Catholic College and Cheadle Academy border the majority of the development with no designated cycle routes to date.

CH085A, CH085B, CH085C, CH085D, CH128-A522 & Potential Link Road

At the junction of the development CH128 and the A522 Tape Street no footway exists to permit either shared or segregated cycle route. The cycle route would have to be signed via upright signage with on footway road markings as the carriageway is too narrow.

An existing footpath is proposed to be developed to link development CH085A north to Pullman Court. Pullman Court has no footways and the carriageway is narrow making the designing of a cycle route very difficult. Road lighting columns are erected within residential driveways giving concern to land ownership claims.

Access to development CH085D can be obtained from Litley Drive [D1249] and Dandillion Avenue [D1249] an illuminated 30mph established residential only carriageway linking to the A522 Tean Road. It would be difficult to design a continuous cycle route as the carriageway and footways are narrow throughout the area, resulting in vehicles being double parked and using the footways.

Developments accessed off the A521 The Green - [Route south west of Cheadle] – CH020

A521 is an illuminated 30mph single two way carriageway with both sided footways which do not have lowered pedestrian crossing points signified with tactile paving at side roads. Both footways appear not to have permitted widths to design footway shared or segregated cycle route. Road widths are consistent along its length from the furthest out development CH020 to Cheadle Town centre; however widths are sufficient to design an on carriageway cycle route.

- 5.2.2 Pedestrian Links
  A walking audit took place on Thursday 2nd February 2017 to ascertain existing pedestrian provision in Cheadle. Pedestrian links in and around Cheadle are generally reasonable, with footways of adequate width linking out-lying areas with the town centre itself. Walking is further promoted by several pedestrian crossing facilities in particular on The Terrace, High Street, Tape Street, Tean Road, Bank Street and Leek Road.

- 5.2.3 Safer Routes to School
  Three primary schools which are within the inner area have participated in the safer routes school strategy and opted for:
  - Reduction of vehicle speeds through vertical deflection;
  - Signal controlled crossing points;
  - Road markings to keep school frontages clear of parked vehicles;
  - Road Safety training for pupils on how to safely cross busy roads.

    As stated previously cycling does not currently appear to be a preferred form of transport; possibly due to the topography of the surrounding area and narrow roads.

    In order to encourage sustainable travel modes, developers would have to produce robust Travel Plans with appropriate measures to support the desired increase in the uptake of cycling, walking and public transport.

    Recommendations

    Various suggestions of on-carriageway cycle routes have been highlighted within the text of this specific chapter. A further suggestion for all existing residential areas of Cheadle and the new sites that come forward is for the implementation of 20 mph zones / 20mph speed limits. This reduction in vehicle speeds could encourage more walking and cycling, thereby reducing unnecessary car borne trips, in particular short

ones on the network.

- 5.2.4 Review of existing Traffic Regulation Orders (TRO's) on High Street
  High Street is a busy shopping street in Cheadle which as well as attracting higher pedestrian numbers, also acts as a through route for traffic, in addition to providing access to adjacent businesses.
  This mixture of uses results in congestion which is exacerbated by parking issues within the area. Figure 9 shows typical parking and congestion issues that can arise.

Figure 9: Large HGV's showing how restricted access is along High Street

High Street is currently a one-way road illuminated 30mph traffic calmed carriageway with varying footway widths, connecting the A521 to the A522, with Cross Street permitting vehicles below 7.5T to turn right to access Chapel Street or Bank Street.

In terms of parking / waiting restrictions, High Street is predominantly covered by a "No Waiting at Any Time" TRO. There are two official bus stops marked on the nearside of the carriageway. The first, Stop A, is sited opposite Oak Street and the second, Stop B, is sited opposite Greyhound Walk, which links to Cheadle's only car park. Both bus stops are signed as local buses which prohibit all other services used for excursions or tours. The bus stops do not require a TRO to enable enforcement but must be fully compliant in terms of signage and markings to current design standards.

There are two raised zebra crossings with associated zig-zag markings, which also prohibit waiting and loading. The first zebra crossing is sited past the junction with Church Street and the second is sited past the Market Square. Generally they are sited on build outs, which have from observation indirectly created non-designated parking spaces, despite having other restrictions in place.

Currently there are no designated loading / unloading or disabled parking bays along High Street, although currently blue badge holders and the activity of loading / unloading can take place for a limited time on the "No Waiting at Any Time" restrictions.

Along High Street is the junction with Cross Street, where there are two signed contradictory restrictions. These are "Prohibition of driving except for access" and a 7.5T weight limit "except for access". The prohibition of driving sign is incorrect as there is no TRO to support this. This sign could cause confusion and result in vehicles below 7.5T using High Street instead of Cross Street.

Site Observations

A site visit was carried out on Thursday 2nd February 2017 where traffic behaviour was observed; particularly the flow of vehicles along High Street and Cross Street and any obstacles encountered which added to congestion and delay to traffic in Cheadle Town centre.

One notable problem was the amount of illegal parking along the entire length of High Street. The major contravention observed within High Street and Cross Street was that of motorists waiting or parking on “No Waiting at Any Time” road markings for longer than the permitted time allowance.

High Street has six locations where build outs have been constructed and the exit side is used as unofficial parking areas. Four locations have green surface dressing applied for an unknown reason and bound by a centre white line that gives the impression the area is available for parking; even though there are clearly visible double yellow lines against the kerb. The other two locations have hatched areas on the exit side of their respective build outs and again all these areas have “No Waiting at Any Time” kerb side markings which are continuously contravened. These areas are not designated bays but due to inconsistent lining motorists are confused and view them as parking areas, contravening the “No Waiting at Any Time” restriction.

Locations of High Street parking abuse

During the day long survey it was noted that multiple vehicles consistently park in contravention of the current TRO’s (locations shown in Figure 10). These locations caused traffic to slow down along the High Street, which caused a level of delay throughout the whole day; with particular implications on traffic during the AM and PM peak, due to the increased traffic volumes.

Figure 10: Locations within High Street, where motorists parked illegally

Whilst undertaking the site survey it was noticed that in several locations, elements of the road signage were non-compliant which could result in vehicles parking without the enforcement contractor being able to enforce the contravention. This could result in vehicles being parked for long periods of time, blocking High Street where the Police would have to attend to due to the obstruction. It has been recorded where vehicles have caused High Street congestion and delays, resulting in road rage.

Figure 11 shows motorists parked immediately in front and beyond a bus bay, making it difficult for the bus to pull out into the running lane. Again, this could result in delay to both public transport and general traffic.

Figure 11: Green surfacing aids motorists to view area a parking bay

Vehicles parking on the High Street Footway

Site observations indicated that parking on the footway is prevalent within High Street and Cross Street. During the AM peak it was twice observed at 0920 and 0950 vehicles double parked fully blocking progress along High Street. This resulted in traffic queueing and one occasion of road rage. The vehicles moved on fairly quickly, however, high volumes of traffic accessing High Street could result in long delays with long queues developing as a result of this illegal parking.

In general the footways are not wide enough to sustain a vehicle parked partially or wholly and maintain legal width requirements for pedestrians and vulnerable footway users. Figures 12 to 15 show examples of typical poor parking behaviour:

High Street past junction with Cross Street

Vehicle parked on the whole footway, restricting footway width, not permitting disability access, fully blocking dropped crossing.

Figure 12: Vehicle parked all day during survey on dropped crossing

Large van parked whole footway restricting footway width. This vehicle stopped further along High Street indicating no regard for contraventions due to lack of enforcement presence.

Figure 13: Vehicle parked for a limited period whole footway

High Street in front of WHSmiths

HGV parked partial footway restricting footway width, not permitting disability access, fully blocking dropped crossing with trip hazards for all footway users.

This indicates there is no designated Goods Vehicle loading bays of the correct width within High Street.

Figure 14 HGV parked unloading onto the footway

High Street beyond last designated limited waiting bay

Vehicle parked partially on the footway restricting footway width, not permitting disability access. This vehicle opened the tailgate to mimic loading but no loading was witnessed.

Consistent parking demonstrates there is no public desire to park in available designated bays within High Street, due to lack of enforcement. Therefore, motorists park outside of shops being visited regardless of available designated waiting bays within High Street.

Figure 15: Vehicles parked blocking the footway

Recommendations

Further consultation with the Highway Authority (SCC) should take place to highlight these locations and actions required to rectify any non-compliances with existing TRO's.

In order to aid a reduction in High Street traffic congestion and to encourage motorists to park within designated bays and not in inappropriate places, new parking bays should be installed along the length of High Street. These should include goods vehicle loading only bays, disability badge holder bays, increased lengths of limited waiting bays and all hatched areas amended to No Loading at Any Time. These amendments would permit the enforcing contractor to be more proactive as certain contraventions would result in instant penalties, removing the need for enforcement officers to wait around a vehicle for time periods to elapse. Some suggestions on how to improve the High Street are shown in Figures 16 to 20:

Figure 16: Amendments to prevent illegal parking and assist disadvantaged motorists

- • Nearside outside of 84, convert to 1 Disabled space.

- • Offside outside of 71, install new restriction – No Loading At Any Time.

Figure 17: Amendments to prevent illegal parking and assist commercial vehicles

- • Nearside outside of 74, convert to standard Loading Bay.

- • Nearside outside of 60, new bollards installed to prevent whole on footway parking.

- • Offside outside 63 and memorial cut back kerbside to increase width of running lane to allow for large vehicles to stop in new loading bay and install new restriction – No Loading At Any Time.

- • To infill around the new bays design parameters the bus bay must be extended either side. This will also improve bus sweep into and out of the bay.

Figure 18: Amendments to prevent illegal parking and assist disadvantaged motorists.

- Nearside outside of 52/54, convert to 1 Disabled space, hatched area with No Loading at Any Time.

- Nearside outside of 48/50 & 44 extended bus bay either side. This will also improve bus sweep into and out of the bay.

Figure 19: Amendments to prevent illegal parking and assist commercial vehicles

Nearside outside of 38 (WHSmiths), reduce 3.2m footway by 1m to permit a deflection to be designed to provide a 3m wide Goods Vehicle Loading bay.

Relocate existing build out to divide the bus bay and the Goods Vehicle Loading bay.

Increase length of existing Limited Waiting bay by 12m, to include the relocated build out.

Figure 20: Amendments to prevent illegal parking

Nearside from A522 Tape Street to existing build out outside of 20. Install new restriction No Loading at Any Time.

All the above recommendations to improve High Street vehicle flow and enable improved turnover of parking bays will depend on good vehicle enforcement. It is recommended that all key Stakeholders (SMDC, SCC and Stoke-On-Trent City Council - TRO enforcing agent) discuss improved enforcement of all restrictions in High Street.

5.2.5 Review of HGV / HCV signage and routes towards Cheadle

Within the transport industry vehicles are classified into two groups, Commercial Vehicles and Goods Vehicles. The definition of these is as follows:

GV : Goods vehicle - A motor vehicle constructed or adapted for use for the carriage of goods, or a trailer so constructed or adapted,

HCV / HGV: Heavy Commercial Vehicle / Heavy Goods Vehicle - Any goods vehicle which has an operating weight exceeding 7.5 tonnes.

The objective of this element of the study is to review what mitigation if any can be introduced to reduce the impact of HGV/HCV journeys within the Cheadle area, particularly within High Street. Cheadle has developed into an unofficial route interchange, where vehicles travelling north to south or east to west use the town as a thoroughfare to reduce journey times and potentially avoid congestion and delays.

Staffordshire County Council Highway Data team were commissioned to provide HGV & HCV traffic movements to Cheadle from four A roads, these being:

- A50 (T) north east towards Cheadle;

- • A520 east towards Cheadle;
- • A52 south towards Cheadle; and,
- • A515 west towards Cheadle;
  Along the above routes vehicles can turn towards Cheadle, however, some of these roads are restricted via weight limits or advised routes are unsuitable for HGV's. The survey also recorded if any HGV/HCV travelled along these routes.

5.2.6 HGV / HCV Survey summary for Peak hours

A review of all side roads that can be taken to travel towards Cheadle has been undertaken. Routes which HGV/HCV's can access are shown in Table 23.

The survey recorded traffic movements for one week in February 2017 to provide an insight into the quantity of journeys that Cheadle have to support. During the survey week the A521 between Cheadle and Froghall was closed for road works and traffic was diverted to the A522 between Kingsley Moor and Cheadle.

Table 23: HGV/HCV traffic movements towards and from Cheadle

Line	Road	Direction	Towards or From Cheadle	24 hrs	AM peak 0800-1000	PM peak 1600-1800	Accesses 7.5T Weight Restriction
01	B5417 Oakamoor Road [Highshutt]	East	F	25	6	2	No
		West	T	12	2	2	No
02	A521 Froghall Road (Road Closure)	North	F	13	2	2	No
		South	T	9	1	1	No
03	A522 Leek Road	North	F	131	24	14	No

	[Clamgoose Lane]	South	T	162	28	22	No
04	A522 Tean Road [Huntley Lane]	North	T	186	40	24	No
		South	F	213	36	28	No
05	A521 The Green	East High Street	T	130	24	13	No
		West	F	60	9	8	No
06	B5030 Woodseat Level [Rocester]	North	T	665	130	69	Yes
		South	F	618	102	79	Yes
07	C10 Mill Street [Rocester]	East	T	33	7	6	Yes
		West	F	46	8	9	Yes
08	B5033 Dove Street [Ellastone]	North East	F	25	3	3	Yes
		South West	T	31	5	2	Yes
09	B5032 Calwich Bank [Mayfield]	East	F	143	30	17	No
		West	T	117	22	16	No
10	B5032 Ashourne Road [Threapwood]	West	T	83	19	14	No
		East	F	82	22	5	No

Line 05 is highlighted to indicate number of vehicles that used the A521 The Green towards Cheadle and had no alternative route available to bypass High Street, Cheadle.

B5417 Oakamoor Road, Highshutt

B5417 west is a 60mph unrestricted carriageway having 8 AM & 4 PM peak vehicle journeys.

Access to the B5417, although unrestricted itself, can be accessed from roads with warning signs stating unsuitable for HGV vehicles, except for access.

A521 Froghall Road, Cheadle

A521 south varies between 30, 40 & 60mph unrestricted carriageway having 3 AM & 3 PM peak vehicle journeys. The low figure is due to a road closure during the survey and vehicles off the A52 being diverted towards the A522.

A522 Leek Road, Cheadle

A522 south is a 30mph unrestricted carriageway having 52 AM & 36 PM peak vehicle journeys. This figure includes vehicles diverted from the A521; however, these vehicles would not access High Street.

A522 Tean Road, Cheadle

A522 north is a 30mph unrestricted carriageway having 76 AM & 52 PM peak vehicle journeys. The route options available to these vehicles would not result in traffic directly accessing High Street.

A521 The Green, Cheadle

A522 south is a 30mph unrestricted carriageway having 33 AM & 21 PM peak vehicle journeys.

This survey is important as all vehicles travelling along this stretch of the A521 must access High Street. All these vehicles are above 7.5T and therefore they should not access Cross Street, however a High Street survey indicated 54% of heavy vehicles accessing High Street illegally accessed Cross Street.

B5030 Woodseat Level Street, Rocester

B5030 east is a 60mph unrestricted carriageway having 232 peak & 59 PM peak vehicle journeys.

It is noted that majority of these journeys would be towards the many JCB sites within the area.

The following two routes 17B007 and 17B008 have 7.5T gross weight limit restricted carriageway except for access. A weight restriction would be installed to either protect a weak bridge or to keep large vehicles out of unsuitable areas where such a vehicle would not be able to safely pass through possibly blocking the route or damaging property.

C10 Mill Street, Rocester

C10 east is a 30mph 7.5T gross weight limit restricted carriageway except for access. It was recorded as having 13 AM & 9 PM peak vehicle journeys over 7.5T but it was not known whether these vehicles had operational duties with any business prior to passing the survey point. This indicates 22 vehicles potentially disregarded the restriction.

B5033 Dove Street, Ellastone

B5033 north east is a 30mph 7.5T gross weight limit restricted carriageway except for access. It was recorded as having 8 AM & 6 PM peak vehicle journeys over 7.5T but it was not known whether these vehicles had operational duties with any business prior to passing the survey point. This indicates 14 vehicles potentially disregarded the restriction.

B5032 Calwich Bank, Mayfield

B5032 west is a 60mph unrestricted carriageway having 18 AM & 15 PM peak vehicle journeys.

B5032 Ashbourne Road, Threapwood

B5032 west is a 60mph unrestricted carriageway having 21 AM & 16 PM peak vehicle journeys.

5.2.7 Observations

Cheadle has developed into a route interchange as the A521 joins the A522 north and south of Cheadle, whilst the A522 joins the B5417 and B5032 west of Cheadle. These various routes then link to the A50 (T), A52 (T), A515 & A520 routes, that all bypass Cheadle. As the survey demonstrates HGV/ HCV's are leaving these principal routes and travelling towards Cheadle to possibly reduce journey times and take a more direct route.

It was noted that route signing for HGV / HCV's towards Cheadle use junctions which are very tight and appear not to have the correct swept path for the type of vehicle using them. This could result in vehicle collisions and blocking the road with no alternative route available for other traffic.

The Road Haulage Association [RHA]

The RHA are an association who represent the haulage profession and champion there interests maintaining good logistics for transport operators.

As part of this study the RHA were asked to comment with respect to reducing HGV / HCV movements within a congested remote town centre. Their response is shown below:

- a) "Transport operators need to gain good access to the heart of town centres to service shops and ensure businesses can continue to trade with good stock levels. This can only be achieved by permitting multiple journeys and not putting obstructions in the way of the haulier such as banning large vehicles from roads during shop opening hours;

- b) Other larger cities have tried to reduce large vehicles from gaining access to the inner city centre by developing a transport hub on the outskirts of the town where the contents of the lorry is off loaded and reloaded onto smaller vehicles. This method adds three to four smaller vehicles for every one lorry onto the carriageway, increasing congestion, air and noise pollution. These vehicles are generally owner / driver operations, so it benefits the operator to complete the delivery as rapidly as possible to return for another load. This generally results in the driver taking risks and contravening restrictions;

- c) The RHA will not support developments where transport operators are put at a disadvantage, increasing delivery costs, purely to reduce vehicle movements".

