LAND TO THE NORTH OF CUFFLEY HILL
GOFFS OAK, BROXBOURNE

Transport Appraisal

Report No. 15-355-01A

September 2016

LAND TO THE NORTH OF CUFFLEY HILL
GOFFS OAK, BROXBOURNE

Transport Appraisal

Odyssey Markides LLP
Elizabeth House
39 York Road
London
SE1 7NQ
Tel: 020 7620 2444
Fax: 020 7620 1168
enquiries@odysseymarkides.com

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DOCUMENT CONTROL SHEET

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FIGURES AND DRAWINGS

APPENDICES

1.0 INTRODUCTION

Preamble and Site Location

1.1 Odyssey Markides (OM) has been instructed by Countryside Properties (CP) to prepare this Transport Appraisal for a potential residential development within the settlement of Goffs Oak, Hertfordshire.

1.2 The development site, which is currently vacant land, encompasses two land parcels as follows:

- Former Rosemead nursery, land to the rear of 90a and 102 Cuffley Hill
- Former Fairmead nursery

1.3 A site location plan is attached as **Figure 1.1**. The site is bound to the north by agricultural land and to the east by an existing property fronting Cuffley Hill and the rear gardens of properties fronting Robinson Avenue. To the west the site is bound by an access road that serves CG Edward Garden Landscape Supplies. The southern boundary includes the rear gardens of properties 90a to 102 Cuffley Hill, with property numbers 90a-98 accessed via a service road that forms two priority junctions with the main Cuffley Hill carriageway. Between properties 92 and 94, there is an undeveloped parcel of land approximately 14m wide, fronting the service road, which forms part of the site, meaning the site has a direct frontage with public highway.

1.4 The site is located within the authoritative boundary of the Borough of Broxbourne (BOB), with Hertfordshire County Council (HCC) being the relevant local highway authority.

Site Allocation

1.5 BOB released its emerging draft Local Plan (LP) document for public consultation on 18th July 2016. The LP sets out proposals for how Broxbourne will grow from 2016-2031, identifying the specific location

of potential development sites. Once adopted, which is intended for late 2017, the policies will replace the Local Plan 2005.

1.6 The site has been identified within the LP as a location that BOB consider to be well suited for new homes, forming part of a wider site that is referenced under Policy GO5: North of Cuffley Hill, which also encompasses the adjacent CG Edward site. Figure 16 of the LP identifies a potential access into the site via the gap between properties 92 and 94 and therefore the service road, with the CG Edwards site accessed from their existing point of access directly onto Cuffley Hill.

1.7 The LP has been informed by a number of evidence studies, including the Goffs Oak Development Options Report April 2016, prepared by BOB. This report identified a potential development approach of expanding Goffs Oak village, as it is *'considered to be the most sustainable for further development as it already has a good range of shops and services, regular bus services, and is theoretically within walking distance of Cuffley railway station.'* The site, including the adjacent CG Edward site, is identified under that development option as *'suitable in principle,'* stating further that it could be accessed from a single point of access between 92-94 Cuffley Hill.

HCC Consultation

1.8 To inform this appraisal, formal discussions have been undertaken with HCC to establish the potential vehicular access arrangements for the site.

1.9 The introduction of a vehicular access between properties 92-94, connecting with the existing service road, has been considered by HCC to be acceptable in principle.

Report Aims and Structure

1.10 This Transport Appraisal has been prepared to demonstrate that the site is an appropriate location for a residential development, benefiting

from a range of social and transport infrastructure that ensures residents would not be wholly reliant on travel by private car. The appraisal demonstrates that a suitable vehicular access can be achieved and that the site can connect with the existing pedestrian footway network. The appraisal also uses the TRICS database to quantify the anticipated vehicular and all person trip generation associated with an indicative scale of development.

1.11 For the purpose of this Transport Appraisal, a scale of development totalling 65 units has been assumed.

1.12 The remainder of the report is structure as follows:

- Section Two describes the site location, including accessibility to social infrastructure, and existing situation in terms of pedestrian and cycle accessibility, public transport accessibility and the local highway network;
- Section Three identifies potential access strategies and acknowledges car and cycle parking standards;
- Section Four uses the TRICS database to estimate the potential trip generation associated with the proposed scale of development, and
- Section Five provides a summary and conclusion.

Planning Application

1.13 Should CP decide to prepare a planning application for a residential development at the site, the application will need to be supported by a Transport Statement/Assessment and, subject to scoping discussions with BOC and HCC, a Travel Plan.

1.14 The Transport Statement/Assessment will include more detailed quantitative analysis to support the application, informed by traffic surveys, and will provide a thorough review of the proposed site layout.

2.0 EXISTING SITUATION

Site Location

2.1 As stated in the introduction, the development site encompasses two land parcels as follows:

- Former Rosemead nursery, land to the rear of 90a and 102 Cuffley Hill
- Former Fairmead nursery

2.2 The site is currently vacant and has not generated any associated vehicular movements for a number of years.

2.3 The site is bound to the north by agricultural land and to the east by an existing property fronting Cuffley Hill and the rear gardens of properties fronting Robinson Avenue. To the west the site is bound by an access road that provides access to CG Edward Garden Landscape Supplies. The southern boundary includes the rear gardens of properties 90a to 102 Cuffley Hill, with property numbers 90a-98 accessed via a service road that forms two priority junctions with the main Cuffley Hill carriageway. Between properties 92 and 94, there is an undeveloped parcel of land approximately 14m wide, fronting the service road, which forms part of the site, meaning the site has a direct frontage with public highway.

2.4 The site is located approximately 500m walk distance from the Goffs Oak village centre to the east and 1km from the start of Cuffley to the west.

Site Accessibility

2.5 The site benefits from being located within close proximity to a range of social infrastructure that acts as typical trip attractors for residential land uses, including education, health, leisure, employment and convenience retail facilities.

2.6 Examples of this social infrastructure, and their associated walk distance, are detailed below in **Table 2.1**, and indicated on **Figure 2.1**.

Table 2.1: Walk Distance to Trip Attractors from Site Entrance

Attractor Land Use	Site	Assumed Travel Route	Walk Distance from Site Entrance
Primary School	Goffs Oak Primary School	Cuffley Hill, Robinson Ave, Millcrest Rd	680m
Food Retail	The Co-Operative	Cuffley Hill, Goff's Ln	550m
Retail	Boots	Cuffley Hill, Goff's Ln	555m
Health	Valley View Health Centre	Cuffley Hill, Goff's Ln	700m
Leisure	Goffs Oak Village Library	Cuffley Hill, Goff's Ln	710m
	Goff's Oak Village Hall and Community Centre	Cuffley Hill, Goff's Ln	750m
Public Transport	Cuffley Railway Station	Cuffley Hill, Station Rd	1.1km
	Robinson Avenue Bus Stops	Cuffley Hill	70m

2.7 **Table 2.1** therefore confirms that a range of land uses are located within close proximity, which ensures that these trip attractors can be accessed by modes other than private car, thereby reflecting fundamental requirements of national, regional and local planning policy for creating sustainable communities. Indeed CIHT's March 2015 guidance document, 'Planning for Walking,' states that 'walkable neighborhoods' are those with a typical catchment of around 800m, with the majority of identified land uses being within this walk distance threshold.

