North West Bicester

20300



Title: Response to OCC Highways Comments

Date: March 2022

- 1.1 Jubb has been commissioned by Hallam Land Management Ltd (HLM) to provide highways and transportation advice in relation to proposals for a residential-led mixed use development on Land north-east of the railway line in North West Bicester.
- 1.2 This technical note sets out, in table format, a response to Oxfordshire County Council's initial transport and highways comments relating to the Transport Assessment that supports the planning application 21/04275/OUT submitted to Cherwell Council.

Document /	OCC Comments	Jubb Comments	
Paragraph			
	ES Non-Tech Sum	mary	
5.1	5.1 States that the transport effects of the proposals have been carefully modelled Noted. -this is not borne out in the TA		
	TA Part 1		
2.1.4	States that the site forms part of Policy Bicester 1 but some of the site is outside the allocation area. Rather Policy Bicester 1 forms part of the site!	Noted.	
4.3.3	A4095 realignment is no longer funded from Growth Deal so delivery cannot be assumed by 2026	Noted. Discussions are ongoing with various parties including Cherwell DC regarding the delivery of the A4095. Assessment work is also being undertaken to understand the quantum of development that could be delivered with a mitigation	

Document / Paragraph	OCC Comments	Jubb Comments
		scheme at the A4095/Howes Lane/Bucknell Road junctions – please note we are awaiting model flows from OCC.
	TA Part 2	
Fig 5.3	The off site pedestrian network doesn't appear very comprehensive and does not include routes to be improved as part of the Masterplan Access and Travel Strategy.	Figure 5.3 shows the main existing footways and existing crossing points. It also indicates the footways that will be provided adjacent to the realigned A4095 and the delivery of additional crossing points that will be provided as part of the proposed A4095 realignment scheme (at Bucknell Road and the two proposed A4095 site accesses) and the proposed A4095/Banbury Road signalisation scheme. Paragraph 10.1.6 sets out the off-site sustainable transport enhancements that were proposed and agreed for the full NWB development scheme and discussions regarding the provision/contribution towards these opportunities to improve links to the wider Bicester active transport network is welcomed. Upgrade of the route alongside the railway from Lord's Lane to Banbury Road as a surfaced cycleway and footpath; Improvements along Banbury Road, some of which are being delivered as part of the Exemplar development; Minor improvements to the existing cycleway on the south side of Lord's Lane to remove vegetation that impacts on the sense of personal security of users; and Improvements to the routes through Bure Park to encourage use as leisure walking and cycling routes.
5.5.13	Improvements will be required to off site pedestrian routes as mitigation for the development.	Noted. See response to Figure 5.3 above. The same improvements that were agreed on the 2014 scheme will be delivered.
5.9.5	Point of detail - Train services from Bicester Village Rail station – not currently provided to Bedford, but are provided to London.	Noted – East West Rail is a major infrastructure project to deliver rail connections between Oxford and Cambridge and will be delivered in three connection stages.

Document / Paragraph	OCC Comments	Jubb Comments
		Stage 1 (Oxford to Bletchley/Milton Keynes) is aimed to be delivered by 2025 with an extension to Bedford (Stage 2) and to Cambridge (Stage 3) to follow.
	TA Part 3	
Fig 7.2	This says it is a 'visual representation of the overarching NWB masterplan movement and access framework', but appears to show only the vehicle access strategy and omits key pedestrian/cycle routes from the framework.	The NWB masterplan shows the strategic pedestrian/cycle routes as red/brown/yellow lines.
7.2.4	The timeframe for the delivery of the A4095 realignment is now uncertain, following the reallocation of its Growth Deal funding, and can no longer be assumed to be delivered by OCC	Noted. See response to 4.3.3. above.
7.2.6/Fig 7.4	Vehicular Access Strategy in the NW Bicester Masterplan Access and Travel	Discussions with A2D are ongoing in respect of the delivery of the access to Charlotte Avenue. The access could take the form of enabling all vehicle movements and active travel or it could form a bus only link alongside active travel. Modelling of the A4095/Banbury Road junction is noted.
Fig 7.4	accordance with the Masterplan Strategy, which aimed to discourage through	With a combination of highway design and traffic calming and traffic management measures along Bucknell Rd journey times to Bucknell village will be increased, hence reducing the attractiveness of this route. Discussions are ongoing with Bucknell Parish Council regarding the exact nature of these measures. Noted and agreed.

Document / Paragraph	OCC Comments	Jubb Comments
7.2.7	Access strategy: The access strategy includes primary accesses direct off the A4095 realignment. As this realignment is no longer programmed to be delivered by OCC the developer would need to provide both connections to Lords Lane, the southern connection being to a design to be agreed with OCC, to be compatible with future realignment of Lords Lane.	Noted. The proposed eastern access is formed from the existing alignment of the A4095.
	The realignment is necessary to distribute traffic from the development, avoiding the severely congested junction of Lords Lane/Bucknell Rd/Howes Lane. Whilst the developer could build the realigned road as far as the new railway bridge, there would need to be a limit on development coming forward before the onward connection south of the railway is opened.	Noted. See response to 4.3.3 above.
	Also two accesses are mentioned off the SLR (realigned section of the A4095). Only one is shown on the plan in Figure 7.4 – this needs clarification.	The western access will be taken from the SLR. The eastern access is taken from the existing A4095.
	A number of accesses are indicated off Bucknell Road, and one off Bainton Road, for which no details are provided. As approval is sought for accesses as part of this outline application, details of each access from the highway must be provided as part of the application.	DLA are discussing this issue with CDC with a proposal to update the key on plan HLM066/026A to clearly shows accesses as illustrative and the proposal for the use of a condition to ensure details of the accesses are submitted and approve:
		"Notwithstanding the submission of drawing no. HLM066/026A in relation to the consideration for approval of the means of access to the Proposed Development, the Site Access positions for the 'Potential access from/to Elmsbrook', 'Indicative access to development parcels', 'access to allotments/open space (public) and cemetery' and 'Maintenance access to solar farm/Access to open space' are shown for illustration purposes only. Full details of the exact positioning and treatment of these site accesses shall be submitted to the Local Planning Authority for approval as part of the reserved matters application for that Part of the approved details."
	The bus only link between the A4095 realignment and Lords Lane/Bucknell Road is not shown - that was part of the NWB masterplan movement and access framework. However, provided an acceptable bus loop can be provided, to link with the bus route within the Exemplar site, this would be acceptable, as the buses could access the site from the Banbury Road rather than Bucknell	This bus only link was removed from the OCC design for the A4095 realignment, and the design reflects that.

Document / Paragraph	OCC Comments	Jubb Comments
	Road. However, the link through to the Exemplar site is only shown as a 'potential' access.	Noted. See response to 7.2.6/Fig 7.4.
7.2.8		

Document / Paragraph	OCC Comments	Jubb Comments
	Walking and cycling routes: These routes should be included in the Development Framework Plan, together with connections to off site public rights of way. Key routes need to be secured through the planning permission to ensure that they are delivered in a timely fashion once the site is divided up onto parcels.	The proposed framework of walking and cycling routes together with connections to off-site public rights of wat are shown in Figure 7.5 which is a reproduction of the figure within the DAS (Part 6, page 89). A condition can be used to ensure key route delivery in accordance with the phased development.
	All the routes shown in Fig 4.3 should be LTN 1/20 compliant. Within the urban area there should be segregation between pedestrian and cycle routes and priority over minor roads. Details of connection points to the highway network must be shown as these are part of the access arrangements. A – important connection point to ped/cycle subway leading to the NW Bicester development S of the railway. To make best use of this it needs to be as directly accessible as possible from the whole of the site, so a connection along the red line marked in on the map below should also be provided. B – the NW Bicester Masterplan shows a connection onto Lords Lane/realigned A4095 here – this should be shown in detail as it part of the access arrangements.	Noted. Please see revised Primary Street cross section attached at Appendix A which shows 2m cycleways adjacent to the carriageway. It is considered that the 'purple route' within the development alongside Bucknell Road provides a suitable link via a proposed toucan crossing to the subway. The NW Bicester Walking and Cycling Strategy indicates a pedestrian/cycle route alongside the realigned A4095 and a leisure route within the development. However, it does not show a connection between.

Paragraph	Walking and Cycling Strategy
	algebra by Primary Road Property Jonation Control of Co
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	Despite the NW Bicester masterplan not showing the link, it can be provided.

Document /	OCC Comments	Jubb Comments
Paragraph		
		As indicated in Figure 7.5, a network of pedestrian routes is proposed including a route adjacent to the Firethorn site, enabling an active travel connection to be made.
		This request is currently being considered and Jubb will provide an update as soon as discussions with landowners have been undertaken.
	Additionally, a primary cycle route connection should be made at the extreme southern corner of the site, to connect to the footpath alongside the railway (which is to be made into a cycle route as part of off site highway works).	Noted.

Document / Paragraph	OCC Comments	Jubb Comments
	How will the route in GI parallel to Bucknell Road pass Hawkwell Farm, which is not within the red line?	The detailed delivery of this route is being discussed but it is understood that its delivery is available as it is the same landowner.
7.2.9	improvements. Off site improvements are a key part of the NW Bicester Access and Travel Strategy. A key access route in that strategy between this site and	Details of off-site improvements are provided in Section 10 of the TA and in relation to walking and cycling specifically laid out in paragraph 10.1.6. As stated, these were the identified for the full NWB development and discussions are welcomed with OCC as to the appropriate level of contribution / delivery that is related to the development.