5.2.8 Recommendations

O-D surveys should be completed to ascertain where the HGV's / HCV's originate from and where they travel to. This will provide an accurate figure of vehicles that are contravening current weight restrictions purely to reduce journey times and travelling along routes that are not suitable for large vehicles.

SCC should review the condition and effectiveness of regulatory and directional signage to ensure compliance and routes are designated for the correct class of vehicles.

5.2.9 Conclusion

In the absence of a Cheadle Bypass road it is noted that HGV / HCV's travelling from the A50 (T) towards Cheadle via the A521 have no suitable route to avoid travelling along High Street. Existing HGV / HCV routes have been considered to see whether vehicles currently passing through Cheadle can use alternative suitable routes, without incurring additional significant delay. The conclusion is that the existing road network is signed correctly and that it is unreasonable to expect a HCV / HGV's travelling from Uttoxeter to Leek for example, to use the A518, A50 (T), A520 (all currently heavily used roads prone to long delays) to avoid Cheadle, thereby adding significant delay and costs to their operation.

6 Conclusions

- ## 6.1 Summary

  This report outlines the work undertaken in association with the Cheadle Transport Study. The report highlights the network's operational capacity in 2017, the effects of proposed future development in 2031 and the subsequent impacts of proposed highway mitigation on the operational performance of the road network within Cheadle.

  Vehicle flows, queues and journey time delay have been used as criteria to assess the network's performance during the AM and PM Peak periods for the '2017 Do-nothing and both the 2031 Reference Case & Do-something scenarios.

  The platform to assess the impacts of the vehicle trips generated by the revised housing and employment developments set out in the Preferred Options sites and Boundaries Plan has been undertaken using the microsimulation modelling package VISSIM.

  From the analysis undertaken of the predicted trips generated from the revised preferred spatial distribution for housing and employment developments, set out in the Preferred Options sites and Boundaries, the following conclusions are drawn:

- ## 6.2 2031 Mitigation Case

  282 additional vehicle trips in the AM and 37 in the PM have been induced onto the Cheadle Gyratory system and local network when compared to

2017. It is due to the additional capacity the proposed network improvements provide.

The AM Peak period, post development, showed queues along A522 Leek Road (SB), B5417 Queen Street A522 Tape Street (NB) and B5032 Ashbourne Road. An average queue of 43 vehicles was recorded on A522 Leek Road (SB) with journey times taking 203.2 seconds. B5417 Queen Street featured an average queue of 7 vehicles, while A522 Tape Street (NB) experienced a queue of 33 vehicles.

B5032 Ashbourne Road featured an average queue of 94 vehicles, with a journey time of 1305.2 seconds (22 minutes). It should be noted that although queues are experienced in the aforementioned locations, the Cheadle Town Centre gyratory operates satisfactorily.

During the PM Peak conditions are more constrained, queuing is again experienced along A522 Leek Road (SB), B5417 Queen Street A522 Tape Street (NB) and B5032 Ashbourne Road. Average queueing on A522 Leek Road (SB) decreased from 43 to 22 vehicles when compared to the AM peak period but queues on B5417 Queen Street and B5032 Ashbourne Road increase from 7 to 26 and from 94 to 120 vehicles, respectively. Journey times along B5032 Ashbourne Road have also increased from 1305.2 seconds (22 minutes) to 2332.5 seconds (39 minutes) in the PM peak.

Overall, the package of proposed mitigation measures to improve the local road network in Cheadle assists in keeping the gyratory system to operate freely under future traffic conditions. There are however greater queues and delays experienced on the B5032 Ashbourne Road.

It should be noted that the roads which are experiencing queues and delays in the future year scenarios already experience such issues now. The increased queuing and delay on them is further highlighted in the 2031 Mitigation case scenario in part due to 17 years of potential traffic growth. Furthermore, this is then compounded by the additional trips generated by the housing and employment developments set out in the Preferred Options sites and Boundaries Plan.

6.3 Conclusion

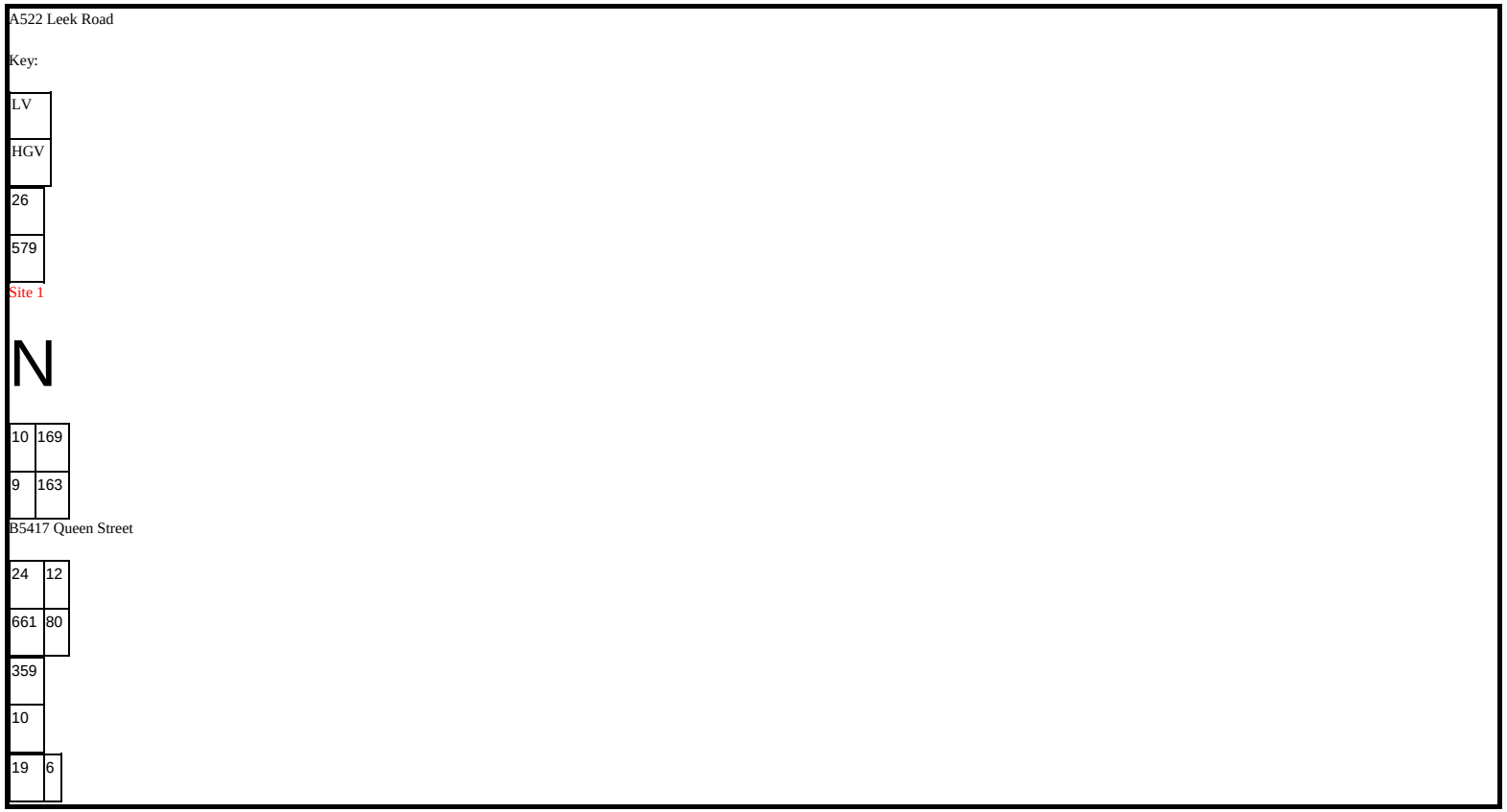
It is recommended that the developers liaise with SCC and bus operators through the planning process to ensure developments have good access to public transport provision. Furthermore, the implementation of 20mph zones could encourage the uptake of increased levels of walking and cycling, which would also potentially reduce the number of short journey, vehicle generated trips and improve safety of all carriageway users within the town centre.

A review of the town centre regulatory and directional signage should be carried out, in order to ensure that routes are suitable for the correct class of vehicles and reduce the congestion of through traffic within the town centre. Furthermore, in order to aid a reduction in High Street traffic congestion and to encourage motorists to park within compliance, new parking bays should be installed along the length of High Street. These should include goods vehicle loading only bays, disability badge holder bays, increased lengths of limited waiting bays and all hatched areas amended to No Loading at Any Time to aim to reduce the number of parking contraventions.

In conclusion, from the modelling assessment of the predicted trip generation produced by housing and employment developments set out in the Preferred Options sites and Boundaries Plan and network changes proposed mitigate the additional trips, it can be seen queuing and delays are still experienced in Cheadle Town Centre.

There is limited scope to change junction characteristics to improve network capacity within the Town Centre due to its historically confined road structure. As such, whilst the package of mitigation measures does provide some additional capacity to the overall network, it should not be considered the total solution to the Cheadle Town Centre traffic problem.

Appendix A.1 2017 Background Traffic Network Flow Diagram



236	7

337	92
5	1

High St

Site 2

A522 Tape St

Park Lane

19	333
0	477

8	23	0
316	401	97

Site 10

Bank St

Site 15

Site 9

Oak St

Site 12

Site 3

Well St

19	806

0	0
125	348

18	504
0	2

0	2
0	61
0	187

18	631

3
0

0	271
0	82

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

47	0
49	2
40	0

High St

495	27
71	0

3	125
0	0

550	28
550	28
49	0

Site 7 Site 8

565	178
27	1

223	382	57
18	6	0

497
27

3	0
673	28

20	3
411	214

Site 14

Tape St

Site 4

241
1

502	28
170	0

Glebe Road

B5032 Ashbourne Road

1	172
0	8

34	0
91	0
44	0

Site 17

145	4
66	1

518	68
19	0

0	6
0	0

3	34
0	0

4	0
90	0

Site 18

Lid Lane

The Birches

Royal Walk

The Avenue

1	175
0	1

Tape St

Site 5

A522 Tean Road

Mill Lane

Baddeley St

0	21	0
46	423	6

0	0	0
9	2	81

19	462	1
0	18	0

45	0
1	0
5	0

TemPRO Growth Factor
1.009951


A522 Leek Road
Key:
LV
HGV
0
627
Site 1
N
7
216
0
185
B5417 Queen Street
0
0
729
85
391
0
17
0
309
4
375
131
0
0
High St
Site 2
A522 Tape St
Park Lane
7
407
5
402
2
3
0
315
610
118

Site 10

Bank St

Site 15

Site 9

Oak St

Site 12

Site 3

Well St

12	806
0	5
66	335
12	571
0	4

0	3
0	60
0	244

12	676

2
0

0	301
5	26

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

144	0
130	0


95 0
High St
508 6
190 1
0 106
0 0
687 7
688 7
25 0
Site 7 Site 8
703 133
7 0
268 356 71
5 0 0
684
7
2 0
748 7
2 1
655 295
Site 14
Tape St
Site 4
153
0
685 7
60 0
Glebe Road

B5032 Ashbourne Road

0	119
0	4

22	0
32	0
4	0

Site 17

240	0
65	0

460	82
5	0

0	2
0	0

4	9
0	0

6	0
29	0

Site 18

Lid Lane

The Birches

Royal Walk

The Avenue

0	122
0	0

Tape St

Site 5

A522 Tean Road

Mill Lane

Baddeley St

0	2	0
28	634	59
0	0	0
10	3	54
11	475	4
0	5	0
25	0	
3	0	
6	0	

TemPRO Growth Factor
1.009968

Appendix A1.2 March 2017 COSTCDT6573	Cheadle Town Centre Study 2017 Background Vehicle Trip Levels - PM Peak (17:00 - 18:00)	

Appendix A.2 Committed Development Network Flow Diagram

A522 Leek Road

Key:

LV
HGV

11
238

Site 1

N

3	58
0	1

B5417 Queen Street

11	0
233	6

133
0

11	0
12	0

121	0
0	0

Park Lane

Site 9

Oak St

Site 12

Site 3

Well St

High St

Site 2

A522 Tape St

3	59
0	1

11	0	0
135	111	0

3	59
0	0
1	0

3	51

0	0

0	0
0	0
0	0
3	51
0	
0	
0	0
0	0

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

0	0
0	0
0	0

High St

Bank St

Site 15

Site 7 Site 8

134	11
0	0
0	0
0	0
135	11
135	11

0	0

134	8
11	0

0	121	0
0	0	0

131
11

0	0
136	11

0	0
111	0

Site 14

Tape St

Site 4

11
0

131	11
4	0

Glebe Road

B5032 Ashbourne Road

0	11
0	0

0	0
4	0
0	0

Site 17

0	0

0	0

121	0
0	0

0	0
0	0
0	0
0	0
0	0
4	0

Site 18

Lid Lane

The Birches

Royal Walk

The Avenue

0	11
0	0

Tape St

Site 5

A522 Tean Road

Mill Lane

Baddeley St

0	0	0
0	111	0

0	0	0
0	0	0

0	121	0
0	0	0

0	0

0	0
0	0

Appendix A2.1 March 2017 COSTCDT6573	Cheadle Town Centre Study - Committed Development Trips Only AM Peak (0800 - 0900)	

A522 Leek Road

Key:

LV
HGV

2
182

Site 1

N

9	113
0	3

B5417 Queen Street

2	0
171	14

265
0

6	0
7	0

258	0
0	0

Site 9

Oak St

Site 12

Site 3

Well St

High St

Site 2

A522 Tape St

Park Lane

9	117
0	3

2	0	0
53	125	0

9	119
0	0
3	0

9	114
0	0

0	0
0	0
0	0

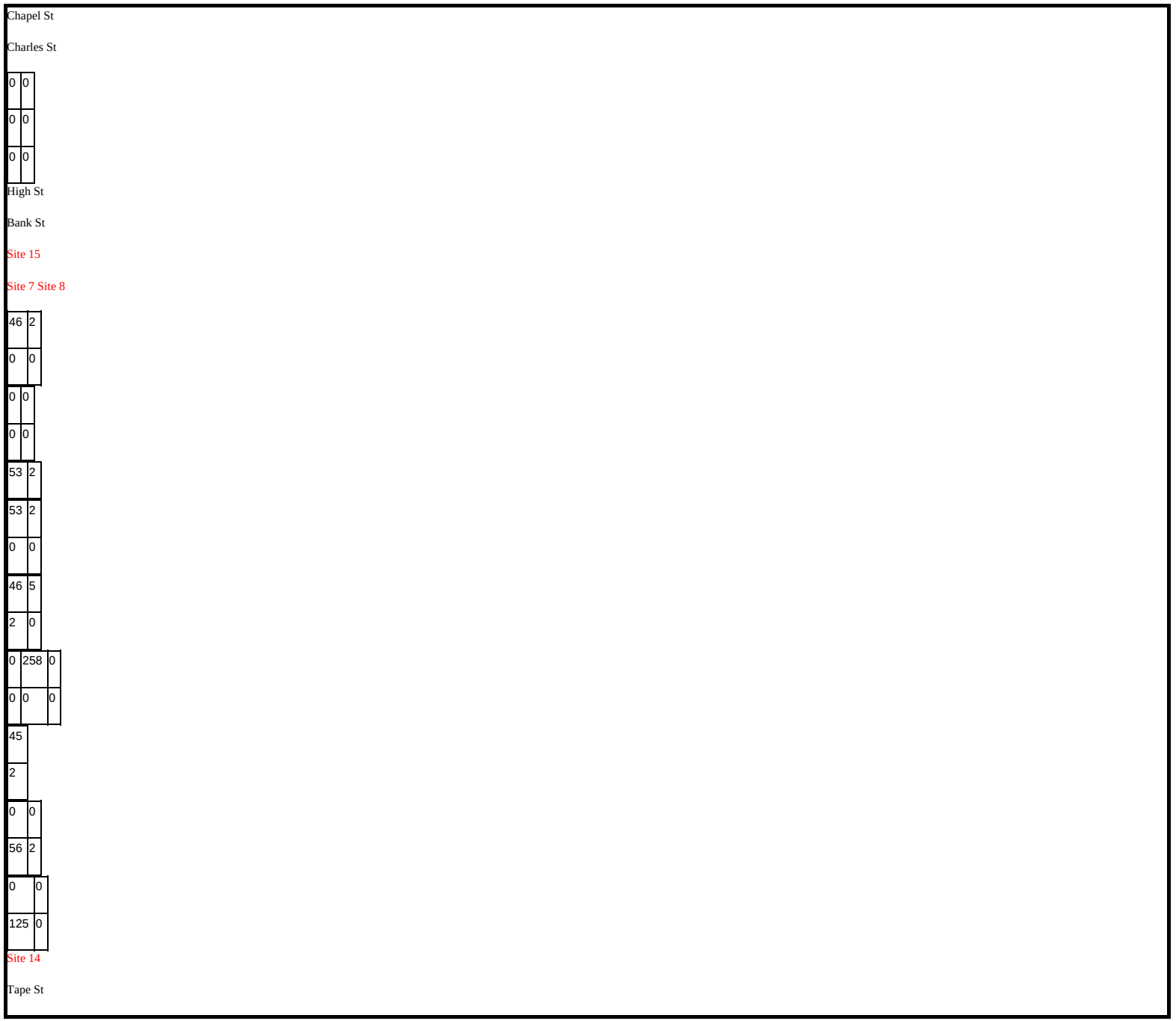
9	114
0	
0	
0	0
0	0

Site 19

A521 Town End

Site 13

Cross St


Chapel St
Charles St
0 0
0 0
0 0
High St
Bank St
Site 15
Site 7 Site 8
46 2
0 0
0 0
0 0
53 2
53 2
0 0
46 5
2 0
0 258 0
0 0 0
45
2
0 0
56 2
0 0
125 0
Site 14
Tape St