2.8 Goffs Oak Secondary School is approximately 2.8km walk distance from the site, which is acknowledged as being above an acceptable walk distance threshold.

2.9 Subsequent paragraphs provide a brief overview of the transport infrastructure serving the site.

Pedestrian and Cycle Accessibility

2.10 The service road benefits from existing footway provision along the site frontage, approximately 1.8m wide, indicated on **Photo 1**, which connects with the wider footway network on Cuffley Hill that runs along the northern edge of the carriageway, indicated on **Photo 2**. This footway provides pedestrian access to Cuffley Hill to the west and Goffs Oak village centre to the east.

	
Photo 1 – Cuffley Hill loop road pedestrian footway	**Photo 2** – Cuffley Hill pedestrian footway leading east to Cuffley Railway Station

2.11 Pedestrian severance caused by the volume of traffic on Cuffley Hill is mitigated by a signalised crossing approximately 245m east of the site, with a further signalised crossing within Goffs Oak village centre. Whilst drop-kerbs and a pedestrian refuge is present on Newgatestreet Road, where it forms a mini-roundabout junction with Cuffley Hill within the village centre, there is no tactile paving. To the west a signalised crossing exists within the centre of Cuffley. It is acknowledged that the walk to Cuffley follows an undulating topography.

2.12 In terms of cycle accessibility, there are no cycle routes adjacent to the site; however the Broxbourne Cycle Map identifies a north/south Advisory Cycle Route to the east, accessed from Newgatestreet Road and Jones Road. Sustrans identifies that this cycle route connects with an on and off road cycle route on Halstead Hill, which continues east connecting with the National Cycle Route 1 at the Lee Valley Park. National Cycle Route 1 is a long distance cycle route connecting Dover and the Shetland Islands, and more locally connects the site with Roydon, Waltham Cross, Waltham Abbey and Hoddesdon.

2.13 Cycle parking facilities are provided at Cuffley Railway Station and Station Road Parade.

Public Transport Accessibility

Buses

2.14 In terms of bus provision, the site benefits from Cuffley Hill being an established bus corridor, accommodating the existing 242 bus route.

2.15 Route 242 begins at Potters Bar Station and terminates in Waltham Cross Bus Station via Cheshunt, with an approximate Monday to Friday daytime frequency of one bus every 30 minutes. The 242 provides access to many of the trip attractors referenced above, including Cuffley National Rail Station, Goff's Oak Secondary School and Brookfield retail centre, thereby mitigating some of the longer walk distances.

2.16 The site benefits further from existing bus stop infrastructure within close proximity, with an eastbound bus stop located 70m east of the site, being a simple flag bus stop indicated in **Photo 3**, and a westbound bus stop located immediately opposite, benefiting from a bus shelter, indicated in **Photo 4**. There is no footway provision adjacent to the westbound bus stop, with pedestrians having to cross the carriageway directly into the bus layby.

	
Photo 3 – Eastbound flag bus stop	**Photo 4** – Westbound sheltered bus stop

National Rail

2.17 The site is located within an acceptable walk distance of Cuffley National Rail Station, which is approximately 1.1km to the west of the site. Cuffley National Rail Station provides access to frequent and direct services between Central London, Hertford North and Stevenage, with service frequencies identified in **Table 2.2** below.

Table 2.2: Existing Rail Provision

Train Station	**Main Stations**			**Frequency at Peak Times** (07:00-09:00 and 17:00-19:00)
Cuffley National Rail Station	Northbound	Stevenage National Rail Station	Hertford North, Watton-at-Stone, Stevenage	2-4 per hour
		Hertford North National Rail Station	Hertford North	3-5 per hour
	Southbound	Moorgate London Underground and National Rail Station	Enfield Chase, Alexandra Palace, Finsbury Park, Highbury and Islington, Essex Road, Old Street and Moorgate	4-6 trains per hour

2.18 In addition to Cuffley, bus service 242 provides access to Cheshunt town centre, with a short onward walk to Cheshunt National Rail

station, which provides access to Cambridge and additional Central London services to Stratford and London Liverpool Street. Cheshunt has also been identified as a station on the emerging Crossrail 2 route.

Local Highway Network

2.19 The B156 Cuffley Hill is a secondary distributor road with a speed limit of 30mph, which increases to 40mph approximately 200m west of Athenia Close. Along the site frontage Cuffley Hill has a carriageway width of approximately 6.5m, accommodating a narrow hatched margin along the centre. Cuffley Hill provides direct access to residential properties along its length.

2.20 Within the centre of Goff's Oak, Cuffley Hill forms a roundabout junction with Newsgatestreet Road and Goff's Lane. Continuing east the B156 eventually provides access to Cheshunt, from which access to the A10 is achieved, which then provides access to the M25 at junction 25.

2.21 Property numbers 90a-98 Cuffley Hill are currently accessed via a service road that is set back from the main carriageway, divided by a 5.5m wide landscaped margin. The service road is approximately 60m long and forms two simple priority junctions with Cuffley Hill, both of which benefit from a good standard of visibility. Along the site frontage the service road is approximately 5.5m wide.

2.22 There are currently no parking controls on the service road, although each property benefits from private drives, with some properties also benefiting from garages.

2.23 Cuffley Hill and the loop road are not located within a controlled parking zone (CPZ), and there are no waiting restrictions.

Capacity Assessment

2.24 Traffic flow data and/or speeds have not been sourced to inform this Transport Appraisal.

2.25 Should CP decide to submit a planning application, the supporting Transport Statement/Assessment will undertake traffic surveys on Cuffley Hill to establish existing vehicle speeds and the volume of vehicle movements to demonstrate the impact that additional development traffic will have on the operation of Cuffley Hill.

3.0 PROPOSED DEVELOPMENT

Vehicular Access

3.1 It is proposed to introduce a vehicular access within the undeveloped land between properties 92 and 94, which will connect with the service road.

3.2 This proposed vehicular access strategy has been shared with HCC, which has considered it to be acceptable in principle.

3.3 Drawing number **15-355-106** details the access form and alignment. The access road is approximately 7m where it meets the service road, in order to accommodate the demands of a large refuse vehicle, which then tapers down to 5.5m toward the site. **Drawing 15-355-106** demonstrates vehicle swept path analysis that confirms that a large refuse vehicle can negotiate the site access.

3.4 The introduction of the access results in the loss of approximately 12m worth of kerbline where existing residents may have parked on-street. However, each property fronting the service road already benefits from on-plot parking. Subject to further detailed design, it may also be necessary to introduce controls on the service road immediately east of the site access in order to prevent parked vehicles from blocking refuse vehicle access.

3.5 Following recommendations by HCC to widen the service road where it meets Cuffley Hill in order to assist with service vehicle access, the proposals include a minor realignment of the western kerbline.

Pedestrian Access

3.6 The vehicular access will be supported by 2m wide footway provision on each side of the carriageway, which will connect with the existing footway provision along the service road.