Document / Paragraph	OCC Comments	Jubb Comments
7.3.1	The proposed bus route does not include the Exemplar site. NW Bicester's public transport strategy is only deliverable if all the development north of the railway can be served by a single bus route and this must be taken into account in the bus routing. The bus route must connect into the Exemplar site, with additional pedestrian connections through to bus stops on Charlotte Avenue.	integrated public transport service with the adjacent Exemplar site. See also response to 7.2.6/Figure 7.4 above.
7.4.1	The Mobility Hub is welcomed, though there is no information to demonstrate that the land allocated for the local centre is sufficient to accommodate it.	Whilst the application is for outline consent only, DLA have undertaken a high-level design to ensure that the outline land uses can be provided within the allocated area – see plan attached at Appendix B . Car club spaces will be provided within the local centre car club. The plan does not provide a definitive layout as details of the layout will be determined as part of a reserved matters application, but it indicates that there is sufficient space to accommodate the land uses and supporting infrastructure that is proposed.
7.5.1	The travel plan is critical to achieve the low car usage predicted. OCC do not consider the submitted travel plan to be sufficiently robust to support this. See comments provided under Travel Plan. OCC would require a detailed travel plan to be agreed before planning permission is issued, and secured via the S106 agreement, with payments to be made to OCC in the event that measures are not delivered, to allow OCC to deliver them.	
7.6.1	The internal road layout should be designed in accordance with the Oxfordshire Street Design Guide.	Noted.
7.7.2	To achieve the low trip generation predicted in this TA, lower car parking standards would need to be agreed. The same would apply to non-residential vehicle parking, to avoid the non-residential uses within the site attracting trips from outside NW Bicester.	dwelling), capping residential parking does not lead to lower car use. The provision

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		travel quicker by other modes car ownership will eventually lower. The developer is not seeking to constrain car ownership but to lower car usage through the provision of alternative mode infrastructure that will enable modal shift to occur.
		Lower car parking standards for non-residential uses is acceptable in principle.
7.7.5	To achieve the low car trip generation predicted, every member of each household old enough to ride a bike should have space to park it securely. Therefore there should be greater provision than in the Oxfordshire Cycle Design Standards, which are minimum standards. Cycle parking should also be provided for visitors and in connection with other land uses at the site including the burial ground, play areas, allotments, open space etc. The school should have cycle parking, scooter parking and buggy parking, as well as nearby off-site cycle parking for parents to use when going into the school to drop off children.	Resident cycle parking – 1 space for 1 bed unit, 2 spaces for larger units It is not possible to provide a secure space for every member of each household who is old enough to ride a bike as the occupancy of each dwelling will be
7.8.2	Given the timescales for the review of the Local Plan, in advance of its adoption, plans should comply with the Oxfordshire EVI Strategy.	Noted.
Section 8, Vehicle Trip Generation	There are several assumptions made in the calculation of trip generation, which are unrealistic in my opinion. The overall conclusion of this section, which is that there will be materially less external traffic than was envisaged in 2014, is therefore open to challenge. Further, the conclusion that the traffic impact of the proposed development, which would give rise to a significantly more dwellings (3,100 plus Firethorn, versus 2600 from 14/01384/OUT) north of the railway than previously envisaged, would be no greater than that predicted in 2014, is not reliable. This conclusion means the TA does not include any traffic modelling or junction assessments.	Please see Technical Note 02 attached at Appendix C which sets out an amended trip generation assessment and was previously submitted (18.02.2022) to OCC for review.

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Paragraph		
8.3.2	States that the calculation of external vehicle trip generation has been undertaken in line with the 'Decide and Provide' approach (TRICS, Feb 2021). However, it seems over simplified when compared with the description of the approach in the TRICS guidance referred to. The guidance refers to establishing trends over time and the creation of a number of scenarios which this TA does not show. Moreover, as acknowledged in this paragraph, the approach is vision-led, whereas the TA does not in my view set out a low car vision for the site.	
8.3.5	It appears only two market housing sites have been selected in TRICS to provide the initial forecast. As there are few, large, market only housing developments in the database, it may have been more realistic to select large mixed market/affordable developments. Moreover the sites chosen do appear to also have primary schools and local centres and so would already have a good level of internalised trips. It's therefore double discounting to discount internalised trips from the TRICS trip rate.	
8.3.6	There is insufficient detail on the mixed use local centre to ascertain that it is 'purposely designed to serve the specific requirements of the residential proposal'. It's quite likely that, depending on what stores/businesses it contains, it will attract trips from the surrounding area and even nearby villages. Likewise, with freedom of choice for parents, it's likely that the primary school will attract pupils from outside the development.	
8.3.18	'34% of the workplace population in Bicester who drive to work also live locally in the same area' – how big is this area, and how many jobs per household? I'm not sure it would be appropriate to use the same percentage to assume that 34% of work purpose car trips in the development could be discounted from the external vehicle trip rate, when considering the size of the development? Nevertheless I acknowledge this makes little difference in this case.	
8.3.21	Discounting all escort education journey purpose trips is not realistic and doesn't take account of the number of children likely to be escorted to schools off site,	

Document / Paragraph	OCC Comments	Jubb Comments
	including private schools. This discounting results in a large number (415) being discounted from the am peak trips predicted by TRICS. See above regarding the TRICS sites already located close to primary schools.	
8.3.24	The discounting of 50% of 'personal business' related trips is unreliable as nothing is known about the range of services to be provided at the local centre. Other than retail or food, businesses at the local centre are unlikely to cater for more than a small proportion of the site's residents, and it's hard to believe they would attract over 150 trips in the peak hour that would otherwise have been made off site.	
8.3.35	States that properties would be designed with 'appropriate work areas and areas to support recreation', to enable the full potential of home working. What is the vision for this and will any special standards apply to the housing? How much co-working space would be provided within the Local Centre?	Discussions with housebuilders are being undertaken to understand in more detail the provision that is being considered for future housing stock following the demand for working from home bought about by the COVID-19 pandemic. The land uses applied for in the outline application have been provided to enable a flexible approach and it will be possible to provide a suitable floor area of co- working space i.e. above the proposed convenience store.
8.3.38	The Travel Plan submitted with the application is not considered sufficiently strong to result in a 15% increase in sustainable modes. OCC would be looking for the framework travel plan to be finalised along with the planning permission and secured through the S106, with the payment of a 'default contribution' in the event that measures are not being delivered, to allow OCC to step in and deliver it.	Noted. The significant infrastructure and funding that the development proposes (extensive network of active travel routes, public transport funding, mobility hub, co-working facilities, off-site active travel improvements) should also be considered when considering the increase in sustainable mode shift.
8.4	The difference between the TA-predicted external trip generation for the site and that predicted in the NW Bicester Traffic Model is very significant (380 trips in the am peak) and suggests that more intensive package of sustainable travel measures would be required to realise this difference than those contained in the NW Bicester Access and Travel Strategy.	Noted. A review of trip rates from the TRICS database indicates a reduction of 17% in daily residential dwelling trip rates for private housing.

Document /	OCC Comments	Jubb Co	Jubb Comments			
Paragraph						
		Year	Daily Two-way Trip Rate per			
			Dwelling			
		2014	5.122			
		2015	4.767			
		2016	4.610			
		2017	4.710			
		2018	4.482			
		2019	4.270			
		undertaken	, a review of the base trip rates used The daily trip rate of the 21 sites the previous development indicates g.	s used for the 'private housing		
		way daily tr would enab With the pr will be no	s trip rate to the 2,600 dwellings wou ips. Dividing this number of trips by t le a development of 3,244 dwellings oposal seeking an additional 500 dw additional vehicles on the highwa n the 2014 scheme.	the lower historical 2019 trip rate is i.e. an additional 644 dwellings ellings it is considered that there		

Document / Paragraph	OCC Comments	Jubb Comments
		Additionally, we would expect a further reduction in vehicle trips as the 2019 two- way daily trip rate is prior to the Covid-19 pandemic and the changes bought about that sees many employers offering hybrid working.
10.1.3	This assumption cannot be made because the BTM has been updated since 2014 to take in a higher level of committed development following the adoption of the current local plan. In the 2014 model, traffic from Heyford was not included.	Noted. However, as the development will not generate additional traffic compared with the previous application any deterioration to the highway network because of the inclusion of additional committed development will be due to the additional committed development and not the Hawkwell Village development.
Appendix D	Main access off realigned A4095. Segregated cycle facilities required on both sides of the road. Note that LTN 1/20 has been introduced, and Oxfordshire Cycle Design Standards, since the PP for the realigned A4095. Refuge at crossing should be designed for cyclists – it is not wide enough. Crossing should be straight over (this was the case with the approved planning permission for the road).	Noted. Design to be amended.

Document / Paragraph	OCC Comments	Jubb Comments
Appendix E	Main access off Lords Lane. Ditto. 3m shared use path is no longer adequate. Is two-lane approach from the site necessary? Segregated cycle facilities required on both sides of the road within the development too – compliant with LTN 1/20. See general comments re this junction above.	Noted. Design to be amended. The Lords Lane site access forms part of the Primary Street identified on the framework plan and will therefore, be comprised of the components as shown in the cross-section at Appendix A .
Appendix F		Junction positioning along Bucknell Road will be undertaken in accordance with OCC design guidelines. A link into the GI route parallel to Bucknell Road will be shown.
Appendix G	Connection to Cranberry Ave, within the Exemplar Site. Clarification needed as this is referred to in the access strategy as potential. The connection must be made, even if only as a bus only route with ped/cycle access.	Dealt with above in 7.2.6/Figure 4 and 7.2.8.
Appendix L	Sensitivity test of cumulative impact with non-local plan development: Clarity is needed on this methodology as it is showing negative % change on some links.	The calculation is based on the original vehicle flows agreed for the 2014 application (Columns A & B) with a pro rata approach used for the proposed development. The original 2014 also show negative % change on some links.

Document / Paragraph	OCC Comments	Jubb Comments
Green and Blue Infrastructure Principals	Within the Green and Blue Infrastructure Principles document Fig 12 Recreational Routes does not show a route along or parallel to the length of Bucknell Road from A4095 northwards. This is a major omission given the diagram in 7.5 proposing a 'leisure' route here. This must be clarified, set out and safeguarded in this application. There is nothing establishing the principles of width, surface, lighting wayfinding and road crossings along this and all other routes.	

