

**EFSAC Trip Generation  
Assessment**  
August 2021

**EAS**

# **11 Woodland Way**

Ongar, Essex CM5 9EP

## Document History

JOB NUMBER: 3487/2021  
DOCUMENT REF: EFSAC Trip Generation Assessment (01)  
REVISION: A – Client Draft

Revision	Comments	By	Checked	Authorised	Date
A	Client Draft	AJP	BM	SA	12/08/2021

## Contents

<b>1</b>	<b>Introduction</b>	<b>4</b>	<b>4</b>	<b>Summary of Trip Figures</b>	<b>8</b>
	Introduction	4		Introduction	8
<b>2</b>	<b>Development</b>	<b>5</b>		Existing Land Use (a)	8
	Site Location and Context	5		Existing Use Trips (b)	8
	Existing and Proposed Use	5		Proposed Land Use (c)	8
<b>3</b>	<b>Analysis</b>	<b>6</b>		Proposed Use Trips (d)	8
	Existing Use Trip Generation	6	<b>5</b>	Net AADT (e)	8
	Proposed Use AADT – TRICS	6		Results of Analysis	8
	Trip Distribution – Census Journey to		<b>5</b>	<b>Summary</b>	<b>9</b>
	Work Data	7	<b>6</b>	<b>Appendices</b>	<b>10</b>
	Distribution of AADT Trips	7		Appendix: A – Location Plan	
				Appendix: B – Epping Forest District	
				Council Guidance Note	
				Appendix: C – EFSAC Map	
				Appendix: D – Proposed Site Layout	
				Appendix: E – TRICS Outputs	
				Appendix: F – Trip Distribution	
				Spreadsheet	

# 1 Introduction

## Introduction

- 1.1 Epping Forest District Council ('EFDC' or 'the Council') has a duty under the Habitats Regulations to ensure that plans and projects, either alone or in combinations with other plans and projects, do not adversely affect the integrity of the Epping Forest Special Area of Conservation (EFSAC).
- 1.2 This includes an Air Pollution Mitigation Strategy (APMS), which involves assessing development proposals to determine whether expected net trip generation in terms of Annual Average Daily Trips (AADT) is greater than that modelled and thus may engender adverse effects.
- 1.3 This report comprises an 'EFSAC Trip Generation Assessment' regarding a proposal to redevelop a site that currently comprises building material and equipment storage into a single residential dwelling.
- 1.4 The application site comprises part of the existing garden of 11 Woodland Way, Ongar CM5 9EP. A location plan is included at **Appendix A**.
- 1.5 This Trip Generation Assessment has been prepared with regard to the Council's *Guidance note on site specific assessment process: effects of development on atmospheric pollution (December 2020)*. The guidance note is included at **Appendix B**.
- 1.6 This Assessment provides the figures regarding trip generation as set out in Section 3 Part 1 of the guidance note in order to facilitate EFDC's assessment of the proposals in terms of associated trip generation and if necessary calculate suitable mitigation measures.

## 2 Development

### Site Location and Context

- 2.1 The application site is 11 Woodland Way, Ongar, Essex CM5 9EP. A location plan is included at **Appendix A**.
- 2.2 The site is situated circa 10km north-east of the edge of the EFSAC.
- 2.3 The site comprises part of the existing garden of number 11 Woodland Way, located to the west of the existing property, which would remain.
- 2.4 A map of the EFSAC with a 200m buffer, as used in the route distribution analysis, is included at **Appendix C**.

### Existing and Proposed Use

- 2.5 The site currently comprises part of the existing garden to 11 Woodland Way in Ongar. This is proposed to be redeveloped into a single residential house dwelling.
- 2.6 The proposed site plan is included at **Appendix D**.

### 3 Analysis

#### Existing Use Trip Generation

- 3.1 As the site comprises part of the garden of an existing residential property, the existing use trip generation is therefore 0.

#### Proposed Use AADT – TRICS

- 3.2 The TRICS database was interrogated to find surveys of sites that met the following criteria:
- Multimodal survey;
  - Privately owned houses (03/A);
  - Located in the England outside of London;
  - Situated in 'Edge of town' or 'Suburban area' locations;
  - Population within 1 mile of up to 10,000 and within 5 miles of up to 100,000;
  - Carried out on a weekday in the last five years (discounting surveys carried out since the onset of Covid-19).
- 3.3 10 surveys were found that met these criteria, from which estimates of trip generation for the proposed site are drawn, as summarised in Table 3.1 below. The TRICS datasheet is included at **Appendix E**.