Cycle Access

3.7 Cyclists will use the proposed site access from Cuffley Hill to access the site.

3.8 The development proposals will include dedicated cycle parking in accordance with the relevant BOB cycle parking standards.

Car Parking

3.9 Car parking will be provided on site in accordance with the relevant BOB parking standards, which are as follows:

- 1 bed - 1.5 parking spaces
- 2 bed - 2 parking spaces
- 3 bed - 2.5 parking spaces
- 4+ bed - 3 parking spaces

Internal Layout

3.10 The internal road layout will be designed in accordance with HCC's Roads in Hertfordshire 3 Design Guide.

3.11 The layout will comply with maximum drag and reverse distances for refuse collection vehicles and fire tender access.

Sustainable Travel Strategy

3.12 At first occupation each household will be supplied with a range of marketing material that details the available transport infrastructure for the site, allowing residents to make informed choices about the way they travel to/from the site.

4.0 TRIP GENERATION

4.1 This section of the Transport Appraisal uses the TRICS database to undertake a trip generation analysis, quantifying the anticipated vehicular and all person movements generated by an assumed scale of development totalling 65 units.

4.2 A proxy site selection criteria of privately owned houses located in South East or South West England, within Suburban or Edge of Town Locations, with at least two parking spaces per unit have been selected. A total of 9 sites fulfilled this criteria, details of which are attached as **Appendix A**.

4.3 **Table 4.1** below presents the peak hour and daily vehicular and all person trip rates, which have been applied to the assumed number of units (65).

Table 4.1: Anticipated Trip Generation

		AM Peak			PM Peak			Daily		
		IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Vehicle	Trip Rate Per House	0.141	0.366	0.507	0.358	0.206	0.564	2.448	2.492	4.94
	Trips (65 units)	9	24	33	23	13	37	159	162	321
Total People	Trip Rate Per House	0.236	0.757	0.993	0.539	0.329	0.868	4.057	4.143	8.2
	Trips (65 units)	15	49	65	35	21	56	264	269	533

4.4 From **Table 4.1** it is evident that the assumed scale of development is anticipated to generate 33 vehicle movements in the AM peak, 37 in the PM peak and 321 across the day.

4.5 In terms of traffic impact, any future planning submission will be supported by a Transport Statement/Assessment, which will include quantitative analysis informed by traffic surveys along Cuffley Hill. It is anticipated however that the scale of additional peak hour vehicle movements, across a 60 minute period, are unlikely to have a material impact on the operation of the immediate highway network to a degree that would require significant mitigation strategies or infrastructure improvements.

5.0 SUMMARY AND CONCLUSION

5.1 Odyssey Markides has been instructed by Countryside Properties to prepare this Transport Appraisal in support of a potential residential development within the settlement of Goffs Oak, Hertfordshire.

5.2 The development site, which is currently vacant land, encompasses two land parcels as follows:

- Former Rosemead nursery, land to the rear of 90a and 102 Cuffley Hill
- Former Fairmead nursery

5.3 The Borough Of Broxbourne, as the relevant local planning authority, have identified the site within their emerging Local Plan as an appropriate location for residential development, with potential access taken from an undeveloped gap between properties 92-94 Cuffley Hill, which provides access to an existing service road set back from the main Cuffley Hill carriageway.

5.4 The Transport Appraisal has identified that the site benefits from being located within an accessible location, with a range of social infrastructure within close proximity, ensuring residents are not wholly reliant on travel by private car. Furthermore, the site benefits from being within walking distance of an existing National Rail station that provides access to larger settlements and employment centres. In addition, Cuffley Hill is an established bus corridor that provides access to an existing bus service that addresses excessive walking distances.

5.5 Vehicular access is proposed within an undeveloped plot of land between properties 92-94. Initial discussions have been undertaken with Hertfordshire County Council, as the relevant local highway authority, who have confirmed that such an access strategy is acceptable in principle.

5.6 The Transport Appraisal has also undertaken a trip generation assessment using proxy sites representative of the development form and location. The assessment has demonstrated that an assumed scale of development is unlikely to generate a significant number of vehicle movements that would have a severe impact on the operation of the local highway network.

5.7 Should Countryside Properties wish to submit a planning application for the site, it would need to be supported by a Transport Statement/Assessment, which would supplement this Transport Appraisal and provide additional quantitative analysis, informed by traffic surveys.

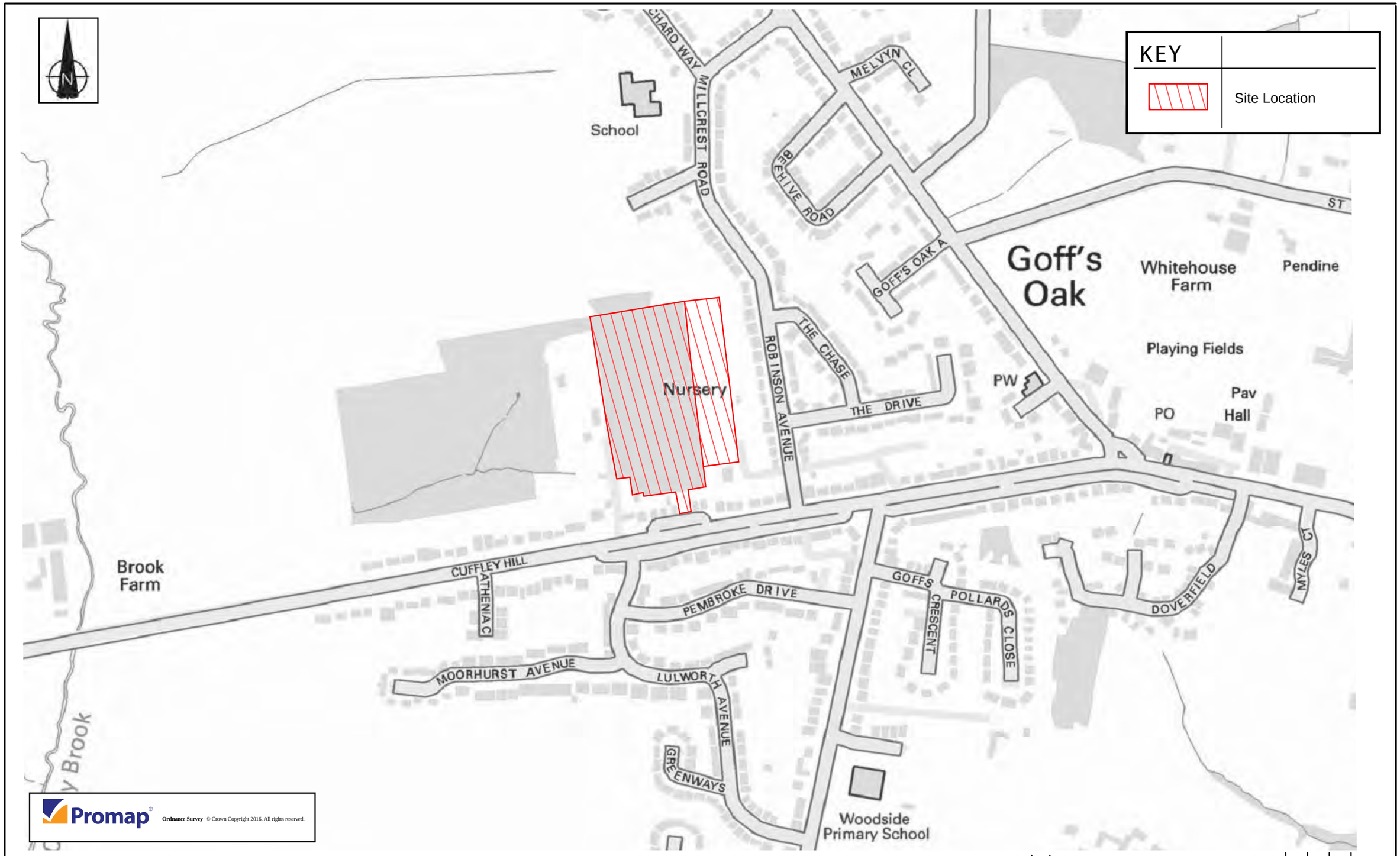
5.8 At this stage however, we are of the view that there are no material transport related issues that would prevent a planning application at the site from being supported.