Appendix A Primary Street Cross-Section

PRIMARY STREET SECTION





Appendix B Preliminary Local Centre Layout (Illustrative)





Elmsbrook Primary School comparison

View 1 Brooklands Local centre, _ Milton keynes

Brooklands Local centre, Milton keynes

Fen Stree

View 1



Appendix C TN02 Trip Generation

Jubb

Title: Transport Scoping Note

Date: February 2022

1.0 Introduction

- 1.1.1 Jubb has been commissioned by Hallam Land Management Ltd (HLM) to provide highways and transportation advice in relation to proposals for a residential-led mixed use development on Land northeast of the railway line in North West Bicester.
- 1.1.2 The detailed description of the development proposals is set out below:

"Mixed Use Development of up to 3,100 dwellings (including extra care); residential care homes(C2); mixed use local centre (comprising Commercial, Business and Service Uses, residential uses, Local Community Uses (F2(a) and F2(b)), hot food takeaways, public house, wine bar); employment area (B2, B8, E(g)); Learning and Non-residential institutions (Class F1) including primary, land to allow extension of existing primary school; Green Infrastructure including formal (including playing fields) and informal open space, allotments, landscape, biodiversity and amenity space; burial ground; play space (including Neaps/Leaps/MUGA); changing facilities; large scale photovoltaic system (solar farm); sustainable drainage systems; movement network comprising new highway, cycle and pedestrian routes and access from highway network; car parking; infrastructure (including utilities); engineering works (including ground modelling); demolition".

1.1.3 This Technical Note (TN) has been produced to establish the details relating to the calculation of forecast peak hour vehicle trip generation for the development proposals. This vehicle trip generation, which has been calculated based on principles brough about by discussions with the Local Highway Authority (LHA), will be used to assess the associated development traffic impact in the TA.

2.0 Development Traffic Impact

Methodology and Approach

- 2.1.1 The masterplan principles set out in this TN are in keeping with the Decide and Provide (D&P) approach, as set out within the TRICS Guidance Note on the Practical Implementation of the Decide & Provide Approach (February 2021). This approach is vision-led and seeks to provide a preferred future of reduced car dependence through providing a development path best suited to achieving it.
- 2.1.2 In contrast to the previous Predict & Provide (P&P) approach, which often delivered schemes based on unrealistic worst case traffic assumptions, the D&P approach develops schemes based on more realistic traffic assumptions, taking into account changes in general travel patterns through technological advances and changes in the perception relating to the esteem associated with car ownership and use.
- 2.1.3 The TRICS D&P Guidance Note emphasises that:

"The D&P approach provides the opportunity for more positive and integrated transport and land use planning. It also provides the opportunity to meaningfully implement the modal hierarchy, giving greater centrality to the up-front consideration of walking and cycling, rather than a more cursory treatment as residual or less considered modes that has sometimes, historically, been the case. It is important that, as transport professionals, we engage fully with this paradigm shift. We need to take decisions and make provisions that respond to the following key drivers including the following:

- The drive towards Net Zero climate change or greenhouse gas (GHG) emissions.
- Strategies to decarbonise the transport sector, being progressed in the UK's Transport Decarbonisation Plan.
- In terms of health and wellbeing, respond to the UK's obesity crisis (also further compounded by Covid-19) and further promote active travel provision."
- 2.1.4 In light of this, a full review of the assumptions and principles that were previously adopted in forecasting the development traffic impact of the 2014 submission has been undertaken and adjustments on the methodology and approach have been made to reflect the prevailing travel tendency and the impact of the current pandemic.
- 2.1.5 In order to provide an initial forecast of peak hour (i.e. 08:00-09:00 and 17:00-18:00) traffic generation associated with the employment and residential elements of the development proposals; vehicle trip rates have first been calculated based on surveys of comparative sites within the TRICS database.
- 2.1.6 It is noted that the envisaged mixed-use Local Centre is purposely designed to serve the specific requirements of the residential proposals. Hence, it has been assumed that the proposed local centre would not create any impact on the nearby highway network as trips relating to these uses would be internal i.e. retained within the site.

Initial Traffic Generation

- 2.1.7 The CDC Housing Strategy identifies a 30% affordable housing requirement in this area. On this basis the peak hour vehicle trip rates for the proposed residential element have been calculated separately for Private Housing and Affordable Housing.
- 2.1.8 Vehicle trip rates for the land categories of "Employment Industrial Units", "Residential Privately Owned Houses", "Residential Affordable/Local Authority Houses" and "Education Primary School" have been established based on comparative survey sites collated from the TRICS database.
- 2.1.9 The obtained full TRICS reports are included within **Appendix A**. The correlated vehicle trip rates for the traditional highway AM and PM peaks of 08:00-0900 and 17:00-18:00 are summarised in **Table 4.1** below.

	Weekday AM Peak			Weekday PM Peak			
Vehicle Trip Rates	IN	OUT	TOTAL	IN	OUT	TOTAL	
B2 Industrial Estate (per 100sq.m GFA)	0.186	0.078	0.264	0.057	0.171	0.228	
Private Housing (per unit)	0.11	0.365	0.475	0.347	0.155	0.502	
Affordable Housing (per unit)	0.162	0.277	0.439	0.275	0.203	0.478	
Primary School	0.322	0.250	0.572	0.020	0.034	0.054	

Table 4.1 – Vehicle Trip Rates – Employment

2.1.10 The initial traffic generation for 3750sq.m B2/B8 Industrial Use, 2170 (i.e. 70%) Privately Owned Houses and 930 (i.e. 30%) Affordable Houses are summarised in **Table 4.2** below:

	Wee	kday AM Pe	ak	Weekday PM Peak		
Traffic Generation	IN	OUT	TOTAL	IN	OUT	TOTAL
B2 Industrial Unit – 3750sq.m	7	3	10	2	6	9
Private Units (2170 dwellings)	239	792	1031	753	336	1089
Affordable Units (930 dwellings)	151	258	408	256	189	445
Primary School (420 Pupils)	135	105	240	8	14	23
Total Employment Traffic	7	3	10	2	6	9
Total Residential Traffic	389	1050	1439	1009	525	1534

Table 4.2 – Initial Traffic Generation

Journey Composition

- 2.1.11 It should be noted that the derived vehicle trip rates for residential development contain journeys with various purposes associated with not only employment but also leisure, shopping and education activities. As discussed earlier in this report, a host of complimentary land-uses are proposed to support the core residential element and thus it is likely that a high proportion of these movements would be retained on site as residents will not need to travel offsite to access these facilities.
- 2.1.12 In light of this, an exercise has been undertaken to calculate the proportion of traffic that would be associated with typical journeys associated with the proposed mix of uses within the site. In order to disaggregate the forecast vehicle movements by journey purposes, information on journey purposes by trip starting time for England was obtained from the National Travel Survey.
- 2.1.13 The 2019 NTS is the latest available series of household data that has been released to provide a data source at a national level that sets out personal travel in England. NTS Table 502 provides details of "Trip start time by trip purpose (Monday to Friday only)", with specific sub tables available that split these trips down into specific modes. The data provided for car/van driver is included as **Appendix B** of this report with a peak hour summary also provided as **Table 4.3** below.

Journey Purpose	AM Peak (08:00-09:00)	PM Peak (17:00-18:00)
Commuting/Business	37%	43%
Education	1%	0%
Escort Education	28%	3%
Shopping	5%	13%
Personal business	23%	23%
Visiting Friends / Sport / Entertainment	5%	15%
Holiday / Day Trip	2%	3%

 Table 4.3 – Summary of Peak Hour Journey Purpose – As Extracted from NTS Table 0502

2.1.14 The forecast residential traffic generation by different journey purposes is summarised as follows:

	We	ekday AM P	eak	Weekday PM Peak			
Journey Purpose	IN	OUT	Total	IN	OUT	Total	
Commuting / Business	143	387	530	435	227	662	
Education	4	10	13	3	1	4	
Escort Education	109	294	403	31	16	48	
Shopping	21	56	77	131	68	199	
Personal business	88	236	324	228	119	346	
Visiting Friends / Sport / Entertainment	18	48	66	154	80	235	
Holiday / Day Trip	7	19	26	26	14	40	
Total 3100 dwellings	389	1050	1439	1009	525	1534	

Table 4.4 – Traffic Generation by Journey Purposes

Calculation of Internalisation

- 2.1.15 Given the self-sufficient nature of the proposed development mix, there is potential for a significant number of the forecast residential vehicle movements that are related to employment, primary education, retail and personal business to take place internally between the proposed residential communities and the onsite ancillary land-uses.
- 2.1.16 And hence, the impact in terms of traffic flow on the external network would be less than the total vehicle trip generation figures shown in **Table 4.2**. On this basis, further calculations have been carried out as appropriate to take account of this internalisation. Further detail relating to these calculations are provided below.

Commuting/Business Trips

- 2.1.17 Inevitably, there will be a proportion of future residents who will live and work onsite giving rise to internal journeys that are retained within the site rather than dispersing onto the wider highway network. To quantify these journeys, 2011 census data on the location of usual residence and place of work for the MSOA areas in Bicester were assessed.
- 2.1.18 The analysis demonstrates that approximately 34% of the workplace population in Bicester who drive to work also live locally in the same area. Applying this to the forecast employment traffic as shown in **Table 4.2**, the reduction for internal work-related trips between the onsite employment elements and residential communities is set out in **Table 4.5**. The subsequent reciprocal and opposing reduction is applied to the residential trips to take account of this internalisation.

Reduction –	AM	Peak (08:00-09	:00)	PM Peak (17:00-18:00)			
Commuting/Business	IN	OUT	Total	IN	OUT	Total	
Employment	-2	-1	-3	-1	-2	-3	
Residential	-1	-2	-3	-2	-1	-3	

Table 4.5 – Vehicle reductions to take into account internal Employment journeys

Education Trips

- 2.1.19 It is evident that "Escort Education" makes up 28% of all main journeys in the AM Peak and 3% of all journeys in the PM.
- 2.1.20 The proposal will see the deliver a 2FE primary school onsite as well as a nursery school to serve the primary educational demand arising from the proposed core residential element. This will reduce the requirement to travel outside of the site by private car for escorted education journeys with these journeys being contained onsite.

- 2.1.21 The new primary school is anticipated to absorb the vast majority of primary education-related trips forecast onsite. Whilst the primary school would also have some staff journeys to and from the site it is considered that these are more likely to be outside of the typical peak hours.
- 2.1.22 However, as a robust case, it is assumed that 90% of the forecast primary school trips will be internal journeys associated with residents of the new development, with the remaining 10% being external to allow some incoming trips made by pupils and staff who live offsite.
- 2.1.23 The resultant deduction in vehicle trips for the primary school is set out below. The equivalent amount of residential trips has also been deducted from the forecast escorted education trips in the opposing direction as shown in **Table 4.6** below.