Site 4

6	
0	

45	2
11	0

Glebe Road

B5032 Ashbourne Road

0	6
0	0

0	0
11	0
0	0

Site 17

0	0
0	0

258	0
0	0

0	0
0	0

0	0
0	0

0	0
11	0

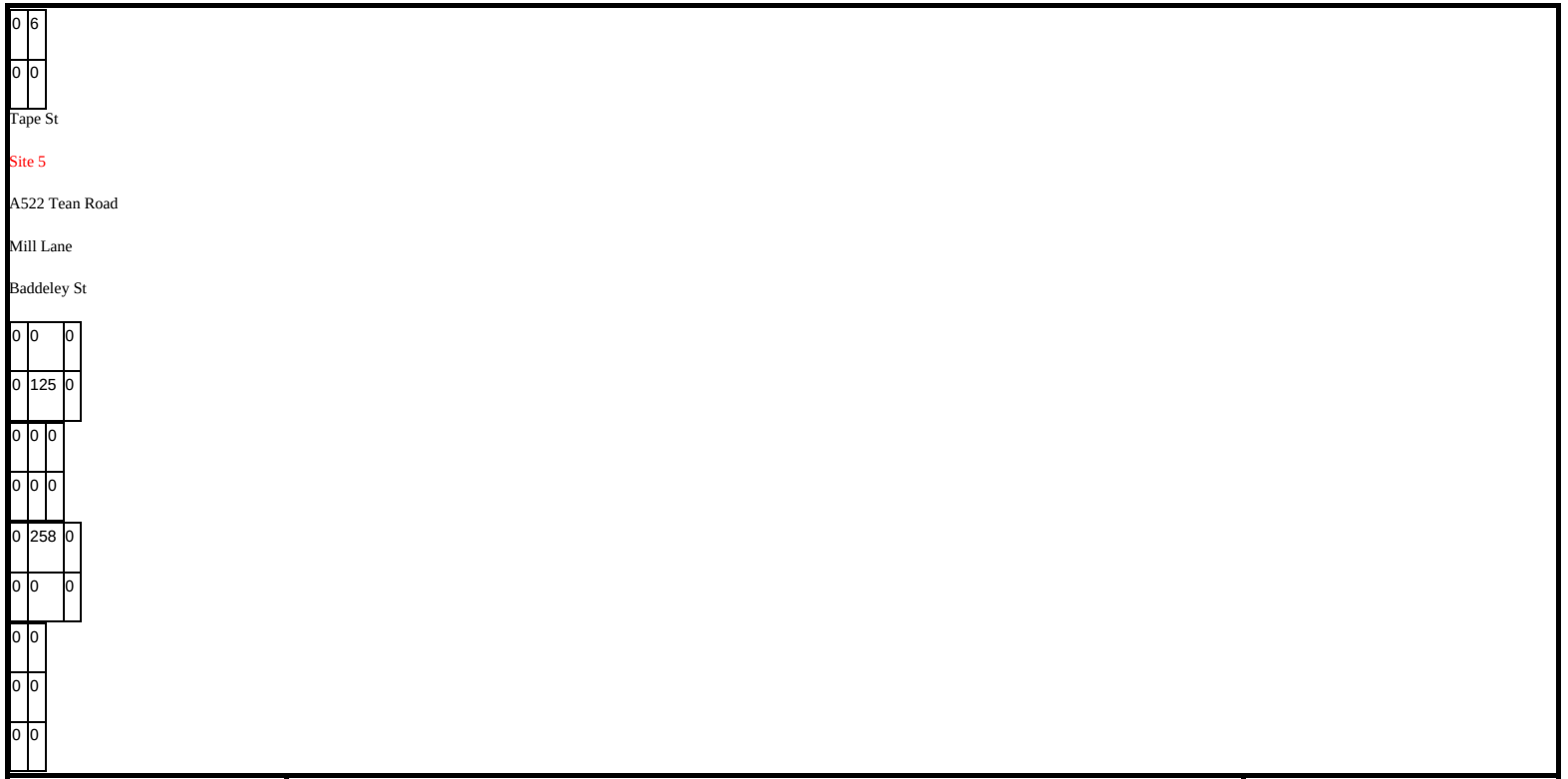
Site 18

Lid Lane

The Birches

Royal Walk

The Avenue



Appendix A2.2 March 2017 COSTCDT6573	Cheadle Town Centre Study - Committed Development Trips Only PM Peak (1700 - 1800)	

Appendix A.3 2031 Background Traffic Network Flow Diagram


Site 1
N
11 180
10 174
B5417 Queen Street
26 13
707 85
384
11
21 6
253 8
361 98
5 1
High St
Site 2
A522 Tape St
Park Lane
Site 9
Oak St
Site 12
Site 3
Well St
21 356
0 510
9 25 0
338 429 104
21 862

0	0
134	373

19	539
0	2

0	2
0	65
0	200

19	675

3
0

0	290
0	88

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

51	0
53	2
43	0

High St

Bank St

Site 15

Site 7 Site 8

529	29
76	0

3	134


0 0
589 30
589 30
53 0
604 190
29 1
239 408 60
19 6 0
537
29
3 0
719 30
22 3
440 229
Site 14
Tape St
Site 4
258
1
537 30
181 0
Glebe Road
B5032 Ashbourne Road
1 184
0 9
37 0
97 0

48	0

Site 17

156	4
70	1

554	72
21	0

0	6
0	0

3	37
0	0

4	0
96	0

Site 18

Lid Lane

The Birches

Royal Walk

The Avenue

1	187
0	1

Tape St

Site 5

A522 Tean Road

Mill Lane

Baddeley St

0	23	0
50	453	6

0	0	0
10	2	86

21	494	1
0	19	0

49	0
1	0
5	0

TemPRO Growth Factor
1.0803

Appendix A3.1 March 2017 COSTCDT6573	Cheadle Town Centre Study - 2031 Future Year AM Peak (0800 - 0900)	

A522 Leek Road

Key: HGV

LV

0
672

Site 1

8	231
0	198

B5417 Queen Street

0	0
781	91

419
0

18	0
331	4

401	141
0	0

High St

Site 2

A522 Tape St

Park Lane

Site 9

Oak St

Site 12

Site 3

Well St

8	436
5	430

2	3	0
337	653	127

13	863
0	5
70	359
13	611
0	4
0	3
0	64
0	262
13	724
2	
0	
0	326
5	28

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

155	0
140	0
102	0

High St

Bank St

Site 15

Site 7 Site 8

544	6
203	1
0	114
0	0
735	8
737	8
27	0

753	143
8	0

287	381	76
5	0	0

732
8

2	0
801	8

2	1
702	316

Site 14

Tape St

Site 4

163
0

733	8
64	0

Glebe Road

B5032 Ashbourne Road

0	128
0	4

24	0
35	0
4	0

Site 17

257	0
69	0

492	88
5	0

0	2
0	0

4	10
0	0

6	0
31	0

Site 18

Lid Lane

The Birches

Royal Walk

The Avenue

0	131	
0	0	

Tape St

Site 5

A522 Tean Road

Mill Lane

Baddeley St

0	2	0
30	679	63

0	0	0
11	3	57

12	508	4
0	5	0

27	0
3	0
6	0

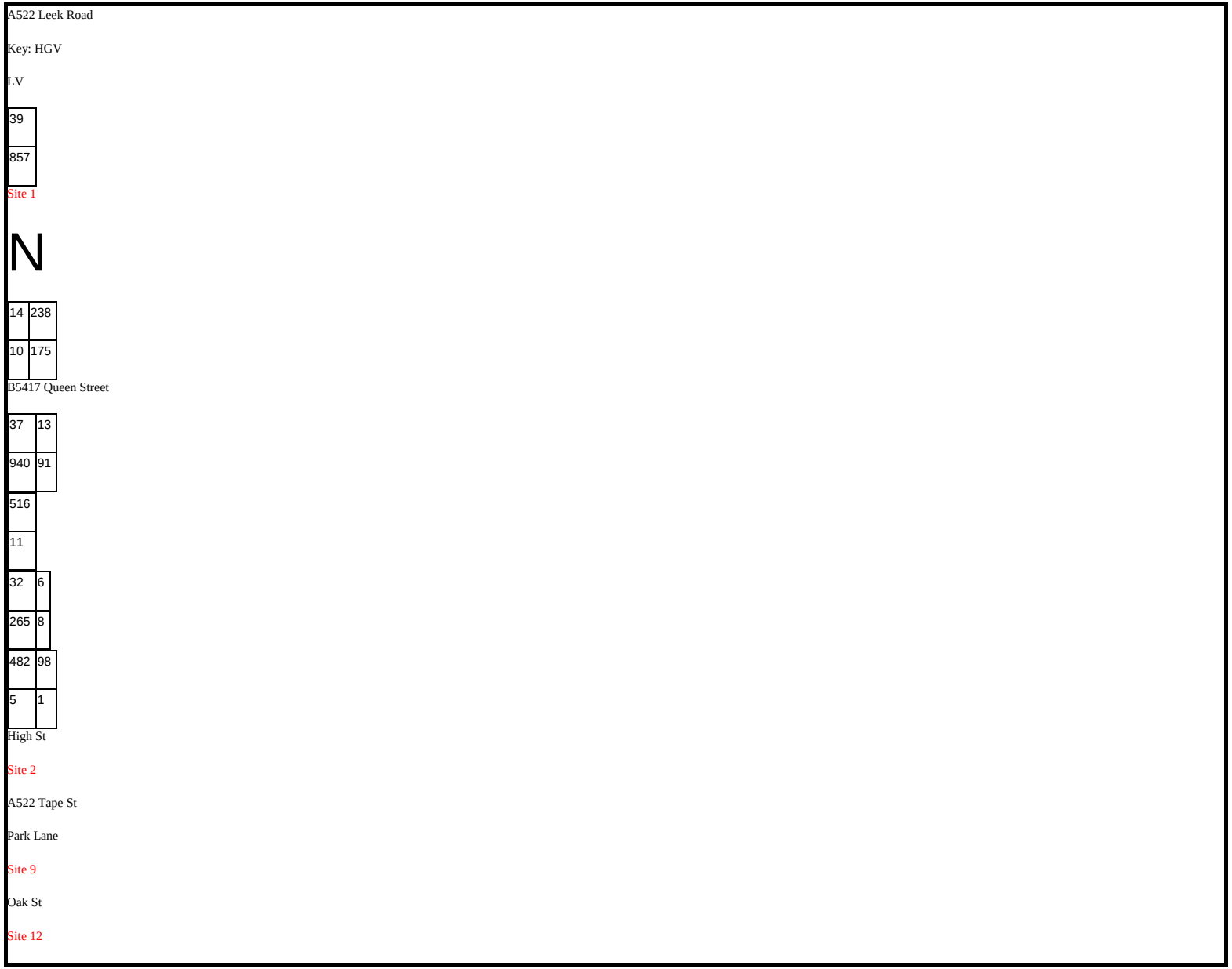
TemPRO Growth Factor
1.0815

Appendix A3.2 March 2017 COSTCDT6573	Cheadle Town Centre Study - 2031 Future Year PM Peak (1700 - 1800)	

Appendix A.4 2031 Background Traffic + Committed Development Network

Flow Diagram

Doc. Ref.:COSTCDT6573 /Rep 002 Rev. FINAL - D - Issued: April 2017



Site 3

Well St

23	415
0	511

19	25	0
473	540	104

23	921

0	0
135	373

22	591
0	2

0	2
0	65
0	200

22	727

3
0

0	290
0	88

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

51	0
53	2
43	0


High St
Bank St
Site 15
Site 7 Site 8
663 40
76 0
3 134
0 0
723 41
723 41
53 0
738 199
40 1
239 529 60
19 6 0
668
40
3 0
855 41
22 3
551 229
Site 14
Tape St
Site 4
269
1
668 41

186	0

Glebe Road

B5032 Ashbourne Road

1	195
0	9

37	0
101	0
48	0

Site 17

156	4
70	1

675	72
21	0

0	6
0	0

3	37
0	0

4	0
100	0

Site 18

Lid Lane

The Birches

Royal Walk

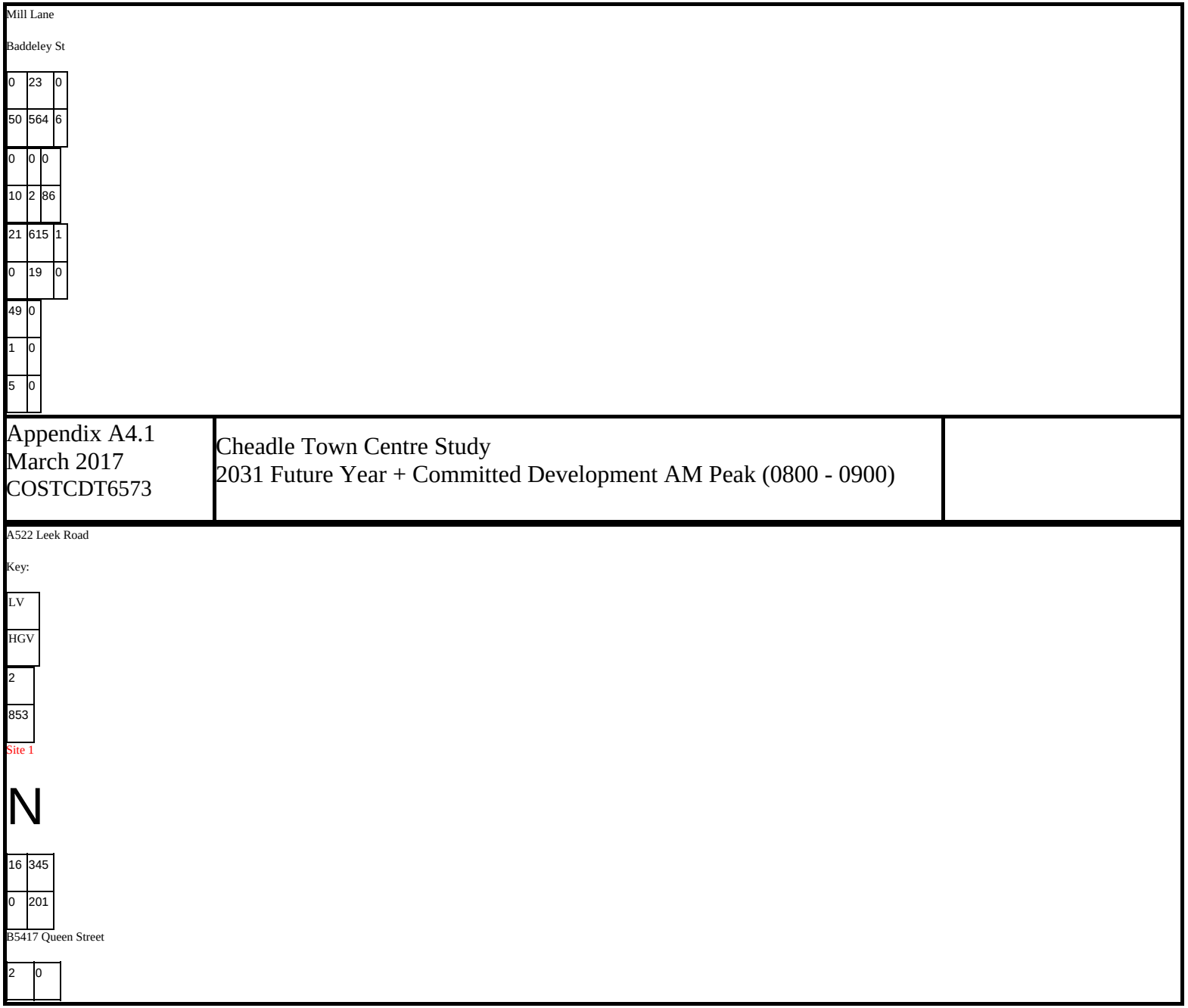
The Avenue

1	198
0	1

Tape St

Site 5

A522 Tean Road


Mill Lane
Baddeley St
0 23 0
50 564 6
0 0 0
10 2 86
21 615 1
0 19 0
49 0
1 0
5 0
Appendix A4.1
March 2017
COSTCDT6573
Cheadle Town Centre Study
2031 Future Year + Committed Development AM Peak (0800 - 0900)
A522 Leek Road
Key:
LV
HGV
2
853
Site 1
N
16 345
0 201
B5417 Queen Street
2 0


952 105
683
0
25 0
338 4
660 141
0 0
Park Lane
Site 9
Oak St
Site 12
Site 3
Well St
High St
Site 2
A522 Tape St
16 552
5 433
4 3 0
390 778 127
22 982
0 5
73 359
22 725
0 4
0 3
0 64
0 262

22	838

2
0

0	326
5	28

Site 19

A521 Town End

Site 13

Cross St

Chapel St

Charles St

155	0
140	0
102	0

High St

Bank St

Site 15

Site 7 Site 8

590	8
203	1

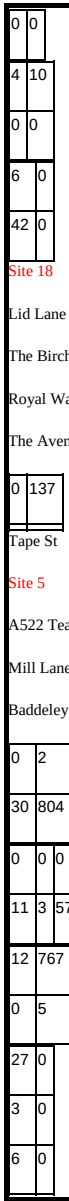
0	114
0	0

788	9
790	9
27	0

799	148
9	0

287	639	76


5 0 0
777
9
2 0
857 9
2 1
827 316
Site 14
Tape St
Site 4
170
0
778 9
74 0
Glebe Road
B5032 Ashbourne Road
0 134
0 4
24 0
45 0
4 0
Site 17
257 0
69 0
750 88
5 0
0 2



Appendix A4.2 March 2017 COSTCDT6573	Cheadle Town Centre Study 2031 Future Year + Committed Development PM Peak (1700 - 1800)	

Appendix B Development Access and Egress Points

Extracted Staffordshire Moorlands Local Plan: Preferred Options Sites and Boundaries		
Appendix B March 2017 COSTCDT6573	Cheadle Town Centre Study Access and Egress Points	

Appendix C Land Allocations and Associated Housing Development Map

Appendix C March 2017 COSTCDT6573	Cheadle Town Centre Study Land Allocation & Associated Housing Developments Extracted from Staffordshire Moorlands Locan Plan: Preferred Options Sites and Boundaries	

Appendix D.1 TRICS Report – Residential Housing Trip Rates (Mon-Sun)

TRICS 7.3.4 120117 B17.46 (C) 2017 TRICS Consortium Ltd Friday 13/01/17 Cheadle2 Residential Page 1

TPi Rocky Lane Aston/Birmingham

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02 SOUTH EAST

ES EAST SUSSEX
EX ESSEX
HC HAMPSHIRE
HF HERTFORDSHIRE SC SURREY

WS WEST SUSSEX

- 03 SOUTH WEST
  CW CORNWALL DV DEVON
  SM SOMERSET WL WILTSHIRE

- 04 EAST ANGLIA

CA CAMBRIDGESHIRE NF NORFOLK
SF SUFFOLK

05 EAST MIDLANDS

LN LINCOLNSHIRE
NR NORTHAMPTONSHIRE NT NOTTINGHAMSHIRE

- 06 WEST MIDLANDS
  SH SHROPSHIRE
  WK WARWICKSHIRE WO WORCESTERSHIRE

- 07 YORKSHIRE & NORTH LINCOLNSHIRE

NE NORTH EAST LINCOLNSHIRE

NY NORTH YORKSHIRE

- 08 NORTH WEST
  CH CHESHIRE

- 09 NORTH
  CB CUMBRIA

Licence No: 522501 Calculation Reference: AUDIT-522501-170113-0148

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

1 days 1 days 1 days 1 days 1 days 2 days

1 days 3 days 1 days 1 days

1 days 3 days 5 days

3 days 1 days 1 days

5 days 2 days 2 days

2 days 8 days

7 days

2 days

TPi Rocky Lane Aston/Birmingham Licence No: 522501

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:
Actual Range:
Range Selected by User:

Public Transport Provision: Selection by:

Number of dwellings 6 to 432 (units:)
6 to 500 (units:)

Date Range: 01/01/06 to 13/01/17

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 Tuesday Wednesday Thursday Friday Saturday Sunday

10 days 14 days 7 days 10 days 7 days 1 days 6 days

Include all surveys

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

Selected survey types:

Manual count 55 days Directional ATC Count 0 days

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

Selected Locations:

Edge of Town Centre 2 Suburban Area (PPS6 Out of Centre) 24 Edge of Town 29

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

Selected Location Sub Categories:

Residential Zone 46 Out of Town 1 No Sub Category 8

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 55 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®.