FIGURES AND DRAWINGS

Figure 1.1 – Site Location Plan

Figure 2.1 – Local Amenities and Transport Infrastructure Plan

Drawing 15-355-106A - Site Access Swept Path Analysis



Rev	Amendments	Drn	Chk	App	Date

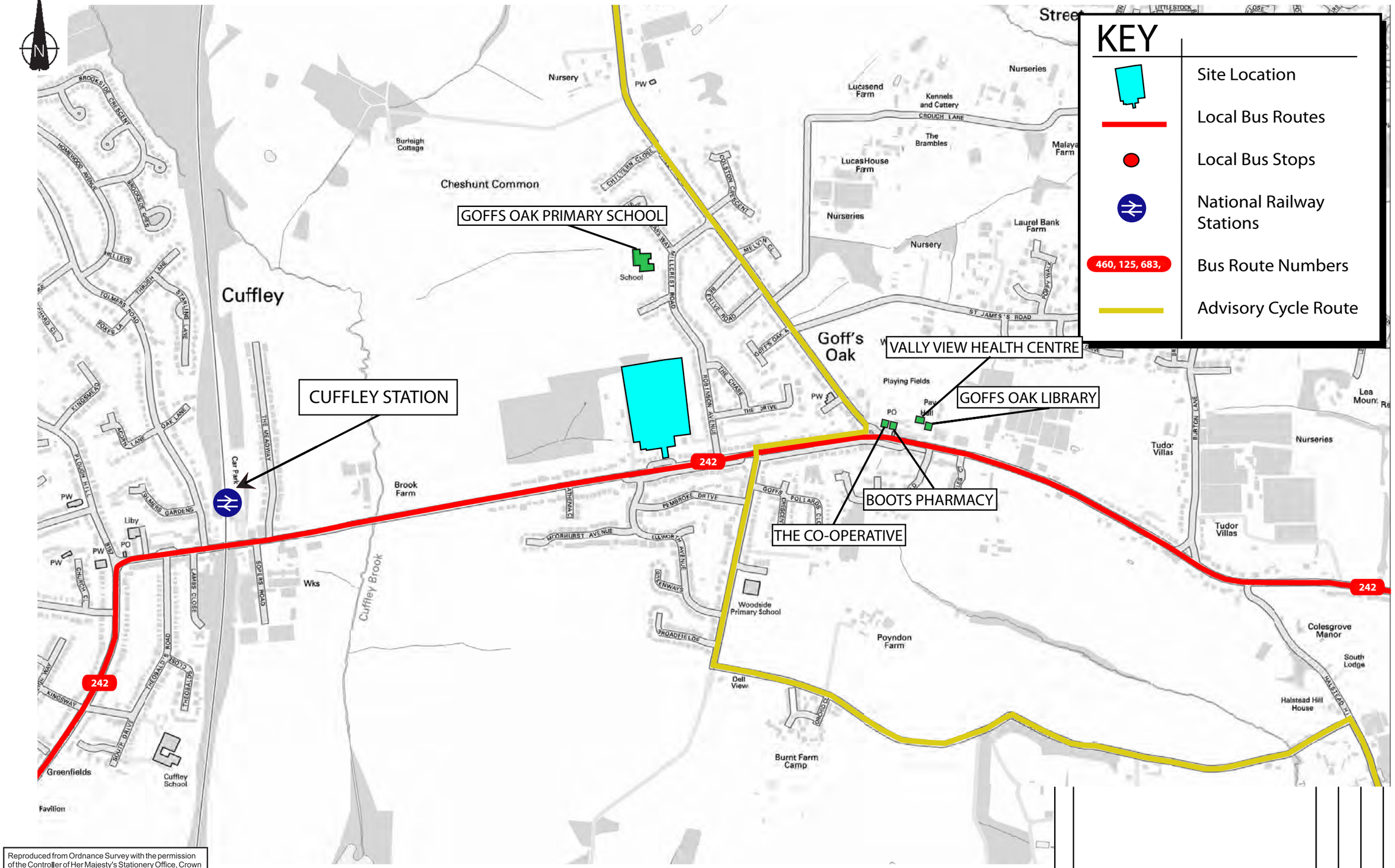
Odyssey Markides
Elizabeth House
39 York Road
London
SE1 7NQ
Telephone: 0207 620 2444
Fax: 0207 620 1168
E: enquiries@odysseymarkides.com
W: www.odysseymarkides.com

Job Title: Cuffley Hill, Goffs Oak

Drawing Title: SITE LOCATION PLAN

Client: Countryside Properties

Scale	Date	Designed
N.T.S.	JULY '16	GE
Drawn	**Checked**	**Approved**
GE	AKS	AKS
Job No	**Figure No**	**Rev**
15-355	FIGURE 1.1	



Rev	Amendments	Drn	Chk	App	Date

Odyssey Markides
Elizabeth House
39 York Road
London
SE1 7NQ
Telephone: 0207 620 2444
Fax: 0207 620 1168
E: enquiries@odysseymarkides.com
W: www.odysseymarkides.com

Job Title: CUFFLEY HILL, GOFFS OAK

Drawing Title: LOCAL TRANSPORT AND AMENITIES PLAN

Client: COUNTRYSIDE PROPERTIES

Scale	Date	Designed
N.T.S	SEPT 16	DWE
Drawn	**Checked**	**Approved**
DWE	GE	AKS
Job No	**Figure No**	**Rev**
15-355	FIGURE No. 2.1	

DRAWING-NO 16-241-002

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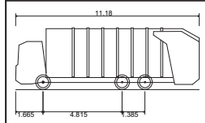
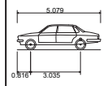
NOTES



Phoenix 2 One-Pass (with Elite 6x4 chassis)

Overall Length	11.180m
Overall Width	2.550m
Overall Body Height	3.760m
Min Body Ground Clearance	0.312m
Track Width	2.550m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.150m



Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.900m

Rev	Amendments	Drn	Chk	App	Date
A	LARGE CAR SWEPT PATH ADDED	HM	GE	AS	07/09/16

Odyssey Markides

Elizabeth House
39 York Road
London
SE1 7NQ

Telephone: 0207 620 2444
Fax: 0207 620 1168
E: enquiries@odysseymarkides.com
W: www.odysseymarkides.com

Job Title
FORMER ROSEMARY NURSERY, CUFFLEY HILL, GOFFS OAK

Drawing Title
ACCESS PROPOSALS

Client
COUNTRYSIDE PROPERTIES

Scale	Date	Designed
1:150 @A1	01/09/16	HM
Drawn	Checked	Approved
HM	AKS	AKS
Job No	Drawing No	Rev
15-355	15-355-106	A

APPENDIX A

TRICS Output

Calculation Reference: AUDIT-138302-160907-0959

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	EX	ESSEX	1 days
	HC	HAMPSHIRE	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	2 days
03	SOUTH WEST		
	DC	DORSET	1 days
	DV	DEVON	2 days
	SM	SOMERSET	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
Actual Range: 28 to 237 (units:)
Range Selected by User: 13 to 491 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/08 to 12/11/15

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

Selected survey days:

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

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

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	4
Edge of Town	5

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

Selected Location Sub Categories:

Residential Zone	9

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

Filtering Stage 3 selection:

Use Class:

C1	1 days
C3	8 days

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

Population within 1 mile:

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

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

Population within 5 miles:

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

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	8 days

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

Travel Plan:

Yes	2 days
No	7 days

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

LIST OF SITES relevant to selection parameters

1 DC-03-A-08 BUNGALOWS DORSET
HURSTDENE ROAD
CASTLE LANE WEST
BOURNEMOUTH
Edge of Town
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY 24/03/14 Survey Type: MANUAL

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

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

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

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

4 EX-03-A-01 SEMI-DET. ESSEX
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Edge of Town
Residential Zone
Total Number of dwellings: 237
Survey date: TUESDAY 13/05/08 Survey Type: MANUAL

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

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

6 SC-03-A-04 DETACHED & TERRACED SURREY
HIGH ROAD

BYFLEET
Edge of Town
Residential Zone
Total Number of dwellings: 71
Survey date: THURSDAY 23/01/14 Survey Type: MANUAL

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

LIST OF SITES relevant to selection parameters (Cont.)

8 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 Survey Type: MANUAL

9 WS-03-A-05 TERRACED & FLATS WEST SUSSEX
UPPER SHOREHAM ROAD

SHOREHAM BY SEA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 48
Survey date: WEDNESDAY 18/04/12 Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DV-03-A-03	parking
ES-03-A-02	parking

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	84	0.096	9	84	0.289	9	84	0.385
08:00 - 09:00	9	84	0.141	9	84	0.366	9	84	0.507
09:00 - 10:00	9	84	0.153	9	84	0.182	9	84	0.335
10:00 - 11:00	9	84	0.155	9	84	0.186	9	84	0.341
11:00 - 12:00	9	84	0.162	9	84	0.159	9	84	0.321
12:00 - 13:00	9	84	0.190	9	84	0.185	9	84	0.375
13:00 - 14:00	9	84	0.196	9	84	0.182	9	84	0.378
14:00 - 15:00	9	84	0.173	9	84	0.182	9	84	0.355
15:00 - 16:00	9	84	0.313	9	84	0.210	9	84	0.523
16:00 - 17:00	9	84	0.305	9	84	0.190	9	84	0.495
17:00 - 18:00	9	84	0.358	9	84	0.206	9	84	0.564
18:00 - 19:00	9	84	0.206	9	84	0.155	9	84	0.361
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.448			2.492			4.940

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

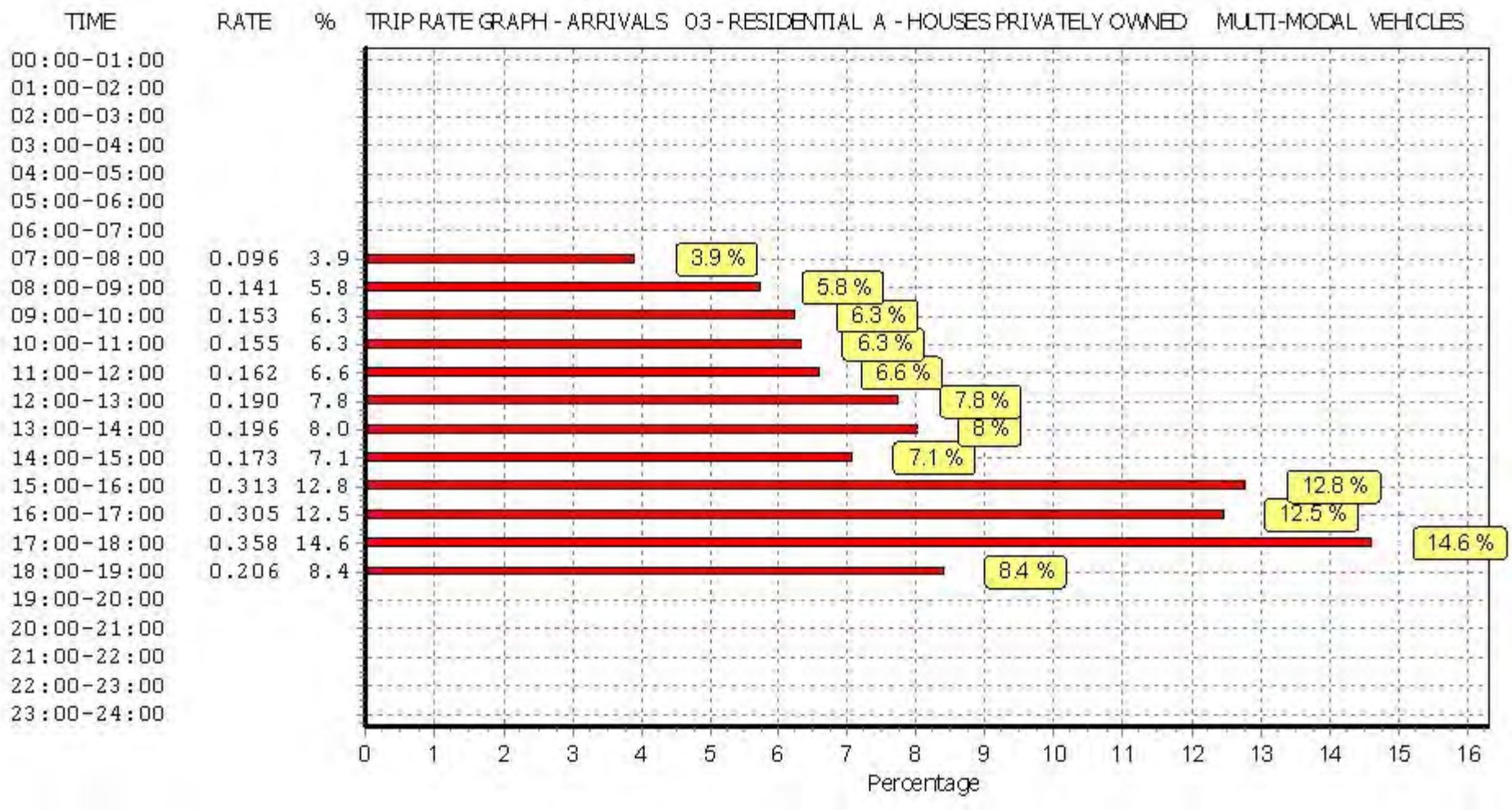
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