Internal Education Journeys	AM P	eak (08:00-0	09:00)	PM Peak (17:00-18:00)		
,	IN	OUT	Total	IN	OUT	Total
Primary School	-122	-95	-216	-8	-13	-21
Residential - Escort Education	-95	-122	-216	-13	-8	-21

Table 4.6 – Vehicle Traffic Adjustments for Internal Education Journeys

Local Centre Adjustment

2.1.24 It can be seen from **Table 4.3** that Personal Business provides a high proportion of the main journey purpose during the reviewed peak hours, equating to 22% in both the AM Peak and PM peak. Personal Business is defined within the "Notes and Definitions" July 2018 release note relating to the NTS as:

"Visits to services, e.g. hairdressers, launderettes, dry cleaners, betting shops, solicitors, banks, estate agents, libraries, churches or for medical consultation or treatment; or for eating and drinking, unless the main purpose was entertainment or social."

2.1.25 It is evident that the local centre would provide a number of these types of services and whilst not all personal business uses may be covered by this centre it is considered reasonable to apply a 25% reduction in the forecast Personal Business-related journeys as shown in Table 4.4 to account for potential internalisation in relation to this proposed use. This reduction is summarised in **Table 4.7** below.

Personal Business	AM	Peak (08:00-09	:00)	PM Peak (17:00-18:00)			
	IN	OUT	Total	IN	OUT	Total	
Residential	-22	-59	-81	-57	-30	-87	

Table 4.7– Vehicle Traffic Adjustments for Internal Personal Business Trips

- 2.1.26 In addition, it also noted that the Local Centre would also include a convenience shopping element catering to the day-to-day local requirements of the proposed new community. On this basis further adjustments have also been undertaken to take account of this specific use.
- 2.1.27 It can be seen from **Table 4.3** that shopping comprises a proportion of the main journey purpose during the reviewed peak hours, equating to 5% in the AM peak and 13% within the PM.
- 2.1.28 Retail trips in the morning peak are likely to consist of more convenience-based journeys (e.g. to pick up day to day food products) and therefore it is likely that the nearby local centre would account for the most part all of the shopping journeys (i.e. the full 5% as outlined within the NTS). However, evening journeys would most likely encompass a broader range of shopping journeys which means that lower proportion of all shopping journeys would be convenience based in this peak (i.e. lower than the 13% as identified with the NTS).
- 2.1.29 On this basis it is considered reasonable and robust to assume a 5% reduction be applied to vehicle journeys in both peaks to take account of the fact that journeys for convenience shopping can be undertaken within the site. This reduction is summarised in **Table 4.8** below.

Shopping	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			
0.1000	IN	OUT	Total	IN	OUT	Total	
Reduction	-19	-52	-72	-50	-26	-77	

Table 4.8 – Vehicle Traffic Adjustments for Internal Shopping Trips

Innovation and Home Working

2.1.30 It is noted that recent control measures introduced nationally as a result of the Covid 19 pandemic appear to have resulted in major behavioural change that has resulted in more home working that is likely to result in subsequent permanent long-term changes even after these measures are lifted. These changes in travel pattern are discussed in the Royal Town Planning Institute document titled "Plan the World We Need", which was released in June 2020. Section 3.1 states the following:

"...In the UK during April, 39% of those in employment reported working only from home, while 6% both worked from home and travelled to work. This contrasts with 5% of the workforce who reported working mainly from home during 2019..."

2.1.31 The Department for Transport (DfT), in conjunction with Ipsos MORI, published 'All change? Travel tracker – Wave 1 summary for the Department for Transport' in June 2020. This summary document presents analysis and headline figures from a UK-wide survey commissioned by the DfT and undertaken during May-June 2020. The survey explored whether participants would use more sustainable travel or return to prelockdown travel and made the following statement in this regard:

"Thinking about the future more generally, the survey suggests that there could be some positive behavioural impacts from a sustainability perspective. There is a high degree of self-reported willingness to change behaviour in response to the long-term threat. Many say they are willing to do a range of things to reduce their contribution to climate change, reflecting a recognition that the long-term posed by climate change is as serious as coronavirus in the long-term (63% agree, 15% disagree)".

- 2.1.32 It is also evident that there would likely be more changes in future years as technology, society and business continues to evolve. This is particularly evident for the Oxfordshire economy which is home to a significant number of research & development and technology companies that present more opportunity for home working than traditional industries.
- 2.1.33 Properties within the community would be designed to capitalise on these changes so that home working is possible through the use of enhanced telecommunications and the establishment of appropriate work areas within each property and areas to support recreation. In addition, co working space can also be provided within the Local Community Centre for residents of the development to use.
- 2.1.34 In addition, the 2020 Home Working Database by Local Authority indicates that when asking people where their main place of work in 'normal times' is, approximately 15% of the population who live in the District stated that they mainly work from home.
- 2.1.35 To account for the impact of these innovations and the subsequent introduction of properties designed to cater for these future changes it is proposed that a reduction factor of 10% be applied to the employment traffic generation as set out in **Table 4.2** as well as the forecast Commuting and Business trips for residential development as set out in **Table 4.4**.
- 2.1.36 This level of adjustment is in accordance with the "Innovation and Homeworking" trip adjustment agreed with Oxfordshire County Council (OCC) for the Oxfordshire Garden Village to the north of Eynsham (i.e. as set out in paragraph 6.9.8 of the TA produced by Stantec in relation to these proposals). The subsequent reduction in terms of trip numbers is summarised in **Table 4.9** below.

Innovation and Home Working	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
innovation and nome working	IN	OUT	Total	IN	OUT	Total
Employment Reduction	-1	0	-1	0	-1	-1
Residential Reduction	-14	-39	-53	-44	-23	-66

Table 4.9 – Calculated "Innovation and Homeworking" vehicle adjustment.

Behavioural Change

- 2.1.37 A robust site overarching Travel Plan will also be introduced at the development to reduce the reliance on solo-car journeys and thus to accomplish a positive mode shift from car travel to other sustainable modes. This travel plan will include measures to encourage sustainable travel behaviour from the point of occupation.
- 2.1.38 Sustainable travel connections linking with the existing pedestrian and cycling network in the local area will be provided across the site. This spine road will also include appropriate walking and cycling links along its length that will feed into the various residential streets that will also include appropriate connections for these modes. The walking and cycle routes will enhance travel via active modes thereby contributing to the wellbeing of the future occupants.
- 2.1.39 High quality public transport connections will also be facilitated (to connect the proposals with the centre of Bicester). The provision of this bus connection within the proposals would ensure that the majority of properties are located within 400m access of a frequent bus service. Details of these proposals will be provided following further discussion with OCC.
- 2.1.40 Various tangible measures will enable significant behavioural change. This is emphasised within the "Essential Guide to Travel Planning" document published by the Department for Transport in March 2008, which states that:

"Good travel plans have typically succeeded in cutting the number of people driving to work by 15%"

- 2.1.41 Notwithstanding, these measures are also likely to have a similar impact on other journey purposes.
- 2.1.42 In light of the above, it is reasonable to assume that by delivering appropriately sustainable travel infrastructure as well as targeted travel plan measures, a mode shift of 15% away from car usage can be achieved.
- 2.1.43 Applying the proposed mode shift to the forecast generation as set out in **Table 4.2**, the reduction in vehicle movements is summarised in **Table 4.10** below.

Behaviour Change	AM	Peak (08:00	-09:00)	PM Peak (17:00-18:00)			
Senariour enunge	IN	OUT	Total	IN	OUT	Total	
Employment Reduction	-1	0	-1	0	-1	-1	
Residential Reduction	-58	-157	-216	-151	-79	-230	

Table 4.10 – Adjustment due to behavioural change as a result of travel plan measures

External Traffic Generation

2.1.44 The calculated adjustments shown in **Table 4.5**, **Table 4.6**, **Table 4.7**, **Table 4.8**, **Table 4.9** and **Table 4.10** have been subtracted from the trip generation forecast in **Table 4.2**. The resultant figures which are shown in **Table 4.11** represent the total development traffic volume on the external network. These traffic figures would therefore be used as the basis of future traffic models for the proposals.

E down of Two ffin	AM Peak			PM Peak		
External Traffic	IN	OUT	Total	IN	OUT	Total
Residential	180	618	798	692	360	1051
Employment	3	1	4	1	3	4
Primary School	14	11	24	1	1	2
Total	196	630	826	693	364	1057

Comparison Study

- 2.1.45 The derived external development traffic generation is subsequently compared with the traffic forecast previously considered in the NW Bicester Traffic Model for the site. The assessed traffic volume that would impact on the external highway network is abstracted from the original TA submitted in support for the 2014 scheme.
- 2.1.46 It is noted that the proposed residential dwellings (3,100 units) on HLM's site only account for 85% of the total housing provision (3,650 units) that is envisaged at land to the north of the railway line. And hence an adjustment of 85% is applied to the previously assessed external traffic impact and the consequent comparison study is shown in **Table 4.12** below.

Forecast External Traffic for the Site	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
Torecast External mane for the site	IN	OUT	Total	IN	OUT	Total
NW Bicester Model 2014 TA	303	618	921	596	430	1026
New Predicted External Development Traffic	196	630	826	693	364	1057
Difference	-107	12	-95	97	-66	31

Table 4.12 – Compariso	n Study on Forecast	External Traffic
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- 2.1.47 As aforementioned the NW Bicester Traffic Model was purposely developed to underpin the development of the associated infrastructure enhancements required in mitigating the cumulative impact of the wider Eco-Town scheme. The outcome of this traffic model was used in the original TA for the 2014 outline consent to establish the associated contribution towards the identified network enhancements.
- 2.1.48 As can be seen above, a comparable level of traffic flow level was previously assessed in the NW Bicester Traffic Model for the site as part of the cumulative study for the wider Eco-town scheme that are included in the original TA for the 2014 outline consent.
- 2.1.49 It is clear that a lot has happened in the world of travel since 2014 and it is appropriate to reassess the true impacts of the proposals in traffic terms based on current patterns and trends rather than 2014 data. This is in line with the now accepted philosophy of the Decide and Provide methodology.
- 2.1.50 Due to higher levels of internalisation, greater home working, data on Travel Plan success and other data it is clear that the proposals will result in materially less external traffic than was envisaged in 2014.
- 2.1.51 The revised proposals will result in less external traffic than envisaged in 2014 in the AM Peak and a comparable level of vehicle movements in the PM, and hence the mitigation measures previously agreed would more than adequately cater for the external trips generated by the proposal.
- 2.1.52 In view of this, it is reasonable to conclude that the forecast development traffic can be comfortably accommodated within the improved highway network. Mitigation measures that were set out as part of the 2014 Outline Submission in support of the NWBET development address the traffic implications associated with the development proposals on the local road network as well as provide support to improve the town's infrastructure.