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000 5,001 to 10,000 10,001 to 15,000 15,001 to 20,000 20,001 to 25,000 25,001 to 50,000

7 days 13 days 15 days 10 days

6 days 4 days

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

Population within 5 miles:

5,001 to 25,000 25,001 to 50,000 50,001 to 75,000 75,001 to 100,000 100,001 to 125,000 125,001 to 250,000

8 days 6 days 5 days

12 days 12 days 12 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 1.1 to 1.5 1.6 to 2.0

16 days 37 days 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:

Yes 4 days No 51 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 55 days

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

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters

- 1 CA-03-A-03 SEMI-DET.
  SUGAR WAY
  WOODSTON
  PETERBOROUGH
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: SUNDAY

- 2 CB-03-A-03 SEMI DETACHED
  HAWKSHEAD AVENUE
  WORKINGTON
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: THURSDAY

28

11/05/08

40

20/11/08

82

24/04/09

174

14/10/08

80

19/10/08

CAMBRIDGESHIRE

Survey Type: MANUAL

CUMBRIA

Survey Type: MANUAL

CUMBRIA

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

3 CB-03-A-04

MOORCLOSE ROAD SALTERBACK WORKINGTON Edge of Town

SEMI DETACHED

No Sub Category
Total Number of dwellings:

Survey date: FRIDAY

- 4 CH-03-A-02 HOUSES/FLATS
  SYDNEY ROAD
  CREWE
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: TUESDAY

- 5 CH-03-A-03 SEMI-DETACHED
  SPRING GARDENS
  CREWE
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: SUNDAY

- 6 CH-03-A-04 DETACHED/SEMI-DET.
  LIME TREE AVENUE
  CREWE
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: SUNDAY

- 7 CH-03-A-05 DETACHED
  SYDNEY ROAD
  SYDNEY
  CREWE
  Edge of Town
  Residential Zone

Total Number of dwellings:
Survey date: TUESDAY

25

19/10/08

17

14/10/08

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

8 CH-03-A-06 SEMI-DET./BUNGALOWS

CHESHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

CORNWALL

Survey Type: MANUAL

DEVON

Survey Type: MANUAL

DEVON

Survey Type: MANUAL

DEVON

Survey Type: MANUAL

CREWE ROAD

CREWE
Suburban Area (PPS6 Out of Centre) No Sub Category
Total Number of dwellings:

Survey date: TUESDAY

9 CH-03-A-08 DETACHED

WHITCHURCH ROAD
BOUGHTON HEATH
CHESTER
Suburban Area (PPS6 Out of Centre) Residential Zone

Total Number of dwellings:

Survey date: TUESDAY

129

14/10/08

11

22/05/12

24

24/11/14

73

18/09/07

37

30/09/15

10 CH-03-A-09

TERRACED HOUSES

GREYSTOKE ROAD HURDSFIELD MACCLESFIELD
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: MONDAY

- 11 CW-03-A-02 SEMI D./DETATCHED
  BOSVEAN GARDENS
  TRURO
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: TUESDAY

- 12 DV-03-A-01 TERRACED HOUSES
  BRONSHILL ROAD
  TORQUAY
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: WEDNESDAY

13 DV-03-A-02 HOUSES & BUNGALOWS

MILLHEAD ROAD

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116

Survey date: FRIDAY

25/09/15

14 DV-03-A-03 TERRACED & SEMI DETACHED

LOWER BRAND LANE

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 70

Survey date: MONDAY

28/09/15

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 15 ES-03-A-02 PRIVATE HOUSING
  SOUTH COAST ROAD
  PEACEHAVEN
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: FRIDAY

- 16 EX-03-A-01 SEMI-DET.
  MILTON ROAD CORRINGHAM STANFORD-LE-HOPE
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: TUESDAY

- 17 HC-03-A-17 HOUSES & FLATS
  CANADA WAY
  LIPHOOK
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: THURSDAY

- 18 HF-03-A-02 HOUSES
  BLACK FAN ROAD
  PANSHANGER
  WELWYN GARDEN CITY
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: SUNDAY

37

18/11/11

237

13/05/08

36

12/11/15

195

20/07/08

150

15/05/07

186

14/05/07

22

18/09/12

EAST SUSSEX

Survey Type: MANUAL

ESSEX

Survey Type: MANUAL

HAMPSHIRE

Survey Type: MANUAL

HERTFORDSHIRE

Survey Type: MANUAL

LINCOLNSHIRE

Survey Type: MANUAL

LINCOLNSHIRE

Survey Type: MANUAL

LINCOLNSHIRE

Survey Type: MANUAL

19 LN-03-A-01

MIXED HOUSES

BRANT ROAD BRACEBRIDGE
LINCOLN
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: TUESDAY

- 20 LN-03-A-02 MIXED HOUSES
  HYKEHAM ROAD
  LINCOLN
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: MONDAY

- 21 LN-03-A-03 SEMI DETACHED
  ROOKERY LANE
  BOULTHAM
  LINCOLN
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: TUESDAY

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

22 NE-03-A-02 SEMI DETACHED & DETACHED

HANOVER WALK

SCUNTHORPE
Edge of Town
No Sub Category
Total Number of dwellings: 432

NORTH EAST LINCOLNSHIRE

Survey Type: MANUAL

NORTH EAST LINCOLNSHIRE

Survey Type: MANUAL

NORFOLK

Survey Type: MANUAL

NORFOLK

Survey Type: MANUAL

NORFOLK

Survey Type: MANUAL

NORTHAMPTONSHIRE

Survey Type: MANUAL

NOTTINGHAMSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey date: MONDAY

23 NE-03-A-03 PRIVATE HOUSES

STATION ROAD

12/05/14

SCUNTHORPE
Edge of Town Centre
Residential Zone
Total Number of dwellings: 180

Survey date: TUESDAY

20/05/14

24 NF-03-A-01 SEMI DET. & BUNGALOWS

YARMOUTH ROAD

CAISTER-ON-SEA
Suburban Area (PPS6 Out of Centre) Residential Zone
Total Number of dwellings:

Survey date: TUESDAY

- 25 NF-03-A-02 HOUSES & FLATS
  DEREHAM ROAD
  NORWICH
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: MONDAY

- 26 NF-03-A-03 DETACHED HOUSES
  HALING WAY
  THETFORD
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: WEDNESDAY

- 27 NR-03-A-01 HOUSES
  BOUGHTON GREEN ROAD KINGSTHORPE
  NORTHAMPTON
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: SATURDAY

- 28 NT-03-A-03 SEMI DETACHED
  B6018 SUTTON ROAD
  KIRKBY-IN-ASHFIELD Edge of Town
  Residential Zone

Total Number of dwellings:
Survey date: WEDNESDAY

- 29 NY-03-A-02 DETACHED
  CLOTHERHOLME ROAD
  RIPON
  Edge of Town
  Residential Zone
  Total Number of dwellings:

27

16/10/12

98

22/10/12

10

16/09/15

102

22/09/12

166

28/06/06

22

Survey date: SUNDAY

21/09/08

Survey Type: MANUAL

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

30 NY-03-A-03 PRIVATE HOUSING

NEW ROW

BOROUGHBRIDGE
Edge of Town Centre
Residential Zone
Total Number of dwellings: 14

NORTH YORKSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey Type: MANUAL

NORTH YORKSHIRE

Survey Type: MANUAL

Survey date: MONDAY

15/09/08

31 NY-03-A-06 BUNGALOWS & SEMI DET.

HORSEFAIR

BOROUGHBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115

Survey date: FRIDAY

14/10/11

32 NY-03-A-07 DETACHED & SEMI DET.

CRAVEN WAY

BOROUGHBRIDGE
Edge of Town
No Sub Category
Total Number of dwellings: 23

Survey date: TUESDAY

33 NY-03-A-08 TERRACED HOUSES

NICHOLAS STREET

18/10/11

YORK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 21

Survey date: MONDAY

34 NY-03-A-09 MIXED HOUSING

GRAMMAR SCHOOL LANE

16/09/13

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52

Survey date: MONDAY

35 NY-03-A-10 HOUSES AND FLATS

BOROUGHBRIDGE ROAD

16/09/13

RIPON
Edge of Town
No Sub Category
Total Number of dwellings: 71

Survey date: TUESDAY

36 NY-03-A-11 PRIVATE HOUSING

HORSEFAIR

17/09/13

BOROUGHBRIDGE
Edge of Town
Residential Zone
Total Number of dwellings: 23

Survey date: WEDNESDAY

18/09/13

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

37 SC-03-A-04 DETACHED & TERRACED

SURREY

Survey

SUFFOLK

Survey

SUFFOLK

Survey

SUFFOLK

Survey

SUFFOLK

Survey

SUFFOLK

Survey

HIGH ROAD

BYFLEET
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: THURSDAY

38 SF-03-A-01 SEMI DETACHED

A1156 FELIXSTOWE ROAD RACECOURSE
IPSWICH
Suburban Area (PPS6 Out of Centre) Residential Zone

Total Number of dwellings:

Survey date: WEDNESDAY

71

23/01/14

77

23/05/07

230

24/05/07

101

15/05/06

Type: MANUAL

Type: MANUAL

Type: MANUAL

Type: MANUAL

Type: MANUAL

Type: MANUAL

39 SF-03-A-02

SEMI DET./TERRACED

STOKE PARK DRIVE MAIDENHALL
IPSWICH
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: THURSDAY

40 SF-03-A-03 MIXED HOUSES

BARTON HILL
FORNHAM ST MARTIN BURY ST EDMUNDS
Edge of Town
Out of Town
Total Number of dwellings:

Survey date: MONDAY

41 SF-03-A-04 DETACHED & BUNGALOWS

NORMANSTON DRIVE

LOWESTOFT
Suburban Area (PPS6 Out of Centre) Residential Zone
Total Number of dwellings:

Survey date: TUESDAY

- 42 SF-03-A-05 DETACHED HOUSES
  VALE LANE
  BURY ST EDMUNDS
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: WEDNESDAY

- 43 SH-03-A-02 DETATCHED
  GATCOMBE WAY PRIORSLEE

TELFORD
Edge of Town
Residential Zone
Total Number of dwellings:
Survey date: SUNDAY

7

23/10/12

18

09/09/15

57

21/06/09

SHROPSHIRE

Survey Type: MANUAL

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 44 SH-03-A-03 DETATCHED
  SOMERBY DRIVE
  BICTON HEATH SHREWSBURY
  Edge of Town
  No Sub Category
  Total Number of dwellings:
  Survey date: FRIDAY

- 45 SH-03-A-04 TERRACED
  ST MICHAEL'S STREET
  SHREWSBURY
  Suburban Area (PPS6 Out of Centre) No Sub Category
  Total Number of dwellings:
  Survey date: THURSDAY

10

26/06/09

108

11/06/09

SHROPSHIRE

Survey Type: MANUAL

SHROPSHIRE

Survey Type: MANUAL

SHROPSHIRE

Survey Type: MANUAL

SHROPSHIRE

Survey Type: MANUAL

SOMERSET

Survey Type: MANUAL

WARWICKSHIRE

Survey Type: MANUAL

WARWICKSHIRE

Survey Type: MANUAL

46 SH-03-A-05 SEMI-DETACHED/TERRACED

SANDCROFT
SUTTON HILL
TELFORD
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: THURSDAY

47 SH-03-A-06 BUNGALOWS

ELLESMERE ROAD

SHREWSBURY
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: THURSDAY

54

24/10/13

16

22/05/14

33

24/09/15

48 SM-03-A-01

DETACHED & SEMI

WEMBDON ROAD NORTHFIELD BRIDGWATER
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: THURSDAY

- 49 WK-03-A-01 TERRACED/SEMI/DET.
  ARLINGTON AVENUE
  LEAMINGTON SPA
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: FRIDAY

- 50 WK-03-A-02 BUNGALOWS
  NARBERTH WAY
  POTTERS GREEN COVENTRY
  Edge of Town
  Residential Zone
  Total Number of dwellings:
  Survey date: THURSDAY

6

21/10/11

17

17/10/13

51 WL-03-A-01 SEMI D./TERRACED W. BASSETT

WILTSHIRE

Survey Type: MANUAL

WORCESTERSHIRE

Survey Type: MANUAL

WORCESTERSHIRE

Survey Type: MANUAL

WEST SUSSEX

Survey Type: MANUAL

WEST SUSSEX

Survey Type: MANUAL

MAPLE DRIVE

WOOTTON BASSETT
Edge of Town
Residential Zone
Total Number of dwellings:

Survey date: MONDAY

- 52 WO-03-A-02 SEMI DETACHED
  MEADOWHILL ROAD
  REDDITCH
  Edge of Town
  No Sub Category
  Total Number of dwellings:
  Survey date: TUESDAY

- 53 WO-03-A-03 DETACHED
  BLAKEBROOK
  BLAKEBROOK
  KIDDERMINSTER
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: FRIDAY

- 54 WS-03-A-04 MIXED HOUSES
  HILLS FARM LANE BROADBRIDGE HEATH HORSHAM
  Edge of Town Residential Zone
  Total Number of dwellings:
  Survey date: THURSDAY

- 55 WS-03-A-05 TERRACED & FLATS
  UPPER SHOREHAM ROAD
  SHOREHAM BY SEA
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Number of dwellings:
  Survey date: WEDNESDAY

99

02/10/06

48

02/05/06

138

05/05/06

151

11/12/14

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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES

Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	55	80	0.069	55	80	0.248	55	80	0.317
08:00 - 09:00	55	80	0.130	55	80	0.350	55	80	0.480
09:00 - 10:00	55	80	0.149	55	80	0.192	55	80	0.341
10:00 - 11:00	55	80	0.143	55	80	0.172	55	80	0.315
11:00 - 12:00	55	80	0.165	55	80	0.174	55	80	0.339
12:00 - 13:00	55	80	0.183	55	80	0.176	55	80	0.359
13:00 - 14:00	55	80	0.171	55	80	0.157	55	80	0.328
14:00 - 15:00	55	80	0.176	55	80	0.182	55	80	0.358
15:00 - 16:00	55	80	0.272	55	80	0.194	55	80	0.466
16:00 - 17:00	55	80	0.285	55	80	0.176	55	80	0.461
17:00 - 18:00	55	80	0.336	55	80	0.199	55	80	0.535
18:00 - 19:00	55	80	0.233	55	80	0.185	55	80	0.418
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 -									

23:00									
23:00 - 24:00									
Total Rates: 2.312 2.405 4.717									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

6 - 432 (units:) 01/01/06 - 13/01/17 48
1
6
3
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.