Parameter summary

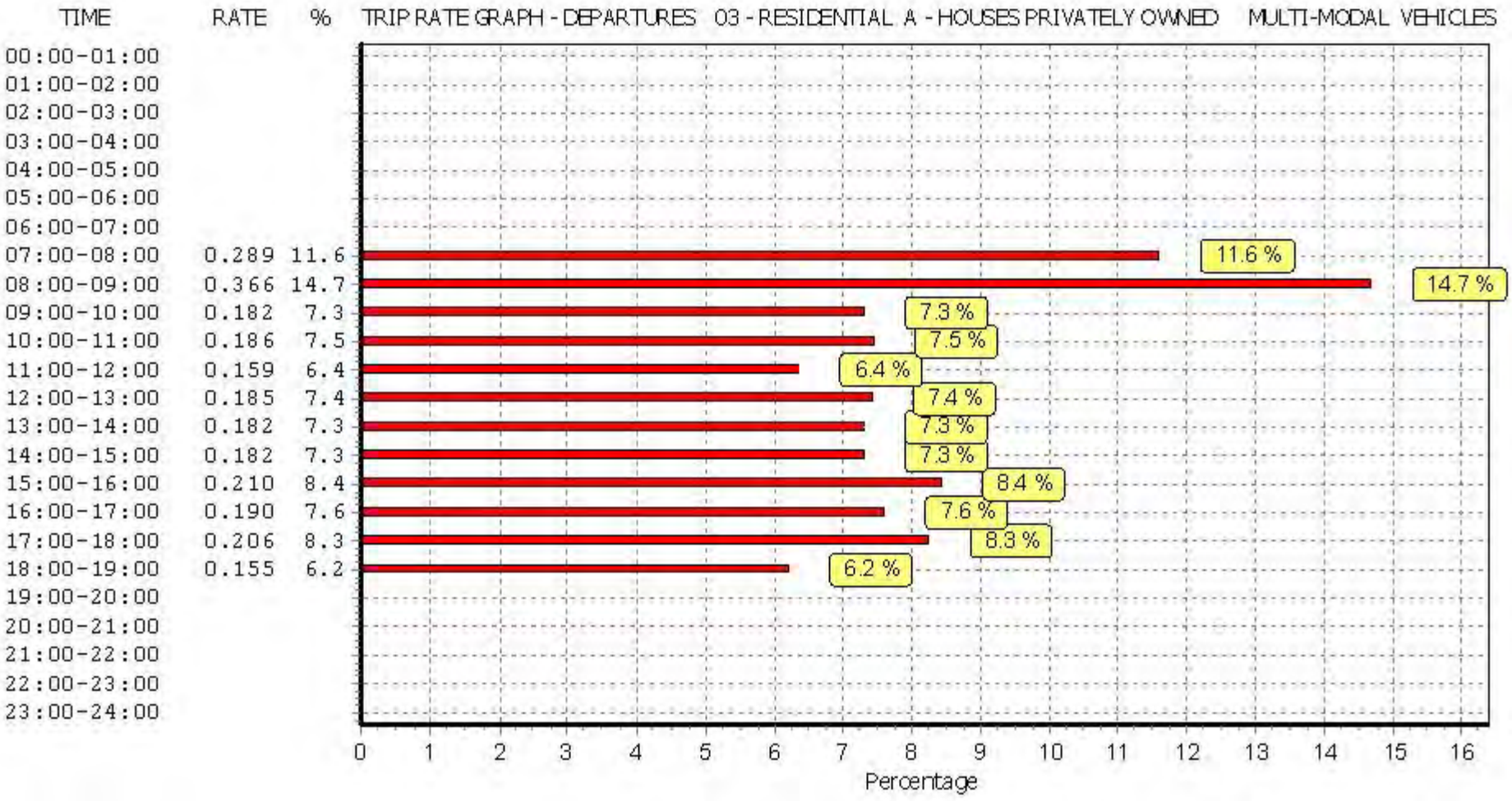
Trip rate parameter range selected:	28 - 237 (units:)
Survey date date range:	01/01/08 - 12/11/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

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

Odyssey Markides LLP 39 York Road London Licence No: 138302



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



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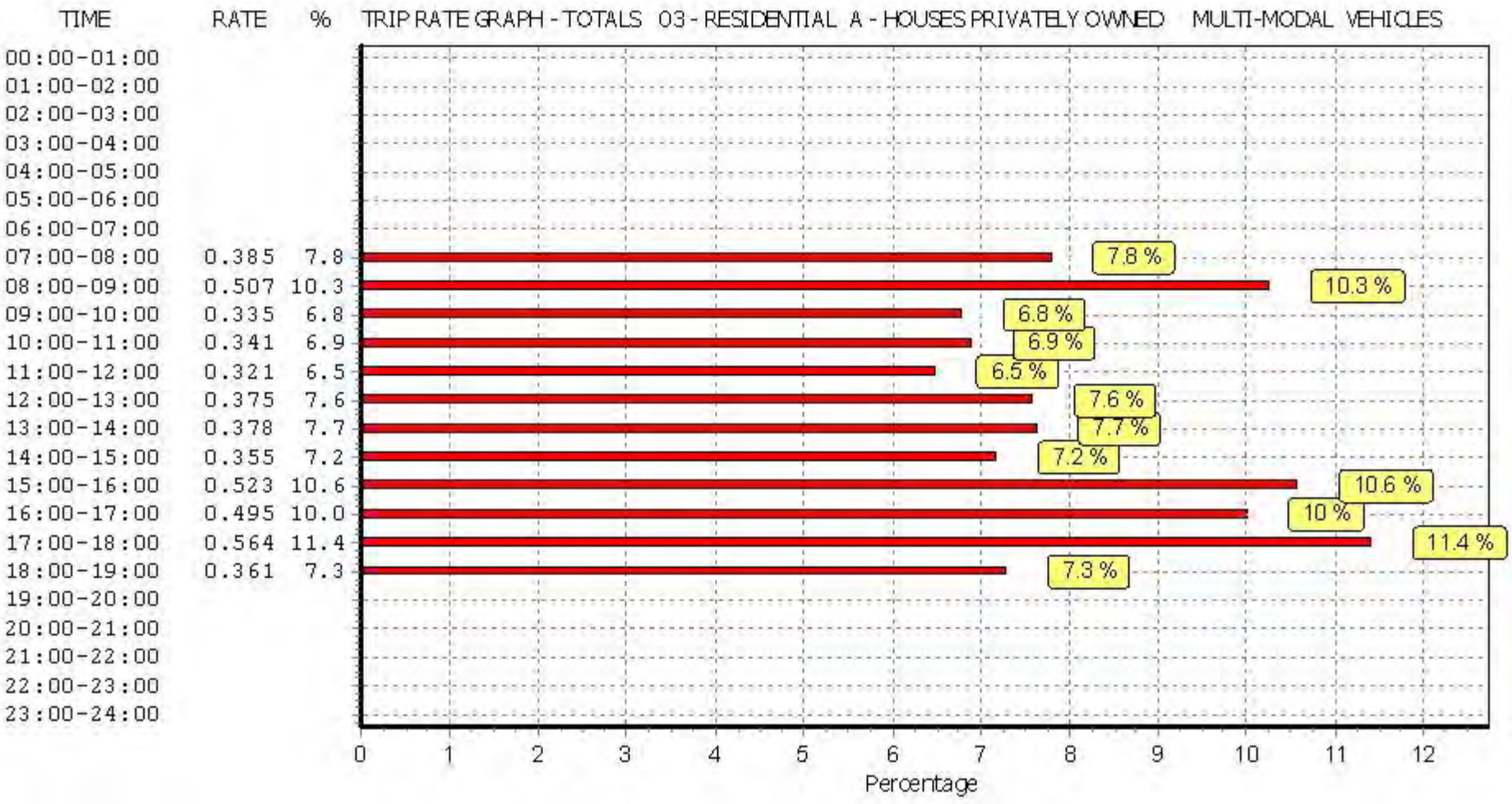