2.1.53 The proposed development on land north of the railway will contribute towards the identified measures (modified, if necessary, in the light of the reduced estimates of traffic) and in proportion to the scale and traffic impact of the wider NW Bicester masterplan and as now subsequently assessed in the light of the current and up to date position. This approach was agreed with OCC and CDC as part of the 2014 submission.

Appendix A TRICS Report

Calculation Reference: AUDIT-829401-210720-0727

Land Use	:	02 - EMPLOYMENT		
Category	:	D - INDUSTRIAL ESTATE		
TOTAĽ VEHICLES				

Seled	cted red	nions and areas:	
02		HEAST	
	ES	EAST SUSSEX	2 days
	ΕX	ESSEX	3 days
03	SOUT	H WEST	5
	BR	BRISTOL CITY	2 days
	DV	DEVON	1 days
	WL	WILTSHIRE	1 days
04	EAST	ANGLIA	
	CA	CAMBRIDGESHIRE	1 days
05		MIDLANDS	
	DS	DERBYSHIRE	1 days
	LN	LINCOLNSHIRE	1 days
	NR	NORTHAMPTONSHIRE	1 days
06		MIDLANDS	
	HE	HEREFORDSHIRE	1 days
	WK		4 days
	WM		1 days
07	WO	WORCESTERSHIRE	3 days
07		SHIRE & NORTH LINCOLNSHIRE	1
	NY WY	NORTH YORKSHIRE WEST YORKSHIRE	1 days
08		TH WEST	6 days
08	GM	GREATER MANCHESTER	1 days
	LC	LANCASHIRE	3 days
09	NORT		5 00 93
07	TW	TYNE & WEAR	2 days
10	WALE		2 days
	SW	SWANSEA	2 days
	VG	VALE OF GLAMORGAN	1 days
11	SCOT	LAND	5
	AG	ANGUS	1 days
	FA	FALKIRK	1 days
	FI	FIFE	1 days
			-

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

JUBB Consulting Engineers Excelsior Road, Western Avenue Cardiff

Primary 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:		Gross floor area 1138 to 974258 (units: sqm)	
Range Selected by U	ser:	552 to 974258 (units: sqm)	
Parking Spaces Rang	e:	All Surveys Included	
Public Transport Prov Selection by:	<u>/ision:</u>		Include all surveys
5	01/01/	/13 to 01/01/20	
I NIS GATA DISDIAVS TH	e rana	e of survev dates selected. On	IV SURVEVS that were

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

Selected survey days:	
Monday	6 days
Tuesday	10 days
Wednesday	5 days
Thursday	10 days
Friday	10 days

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

<u>Selected survey types:</u>	
Manual count	41 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)	13
Edge of Town	28

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	21
Commercial Zone	1
Development Zone	2
Residential Zone	8
Out of Town	2
No Sub Category	7

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:

<u>Use Class:</u> Not Known

41 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®.

<u>Filter by Site Operations Breakdown:</u> All Surveys Included

<u>Population within 500m Range:</u> All Surveys Included Page 2

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Population within 1 mile:	
1,001 to 5,000	1 days
5,001 to 10,000	8 days
10,001 to 15,000	9 days
15,001 to 20,000	6 days
20,001 to 25,000	5 days
25,001 to 50,000	11 days
50,001 to 100,000	1 days

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

Population within 5 miles:	
25,001 to 50,000	4 days
50,001 to 75,000	2 days
75,001 to 100,000	5 days
100,001 to 125,000	3 days
125,001 to 250,000	18 days
250,001 to 500,000	7 days
500,001 or More	2 days

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

Car ownership within 5 miles:	
0.6 to 1.0	17 days
1.1 to 1.5	22 days
1.6 to 2.0	2 days

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

Travel Plan:

No

41 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.

<u>PTAL Rating:</u> No PTAL Present

41 days

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

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LIST OF SITES relevant to selection parameters

<u></u>			
1	AG-02-D-02 INDUSTRIAL ESTATE	Ξ	ANGUS
	A933 WESTWAY		
	ARBROATH		
	HOSPITALFIELD		
	Edge of Town		
	No Sub Category		
		78500 sqm	
_	Survey date: TUESDAY	25/04/17	Survey Type: MANUAL
2	BR-02-D-04 INDUSTRIAL ESTATE	-	BRISTOL CITY
	CROFTS END ROAD		
	BRISTOL SPEEDWELL		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
		18018 sqm	
	Survey date: FRIDAY	29/11/13	Survey Type: MANUAL
3	BR-02-D-05 INDUSTRIAL ESTATE		BRISTOL CITY
	NOVERS HILL		
	BRISTOL		
	BEDMINSTER		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
		18128 sqm	
	Survey date: FRIDAY		Survey Type: MANUAL
4	CA-02-D-04 INDUSTRIAL ESTATE	-	CAMBRI DGESHI RE
	PETERBOROUGH		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Gross floor area:	4133 sqm	
	Survey date: TUESDAY	02/12/14	Survey Type: MANUAL
5	DS-02-D-02 INDUSTRIAL ESTATE	-	DERBYSHIRE
	SHAFTESBURY STREET		
	DERBY		
	ROSE HILL		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category	- / - /	
	Total Gross floor area:	5686 sqm	
4	Survey date: WEDNESDAY	25/09/19	Survey Type: MANUAL
6	DV-02-D-07 INDUSTRIAL ESTATE	-	DEVON
	BITTERN ROAD EXETER		
	SOWTON IND. ESTATE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3600 sqm	
	Survey date: MONDAY	03/07/17	Survey Type: MANUAL
7	ES-02-D-06 INDUSTRIAL ESTATE	<u> </u>	EAST SUSSEX
	COURTLANDS ROAD		
	EASTBOURNE		
	Edge of Town		
	Edge of Town		
	Residential Zone Total Gross floor area:	7525 sqm	
	Survey date: MONDAY	<i>21/10/13</i>	Survey Type: MANUAL
8	ES-02-D-07 INDUSTRIAL ESTATE		EAST SUSSEX
5	HUGHES ROAD	-	
	BRIGHTON		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	6625 sqm	a –
	Survey date: THURSDAY	16/10/14	Survey Type: MANUAL
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JUBB Consulting Engineers Excelsior Road, Western Avenue Cardiff

LIST OF SITES relevant to selection parameters (Cont.)

<u>LIST</u>	OF SITES relevant to selection parameters (Cont.)	
9	EX-02-D-03 INDUSTRIAL ESTATE WYNCOLLS ROAD COLCHESTER SEVERALLS INDUSTRIAL PK Edge of Town Industrial Zone Total Gross floor area: 4876 sqm	ESSEX
10	<i>Survey date: FRIDAY 18/05/18</i> EX-02-D-04 INDUSTRIAL ESTATE PASTURE ROAD WITHAM	<i>Survey Type: MANUAL</i> ESSEX
11	Edge of Town Industrial Zone Total Gross floor area: 37130 sqm <i>Survey date: THURSDAY</i> 10/05/18 EX-02-D-05 INDUSTRIAL ESTATE HECKWORTH CLOSE COLCHESTER SEVERALLS INDUSTRIAL PK	<i>Survey Type: MANUAL</i> ESSEX
12	Edge of Town Industrial Zone Total Gross floor area: 7280 sqm <i>Survey date: FRIDAY</i> 18/05/18 FA-02-D-02 INDUSTRIAL ESTATE MAIN STREET FALKIRK GRAHAMSTON Suburban Area (PPS6 Out of Centre)	<i>Survey Type: MANUAL</i> FALKIRK
13	Residential Zone Total Gross floor area: 21250 sqm <i>Survey date: THURSDAY 30/05/13</i> FI-02-D-01 INDUSTRIAL ESTATE DICKSON STREET DUNFERMLINE	<i>Survey Type: MANUAL</i> FIFE
14	Edge of Town Residential Zone Total Gross floor area: 7850 sqm <i>Survey date: THURSDAY 21/05/15</i> GM-02-D-07 BUSI NESS PARK VULCAN STREET OLDHAM	<i>Survey Type: MANUAL</i> GREATER MANCHESTER
15	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 4400 sqm <i>Survey date: THURSDAY 22/10/15</i> HE-02-D-02 BUSI NESS PARK BURCOTT ROAD HEREFORD	<i>Survey Type: MANUAL</i> HEREFORDSHIRE
16	Suburban Area (PPS6 Out of Centre) Industrial Zone Total Gross floor area: 5214 sqm <i>Survey date: TUESDAY 22/10/13</i> LC-02-D-06 INDUSTRIAL ESTATE SMALLSHAW LANE BURNLEY	<i>Survey Type: MANUAL</i> LANCASHI RE
17	Suburban Area (PPS6 Out of Centre) Industrial Zone Total Gross floor area: 7383 sqm <i>Survey date: THURSDAY 29/09/16</i> LC-02-D-07 INDUSTRIAL ESTATE CHAIN CAUL WAY PRESTON ASHTON-ON-RIBBLE	<i>Survey Type: MANUAL</i> LANCASHI RE
	Edge of Town Industrial Zone Total Gross floor area: 4700 sqm <i>Survey date: FRIDAY</i> 17/11/17	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