**Table 3.1 – TRICS trip rates (privately owned houses)**

	Daily (07:00-19:00)		
	In	Out	Total
Vehicle trip rate (per unit)	2.525	2.528	5.053
Vehicle trip numbers (1 unit)	3	3	5
HGV trip rate (per unit)	0.032	0.026	0.058
HGV trip numbers (1 unit)	0	0	0

- 3.4 It can be seen above that the proposed site is expected to generate 5 (5.053) two-way vehicle trips over the 12-hour weekday period, with 0 (0.058) HGV trips (2.2%) over the same period.
- 3.5 The 12-hour weekday trip generation can be converted into AADT using the COBA 2018 User Manual Part 4 Chapter 9. The 12-hour trip rate is first multiplied by 1.15 (E factor) to give 16-hour (06:00-22:00) trip rates, and then by an M factor to give the total annual trip rate. There are different M factors for each month, and given that the TRICS data comprise surveys from different months the M factors were averaged as 369.16. Finally, dividing by 362.25 (days) gives AADT.
- 3.6  $5.053 \times 1.15 = 5.8 \times 369.16 = 2145.2 / 365.25 = 6$  (5.9) AADT for the proposed site.
- 3.7  $0.058 \times 1.15 = 0.07 \times 369.16 = 24.6 / 365.25 = 0$  (0.07) HGV AADT for the proposed site.
- 3.8 HGV trips comprise 1.2% of the proposed use AADT.

### Trip Distribution – Census Journey to Work Data

- 3.9 Trips were distributed on the road network based on journey to work data from Nomis table WU03EW '*Location of usual residence and place of work by method of travel to work (MSOA level)*'.
- 3.10 While some trips, particularly those of the proposed use, will be commercial deliveries or collections – as opposed to staff – no other data sources provide as robust an estimation of trip origins and destinations, and moreover it is considered that distribution of residences broadly replicates distribution of commercial land uses.
- 3.11 The site's MSOA, E02004530 (Epping Forest 004), was selected as the location of the place of work, with all other Epping Forest MSOAs plus all other districts/unitary authorities selected as the locations of residences.
- 3.12 Only the 'car or van driver' mode of travel was used to calculate the distribution from each origin/destination.
- 3.13 Next, the route by car between the site and the approximate centre of each of the areas of residences (i.e. MSOAs or district/unitary authorities) were plotted using Google Maps, with the fastest route by car selected as the route that would be driven between the site and the given origin/destination. Where there were two routes of similar journey duration both were noted.
- 3.14 These routes were then compared to the outline of the EFSAC with a 200m buffer, as per the EFDC guidance note.
- 3.15 A total of 1,588 people were found to have reported working in the site's MSOA, travelling from 104 MSOAs or districts/unitary authorities.
- 3.16 Of these, 1,201 (75.6%) would not be expected to route on roads in the EFSAC or within 200m of it; these are referred to as 'No' on the associated spreadsheet which is contained at **Appendix F**.
- 3.17 284 (17.9%) would be expected to route on roads within the EFSAC or within 200m of it; these are referred to as 'Yes' on the associated spreadsheet contained at **Appendix F**.
- 3.18 103 (6.5%) would be expected to have two routes of roughly similar duration, one of which routes on roads in the EFSAC or within 200m of it, and the other not doing so; these are referred to as '50/50' on the associated spreadsheet contained at **Appendix F**.
- 3.19 Taking half of the '50/50' trips in addition to the 'Yes' trips it is reasoned that 21.15% of trips associated with the site would route within 200m of the EFSAC.

### Distribution of AADT Trips

- 3.20 The existing use AADT is 0 so there would not be any trips routing through or within 200m of the EFSAC.
- 3.21 Of the AADT of 6 associated with the proposed use there would be 1 (1.27) trip routing through or within 200m of the EFSAC, including 0 HGV trips.

## 4 Summary of Trip Figures

### Introduction

- 4.1 The Section summarises from the broader calculations in Section 3 the specific required figures as set out in Section 3 Step 1 of the EFDC guidance note.

### Existing Land Use (a)

- 4.2 The authorised existing use of the site is a building housing part of Norton Fishery; the functions housed within the building will be moved elsewhere within Norton Fishery.

### Existing Use Trips (b)

- 4.3 AADT generated by the site = 0  
 4.4 Proportion of AADT as HGVs = 0%  
 4.5 Proportion of site generated AADT on roads within 200m of the EFSAC = 0%  
 4.6 Proportion of site generated AADT as HGVs on roads within 200m of the EFSAC = 0%

### Proposed Land Use (c)

- 4.7 The proposed use of the site is a single residential house dwelling.

### Proposed Use Trips (d)

- 4.8 Total AADT forecast to be generated by the site = 6  
 4.9 Proportion of AADT as HGVs = 1.2%  
 4.10 Proportion of site generated AADT on roads within 200m of the EFSAC = 21.15%  
 4.11 Proportion of site generated AADT as HGVs on roads within 200m of the EFSAC = 0.25%

### Net AADT (e)

- 4.12 Net AADT (total) = 6  
 4.13 Net AADT (roads within the EFSAC or within 200m) = 1

### Results of Analysis

- 4.14 It is expected that there would be a net increase of vehicles routing through or within 200m of the EFSAC of 1. It is expected that sufficient mitigation to offset this would be sought by EFDC.