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	84	0.143	9	84	0.436	9	84	0.579
08:00 - 09:00	9	84	0.236	9	84	0.757	9	84	0.993
09:00 - 10:00	9	84	0.239	9	84	0.306	9	84	0.545
10:00 - 11:00	9	84	0.238	9	84	0.297	9	84	0.535
11:00 - 12:00	9	84	0.240	9	84	0.251	9	84	0.491
12:00 - 13:00	9	84	0.281	9	84	0.251	9	84	0.532
13:00 - 14:00	9	84	0.304	9	84	0.259	9	84	0.563
14:00 - 15:00	9	84	0.254	9	84	0.275	9	84	0.529
15:00 - 16:00	9	84	0.694	9	84	0.373	9	84	1.067
16:00 - 17:00	9	84	0.535	9	84	0.321	9	84	0.856
17:00 - 18:00	9	84	0.539	9	84	0.329	9	84	0.868
18:00 - 19:00	9	84	0.354	9	84	0.288	9	84	0.642
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.057			4.143			8.200

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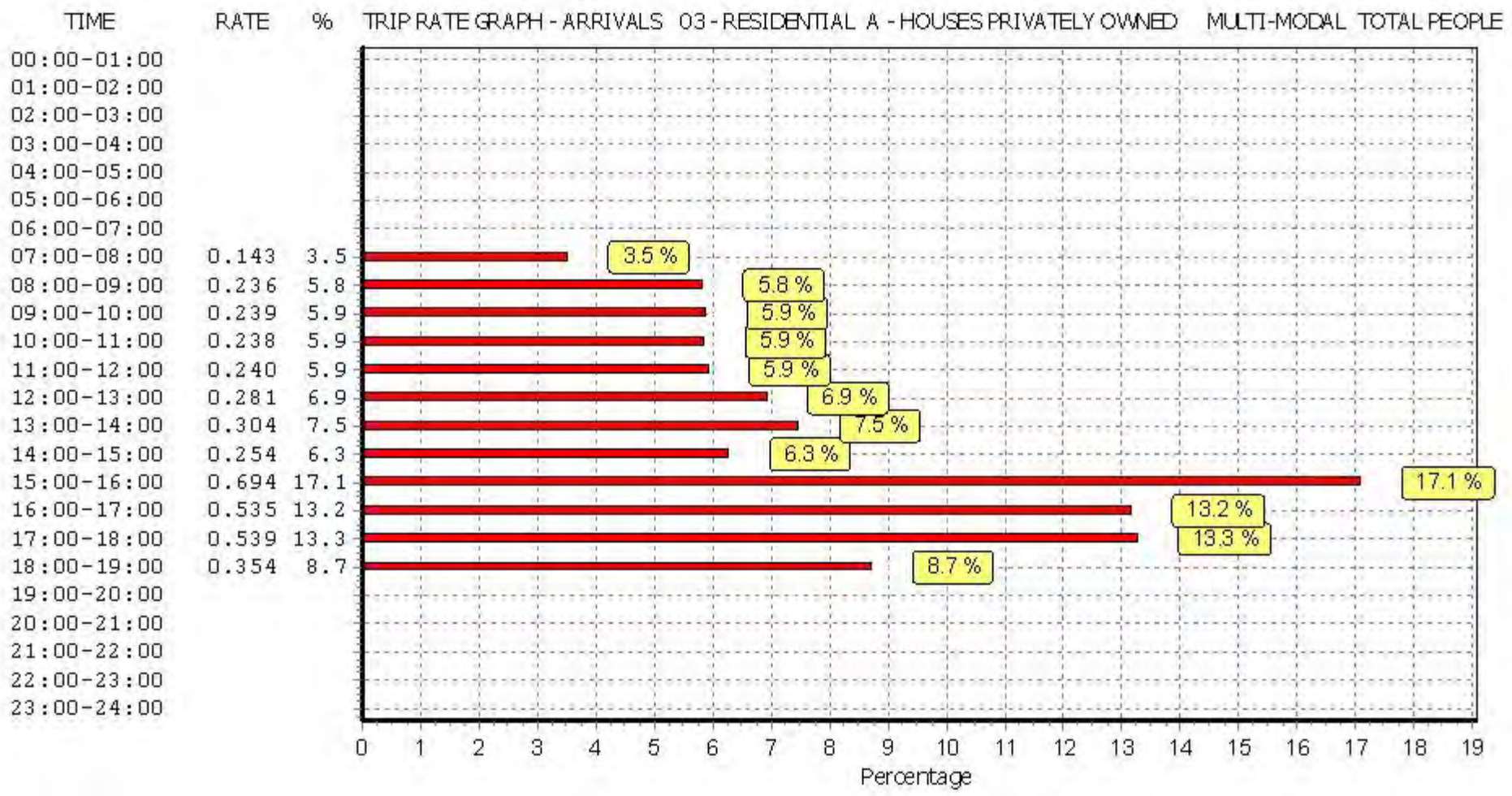