TAXIS

Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	55	80	0.002	55	80	0.002	55	80	0.004
08:00 - 09:00	55	80	0.004	55	80	0.004	55	80	0.008
09:00 - 10:00	55	80	0.003	55	80	0.003	55	80	0.006
10:00 - 11:00	55	80	0.003	55	80	0.004	55	80	0.007
11:00 -	55	80	0.002	55	80	0.002	55	80	0.004

12:00									
12:00 - 13:00	55	80	0.001	55	80	0.001	55	80	0.002
13:00 - 14:00	55	80	0.001	55	80	0.001	55	80	0.002
14:00 - 15:00	55	80	0.003	55	80	0.003	55	80	0.006
15:00 - 16:00	55	80	0.004	55	80	0.004	55	80	0.008
16:00 - 17:00	55	80	0.003	55	80	0.002	55	80	0.005
17:00 - 18:00	55	80	0.003	55	80	0.002	55	80	0.005
18:00 - 19:00	55	80	0.002	55	80	0.002	55	80	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.031 0.030 0.061									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

6 - 432 (units:) 01/01/06 - 13/01/17 48
1
6
3
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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

OGVS

Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	55	80	0.002	55	80	0.002	55	80	0.004
08:00 - 09:00	55	80	0.002	55	80	0.002	55	80	0.004
09:00 - 10:00	55	80	0.002	55	80	0.002	55	80	0.004
10:00 - 11:00	55	80	0.002	55	80	0.002	55	80	0.004
11:00 - 12:00	55	80	0.002	55	80	0.002	55	80	0.004
12:00 - 13:00	55	80	0.002	55	80	0.002	55	80	0.004
13:00 - 14:00	55	80	0.002	55	80	0.003	55	80	0.005
14:00 - 15:00	55	80	0.002	55	80	0.003	55	80	0.005
15:00 -	55	80	0.001	55	80	0.001	55	80	0.002

16:00									
16:00 - 17:00	55	80	0.002	55	80	0.001	55	80	0.003
17:00 - 18:00	55	80	0.001	55	80	0.001	55	80	0.002
18:00 - 19:00	55	80	0.000	55	80	0.000	55	80	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.020 0.021 0.041									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

6 - 432 (units:) 01/01/06 - 13/01/17 48
1
6
3
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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

PSVS

Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	55	80	0.000	55	80	0.000	55	80	0.000
08:00 - 09:00	55	80	0.000	55	80	0.000	55	80	0.000
09:00 - 10:00	55	80	0.000	55	80	0.000	55	80	0.000
10:00 - 11:00	55	80	0.000	55	80	0.000	55	80	0.000
11:00 - 12:00	55	80	0.001	55	80	0.001	55	80	0.002
12:00 - 13:00	55	80	0.000	55	80	0.000	55	80	0.000
13:00 - 14:00	55	80	0.000	55	80	0.000	55	80	0.000
14:00 - 15:00	55	80	0.000	55	80	0.000	55	80	0.000
15:00 - 16:00	55	80	0.001	55	80	0.000	55	80	0.001
16:00 - 17:00	55	80	0.000	55	80	0.000	55	80	0.000
17:00 - 18:00	55	80	0.000	55	80	0.000	55	80	0.000
18:00 - 19:00	55	80	0.000	55	80	0.000	55	80	0.000
19:00 -									

20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.002 0.001 0.003									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

6 - 432 (units:) 01/01/06 - 13/01/17 48
1
6
3
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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

CYCLISTS

Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	55	80	0.007	55	80	0.013	55	80	0.020

08:00 - 09:00	55	80	0.004	55	80	0.016	55	80	0.020
09:00 - 10:00	55	80	0.004	55	80	0.004	55	80	0.008
10:00 - 11:00	55	80	0.004	55	80	0.009	55	80	0.013
11:00 - 12:00	55	80	0.005	55	80	0.005	55	80	0.010
12:00 - 13:00	55	80	0.007	55	80	0.007	55	80	0.014
13:00 - 14:00	55	80	0.007	55	80	0.005	55	80	0.012
14:00 - 15:00	55	80	0.007	55	80	0.007	55	80	0.014
15:00 - 16:00	55	80	0.017	55	80	0.009	55	80	0.026
16:00 - 17:00	55	80	0.014	55	80	0.007	55	80	0.021
17:00 - 18:00	55	80	0.017	55	80	0.012	55	80	0.029
18:00 - 19:00	55	80	0.009	55	80	0.006	55	80	0.015
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 -									

24:00									
Total Rates: 0.102 0.100 0.202									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

6 - 432 (units:) 01/01/06 - 13/01/17 48
1
6
3
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.

TPi Rocky Lane Aston/Birmingham

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT Category : B - BUSINESS PARK VEHICLES

Selected regions and areas:

02 SOUTH EAST

HC HAMPSHIRE
HF HERTFORDSHIRE SC SURREY

03 SOUTH WEST

WL WILTSHIRE

04 EAST ANGLIA

NF NORFOLK

SF SUFFOLK

05 EAST MIDLANDS

LN LINCOLNSHIRE

06 WEST MIDLANDS

SH SHROPSHIRE

WO WORCESTERSHIRE

07 YORKSHIRE & NORTH LINCOLNSHIRE

WY WEST YORKSHIRE

08 NORTH WEST

LC LANCASHIRE

Licence No: 522501 Calculation Reference: AUDIT-522501-170118-0106

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:
Actual Range:
Range Selected by User:

Public Transport Provision: Selection by:

Gross floor area
1300 to 121275 (units: sqm) 975 to 121275 (units: sqm)

1 days 1 days 1 days

1 days

1 days 1 days

1 days

2 days 1 days

1 days

1 days

Date Range: 01/01/06 to 13/01/2017

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 Tuesday Wednesday Thursday

2 days 4 days 2 days 4 days

Include all surveys

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

Selected survey types:

Manual count 12 days Directional ATC Count 0 days

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

Selected Locations:

Edge of Town Centre 2 Suburban Area (PPS6 Out of Centre) 1 Edge of Town 9

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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501

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 12 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 5,001 to 10,000 10,001 to 15,000 15,001 to 20,000 25,001 to 50,000

2 days 3 days 4 days 2 days 1 days

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

Population within 5 miles:

5,001 to 25,000 25,001 to 50,000 50,001 to 75,000 75,001 to 100,000 100,001 to 125,000 125,001 to 250,000

1 days 2 days 1 days 1 days 2 days 5 days

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

Car ownership within 5 miles:

0.6 to 1.0 1.1 to 1.5 1.6 to 2.0

4 days 7 days 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 2 days No 10 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 12 days

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

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters

- 1 HC-02-B-01 BUSINESS PARK
  CROCKFORD LANE CHINEHAM BUSINESS PARK BASINGSTOKE
  Edge of Town
  Commercial Zone
  Total Gross floor area:
  Survey date: THURSDAY

- 2 HF-02-B-01 BUSINESS PARK
  ST ALBANS ROAD WEST
  HATFIELD
  Edge of Town Commercial Zone Total Gross floor area:
  Survey date: MONDAY

- 3 LC-02-B-03 BUSINESS PARK
  NAVIGATION WAY
  PRESTON
  Edge of Town Commercial Zone Total Gross floor area:
  Survey date: TUESDAY

- 4 LN-02-B-02 BUSINESS PARK
  CARDINAL CLOSE
  LINCOLN
  Edge of Town Industrial Zone
  Total Gross floor area:
  Survey date: THURSDAY

121275 sqm

22/11/07

26000 sqm

07/07/08

3450 sqm

18/10/11

5000 sqm

25/06/15

7400 sqm

17/05/07

20160 sqm

27/11/12

2480 sqm

10/05/06

HAMPSHIRE

Survey Type: MANUAL

HERTFORDSHIRE

Survey Type: MANUAL

LANCASHIRE

Survey Type: MANUAL

LINCOLNSHIRE

Survey Type: MANUAL

NORFOLK

Survey Type: MANUAL

SURREY

Survey Type: MANUAL

SUFFOLK

Survey Type: MANUAL

5 NF-02-B-02

WHITING ROAD LONG JOHN'S HILL NORWICH
Edge of Town Retail Zone

BUSINESS PARK

Total Gross floor area:

Survey date: THURSDAY

- 6 SC-02-B-03 BUSINESS PARK
  A331
  FRIMLEY
  Edge of Town Centre No Sub Category Total Gross floor area:
  Survey date: TUESDAY

- 7 SF-02-B-01 BUSINESS PK
  KEMPSON WAY
  BURY ST EDMUNDS Edge of Town Industrial Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 8 SH-02-B-03 BUSINESS CENTRE
  CASTLE STREET
  HADLEY
  TELFORD
  Suburban Area (PPS6 Out of Centre) No Sub Category
  Total Gross floor area:
  Survey date: TUESDAY

- 9 SH-02-B-04 BUSINESS PARK
  STAFFORD COURT
  TELFORD
  Edge of Town Centre Commercial Zone Total Gross floor area:

Survey date: THURSDAY

1300 sqm

16/06/09

10175 sqm

24/10/13

2600 sqm

02/10/06

3525 sqm

02/05/06

9200 sqm

23/04/14

SHROPSHIRE

Survey Type: MANUAL

SHROPSHIRE

Survey Type: MANUAL

WILTSHIRE

Survey Type: MANUAL

WORCESTERSHIRE

Survey Type: MANUAL

WEST YORKSHIRE

Survey Type: MANUAL

10 WL-02-B-01

BUSINESS PK

HIGH STREET
COPED HALL WOOTTON BASSETT Edge of Town Residential Zone
Total Gross floor area:

Survey date: MONDAY

- 11 WO-02-B-01 BUSINESS PARK
  BURNT MEADOW ROAD MOORS MOAT NTH IND. EST REDDITCH
  Edge of Town
  Industrial Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 12 WY-02-B-02 BUSINESS PARK
  ARMITAGE BRIDGE
  HUDDERSFIELD
  Edge of Town
  No Sub Category Total Gross floor area:
  Survey date: WEDNESDAY

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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

VEHICLES

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS	DEPARTURES	TOTALS

	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	12	17714	0.442	12	17714	0.098	12	17714	0.540
08:00 - 09:00	12	17714	1.369	12	17714	0.283	12	17714	1.652
09:00 - 10:00	12	17714	0.703	12	17714	0.196	12	17714	0.899
10:00 - 11:00	12	17714	0.281	12	17714	0.222	12	17714	0.503
11:00 - 12:00	12	17714	0.207	12	17714	0.203	12	17714	0.410
12:00 - 13:00	12	17714	0.331	12	17714	0.454	12	17714	0.785
13:00 - 14:00	12	17714	0.472	12	17714	0.390	12	17714	0.862

14:00 - 15:00	12	17714	0.246	12	17714	0.272	12	17714	0.518
15:00 - 16:00	12	17714	0.191	12	17714	0.331	12	17714	0.522
16:00 - 17:00	12	17714	0.187	12	17714	0.632	12	17714	0.819
17:00 - 18:00	12	17714	0.183	12	17714	1.079	12	17714	1.262
18:00 - 19:00	11	18488	0.143	11	18488	0.517	11	18488	0.660
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 4.755 4.677 9.432									

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1300 - 121275 (units: sqm) 01/01/06 - 13/01/17
12
0

0 1 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

TAXIS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	11	18870	0.006	11	18870	0.004	11	18870	0.010
08:00 - 09:00	12	17714	0.016	12	17714	0.011	12	17714	0.027
09:00 - 10:00	12	17714	0.016	12	17714	0.014	12	17714	0.030
10:00 - 11:00	12	17714	0.010	12	17714	0.010	12	17714	0.020
11:00 - 12:00	12	17714	0.005	12	17714	0.006	12	17714	0.011
12:00 - 13:00	12	17714	0.006	12	17714	0.007	12	17714	0.013
13:00 - 14:00	12	17714	0.006	12	17714	0.004	12	17714	0.010
14:00 - 15:00	12	17714	0.008	12	17714	0.007	12	17714	0.015
15:00 - 16:00	12	17714	0.007	12	17714	0.009	12	17714	0.016
16:00 - 17:00	12	17714	0.005	12	17714	0.007	12	17714	0.012
17:00 - 18:00	12	17714	0.007	12	17714	0.012	12	17714	0.019
18:00 -	11	18488	0.004	11	18488	0.005	11	18488	0.009

19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.096 0.096 0.192									

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.

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1300 - 121275 (units: sqm) 01/01/06 - 13/01/17
12
0

0 1 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

OGVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	12	17714	0.003	12	17714	0.003	12	17714	0.006
08:00 - 09:00	12	17714	0.014	12	17714	0.009	12	17714	0.023
09:00 - 10:00	12	17714	0.012	12	17714	0.012	12	17714	0.024
10:00 - 11:00	12	17714	0.008	12	17714	0.013	12	17714	0.021
11:00 - 12:00	12	17714	0.007	12	17714	0.007	12	17714	0.014
12:00 - 13:00	12	17714	0.010	12	17714	0.006	12	17714	0.016
13:00 - 14:00	12	17714	0.007	12	17714	0.009	12	17714	0.016
14:00 - 15:00	12	17714	0.006	12	17714	0.006	12	17714	0.012
15:00 - 16:00	12	17714	0.009	12	17714	0.008	12	17714	0.017
16:00 - 17:00	12	17714	0.006	12	17714	0.005	12	17714	0.011
17:00 - 18:00	12	17714	0.003	12	17714	0.005	12	17714	0.008
18:00 - 19:00	11	18488	0.001	11	18488	0.002	11	18488	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 -									

23:00									
23:00 - 24:00									
Total Rates: 0.086 0.085 0.171									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1300 - 121275 (units: sqm) 01/01/06 - 13/01/17
12
0

0 1 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.

PSVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	12	17714	0.002	12	17714	0.002	12	17714	0.004
08:00 - 09:00	12	17714	0.003	12	17714	0.003	12	17714	0.006
09:00 - 10:00	12	17714	0.002	12	17714	0.002	12	17714	0.004
10:00 - 11:00	12	17714	0.000	12	17714	0.000	12	17714	0.000
11:00 -	12	17714	0.001	12	17714	0.001	12	17714	0.002

12:00									
12:00 - 13:00	12	17714	0.002	12	17714	0.002	12	17714	0.004
13:00 - 14:00	12	17714	0.004	12	17714	0.004	12	17714	0.008
14:00 - 15:00	12	17714	0.001	12	17714	0.001	12	17714	0.002
15:00 - 16:00	12	17714	0.001	12	17714	0.001	12	17714	0.002
16:00 - 17:00	12	17714	0.001	12	17714	0.002	12	17714	0.003
17:00 - 18:00	12	17714	0.002	12	17714	0.002	12	17714	0.004
18:00 - 19:00	11	18488	0.002	11	18488	0.002	11	18488	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.021 0.022 0.043									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1300 - 121275 (units: sqm) 01/01/06 - 13/01/17
12
0

0 1 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

CYCLISTS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	12	17714	0.009	12	17714	0.000	12	17714	0.009
08:00 - 09:00	12	17714	0.018	12	17714	0.001	12	17714	0.019
09:00 - 10:00	12	17714	0.006	12	17714	0.000	12	17714	0.006
10:00 - 11:00	12	17714	0.001	12	17714	0.000	12	17714	0.001
11:00 - 12:00	12	17714	0.000	12	17714	0.000	12	17714	0.000
12:00 - 13:00	12	17714	0.002	12	17714	0.001	12	17714	0.003
13:00 - 14:00	12	17714	0.002	12	17714	0.000	12	17714	0.002
14:00 - 15:00	12	17714	0.001	12	17714	0.001	12	17714	0.002
15:00 -	12	17714	0.000	12	17714	0.003	12	17714	0.003

16:00									
16:00 - 17:00	12	17714	0.001	12	17714	0.011	12	17714	0.012
17:00 - 18:00	12	17714	0.001	12	17714	0.016	12	17714	0.017
18:00 - 19:00	11	18488	0.000	11	18488	0.006	11	18488	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.041 0.039 0.080									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1300 - 121275 (units: sqm) 01/01/06 - 13/01/17
12
0

0 1 0

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

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TPi Rocky Lane Aston/Birmingham

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02 SOUTH EAST

HF HERTFORDSHIRE

RE READING

03 SOUTH WEST

CW CORNWALL DC DORSET DV DEVON

04 EAST ANGLIA

SF SUFFOLK

05 EAST MIDLANDS

NR NORTHAMPTONSHIRE

06 WEST MIDLANDS

HE HEREFORDSHIRE

WM WEST MIDLANDS

08 NORTH WEST

CH CHESHIRE LC LANCASHIRE

Licence No: 522501 Calculation Reference: AUDIT-522501-170118-0121

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:
Actual Range:
Range Selected by User:

Public Transport Provision: Selection by:

Gross floor area
300 to 20000 (units: sqm) 300 to 43325 (units: sqm)

1 days 1 days

2 days 1 days 1 days

1 days 1 days

1 days 2 days

2 days 1 days

Date Range: 01/01/06 to 13/01/17

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 Tuesday Wednesday Thursday Friday

1 days 3 days 3 days 5 days 2 days

Include all surveys

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

Selected survey types:

Manual count 14 days Directional ATC Count 0 days

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

Selected Locations:

Edge of Town Centre 1 Suburban Area (PPS6 Out of Centre) 3 Edge of Town 10

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

TPi Rocky Lane Aston/Birmingham Licence No: 522501

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 10 days B2 4 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 5,001 to 10,000 10,001 to 15,000 15,001 to 20,000 25,001 to 50,000

4 days 2 days 4 days 1 days 3 days

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

Population within 5 miles:

5,001 to 25,000 50,001 to 75,000 75,001 to 100,000 125,001 to 250,000

1 days 4 days 2 days 7 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 11 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 14 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 14 days

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

LIST OF SITES relevant to selection parameters

1 CH-02-C-01 BAKERY

GADBROOK PARK HIGH SHURLACH NORTHWICH
Edge of Town Industrial Zone
Total Gross floor area:

Survey date: THURSDAY

15000 sqm

21/06/07

CHESHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

CORNWALL

Survey Type: MANUAL

CORNWALL

Survey Type: MANUAL

DORSET

Survey Type: MANUAL

DEVON

Survey Type: MANUAL

HEREFORDSHIRE

Survey Type: MANUAL

2 CH-02-C-02 INDUSTRIAL MATERIALS

JUPITER DRIVE CHESTER W. EMP. PARK CHESTER
Edge of Town
Industrial Zone
Total Gross floor area:

Survey date: WEDNESDAY

3 CW-02-C-01 FOOD DISTRIBUTION

WILSON WAY
POOL
CAMBORNE
Suburban Area (PPS6 Out of Centre) Industrial Zone

Total Gross floor area:

Survey date: FRIDAY

- 4 CW-02-C-02 LIGHTING COMPANY
  NORMANDY WAY
  BODMIN
  Edge of Town Industrial Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