18	LC-02-D-08 NOOK LANE BAMBER BRIDGE	INDUSTRIAL ESTATE	5	LANCASHI RE
19		ea: - <i>TUESDAY</i> - INDUSTRIAL ESTATE	4000 sqm <i>06/11/18</i>	<i>Survey Type: MANUAL</i> LINCOLNSHIRE
20	Edge of Town Industrial Zone Total Gross floor are <i>Survey date:</i> NR-02-D-01 ROBINSON WAY KETTERING		11265 sqm <i>28/06/19</i>	<i>Survey Type: MANUAL</i> NORTHAMPTONSHI RE
21	Edge of Town Industrial Zone Total Gross floor are <i>Survey date:</i> NY-02-D-02 RACECOURSE ROAD RICHMOND	<i>THURSDAY</i> INDUSTRIAL ESTATE	12900 sqm <i>23/10/14</i>	<i>Survey Type: MANUAL</i> NORTH YORKSHI RE
22	SW-02-D-01 UPPER FOREST WAY SWANSEA SWANSEA ENTERPR	<i>TUESDAY</i> INDUSTRIAL ESTATE	35183 sqm <i>12/03/19</i>	<i>Survey Type: MANUAL</i> SWANSEA
23	SW-02-D-02 CLARION COURT SWANSEA SWANSEA ENTERPR	<i>WEDNESDAY</i> INDUSTRIAL ESTATE	6822 sqm <i>09/10/19</i>	<i>Survey Type: MANUAL</i> SWANSEA
24	Edge of Town Industrial Zone Total Gross floor are <i>Survey date:</i> TW-02-D-07 SWALWELL BANK GATESHEAD WHICKHAM		5280 sqm <i>10/10/19</i>	<i>Survey Type: MANUAL</i> TYNE & WEAR
25	Edge of Town Residential Zone Total Gross floor are <i>Survey date:</i> TW-02-D-08 NORTH HYLTON RO/ SUNDERLAND SOUTHWICK	<i>FRIDAY</i> INDUSTRIAL ESTATE	6800 sqm <i>04/10/13</i>	<i>Survey Type: MANUAL</i> TYNE & WEAR
	Suburban Area (PPS Development Zone Total Gross floor are <i>Survey date:</i>	ea:	8310 sqm <i>04/04/17</i>	Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

<u>26</u>	VG-02-D-01 INDUSTRIAL ESTATE ARTHUR STREET BARRY	VALE OF GLAMORGAN
27	Edge of Town No Sub Category Total Gross floor area: 13091 sqm <i>Survey date: MONDAY 08/05/17</i> WK-02-D-01 INDUSTRIAL ESTATE CASTLE MOUND WAY RUGBY	<i>Survey Type: MANUAL</i> WARWICKSHIRE
28	Edge of Town Industrial Zone Total Gross floor area: 150564 sqm <i>Survey date: WEDNESDAY 27/06/18</i> WK-02-D-02 INDUSTRIAL ESTATE OVERVIEW WAY RUGBY	<i>Survey Type: MANUAL</i> WARWICKSHIRE
29	Edge of Town Industrial Zone Total Gross floor area: 974258 sqm <i>Survey date: WEDNESDAY 27/06/18</i> WK-02-D-03 INDUSTRIAL ESTATE EASTBORO WAY NUNEATON	<i>Survey Type: MANUAL</i> WARWICKSHIRE
30	Edge of Town Industrial Zone Total Gross floor area: 20860 sqm <i>Survey date: THURSDAY 26/09/19</i> WK-02-D-04 INDUSTRIAL ESTATE ABELES WAY ATHERSTONE	<i>Survey Type: MANUAL</i> WARWICKSHIRE
31	Edge of Town No Sub Category Total Gross floor area: 17500 sqm <i>Survey date: FRIDAY 27/09/19</i> WL-02-D-02 INDUSTRIAL ESTATE HEADLANDS GROVE SWINDON	<i>Survey Type: MANUAL</i> WILTSHIRE
32	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 10000 sqm <i>Survey date: TUESDAY 20/09/16</i> WM-02-D-03 INDUSTRIAL ESTATE JUNCTION ROAD STOURBRIDGE AUDNAM	<i>Survey Type: MANUAL</i> WEST MIDLANDS
33	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 1138 sqm <i>Survey date: TUESDAY 28/11/17</i> WO-02-D-01 INDUSTRIAL ESTATE SANDY LANE STOURPORT-ON-SEVERN	<i>Survey Type: MANUAL</i> WORCESTERSHIRE
34	Edge of Town Commercial Zone Total Gross floor area: 2758 sqm <i>Survey date: FRIDAY 23/05/14</i> WO-02-D-02 INDUSTRIAL ESTATE WEIR LANE WORCESTER	<i>Survey Type: MANUAL</i> WORCESTERSHI RE
	Edge of Town Residential Zone Total Gross floor area: 9500 sqm <i>Survey date: MONDAY</i> 14/11/16	Survey Type: MANUAL

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Licence No: 829401

LIST OF SITES relevant to selection parameters (Cont.)

35	WO-02-D-03 INDUSTRIAL ESTATE MILLENNIUM WAY EVESHAM	WORCESTERSHI RE
36	Edge of Town Out of Town Total Gross floor area: 84575 sqm <i>Survey date: TUESDAY 26/06/18</i> WY-02-D-03 INDUSTRIAL ESTATE	<i>Survey Type: MANUAL</i> WEST YORKSHI RE
50	ARMLEY ROAD LEEDS	WEST FORGERINE
	Suburban Area (PPS6 Out of Centre) Industrial Zone Total Gross floor area: 24980 sqm	
37	Survey date: FRIDAY 20/09/13 WY-02-D-04 INDUSTRIAL ESTATE LAW STREET CLECKHEATON	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
	Edge of Town Industrial Zone Total Gross floor area: 23226 sqm	
38	Survey date: THURSDAY 15/09/16 WY-02-D-05 INDUSTRIAL ESTATE CARR WOOD ROAD CASTLEFORD	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
	Edge of Town Development Zone Total Gross floor area: 1776 sqm Survey date: MONDAY 22/05/17	Survey Type: MANUAL
39	WY-02-D-06 INDUSTRIAL ESTATE (PART) PIONEER WAY CASTLEFORD	WEST YORKSHIRE
	Edge of Town Industrial Zone Total Gross floor area: 4328 sqm	
40	Survey date: TUESDAY 23/05/17 WY-02-D-07 INDUSTRIAL ESTATE THUNDERHEAD RIDGE RD CASTLEFORD GLASSHOUGHTON	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
	Edge of Town No Sub Category Total Gross floor area: 3191 sqm	
41	Survey date: MONDAY 15/05/17 WY-02-D-08 INDUSTRIAL ESTATE MILL LANE HALIFAX	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
	Edge of Town No Sub Category	
	Total Gross floor area:11305 sqmSurvey date:WEDNESDAY17/10/18	Survey Type: MANUAL
This	section provides a list of all survey sites and days in the selected s	set. For each individual survey site, it

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.

Licence No: 829401

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE TOTAL 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	5	9792	0.063	5	9792	0.010	5	9792	0.073
06:00 - 07:00	6	10037	0.141	6	10037	0.033	6	10037	0.174
07:00 - 08:00	41	39621	0.149	41	39621	0.042	41	39621	0.191
08:00 - 09:00	41	39621	0.186	41	39621	0.078	41	39621	0.264
09:00 - 10:00	41	39621	0.139	41	39621	0.093	41	39621	0.232
10:00 - 11:00	41	39621	0.114	41	39621	0.099	41	39621	0.213
11:00 - 12:00	41	39621	0.111	41	39621	0.106	41	39621	0.217
12:00 - 13:00	41	39621	0.114	41	39621	0.129	41	39621	0.243
13:00 - 14:00	41	39621	0.131	41	39621	0.116	41	39621	0.247
14:00 - 15:00	41	39621	0.104	41	39621	0.128	41	39621	0.232
15:00 - 16:00	41	39621	0.091	41	39621	0.129	41	39621	0.220
16:00 - 17:00	41	39621	0.086	41	39621	0.164	41	39621	0.250
17:00 - 18:00	41	39621	0.057	41	39621	0.171	41	39621	0.228
18:00 - 19:00	41	39621	0.038	41	39621	0.069	41	39621	0.107
19:00 - 20:00	6	10037	0.098	6	10037	0.148	6	10037	0.246
20:00 - 21:00	6	10037	0.017	6	10037	0.070	6	10037	0.087
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.639			1.585			3.224

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.

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Parameter summary

Trip rate parameter range selected:1138 - 974258 (units: sqm)Survey date date range:01/01/13 - 01/01/20Number of weekdays (Monday-Friday):41Number of Saturdays:0Number of Sundays:0Surveys automatically removed from selection:0Surveys manually removed from selection:0

Calculation Reference: AUDIT-829401-210308-0328

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use	:	03 - RESIDENTIAL
Category	:	B - AFFORDABLE/LOCAL AUTHORITY HOUSES
TOTAL V		

Selea	cted red	gions and areas:			
03	SOUT	TH WEST			
	WL	WILTSHIRE	1 days		
07	YORK	(SHI RE & NORTH LI NCOLNSHI RE			
	WY	WEST YORKSHIRE	3 days		
80	NOR	TH WEST			
	СН	CHESHIRE	1 days		
	GM	GREATER MANCHESTER	1 days		
	MS	MERSEYSIDE	1 days		
09	NORTH				
	NB	NORTHUMBERLAND	1 days		
11	SCOT	LAND			
	DU	DUNDEE CITY	1 days		

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

Primary 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:	No of Dwellings
Actual Range:	16 to 97 (units:)
Range Selected by User:	11 to 516 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision: Selection by:

Include all surveys

Date Range: 01/01/12 to 19/10/18

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.

<u>Selected survey days:</u>	
Monday	2 days
Tuesday	3 days
Wednesday	1 days
Thursday	1 days
Friday	2 days

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

<u>Selected survey types:</u>	
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.

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<u>Selected Locations:</u>	
Suburban Area (PPS6 Out of Centre)	
Edge of Town	

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.

<u>Selected Location Sub Categories:</u> Residential Zone Built-Up Zone No Sub Category

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

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®.