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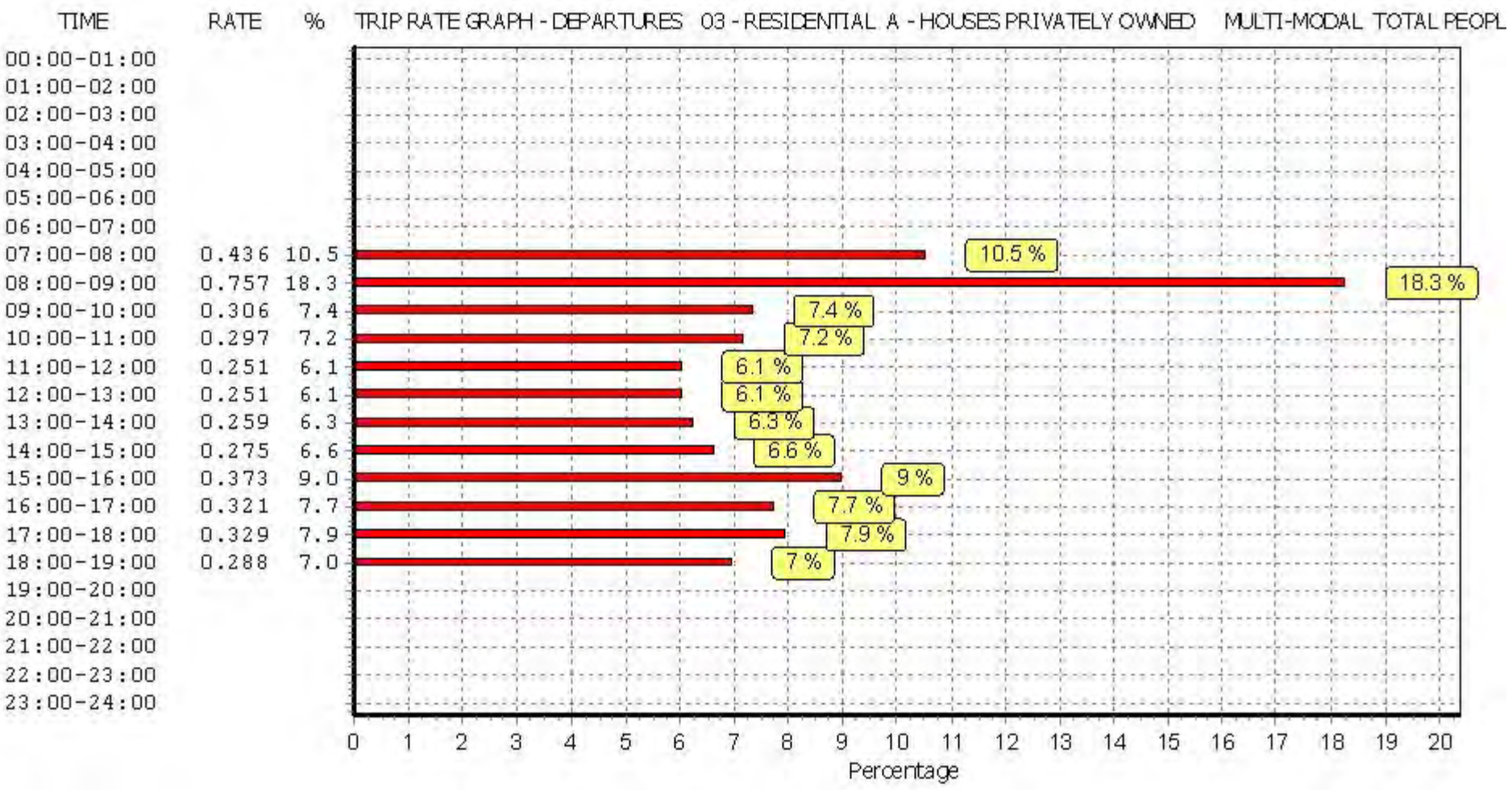

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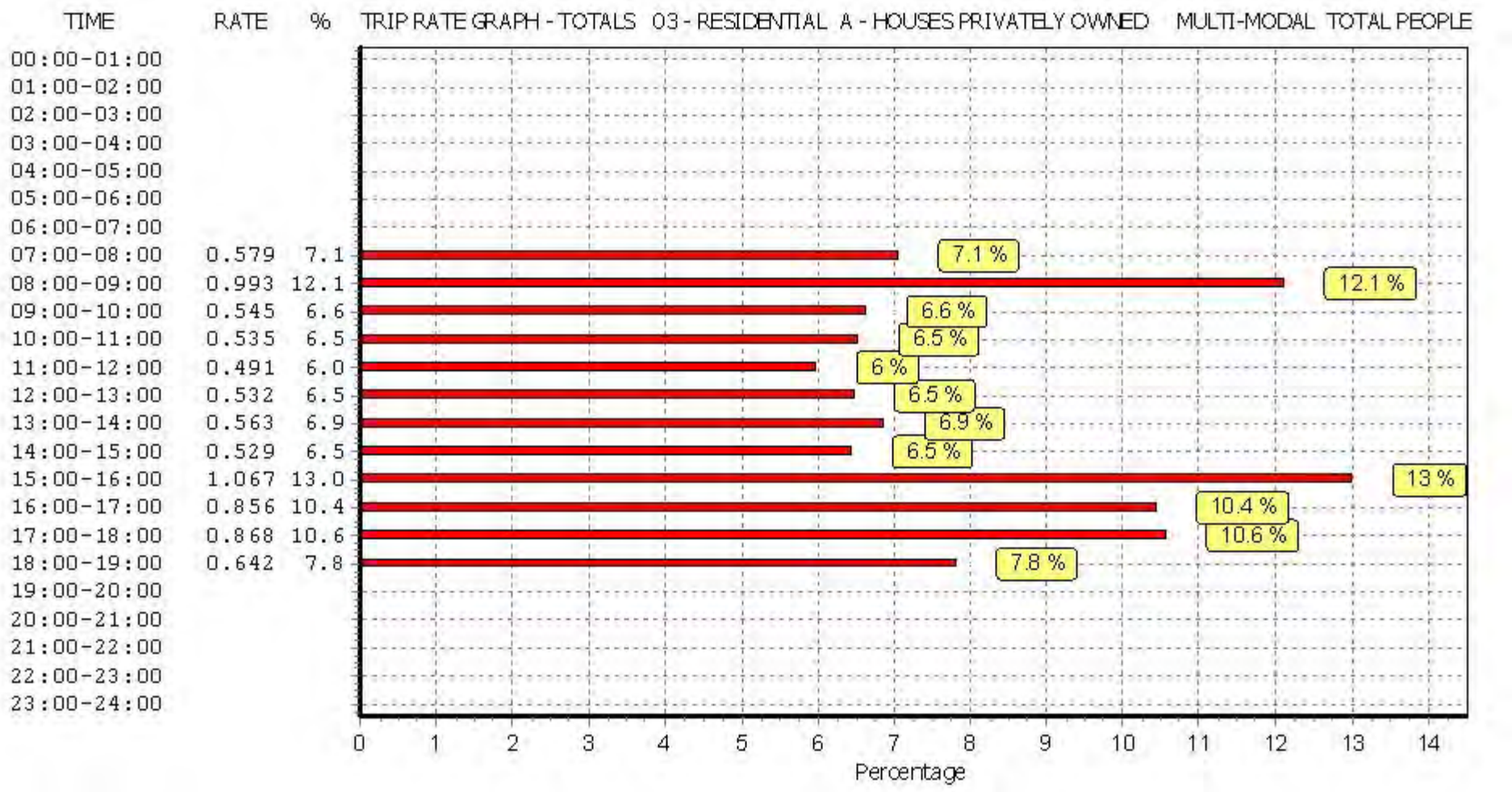

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