- 5 DC-02-C-07 NEW LOOK
  MERCERY ROAD
  WEYMOUTH
  Edge of Town
  No Sub Category Total Gross floor area:
  Survey date: MONDAY

6 DV-02-C-01

TUBE MANUFACTURE

PLYMBRIDGE ROAD ESTOVER
PLYMOUTH
Edge of Town Industrial Zone
Total Gross floor area:

Survey date: TUESDAY

20000 sqm

17/07/12

7 HE-02-C-02

THERMAL PROCESSING

COLLEGE ROAD BURCOTT
HEREFORD
Edge of Town Commercial Zone Total Gross floor area:

Survey date: TUESDAY

1880 sqm

22/10/13

8100 sqm

19/11/14

10200 sqm

08/06/07

17675 sqm

06/06/07

5467 sqm

07/07/08

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 8 HF-02-C-01 INDUSTRIAL UNIT
  BRIDGE ROAD EAST
  WELWYN GARDEN CITY
  Suburban Area (PPS6 Out of Centre) Industrial Zone
  Total Gross floor area:
  Survey date: THURSDAY

- 9 LC-02-C-02 RECYCLING CO.
  ESSEX STREET
  RED SCAR IND ESTATE PRESTON
  Edge of Town Centre Industrial Zone
  Total Gross floor area:
  Survey date: THURSDAY

1800 sqm

17/07/08

8000 sqm

10/05/12

11500 sqm

27/11/08

HERTFORDSHIRE

Survey Type: MANUAL

LANCASHIRE

Survey Type: MANUAL

NORTHAMPTONSHIRE

Survey Type: MANUAL

READING

Survey Type: MANUAL

SUFFOLK

Survey Type: MANUAL

WEST MIDLANDS

Survey Type: MANUAL

WEST MIDLANDS

Survey Type: MANUAL

10 NR-02-C-01

PAPER COMPANY

RHOSILI ROAD BRACKMILLS NORTHAMPTON
Edge of Town Industrial Zone
Total Gross floor area:

Survey date: THURSDAY

11 RE-02-C-01 SHEET METAL FABRICATION

COMMERCIAL ROAD

READING
Edge of Town Industrial Zone
Total Gross floor area:

Survey date: THURSDAY

- 12 SF-02-C-01 JOINERY
  ANSON ROAD MARTLESHAM HEATH IPSWICH

Edge of Town Industrial Zone
Total Gross floor area:
Survey date: FRIDAY

- 13 WM-02-C-02 ARDONPRINT
  SYDNEY ROAD
  SMALL HEATH
  BIRMINGHAM
  Suburban Area (PPS6 Out of Centre) Commercial Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

- 14 WM-02-C-03 INDUSTRIAL GLASS
  DOWNING STREET
  SMETHWICK
  Edge of Town Industrial Zone
  Total Gross floor area:
  Survey date: TUESDAY

645 sqm

22/11/12

1100 sqm

12/07/13

300 sqm

17/06/09

5070 sqm

06/11/12

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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

VEHICLES

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	14	7624	0.337	14	7624	0.102	14	7624	0.439
08:00 -	14	7624	0.512	14	7624	0.103	14	7624	0.615

09:00									
09:00 - 10:00	14	7624	0.198	14	7624	0.126	14	7624	0.324
10:00 - 11:00	14	7624	0.121	14	7624	0.106	14	7624	0.227
11:00 - 12:00	14	7624	0.095	14	7624	0.096	14	7624	0.191
12:00 - 13:00	14	7624	0.130	14	7624	0.168	14	7624	0.298
13:00 - 14:00	14	7624	0.319	14	7624	0.197	14	7624	0.516
14:00 - 15:00	14	7624	0.149	14	7624	0.294	14	7624	0.443
15:00 - 16:00	14	7624	0.099	14	7624	0.161	14	7624	0.260
16:00 - 17:00	14	7624	0.092	14	7624	0.310	14	7624	0.402
17:00 - 18:00	14	7624	0.062	14	7624	0.394	14	7624	0.456
18:00 - 19:00	14	7624	0.073	14	7624	0.220	14	7624	0.293
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 -									

24:00									
Total Rates: 2.187 2.277 4.464									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

300 - 20000 (units: sqm) 01/01/06 - 13/01/17
14
0

0 1 0

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Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	14	7624	0.010	14	7624	0.009	14	7624	0.019
08:00 - 09:00	14	7624	0.002	14	7624	0.004	14	7624	0.006
09:00 - 10:00	14	7624	0.004	14	7624	0.004	14	7624	0.008
10:00 - 11:00	14	7624	0.005	14	7624	0.005	14	7624	0.010
11:00 - 12:00	14	7624	0.002	14	7624	0.002	14	7624	0.004

12:00 - 13:00	14	7624	0.003	14	7624	0.003	14	7624	0.006
13:00 - 14:00	14	7624	0.003	14	7624	0.003	14	7624	0.006
14:00 - 15:00	14	7624	0.004	14	7624	0.004	14	7624	0.008
15:00 - 16:00	14	7624	0.001	14	7624	0.002	14	7624	0.003
16:00 - 17:00	14	7624	0.007	14	7624	0.004	14	7624	0.011
17:00 - 18:00	14	7624	0.002	14	7624	0.006	14	7624	0.008
18:00 - 19:00	14	7624	0.002	14	7624	0.002	14	7624	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.045 0.048 0.093									

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

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that

have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

300 - 20000 (units: sqm) 01/01/06 - 13/01/17
14
0

0 1 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.

OGVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	14	7624	0.007	14	7624	0.014	14	7624	0.021
08:00 - 09:00	14	7624	0.027	14	7624	0.023	14	7624	0.050
09:00 - 10:00	14	7624	0.039	14	7624	0.021	14	7624	0.060
10:00 - 11:00	14	7624	0.033	14	7624	0.025	14	7624	0.058
11:00 - 12:00	14	7624	0.023	14	7624	0.021	14	7624	0.044
12:00 - 13:00	14	7624	0.026	14	7624	0.016	14	7624	0.042
13:00 - 14:00	14	7624	0.030	14	7624	0.022	14	7624	0.052
14:00 - 15:00	14	7624	0.026	14	7624	0.013	14	7624	0.039
15:00 - 16:00	14	7624	0.014	14	7624	0.007	14	7624	0.021
16:00 -	14	7624	0.013	14	7624	0.014	14	7624	0.027

17:00									
17:00 - 18:00	14	7624	0.006	14	7624	0.004	14	7624	0.010
18:00 - 19:00	14	7624	0.008	14	7624	0.008	14	7624	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.252 0.188 0.440									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

300 - 20000 (units: sqm) 01/01/06 - 13/01/17
14
0

0 1 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

PSVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	14	7624	0.000	14	7624	0.000	14	7624	0.000
08:00 - 09:00	14	7624	0.000	14	7624	0.000	14	7624	0.000
09:00 - 10:00	14	7624	0.001	14	7624	0.001	14	7624	0.002
10:00 - 11:00	14	7624	0.001	14	7624	0.000	14	7624	0.001
11:00 - 12:00	14	7624	0.000	14	7624	0.001	14	7624	0.001
12:00 - 13:00	14	7624	0.002	14	7624	0.001	14	7624	0.003
13:00 - 14:00	14	7624	0.000	14	7624	0.000	14	7624	0.000
14:00 - 15:00	14	7624	0.001	14	7624	0.000	14	7624	0.001
15:00 - 16:00	14	7624	0.000	14	7624	0.000	14	7624	0.000
16:00 - 17:00	14	7624	0.000	14	7624	0.000	14	7624	0.000
17:00 - 18:00	14	7624	0.000	14	7624	0.000	14	7624	0.000
18:00 - 19:00	14	7624	0.000	14	7624	0.000	14	7624	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 -									

22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.005 0.003 0.008									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

300 - 20000 (units: sqm) 01/01/06 - 13/01/17
14
0

0 1 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

CYCLISTS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	14	7624	0.013	14	7624	0.003	14	7624	0.016
08:00 - 09:00	14	7624	0.008	14	7624	0.001	14	7624	0.009
09:00 - 10:00	14	7624	0.002	14	7624	0.000	14	7624	0.002
10:00 - 11:00	14	7624	0.000	14	7624	0.001	14	7624	0.001

11:00 - 12:00	14	7624	0.000	14	7624	0.001	14	7624	0.001
12:00 - 13:00	14	7624	0.000	14	7624	0.002	14	7624	0.002
13:00 - 14:00	14	7624	0.013	14	7624	0.007	14	7624	0.020
14:00 - 15:00	14	7624	0.009	14	7624	0.017	14	7624	0.026
15:00 - 16:00	14	7624	0.001	14	7624	0.003	14	7624	0.004
16:00 - 17:00	14	7624	0.001	14	7624	0.016	14	7624	0.017
17:00 - 18:00	14	7624	0.000	14	7624	0.008	14	7624	0.008
18:00 - 19:00	14	7624	0.003	14	7624	0.007	14	7624	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.050 0.066 0.116									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

300 - 20000 (units: sqm) 01/01/06 - 13/01/17
14
0

0 1 0

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

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TPi Rocky Lane Aston/Birmingham

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02 SOUTH EAST

BD BEDFORDSHIRE ES EAST SUSSEX
HC HAMPSHIRE
HF HERTFORDSHIRE KC KENT

SC SURREY

SO SLOUGH

03 SOUTH WEST

CW CORNWALL

DC DORSET

04 EAST ANGLIA

CA CAMBRIDGESHIRE NF NORFOLK
SF SUFFOLK

06 WEST MIDLANDS

WO WORCESTERSHIRE

08 NORTH WEST

LC LANCASHIRE

09 NORTH

DH DURHAM

Licence No: 522501 Calculation Reference: AUDIT-522501-170118-0141

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:
Actual Range:
Range Selected by User:

Public Transport Provision: Selection by:

Gross floor area
186 to 39230 (units: sqm) 186 to 175000 (units: sqm)

1 days 2 days 1 days 2 days 6 days 3 days 2 days

2 days 2 days

2 days 1 days 2 days

1 days 2 days 2 days

Date Range: 01/01/06 to 13/01/17

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 Tuesday Wednesday Thursday Friday

6 days 9 days 3 days 9 days 4 days

Include all surveys

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

Selected survey types:

Manual count 31 days Directional ATC Count 0 days

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

Selected Locations:

Town Centre 3 Edge of Town Centre 14 Suburban Area (PPS6 Out of Centre) 5 Edge of Town 9

TPi Rocky Lane Aston/Birmingham Licence No: 522501

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 3 Commercial Zone 6 Residential Zone 5 Retail Zone 1 Built-Up Zone 12 High Street 1 No Sub Category 3

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

Secondary Filtering selection:

Use Class:

A1 1 days B1 30 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:

Not Known	1,001 to 5,000	5,001 to 10,000	10,001 to 15,000	15,001 to 20,000	25,001 to 50,000
1 days	1 days	8 days	5 days	5 days	

11 days

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

Population within 5 miles:

Not Known	25,001 to 50,000	50,001 to 75,000	75,001 to 100,000	100,001 to 125,000	125,001 to 250,000
1 days	5 days	1 days	6 days	2 days	

16 days

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

Car ownership within 5 miles:

0.5 or Less 0.6 to 1.0 1.1 to 1.5 1.6 to 2.0

1 days

6 days 19 days 5 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 16 days No 15 days

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

PTAL Rating:

No PTAL Present 31 days

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

LIST OF SITES relevant to selection parameters

- 1 BD-02-A-03 OFFICES
  BROMHAM ROAD
  BEDFORD
  Edge of Town Centre No Sub Category Total Gross floor area:
  Survey date: MONDAY

- 2 CA-02-A-04 OFFICE
  BRETTON WAY

PETERBOROUGH Edge of Town Commercial Zone Total Gross floor area:
Survey date: THURSDAY

- 3 CA-02-A-05 OFFICES
  NEW ROAD
  PETERBOROUGH Town Centre
  Built-Up Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 4 CW-02-A-02 INLAND REVENUE
  TRINITY STREET
  ST AUSTELL
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: FRIDAY

- 5 CW-02-A-03 COUNCIL OFFICES
  A390 TREYEW ROAD
  TRURO
  Edge of Town
  No Sub Category Total Gross floor area:
  Survey date: THURSDAY

- 6 DC-02-A-08 OFFICE
  STATION APPROACH
  DORCHESTER
  Edge of Town Centre No Sub Category Total Gross floor area:
  Survey date: THURSDAY

1469 sqm

14/10/13

6483 sqm

20/10/11

8793 sqm

16/12/14

4850 sqm

08/06/07

30000 sqm

07/06/07

1550 sqm

03/07/08

BEDFORDSHIRE

Survey Type: MANUAL

CAMBRIDGESHIRE

Survey Type: MANUAL

CAMBRIDGESHIRE

Survey Type: MANUAL

CORNWALL

Survey Type: MANUAL

CORNWALL

Survey Type: MANUAL

DORSET

Survey Type: MANUAL

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 7 DC-02-A-09 COUNCIL OFFICES
  THE GROVE
  DORCHESTER
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: MONDAY

- 8 DH-02-A-01 RPMI OFFICES
  BRINKBURN ROAD
  DARLINGTON
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Gross floor area:
  Survey date: FRIDAY

11664 sqm

28/11/11

3372 sqm

05/11/10

DORSET

Survey

DURHAM

Survey

DURHAM

Survey

Type: MANUAL

Type: MANUAL

Type: MANUAL

9 DH-02-A-02

CONSTRUCTION COMPANY

DURHAM ROAD BOWBURN
NEAR DURHAM
Edge of Town Industrial Zone
Total Gross floor area:

Survey date: TUESDAY

- 10 ES-02-A-11 HOUSING COMPANY
  THE SIDINGS
  ORE VALLEY
  HASTINGS
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 11 ES-02-A-12 COUNCIL OFFICES
  VICARAGE LANE
  HAILSHAM
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: THURSDAY

- 12 HC-02-A-09 ERICSON
  MAPLEWOOD
  CHINEHAM BUSINESS PARK BASINGSTOKE

Edge of Town
Commercial Zone
Total Gross floor area:
Survey date: THURSDAY

- 13 HF-02-A-03 OFFICE
  60 VICTORIA STREET
  ST ALBANS
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

2000 sqm

27/11/12

186 sqm

17/11/15

3640 sqm

26/11/15

9000 sqm

22/11/07

610 sqm

16/10/13

EAST SUSSEX

Survey Type: MANUAL

EAST SUSSEX

Survey Type: MANUAL

HAMPSHIRE

Survey Type: MANUAL

HERTFORDSHIRE

Survey Type: MANUAL

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

14 HF-02-A-04 OFFICES

STATION WAY

ST ALBANS
Edge of Town Centre Residential Zone
Total Gross floor area:

Survey date: THURSDAY

5000 sqm

02/10/14

5677 sqm

01/12/09

HERTFORDSHIRE

Survey Type: MANUAL

KENT

Survey Type: MANUAL

KENT

Survey Type: MANUAL

KENT

Survey Type: MANUAL

KENT

Survey Type: MANUAL

KENT

Survey Type: MANUAL

15 KC-02-A-06

LAND REGISTRY

FOREST ROAD CAMDEN PARK TUNBRIDGE WELLS Edge of Town Residential Zone
Total Gross floor area:

Survey date: TUESDAY

16 KC-02-A-07 KCC HIGHWAYS REG.

KAVELIN WAY HENWOOD IND. ESTATE ASHFORD
Edge of Town Commercial Zone
Total Gross floor area:

Survey date: MONDAY

2525 sqm

05/12/11

- 17 KC-02-A-08
  ST MICHAEL'S CLOSE CLAY WOOD AYLESFORD
  Edge of Town Industrial Zone
  Total Gross floor area:
  Survey date: MONDAY

- 18 KC-02-A-09 COUNCIL OFFICES
  SANDLING ROAD
  MAIDSTONE
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

- 19 KC-02-A-10 COUNCIL OFFICES
  SANDLING ROAD
  MAIDSTONE
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

KCC HIGHWAYS REG. OFFICE

3168 sqm

28/11/11

1500 sqm

19/10/11

2900 sqm

19/10/11

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 20 KC-02-A-11 COUNTY HALL
  SANDLING ROAD

MAIDSTONE
Edge of Town Centre Built-Up Zone
Total Gross floor area:
Survey date: MONDAY

- 21 LC-02-A-08 COUNCIL OFFICES
  UNION STREET
  CHORLEY
  Edge of Town Centre Retail Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 22 LC-02-A-09 OFFICES
  FURTHERGATE
  BLACKBURN
  Suburban Area (PPS6 Out of Centre) Built-Up Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 23 NF-02-A-01 COUNCIL OFFICE
  CHAPEL STREET
  KING'S LYNN
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: THURSDAY

- 24 SC-02-A-14 UNILEVER
  SPRINGFIELD DRIVE
  LEATHERHEAD
  Edge of Town Commercial Zone Total Gross floor area:
  Survey date: TUESDAY

- 25 SC-02-A-15 ACCOUNTANTS
  BOXGROVE ROAD
  GUILDFORD
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 26 SC-02-A-16 BANK OF AMERICA
  STANHOPE ROAD
  CAMBERLEY
  Edge of Town Commercial Zone Total Gross floor area:
  Survey date: TUESDAY

32793 sqm

17/10/11

2000 sqm

13/06/06

2600 sqm

04/06/13

5500 sqm

30/09/10

19974 sqm

10/03/09

1896 sqm

05/10/10

39230 sqm

10/05/11

KENT

Survey Type: MANUAL

LANCASHIRE

Survey Type: MANUAL

LANCASHIRE

Survey Type: MANUAL

NORFOLK

Survey Type: MANUAL

SURREY

Survey Type: MANUAL

SURREY

Survey Type: MANUAL

SURREY

Survey Type: MANUAL

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

- 27 SF-02-A-01 COUNCIL OFFICES
  BEETONS WAY
  BURY ST. EDMUNDS
  Suburban Area (PPS6 Out of Centre) Industrial Zone
  Total Gross floor area:

Survey date: MONDAY

- 28 SF-02-A-02 OFFICES
  BATH STREET
  IPSWICH
  Edge of Town Centre Commercial Zone Total Gross floor area:
  Survey date: FRIDAY

- 29 SO-02-A-01 COUNCIL OFFICES
  HIGH STREET
  SLOUGH
  Town Centre
  High Street
  Total Gross floor area:
  Survey date: THURSDAY

- 30 SO-02-A-02 COUNCIL OFFICES
  BATH ROAD
  SLOUGH
  Edge of Town Centre Built-Up Zone
  Total Gross floor area:
  Survey date: THURSDAY

- 31 WO-02-A-01 OFFICES
  ST MARY'S STREET
  WORCESTER
  Town Centre
  Built-Up Zone
  Total Gross floor area:
  Survey date: FRIDAY

8000 sqm

27/09/10

6505 sqm

19/07/13

1800 sqm

27/02/14

5050 sqm

27/02/14

22657 sqm

23/05/14

SUFFOLK

Survey

SUFFOLK

Survey

SLOUGH

Survey

SLOUGH

Survey

Type: MANUAL

Type: MANUAL

Type: MANUAL

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.