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Licence No: 829401

Population within 500m Range:	
All Surveys Included	
Population within 1 mile:	
1,001 to 5,000	1 days
5,001 to 10,000	3 days
10,001 to 15,000	1 days
15,001 to 20,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:	
5,001 to 25,000	1 days
25,001 to 50,000	1 days
75,001 to 100,000	2 days
125,001 to 250,000	4 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:	
0.6 to 1.0	6 days
1.1 to 1.5	3 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

9 days

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

PTAL Rating: No PTAL Present

9 days

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

LIST OF SITES relevant to selection parameters

LIST	OF SITES relevant to selection parameters		
1	CH-03-B-01 HOUSES & FLATS WORDSWORTH CRES.		CHESHIRE
	CHESTER BLACON Edge of Town Residential Zone Total No of Dwellings:	80	
2	Survey date: MONDAY DU-03-B-01 TERRACED BUNGALOV 307-441 BALUNIE DRIVE DUNDEE DOUGLAS & ANGUS Suburban Area (PPS6 Out of Centre)	<i>17/11/14</i> VS	<i>Survey Type: MANUAL</i> DUNDEE CITY
3	Residential Zone Total No of Dwellings: <i>Survey date: FRIDAY</i> GM-03-B-01 TERRACED HOUSES NEWBOLD	68 <i>21/04/17</i>	<i>Survey Type: MANUAL</i> GREATER MANCHESTER
4	ROCHDALE Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: <i>Survey date: WEDNESDAY</i> MS-03-B-01 TARBOCK ROAD LIVERPOOL	43 <i>21/10/15</i>	<i>Survey Type: MANUAL</i> MERSEYSI DE
5	SPEKE Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i> NB-03-B-01 SEMI DET. & TERRACE WESTLEA BEDLINGTON	16 <i>18/06/13</i> D	<i>Survey Type: MANUAL</i> NORTHUMBERLAND
6	Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: MONDAY</i> WL-03-B-01 TERRACED HOUSES BUTTERFIELD DRIVE AMESBURY	97 <i>19/11/12</i>	<i>Survey Type: MANUAL</i> WILTSHIRE
7	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i> WY-03-B-02 MI XED HOUSES WHITEACRE STREET HUDDERSFIELD DEIGHTON	54 <i>18/09/18</i>	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
8	Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i> WY-03-B-03 TERRACED HOUSES LINCOLN GREEN ROAD LEEDS	54 1 <i>7/09/13</i>	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
9	Suburban Area (PPS6 Out of Centre) Built-Up Zone Total No of Dwellings: <i>Survey date: THURSDAY</i> WY-03-B-04 SYKES CLOSE BATLEY	29 1 <i>9/09/13</i>	<i>Survey Type: MANUAL</i> WEST YORKSHIRE
	Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: FRIDAY</i>	17 <i>19/10/18</i>	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES TOTAL 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	9	51	0.076	9	51	0.159	9	51	0.235
08:00 - 09:00	9	51	0.162	9	51	0.277	9	51	0.439
09:00 - 10:00	9	51	0.162	9	51	0.227	9	51	0.389
10:00 - 11:00	9	51	0.155	9	51	0.164	9	51	0.319
11:00 - 12:00	9	51	0.138	9	51	0.140	9	51	0.278
12:00 - 13:00	9	51	0.177	9	51	0.138	9	51	0.315
13:00 - 14:00	9	51	0.162	9	51	0.148	9	51	0.310
14:00 - 15:00	9	51	0.177	9	51	0.188	9	51	0.365
15:00 - 16:00	9	51	0.240	9	51	0.181	9	51	0.421
16:00 - 17:00	9	51	0.266	9	51	0.166	9	51	0.432
17:00 - 18:00	9	51	0.275	9	51	0.203	9	51	0.478
18:00 - 19:00	9	51	0.170	9	51	0.142	9	51	0.312
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.160			2.133			4.293

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.

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Parameter summary

Trip rate parameter range selected:	16 - 97 (units:)
Survey date date range:	01/01/12 - 19/10/18
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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B Consul	ting Engineers Excelsior Road, Western Avenue	e Cardiff		Licence No: 82940
		(Calculation Reference: A	AUDIT-829401-220216-020
TRI	P RATE CALCULATION SELECTION PARAMETI	ERS:		
Land	Use : 04 - EDUCATION			
Cate	egory : A - PRIMARY			
TO	TĂĽ VEHICLES			
Sele	ected regions and areas:			
02	SOUTH EAST			
	HC HAMPSHIRE	1 days		
03	SOUTH WEST	·		
	BR BRISTOL CITY	1 days		
	CW CORNWALL	1 days		
05	EAST MIDLANDS			
	DS DERBYSHIRE	1 days		
	LE LEICESTERSHIRE	1 days		
	NR NORTHAMPTONSHIRE	1 days		
06	WEST MIDLANDS			
	WM WEST MIDLANDS	1 days		
07	YORKSHIRE & NORTH LINCOLNSHIRE	3		
	WY WEST YORKSHIRE	2 days		
08	NORTH WEST	3		
	CH CHESHIRE	1 days		
	GM GREATER MANCHESTER	1 days		
09	NORTH	3		
	TW TYNE & WEAR	1 days		
10	WALES	3		
	CF CARDIFF	1 days		
	MT MERTHYR TYDFIL	1 days		
11	SCOTLAND	5		
	EB CITY OF EDINBURGH	1 days		

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

Primary Filtering selection:

FALKIRK

FA

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.

1 days

Parameter:	Number of pupils
Actual Range:	184 to 621 (units:)
Range Selected by User:	79 to 621 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision: Selection by:

Include all surveys

Date Range: 01/01/13 to 25/11/19

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.

<u>Selected survey days:</u>	
Monday	6 days
Tuesday	3 days
Thursday	5 days
Friday	2 days

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

Selected survey types:	
Manual count	16 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.

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<u>Selected Locations:</u>	
Suburban Area (PPS6 Out of Centre)	
Edge of Town	

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

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

Secondary Filtering selection:

<u>Use Class:</u>

F1(a)

16 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 500m Range:	
All Surveys Included	
Population within 1 mile:	
1,001 to 5,000	1 days
5,001 to 10,000	3 days
10,001 to 15,000	1 days
15,001 to 20,000	6 days
20,001 to 25,000	2 days
25,001 to 50,000	3 days

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

Population within 5 miles:	
50,001 to 75,000	2 days
75,001 to 100,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	8 days
500,001 or More	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	9 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.

<u>Travel Plan:</u>	
Yes	2 days
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.

<u>PTAL Rating:</u> No PTAL Present

16 days

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

3 Consul	ting Engineers Excelsior Road, Western Av	enue Cardiff	Licence No: 829
LIS	T OF SITES relevant to selection parameters		
1	BR-04-A-01 PRIMARY SCHOOL SCHOOL CLOSE BRISTOL WHITCHURCH Edge of Town Residential Zone	200	BRI STOL CI TY
	Total Number of pupils: Survey date: TUESDAY	208 <i>22/09/15</i>	Survey Type: MANUAL
2	CF-04-A-01 PRIMARY SCHOOL AEL-Y-BRYN CARDIFF LLANEDEYRN Suburban Area (PPS6 Out of Centre) Residential Zone		CARDIFF
	Total Number of pupils: Survey date: FRIDAY	194 <i>05/05/17</i>	Survey Type: MANUAL
3	CH-04-A-01 PRIMARY SCHOOL WESTON GROVE CHESTER UPTON Edge of Town Residential Zone		CHESHIRE
	Total Number of pupils:	219	
4	Survey date: MONDAY CW-04-A-03 PRIMARY ACADEMY TREVERBYN RISE PENRYN	, 17/11/14	<i>Survey Type: MANUAL</i> CORNWALL
5	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: <i>Survey date: THURSDAY</i> DS-04-A-01 PRIMARY SCHOOL VICARAGE ROAD DERBY MICKLEOVER	440 <i>28/03/19</i>	<i>Survey Type: MANUAL</i> DERBYSHIRE
6	Edge of Town Residential Zone Total Number of pupils: <i>Survey date: THURSDAY</i> EB-04-A-01 PRIMARY SCHOOL MAGDALENE DRIVE EDINBURGH	387 <i>25/06/15</i>	<i>Survey Type: MANUAL</i> CITY OF EDINBURGH
7	Edge of Town Residential Zone Total Number of pupils: <i>Survey date: MONDAY</i> FA-04-A-03 PRIMARY SCHOOL	214 <i>23/04/18</i>	<i>Survey Type: MANUAL</i> FALKI RK
8	GLENDEVON DRIVE FALKIRK MADDISTON Edge of Town Residential Zone Total Number of pupils: <i>Survey date: MONDAY</i> GM-04-A-01 PRIMARY SCHOOL ROCH MILLS CRESCENT ROCHDALE	452 <i>03/06/13</i>	<i>Survey Type: MANUAL</i> GREATER MANCHESTER
	Edge of Town Residential Zone Total Number of pupils: <i>Survey date: TUESDAY</i>	457 <i>20/10/15</i>	Survey Type: MANUAL

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<u></u>	OF SITES relevant to	selection parameters (Co	<u>ont.)</u>		
9	HC-04-A-05 HAVANT ROAD HAYLING ISLAND	PRIMARY SCHOOL		HAMPSHI RE	
10	Edge of Town Residential Zone Total Number of pup <i>Survey date:</i> LE-04-A-02 BEAUFORT WAY		550 <i>30/11/15</i>	<i>Survey Type: MANUA</i> LEICESTERSHIRE	Z
	LEICESTER OADBY Edge of Town Residential Zone Total Number of pup <i>Survey date:</i>		380 <i>30/10/14</i>	Survey Type: MANUA.	/
11	MT-04-A-01 BRECON ROAD MERTHYR TYDFIL	PRIMARY SCHOOL		MERTHYR TYDFIL	
12	Suburban Area (PPSe Residential Zone Total Number of pup <i>Survey date:</i> NR-04-A-03 BOOTH LANE NORTH NORTHAMPTON	ils: <i>FRIDAY</i> PRIMARY SCHOOL	184 <i>18/10/13</i>	<i>Survey Type: MANUA</i> . NORTHAMPTONSHI RE	Z
13	Suburban Area (PPSe Residential Zone Total Number of pup <i>Survey date:</i> TW-04-A-01 GLYNWOOD GARDEN GATESHEAD	ils: <i>THURSDAY</i> PRIMARY SCHOOL	400 <i>24/03/16</i>	<i>Survey Type: MANUA.</i> TYNE & WEAR	Z
14	Suburban Area (PPSe Residential Zone Total Number of pup <i>Survey date:</i> WM-04-A-02 HAZEL ROAD BIRMINGHAM RUBERY	ils: <i>MONDAY</i>	260 <i>07/10/13</i>	<i>Survey Type: MANUA</i> WEST MIDLANDS	2
15	Edge of Town Residential Zone Total Number of pup <i>Survey date:</i> WY-04-A-01 SHAKESPEARE AVEN LEEDS	<i>TUESDAY</i> PRIMARY SCHOOL	234 <i>10/11/15</i>	<i>Survey Type: MANUA</i> WEST YORKSHIRE	2
16	Suburban Area (PPSe Residential Zone Total Number of pup <i>Survey date:</i> WY-04-A-02 TOWN STREET LEEDS	ils:	370 <i>19/09/13</i>	<i>Survey Type: MANUA.</i> WEST YORKSHIRE	Z
	Suburban Area (PPSe Residential Zone Total Number of pup <i>Survey date:</i>	ils:	621 <i>19/10/15</i>	Survey Type: MANUA.	2

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY TOTAL 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	16	348	0.054	16	348	0.021	16	348	0.075
08:00 - 09:00	16	348	0.322	16	348	0.250	16	348	0.572
09:00 - 10:00	16	348	0.039	16	348	0.066	16	348	0.105
10:00 - 11:00	16	348	0.014	16	348	0.012	16	348	0.026
11:00 - 12:00	16	348	0.025	16	348	0.020	16	348	0.045
12:00 - 13:00	16	348	0.028	16	348	0.033	16	348	0.061
13:00 - 14:00	16	348	0.017	16	348	0.021	16	348	0.038
14:00 - 15:00	16	348	0.088	16	348	0.027	16	348	0.115
15:00 - 16:00	16	348	0.186	16	348	0.257	16	348	0.443
16:00 - 17:00	16	348	0.045	16	348	0.079	16	348	0.124
17:00 - 18:00	16	348	0.020	16	348	0.034	16	348	0.054
18:00 - 19:00	15	359	0.009	15	359	0.019	15	359	0.028
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.847			0.839			1.686

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.

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Parameter summary

Trip rate parameter range selected:	184 - 621 (units:)
Survey date date range:	01/01/13 - 25/11/19
Number of weekdays (Monday-Friday):	16
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

02		
	ES EAST SUSSEX	2 days
	KC KENT	3 days
03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
06	WEST MIDLANDS	
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
11	SCOTLAND	
	FA FALKIRK	1 days

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

Primary 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:	No of Dwellings 110 to 432 (units:) 100 to 4334 (units:))
Parking Spaces Range:	All Surveys Included	
Parking Spaces per Dwelling	g Range: All Surveys	Included
Bedrooms per Dwelling Ran	nge: All Surveys	Included
Percentage of dwellings priv	vately owned:	All Surveys Included
Public Transport Provision: Selection by:		Include all surveys

Date Range: 01/01/13 to 31/12/19

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.

<u>Selected survey days:</u>	
Monday	2 days
Tuesday	1 days
Wednesday	4 days
Friday	3 days

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

<u>Selected survey types:</u>	
Manual count	10 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.

<u>Selected Locations:</u>	
Suburban Area (PPS6 Out of Centre)	
Edge of Town	

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.

3 7

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:

<u>Use Class:</u>

C3

10 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 500m Range:	
All Surveys Included	
Population within 1 mile:	
1,000 or Less	1 days
5,001 to 10,000	1 days
10,001 to 15,000	5 days
15,001 to 20,000	1 days
20,001 to 25,000	2 days

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

Population within 5 miles:	
5,001 to 25,000	2 days
50,001 to 75,000	3 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days

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

Car ownership within 5 miles: 0.6 to 1.0 1.1 to 1.5

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.

<u>Travel Plan:</u> No

10 days

4 days

6 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

10 days

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

P. Consul	ting Engineers Excelsior Road, Western Avenue Cardiff	Page Licence No: 82940
D CONSUL		LICENCE NO. 62940
LIST	T OF SITES relevant to selection parameters	
1	DS-03-A-02 MI XED HOUSES DERBYSHI RE RADBOURNE LANE DERBY	
2	Edge of Town Residential Zone Total No of Dwellings: 371 <i>Survey date: TUESDAY</i> 10/07/18 Survey Type: MANUA DV-03-A-02 HOUSES & BUNGALOWS DEVON MILLHEAD ROAD HONITON	42
3	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 <i>Survey date: FRIDAY 25/09/15 Survey Type: MANUA</i> ES-03-A-03 MI XED HOUSES & FLATS EAST SUSSEX SHEPHAM LANE POLEGATE	42
4	Edge of Town Residential Zone Total No of Dwellings: 212 <i>Survey date: MONDAY</i> 11/07/16 Survey Type: MANUA ES-03-A-04 MI XED HOUSES & FLATS EAST SUSSEX NEW LYDD ROAD CAMBER	4/
5	Edge of Town Residential Zone Total No of Dwellings: 134 <i>Survey date: FRIDAY</i> 15/07/16 Survey Type: MANUA FA-03-A-02 MI XED HOUSES FALKI RK ROSEBANK AVENUE & SPRINGFIELD DRIVE FALKIRK	42
6	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 161 <i>Survey date: WEDNESDAY 29/05/13 Survey Type: MANUA</i> KC-03-A-04 SEMI-DETACHED & TERRACED KENT KILN BARN ROAD AYLESFORD DITTON	42
7	Edge of Town Residential Zone Total No of Dwellings: 110 <i>Survey date: FRIDAY 22/09/17 Survey Type: MANUA</i> KC-03-A-06 MI XED HOUSES & FLATS KENT MARGATE ROAD HERNE BAY	42
	Suburban Area (PPS6 Out of Centre)Residential ZoneTotal No of Dwellings:363Survey date: WEDNESDAY27/09/17Survey Type: MANU/	42

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3 Consul	ting Engineers Excelsior Road, We	stern Avenue Cardiff	Licence No: 8294
LIST	T OF SITES relevant to selection para	meters (Cont.)	
		, , ,	
8	KC-03-A-07 MI XED HOU RECULVER ROAD HERNE BAY	SES	KENT
	Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	288 <i>27/09/17</i>	Survey Type: MANUAL
9	2	CHED & DETACHED	NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings: <i>Survey date: MONDAY</i>	432 <i>12/05/14</i>	Survey Type: MANUAL
10		& SEMI -DETACHED	STAFFORDSHIRE
	Total No of Dwellings:	248	
	Survey date: WEDNESDAY	22/11/17	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref		Reason for Deselection
WS-03-A-11	Other Land Uses	

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED TOTAL 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	10	244	0.072	10	244	0.294	10	244	0.366	
08:00 - 09:00	10	244	0.110	10	244	0.365	10	244	0.475	
09:00 - 10:00	10	244	0.125	10	244	0.145	10	244	0.270	
10:00 - 11:00	10	244	0.117	10	244	0.147	10	244	0.264	
11:00 - 12:00	10	244	0.118	10	244	0.138	10	244	0.256	
12:00 - 13:00	10	244	0.153	10	244	0.141	10	244	0.294	
13:00 - 14:00	10	244	0.151	10	244	0.145	10	244	0.296	
14:00 - 15:00	10	244	0.168	10	244	0.161	10	244	0.329	
15:00 - 16:00	10	244	0.246	10	244	0.170	10	244	0.416	
16:00 - 17:00	10	244	0.280	10	244	0.175	10	244	0.455	
17:00 - 18:00	10	244	0.347	10	244	0.155	10	244	0.502	
18:00 - 19:00	10	244	0.293	10	244	0.179	10	244	0.472	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			2.180			2.215			4.395	

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

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Parameter summary

Trip rate parameter range selected:	110 - 432 (units:)
Survey date date range:	01/01/13 - 31/12/19
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	-1
Surveys manually removed from selection:	1

Appendix B NTS Travel Survey

Department for Transport statistics

National Travel Survey

Table NTS0502 (edit)

Trip start time by trip purpose (Monday to Friday only): car/van driver only, England, 2015/19

					Percentage					
Start time	Commuting	Business	Education	Escort education	Shopping		Visiting friends / entertainment / sport	Holiday / Day trip / Other	All purposes	Unweighted sample size (trips '000s)
0000 - 0059	50	6	0	1	3	18	22	. 1	100	-
0100 - 0159	69	4	0	1	1	11	13	1	100	-
0200 - 0259	78	4	0	-	3	7	5	3	100	-
0300 - 0359	71	6	0	1	3	11	2	5	100	-
0400 - 0459	75	8	-	-	1	10	2	3	100	1
0500 - 0559	79	7	-	-	1	8	4	1	100	4
0600 - 0659	70	8	-	1	2	12	5	2	100	11
0700 - 0759	58	7	1	8	2	18	4	1	100	28
0800 - 0859	31	6	1	28	5	23	5	2	100	40
0900 - 0959	13	8	1	6	22	29	16	5	100	25
1000 - 1059	5	7	-	1	36	26	18	6	100	25
1100 - 1159	6	7	-	2	37	24	18	5	100	25
1200 - 1259	9	8	-	2	33	23	20	4	100	24
1300 - 1359	14	8	-	1	30	23	20	4	100	23
1400 - 1459	13	6	-	12	27	21	16	5	100	26
1500 - 1559	13	5	1	28	18	19	13	4	100	34
1600 - 1659	30	6	1	6	16	23	14	4	100	34
1700 - 1759	38	5	-	3	13	23	15	3	100	36
1800 - 1859	24	4	-	1	17	23	28	3	100	24
1900 - 1959	13	3	-	-	18	24	38	3	100	16
2000 - 2059	14	4	-	1	16	23	39	3	100	10
2100 - 2159	16	4	-	-	9	22	46	2	100	7
2200 - 2259	25	4	-	-	4	19	46	2	100	5
2300 - 2359	27	4	-	-	4	20	44	1	100	2
All day	24	6	-	8	18	22	17	4	100	402

Five years combined to increase sample size. However some hour/purpose combinations will be based on a small number of trips in the survey and so should be treated with caution.

Telephone: 020 7944 4163 Email: national.travelsurvey@dft.gsi.gov.uk Notes & definitions

The figures in this table are National Statistics

The results presented in this table are weighted. The base (unweighted sample size) is shown in the table for information. Weights are applied to adjust for non-response to ensure the characteristics of the achieved sample match the population of Great Britain (1995-2012) or England (2013 onwards) and for the drop off in trip recording in diary data. The survey results are subject to sampling error.

Source: National Travel Survey