WORCESTERSHIRE

Survey Type: MANUAL

VEHICLES

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	19974	0.020	1	19974	0.010	1	19974	0.030
06:00 - 07:00	1	19974	0.175	1	19974	0.030	1	19974	0.205

07:00 - 08:00	31	8142	0.504	31	8142	0.051	31	8142	0.555
08:00 - 09:00	31	8142	1.275	31	8142	0.144	31	8142	1.419
09:00 - 10:00	31	8142	0.887	31	8142	0.243	31	8142	1.130
10:00 - 11:00	31	8142	0.373	31	8142	0.251	31	8142	0.624
11:00 - 12:00	31	8142	0.282	31	8142	0.271	31	8142	0.553
12:00 - 13:00	31	8142	0.302	31	8142	0.365	31	8142	0.667
13:00 - 14:00	31	8142	0.361	31	8142	0.313	31	8142	0.674
14:00 - 15:00	31	8142	0.264	31	8142	0.297	31	8142	0.561
15:00 - 16:00	31	8142	0.209	31	8142	0.380	31	8142	0.589
16:00 - 17:00	31	8142	0.182	31	8142	0.928	31	8142	1.110
17:00 - 18:00	31	8142	0.128	31	8142	1.118	31	8142	1.246
18:00 - 19:00	31	8142	0.044	31	8142	0.360	31	8142	0.404
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 -									

23:00									
23:00 - 24:00									
Total Rates: 5.006 4.761 9.767									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

186 - 39230 (units: sqm) 01/01/06 - 13/01/17
31
0

0 7 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.

TAXIS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	19974	0.000	1	19974	0.000	1	19974	0.000
06:00 - 07:00	1	19974	0.005	1	19974	0.005	1	19974	0.010
07:00 - 08:00	31	8142	0.006	31	8142	0.006	31	8142	0.012
08:00 - 09:00	31	8142	0.010	31	8142	0.009	31	8142	0.019
09:00 - 10:00	31	8142	0.010	31	8142	0.010	31	8142	0.020
10:00 - 11:00	31	8142	0.006	31	8142	0.006	31	8142	0.012
11:00 -	31	8142	0.004	31	8142	0.004	31	8142	0.008

12:00									
12:00 - 13:00	31	8142	0.005	31	8142	0.004	31	8142	0.009
13:00 - 14:00	31	8142	0.004	31	8142	0.004	31	8142	0.008
14:00 - 15:00	31	8142	0.004	31	8142	0.003	31	8142	0.007
15:00 - 16:00	31	8142	0.002	31	8142	0.003	31	8142	0.005
16:00 - 17:00	31	8142	0.003	31	8142	0.003	31	8142	0.006
17:00 - 18:00	31	8142	0.006	31	8142	0.006	31	8142	0.012
18:00 - 19:00	31	8142	0.002	31	8142	0.002	31	8142	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.067 0.065 0.132									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

186 - 39230 (units: sqm) 01/01/06 - 13/01/17
31
0

0 7 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.

OGVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	19974	0.000	1	19974	0.000	1	19974	0.000
06:00 - 07:00	1	19974	0.005	1	19974	0.005	1	19974	0.010
07:00 - 08:00	31	8142	0.002	31	8142	0.002	31	8142	0.004
08:00 - 09:00	31	8142	0.004	31	8142	0.004	31	8142	0.008
09:00 - 10:00	31	8142	0.003	31	8142	0.004	31	8142	0.007
10:00 - 11:00	31	8142	0.005	31	8142	0.004	31	8142	0.009
11:00 - 12:00	31	8142	0.004	31	8142	0.005	31	8142	0.009
12:00 - 13:00	31	8142	0.003	31	8142	0.002	31	8142	0.005
13:00 - 14:00	31	8142	0.002	31	8142	0.002	31	8142	0.004
14:00 - 15:00	31	8142	0.002	31	8142	0.003	31	8142	0.005
15:00 -	31	8142	0.005	31	8142	0.004	31	8142	0.009

16:00									
16:00 - 17:00	31	8142	0.003	31	8142	0.002	31	8142	0.005
17:00 - 18:00	31	8142	0.001	31	8142	0.002	31	8142	0.003
18:00 - 19:00	31	8142	0.000	31	8142	0.000	31	8142	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.039 0.039 0.078									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

186 - 39230 (units: sqm) 01/01/06 - 13/01/17
31
0

0 7 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

PSVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	19974	0.000	1	19974	0.000	1	19974	0.000
06:00 - 07:00	1	19974	0.010	1	19974	0.010	1	19974	0.020
07:00 - 08:00	31	8142	0.001	31	8142	0.001	31	8142	0.002
08:00 - 09:00	31	8142	0.004	31	8142	0.002	31	8142	0.006
09:00 - 10:00	31	8142	0.003	31	8142	0.003	31	8142	0.006
10:00 - 11:00	31	8142	0.002	31	8142	0.002	31	8142	0.004
11:00 - 12:00	31	8142	0.002	31	8142	0.002	31	8142	0.004
12:00 - 13:00	31	8142	0.002	31	8142	0.002	31	8142	0.004
13:00 - 14:00	31	8142	0.003	31	8142	0.002	31	8142	0.005
14:00 - 15:00	31	8142	0.002	31	8142	0.003	31	8142	0.005
15:00 - 16:00	31	8142	0.003	31	8142	0.003	31	8142	0.006
16:00 - 17:00	31	8142	0.002	31	8142	0.004	31	8142	0.006
17:00 - 18:00	31	8142	0.003	31	8142	0.003	31	8142	0.006
18:00 - 19:00	31	8142	0.001	31	8142	0.002	31	8142	0.003
19:00 -									

20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.038 0.039 0.077									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

186 - 39230 (units: sqm) 01/01/06 - 13/01/17
31
0

0 7 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

CYCLISTS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	19974	0.000	1	19974	0.000	1	19974	0.000
06:00 - 07:00	1	19974	0.005	1	19974	0.000	1	19974	0.005
07:00 - 08:00	31	8142	0.010	31	8142	0.000	31	8142	0.010

08:00 - 09:00	31	8142	0.032	31	8142	0.001	31	8142	0.033
09:00 - 10:00	31	8142	0.011	31	8142	0.001	31	8142	0.012
10:00 - 11:00	31	8142	0.005	31	8142	0.003	31	8142	0.008
11:00 - 12:00	31	8142	0.004	31	8142	0.004	31	8142	0.008
12:00 - 13:00	31	8142	0.004	31	8142	0.006	31	8142	0.010
13:00 - 14:00	31	8142	0.006	31	8142	0.005	31	8142	0.011
14:00 - 15:00	31	8142	0.002	31	8142	0.005	31	8142	0.007
15:00 - 16:00	31	8142	0.003	31	8142	0.005	31	8142	0.008
16:00 - 17:00	31	8142	0.005	31	8142	0.018	31	8142	0.023
17:00 - 18:00	31	8142	0.002	31	8142	0.027	31	8142	0.029
18:00 - 19:00	31	8142	0.001	31	8142	0.009	31	8142	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 -									

24:00									
Total Rates: 0.090 0.084 0.174									

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

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Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

186 - 39230 (units: sqm) 01/01/06 - 13/01/17
31
0

0 7 0

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TPi Rocky Lane Aston/Birmingham

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : F - WAREHOUSING (COMMERCIAL) VEHICLES

Selected regions and areas:

02 SOUTH EAST

HC HAMPSHIRE

HF HERTFORDSHIRE

03 SOUTH WEST

CW CORNWALL

04 EAST ANGLIA

SF SUFFOLK

05 EAST MIDLANDS

LN LINCOLNSHIRE

08 NORTH WEST

LC LANCASHIRE

09 NORTH

CB CUMBRIA
TV TEES VALLEY

Licence No: 522501 Calculation Reference: AUDIT-522501-170118-0139

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:
Actual Range:
Range Selected by User:

Public Transport Provision: Selection by:

Gross floor area
1200 to 80066 (units: sqm) 387 to 80066 (units: sqm)

1 days 1 days

1 days

2 days

1 days

1 days

1 days 1 days

Date Range: 01/01/06 to 13/01/17

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 Tuesday Wednesday Thursday Friday

1 days 3 days 1 days 2 days 2 days

Include all surveys

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

Selected survey types:

Manual count 9 days Directional ATC Count 0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre) 2 Edge of Town 7

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 5 Commercial Zone 1 Residential Zone 1

TPi Rocky Lane Aston/Birmingham Licence No: 522501

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:

B8 9 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 5,001 to 10,000 10,001 to 15,000

4 days 2 days 3 days

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

Population within 5 miles:

5,001 to 25,000 25,001 to 50,000 50,001 to 75,000 100,001 to 125,000 125,001 to 250,000

3 days 1 days 1 days 1 days 3 days

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

Car ownership within 5 miles:

0.6 to 1.0 1 days 1.1 to 1.5 8 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 8 days

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

PTAL Rating:

No PTAL Present 9 days

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

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters

- 1 CB-02-F-01 DOMINO'S PIZZA
  COWPER ROAD GILWILLY IND. ESTATE PENRITH
  Edge of Town Industrial Zone
  Total Gross floor area:
  Survey date: TUESDAY

- 2 CW-02-F-01 WAREHOUSING
  A390 THREEMILESTONE NEAR TRURO
  Edge of Town
  No Sub Category Total Gross floor area:
  Survey date: TUESDAY

- 3 HC-02-F-01 WAREHOUSING
  MAURETANIA ROAD
  NURSLING INDUSTRIAL ESTATE SOUTHAMPTON
  Edge of Town
  Industrial Zone
  Total Gross floor area:
  Survey date: WEDNESDAY

- 4 HF-02-F-03 DISTRIBUTION CEN.

2950 sqm

10/06/14

5150 sqm

18/09/07

4000 sqm

21/11/07

CUMBRIA

Survey Type: MANUAL

CORNWALL

Survey Type: MANUAL

HAMPSHIRE

Survey Type: MANUAL

HERTFORDSHIRE

Survey Type: MANUAL

LANCASHIRE

Survey Type: MANUAL

LINCOLNSHIRE

Survey Type: MANUAL

SUFFOLK

Survey Type: MANUAL

HATFIELD BUSINESS CEN. HATFIELD
Edge of Town
Commercial Zone

Total Gross floor area:

Survey date: THURSDAY

- 5 LC-02-F-02 WAREHOUSING
  CHORLEY ROAD
  WALTON-LE-DALE
  PRESTON
  Suburban Area (PPS6 Out of Centre) Residential Zone
  Total Gross floor area:
  Survey date: FRIDAY

- 6 LN-02-F-01 BOOK SERVICE
  TRENT ROAD
  GRANTHAM
  Edge of Town
  No Sub Category Total Gross floor area:
  Survey date: MONDAY

- 7 SF-02-F-02 WAREHOUSING
  WALTON ROAD
  FELIXSTOWE
  Suburban Area (PPS6 Out of Centre) Industrial Zone

Total Gross floor area:
Survey date: THURSDAY

80000 sqm

10/07/08

1200 sqm

22/06/07

32300 sqm

29/11/10

22270 sqm

11/07/13

TPi Rocky Lane Aston/Birmingham

Licence No: 522501

LIST OF SITES relevant to selection parameters (Cont.)

8 SF-02-F-03

ROAD HAULAGE

SUFFOLK

Survey Type: MANUAL

TEES VALLEY

Survey Type: MANUAL

CENTRAL AVENUE WARREN HEATH IPSWICH
Edge of Town Industrial Zone
Total Gross floor area:

Survey date: FRIDAY

4700 sqm

18/09/15

9 TV-02-F-02

ROUNDHOUSE ROAD FAVERDALE DARLINGTON
Edge of Town Industrial Zone

Total Gross floor area:

Survey date: TUESDAY

ARGOS WAREHOUSE

80066 sqm

07/10/08

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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	12610	0.028	2	12610	0.036	2	12610	0.064
06:00 - 07:00	2	12610	0.067	2	12610	0.059	2	12610	0.126
07:00 - 08:00	9	25848	0.087	9	25848	0.054	9	25848	0.141
08:00 - 09:00	9	25848	0.070	9	25848	0.051	9	25848	0.121
09:00 - 10:00	9	25848	0.070	9	25848	0.051	9	25848	0.121
10:00 - 11:00	9	25848	0.055	9	25848	0.055	9	25848	0.110
11:00 - 12:00	9	25848	0.053	9	25848	0.053	9	25848	0.106
12:00 - 13:00	9	25848	0.056	9	25848	0.057	9	25848	0.113
13:00 - 14:00	9	25848	0.103	9	25848	0.081	9	25848	0.184
14:00 - 15:00	9	25848	0.080	9	25848	0.094	9	25848	0.174
15:00 - 16:00	9	25848	0.077	9	25848	0.101	9	25848	0.178

16:00 - 17:00	9	25848	0.062	9	25848	0.098	9	25848	0.160
17:00 - 18:00	9	25848	0.034	9	25848	0.077	9	25848	0.111
18:00 - 19:00	9	25848	0.019	9	25848	0.050	9	25848	0.069
19:00 - 20:00	2	12610	0.056	2	12610	0.052	2	12610	0.108
20:00 - 21:00	2	12610	0.024	2	12610	0.044	2	12610	0.068
21:00 - 22:00	1	22270	0.031	1	22270	0.018	1	22270	0.049
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.972 1.031 2.003									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1200 - 80066 (units: sqm) 01/01/06 - 13/01/17
9
0

0 0 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

TAXIS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	12610	0.000	2	12610	0.000	2	12610	0.000
06:00 - 07:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
07:00 - 08:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
08:00 - 09:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
09:00 - 10:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
10:00 - 11:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
11:00 - 12:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
12:00 - 13:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
13:00 - 14:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
14:00 - 15:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
15:00 - 16:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
16:00 - 17:00	9	25848	0.001	9	25848	0.001	9	25848	0.002
17:00 - 18:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
18:00 - 19:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
19:00 -	2	12610	0.000	2	12610	0.000	2	12610	0.000

20:00									
20:00 - 21:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
21:00 - 22:00	1	22270	0.000	1	22270	0.000	1	22270	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.001 0.001 0.002									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1200 - 80066 (units: sqm) 01/01/06 - 13/01/17
9
0

0 0 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

OGVS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	12610	0.012	2	12610	0.036	2	12610	0.048
06:00 - 07:00	2	12610	0.032	2	12610	0.056	2	12610	0.088
07:00 - 08:00	9	25848	0.016	9	25848	0.015	9	25848	0.031

08:00 - 09:00	9	25848	0.016	9	25848	0.016	9	25848	0.032
09:00 - 10:00	9	25848	0.019	9	25848	0.019	9	25848	0.038
10:00 - 11:00	9	25848	0.023	9	25848	0.019	9	25848	0.042
11:00 - 12:00	9	25848	0.021	9	25848	0.023	9	25848	0.044
12:00 - 13:00	9	25848	0.018	9	25848	0.016	9	25848	0.034
13:00 - 14:00	9	25848	0.022	9	25848	0.014	9	25848	0.036
14:00 - 15:00	9	25848	0.024	9	25848	0.014	9	25848	0.038
15:00 - 16:00	9	25848	0.025	9	25848	0.017	9	25848	0.042
16:00 - 17:00	9	25848	0.021	9	25848	0.012	9	25848	0.033
17:00 - 18:00	9	25848	0.010	9	25848	0.014	9	25848	0.024
18:00 - 19:00	9	25848	0.004	9	25848	0.013	9	25848	0.017
19:00 - 20:00	2	12610	0.016	2	12610	0.044	2	12610	0.060
20:00 - 21:00	2	12610	0.012	2	12610	0.036	2	12610	0.048
21:00 - 22:00	1	22270	0.027	1	22270	0.004	1	22270	0.031
22:00 - 23:00									
23:00 -									

24:00									
Total Rates: 0.318 0.368 0.686									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1200 - 80066 (units: sqm) 01/01/06 - 13/01/17
9
0

0 0 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 factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	12610	0.000	2	12610	0.000	2	12610	0.000
06:00 - 07:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
07:00 - 08:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
08:00 - 09:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
09:00 - 10:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
10:00 - 11:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
11:00 - 12:00	9	25848	0.000	9	25848	0.000	9	25848	0.000

12:00 - 13:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
13:00 - 14:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
14:00 - 15:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
15:00 - 16:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
16:00 - 17:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
17:00 - 18:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
18:00 - 19:00	9	25848	0.000	9	25848	0.000	9	25848	0.000
19:00 - 20:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
20:00 - 21:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
21:00 - 22:00	1	22270	0.000	1	22270	0.000	1	22270	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.000 0.000 0.000									

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

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have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1200 - 80066 (units: sqm) 01/01/06 - 13/01/17
9
0

0 0 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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

CYCLISTS

Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	12610	0.000	2	12610	0.000	2	12610	0.000
06:00 - 07:00	2	12610	0.004	2	12610	0.000	2	12610	0.004
07:00 - 08:00	9	25848	0.004	9	25848	0.000	9	25848	0.004
08:00 - 09:00	9	25848	0.001	9	25848	0.000	9	25848	0.001
09:00 - 10:00	9	25848	0.002	9	25848	0.000	9	25848	0.002
10:00 - 11:00	9	25848	0.000	9	25848	0.002	9	25848	0.002
11:00 - 12:00	9	25848	0.000	9	25848	0.002	9	25848	0.002
12:00 - 13:00	9	25848	0.001	9	25848	0.002	9	25848	0.003
13:00 - 14:00	9	25848	0.009	9	25848	0.010	9	25848	0.019
14:00 - 15:00	9	25848	0.001	9	25848	0.008	9	25848	0.009
15:00 - 16:00	9	25848	0.003	9	25848	0.004	9	25848	0.007
16:00 -	9	25848	0.000	9	25848	0.003	9	25848	0.003

17:00									
17:00 - 18:00	9	25848	0.000	9	25848	0.004	9	25848	0.004
18:00 - 19:00	9	25848	0.001	9	25848	0.003	9	25848	0.004
19:00 - 20:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
20:00 - 21:00	2	12610	0.000	2	12610	0.000	2	12610	0.000
21:00 - 22:00	1	22270	0.000	1	22270	0.000	1	22270	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.026 0.038 0.064									

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

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Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

1200 - 80066 (units: sqm) 01/01/06 - 13/01/17
9
0

0 0 0

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TPi Rocky Lane Aston/Birmingham

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02 SOUTH EAST

BU BUCKINGHAMSHIRE

03 SOUTH WEST

BR BRISTOL CITY

04 EAST ANGLIA

SF SUFFOLK

06 WEST MIDLANDS

WM WEST MIDLANDS

08 NORTH WEST

CH CHESHIRE

Licence No: 522501 Calculation Reference: AUDIT-522501-170203-0228

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:
Actual Range:
Range Selected by User:

Public Transport Provision: Selection by:

Number of pupils 208 to 234 (units:) 150 to 247 (units:)

1 days 1 days 1 days 1 days 1 days

Date Range: 01/01/08 to 31/01/17

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 Tuesday Wednesday

1 days 2 days 2 days

Include all surveys

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

Selected survey types:

Manual count 5 days Directional ATC Count 0 days

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

Selected Locations:

Edge of Town 3 Neighbourhood Centre (PPS6 Local Centre) 2

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

Selected Location Sub Categories:

Residential Zone 4 Village 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:

D1 5 days

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

Population within 1 mile:

5,001 to 10,000 15,001 to 20,000 20,001 to 25,000

1 days 2 days 2 days

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

Population within 5 miles:

75,001 to 100,000 125,001 to 250,000 250,001 to 500,000

2 days 1 days 2 days

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

1.1 to 1.5 5 days

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

Travel Plan:

Yes 2 days No 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 5 days

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

LIST OF SITES relevant to selection parameters

1 BR-04-A-01

PRIMARY SCHOOL

BRISTOL CITY

Survey Type: MANUAL

BUCKINGHAMSHIRE

Survey Type: MANUAL

CHESHIRE

Survey Type: MANUAL

SUFFOLK

Survey Type: MANUAL

WEST MIDLANDS

Survey Type: MANUAL

SCHOOL CLOSE WHITCHURCH BRISTOL
Edge of Town Residential Zone
Total Number of pupils:

Survey date: TUESDAY

2 BU-04-A-01 PRIMARY SCHOOL

LOWER ROAD
STOKE MANDEVILLE
NEAR AYLESBURY
Neighbourhood Centre (PPS6 Local Centre) Village
Total Number of pupils:

Survey date: WEDNESDAY

208

22/09/15

208

01/10/14

219

17/11/14

234

10/12/14

234

10/11/15

3 CH-04-A-01

PRIMARY SCHOOL

WESTON GROVE UPTON
CHESTER
Edge of Town Residential Zone
Total Number of pupils:

Survey date: MONDAY

4 SF-04-A-03 PRIMARY SCHOOL

ENSTONE ROAD
KIRKLEY
LOWESTOFT
Neighbourhood Centre (PPS6 Local Centre) Residential Zone

Total Number of pupils:

Survey date: WEDNESDAY

5 WM-04-A-02

PRIMARY SCHOOL

HAZEL ROAD
RUBERY
BIRMINGHAM
Edge of Town Residential Zone
Total Number of pupils:

Survey date: TUESDAY

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.

VEHICLES

Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	PUPILS	Rate	Days	PUPILS	Rate	Days	PUPILS	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	5	221	0.064	5	221	0.015	5	221	0.079
08:00 - 09:00	5	221	0.253	5	221	0.189	5	221	0.442
09:00 - 10:00	5	221	0.036	5	221	0.055	5	221	0.091
10:00 - 11:00	5	221	0.013	5	221	0.015	5	221	0.028
11:00 -	5	221	0.027	5	221	0.020	5	221	0.047

12:00									
12:00 - 13:00	5	221	0.034	5	221	0.040	5	221	0.074
13:00 - 14:00	5	221	0.029	5	221	0.039	5	221	0.068
14:00 - 15:00	5	221	0.074	5	221	0.017	5	221	0.091
15:00 - 16:00	5	221	0.132	5	221	0.218	5	221	0.350
16:00 - 17:00	5	221	0.070	5	221	0.080	5	221	0.150
17:00 - 18:00	5	221	0.015	5	221	0.053	5	221	0.068
18:00 - 19:00	5	221	0.001	5	221	0.007	5	221	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.748 0.748 1.496									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

208 - 234 (units:) 01/01/08 - 31/01/17 5
0
0
0
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.

TAXIS

Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	PUPILS	Rate	Days	PUPILS	Rate	Days	PUPILS	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	5	221	0.001	5	221	0.000	5	221	0.001
08:00 - 09:00	5	221	0.009	5	221	0.010	5	221	0.019
09:00 - 10:00	5	221	0.000	5	221	0.000	5	221	0.000
10:00 - 11:00	5	221	0.000	5	221	0.000	5	221	0.000
11:00 - 12:00	5	221	0.000	5	221	0.000	5	221	0.000
12:00 - 13:00	5	221	0.000	5	221	0.000	5	221	0.000
13:00 - 14:00	5	221	0.000	5	221	0.000	5	221	0.000
14:00 - 15:00	5	221	0.002	5	221	0.000	5	221	0.002
15:00 -	5	221	0.005	5	221	0.007	5	221	0.012

16:00									
16:00 - 17:00	5	221	0.000	5	221	0.000	5	221	0.000
17:00 - 18:00	5	221	0.000	5	221	0.000	5	221	0.000
18:00 - 19:00	5	221	0.000	5	221	0.000	5	221	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.017 0.017 0.034									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

208 - 234 (units:) 01/01/08 - 31/01/17 5
0
0
0
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.

OGVS

Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	PUPILS	Rate	Days	PUPILS	Rate	Days	PUPILS	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	5	221	0.000	5	221	0.000	5	221	0.000
08:00 - 09:00	5	221	0.000	5	221	0.000	5	221	0.000
09:00 - 10:00	5	221	0.000	5	221	0.000	5	221	0.000
10:00 - 11:00	5	221	0.000	5	221	0.000	5	221	0.000
11:00 - 12:00	5	221	0.002	5	221	0.002	5	221	0.004
12:00 - 13:00	5	221	0.002	5	221	0.002	5	221	0.004
13:00 - 14:00	5	221	0.000	5	221	0.000	5	221	0.000
14:00 - 15:00	5	221	0.000	5	221	0.000	5	221	0.000
15:00 - 16:00	5	221	0.000	5	221	0.000	5	221	0.000
16:00 - 17:00	5	221	0.000	5	221	0.000	5	221	0.000
17:00 - 18:00	5	221	0.000	5	221	0.000	5	221	0.000
18:00 - 19:00	5	221	0.000	5	221	0.000	5	221	0.000
19:00 -									

20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.004 0.004 0.008									

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

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

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

208 - 234 (units:) 01/01/08 - 31/01/17 5
0
0
0
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.

TPi Rocky Lane Aston/Birmingham Licence No: 522501 TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

PSVS

Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	PUPILS	Rate	Days	PUPILS	Rate	Days	PUPILS	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	5	221	0.000	5	221	0.000	5	221	0.000

08:00 - 09:00	5	221	0.001	5	221	0.001	5	221	0.002
09:00 - 10:00	5	221	0.000	5	221	0.000	5	221	0.000
10:00 - 11:00	5	221	0.000	5	221	0.000	5	221	0.000
11:00 - 12:00	5	221	0.000	5	221	0.000	5	221	0.000
12:00 - 13:00	5	221	0.000	5	221	0.000	5	221	0.000
13:00 - 14:00	5	221	0.000	5	221	0.000	5	221	0.000
14:00 - 15:00	5	221	0.000	5	221	0.000	5	221	0.000
15:00 - 16:00	5	221	0.002	5	221	0.002	5	221	0.004
16:00 - 17:00	5	221	0.000	5	221	0.000	5	221	0.000
17:00 - 18:00	5	221	0.000	5	221	0.000	5	221	0.000
18:00 - 19:00	5	221	0.000	5	221	0.000	5	221	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.

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

208 - 234 (units:) 01/01/08 - 31/01/17 5
0
0
0
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 factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	PUPILS	Rate	Days	PUPILS	Rate	Days	PUPILS	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	5	221	0.002	5	221	0.000	5	221	0.002
08:00 - 09:00	5	221	0.005	5	221	0.004	5	221	0.009
09:00 - 10:00	5	221	0.000	5	221	0.000	5	221	0.000
10:00 - 11:00	5	221	0.000	5	221	0.000	5	221	0.000
11:00 - 12:00	5	221	0.000	5	221	0.000	5	221	0.000

12:00 - 13:00	5	221	0.000	5	221	0.000	5	221	0.000
13:00 - 14:00	5	221	0.000	5	221	0.000	5	221	0.000
14:00 - 15:00	5	221	0.001	5	221	0.000	5	221	0.001
15:00 - 16:00	5	221	0.004	5	221	0.003	5	221	0.007
16:00 - 17:00	5	221	0.002	5	221	0.002	5	221	0.004
17:00 - 18:00	5	221	0.000	5	221	0.000	5	221	0.000
18:00 - 19:00	5	221	0.000	5	221	0.002	5	221	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates: 0.014 0.011 0.025									

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

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that

have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: Survey date date range:
Number of weekdays (Monday-Friday): Number of Saturdays:

Number of Sundays:
Surveys automatically removed from selection: Surveys manually removed from selection:

208 - 234 (units:) 01/01/08 - 31/01/17 5
0
0
0
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.

WF01BEW - Location of usual residence and place of work (OA level)

ONS Crown Copyright Reserved [from Nomis on 23 January 2017]

population units
date

All usual residents ages 16 and over in employment the week before the census Persons
2011

place of work : 2011 census merged local authority district

Birmingham Bromsgrove Cannock Chase Coventry Dudley

East Staffordshire Herefordshire, County of Lichfield
Malvern Hills Newcastle-under-Lyme North Warwickshire Nuneaton and Bedworth Redditch

Rugby
Sandwell
Shropshire
Solihull
South Staffordshire Stafford
Staffordshire Moorlands Stoke-on-Trent Stratford-on-Avon Tamworth

Telford and Wrekin Walsall
Warwick Wolverhampton Worcester Wychavon

Wyre Forest

Cheadle

264 252

190 174

193 225 220

Cheadle North East

E01029781 : Staffordshire Moorlands 011A

Cheadle North East

E01029783 : Staffordshire Moorlands 011B

Cheadle South East

currently residing in

E01029782 : Staffordshire Moorlands 010B

E01029786 : Staffordshire Moorlands 011C

Cheadle West

0210432 0002001 2131032 0000210 1111012

102 72 59 58 63 86 80 0000000 3102253 0000000

22 17 18 22 21 31 32 0000010 0001001 0000000 0000000 0002020 0010122 2201002 2022111

32 43 22 49 40 63 57

400 362 306 302 305 396 360

122 104 87 150 117 199 196 0000000 0101300 3011021 2101010 1001100 1127123 0000000 0000000 0000000

E01029787 : Staffordshire Moorlands 011D

Cheadle West

E01029784 : Staffordshire Moorlands 013A

Cheadle South East

E01029785 : Staffordshire Moorlands 013B

Cheadle West

Total Trips to destination

0.4% 1% 0.1%
0.4% 1% 0.1%

0.2%
17.4% 17%

0.0%
0.5%
0.0%
5.4% 6% 0.0%

0.1% 0.0% 0.0% 0.1% 0.2% 0.2% 0.3%

10.2% 10% 30.5% 31% 32.5% 33%

0.0%
0.2%
0.3%
0.2%
0.1%
0.6% 1% 0.0%

0.0%

0.0%

4,515 100% 100%

12
3

12
3
7
520
0
16
0
163
1
2
0
0
4
6
7
9
306
2431
975
0
5
8
5
3
17
0
0
0

Percentage of trips to destination

0% 0% 0% 0% 0%

12% 0% 0% 0% 4% 0% 0% 0% 0% 0% 0% 0% 0% 7% 54% 22% 0% 0% 0% 0% 0% 0% 0% 0% 0%

1,518	62%

913	38%

2,997

Appendix E.2 Total Committed Development Trips – Inbound and Outbound for AM and PM

CH020

AM PM IN 5 14

CH132

IN OUT

AM PM

10 27 28 16

AM PM

53 28 40 46

AM PM

5 14 15 8

AM PM

31 81 84 48

OUT 15

8

School Site in IN

CH132

IN CH004

OUT

IN CH001

OUT

TOTAL

AM PM IN 100 149

OUT 166 118

AM PM

4 11 11 6

AM PM

25 63

AM PM

6 15 16 9

OUT

IN CH015

Appendix E.2

March 2017 COSTCDT6573

Cheadle Town Centre Study Census Data Trip Numbers

CH013

AM PM IN 7 17

OUT

IN OUT

LIGHT VEHICLES

EM1 CH127

EM2 CH019

TOTAL

TOTAL

HEAVY GOODS VEHICLES AM

CH002a

CH002b

9

OUT

18 10

CH009

IN OUT

AM PM

112 18 30 91

PM EM1CH127 IN 12 2

AM
IN 9 24

AM PM IN 87 14

EM2 CH019

TOTAL

AM PM CH085c IN 16 42

OUT

IN OUT

IN OUT

23 70

AM PM

199 33 53 161

AM PM

221 36 58 179

OUT

IN CH085d

OUT

IN

CH128
OUT

44 25

AM PM

12 32 33 19

AM PM

37 74

AM PM

56 144 151 86

TOTAL IN 9 23 OUT 24 14

OUT 3 10

AM PM IN 10 2 OUT 3 8

AM PM IN 22 4

OUT 6 18

OUT

25 14

IN OUT

CH085a

CH085b

IN
OUT 9 5

TOTAL

IN OUT

IN OUT

AM

16 42

PM

40 24

AM

PM

PM

3

AM PM

5 14 15 8

AM PM

IN CH024

OUT

TOTAL

AM PM IN 12 31

OUT 33 19

IN CH020

OUT

IN CH013

OUT

EM1 CH127 (LV)

EM1 CH127 (HGV)

EM2 CH019 (LV)

EM2 CH019 (HGV)

124 20 60 10 19 3 46 33 101 16 48 5 15 12

IN 112 18 54 9 17 3 41 OUT 30 91 14 43 4 14 11

8 0 0 37 0 0

7 0 0 33 0 0

IN EM2 CH019

OUT

Total trips in / out of Northbound (A521) Westbound (A521) Southbound (A522) Eastbound

development site
AM PM AM PM AM PM AM PM AM PM

48% 15% 37% 0%

5 14 3 7 1 2 2 5 0 0 15 8 7 4 2 1 5 3 0 0

7 17 3 8 1 3 2 6 0 0 18 10 8 5 3 1 6 4 0 0

IN EM1 CH127

OUT

IN 12 2 6 1 2 0 5 1 0 0 OUT 3 10 2 5 0 2 1 4 0 0

97 16 46 8 14 2 36 26 78 12 38 4 12 9

IN 87 14 42 7 13 2 32 OUT 23 70 11 34 3 11 9

6 0 0 29 0 0

5 0 0 26 0 0

IN 10 2 5 1 1 0 OUT 3 8 1 4 0 1

16 40 7 19 2 6 42 24 20 11 6 4

9 24 4 11 1 4 25 14 12 7 4 2

16 42 8 20 2 6 44 25 21 12 7 4

4 1 0 0 1 3 0 0

6 15 0 0 16 9 0 0

3 9 0 0 9 5 0 0

IN CH085a

OUT

IN CH085b

OUT

IN CH085c

OUT

IN CH085d

OUT

IN CH004

OUT

163281525 1200

33 19 16 9 5 3 3713011200

12 7432113100

10 27 5 13 2 4 4 10 0 0 28 16 13 8 4 2 10 6 0 0

53 28 26 13 8 4 20 10 0 0 40 46 19 22 6 7 15 17 0 0

5 14 3 7 1 2 2 5 0 0 15 8 7 4 2 1 5 3 0 0

31 81 15 39 5 12 12 30 0 0 84 48 40 23 13 7 31 18 0 0

4 11 2 5 1 2 2 4 0 0 11 6 5 3 2 1 4 2 0 0

2513011200 6332102100

6 15 3 7 1 2 2 6 0 0 16 9 8 4 2 1 6 3 0 0

3924111300 9542113200

5 14 3 7 1 2 2 5 0 0 15 8 7 4 2 1 5 3 0 0

Appendix E.3 Cheadle Town Centre Study March 2017 Inbound and Outbound Route Choices

COSTCDT6573

6 16

16 0 0 9 0 0

6

7 0 0

IN CH128

OUT

IN CH132

OUT

School Site in CH132

IN OUT

IN CH001

OUT

IN CH015

OUT

IN CH009

OUT

IN CH024

OUT

IN CH002a

OUT

IN CH002b

OUT