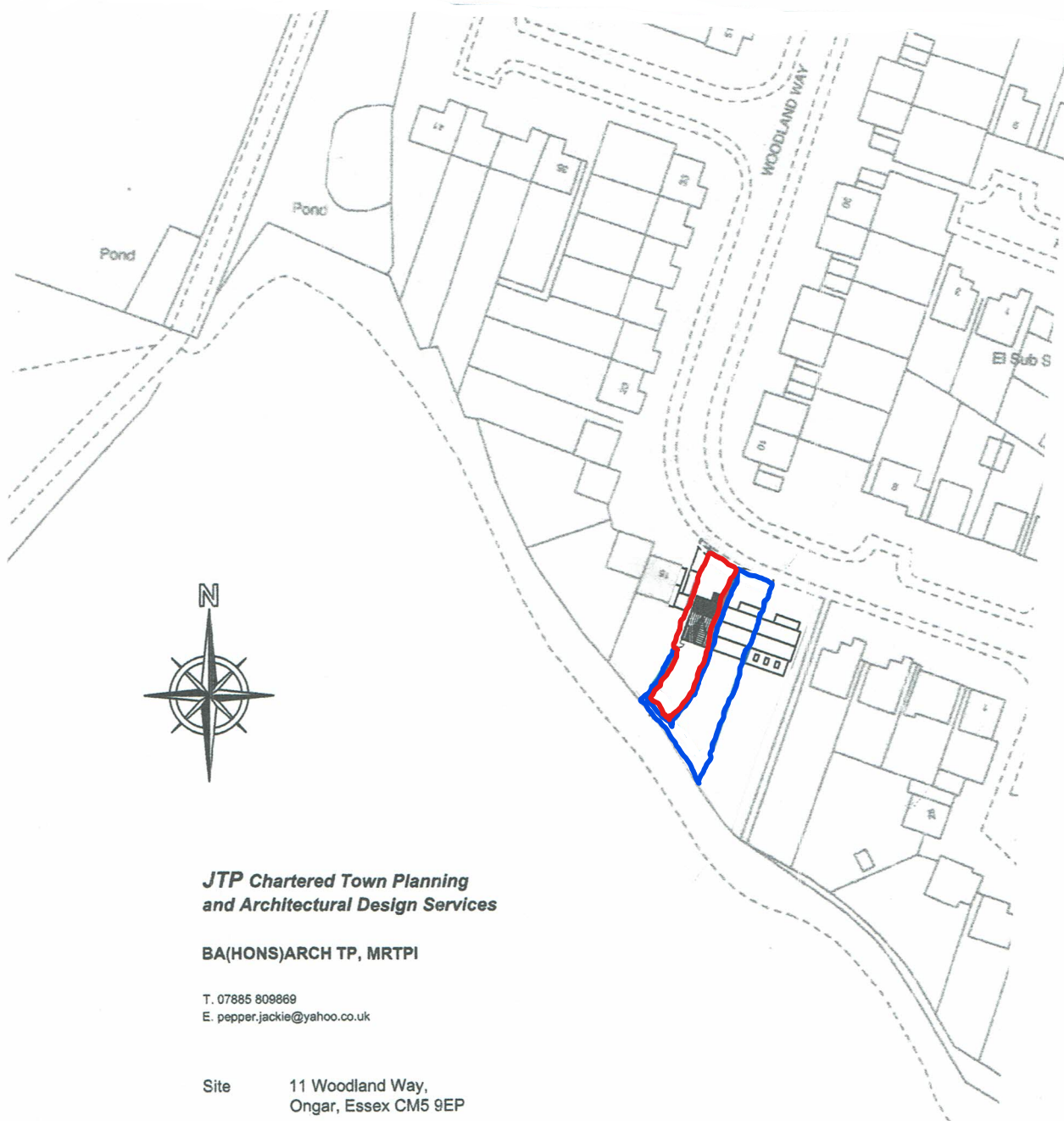
## 5 Summary

- 5.1 The existing site comprises part of the existing garden of 11 Woodland Way. As such the existing use trip generation is essentially 0.
- 5.2 To estimate trip generation associated with the proposed use of one residential house unit TRICS data and COBA Manual conversion factors were used.
- 5.3 Census journey to work data was used to distribute AADT on the road network, in order to calculate the number of total vehicle and HGV trips routing through or within 200m of the EFSAC.
- 5.4 Full calculations and explanations are provided in Section 3, with the key figures, as set out in Section 3 Step 1 of EFDC's guidance note, summarised in Section 4.
- 5.5 Net AADT was calculated as being 6 trips, of which 1 trip would be expected to route through or within 200m of the EFSAC. It is expected that suitable mitigation would be sought by EFDC on the basis of a net increase of AADT of 1 trip routing through or within 200m of the EFSAC.
- 5.6 Supporting data are included in the Appendices.

## 6 Appendices

Appendix: A – Location Plan  
Appendix: B – Epping Forest District Council Guidance Note  
Appendix: C – EFSAC Map  
Appendix: D – Proposed Site Layout  
Appendix: E – TRICS Outputs  
Appendix: F – Trip Distribution Spreadsheet TRICS Outputs

## Appendix: A – Location Plan



**JTP Chartered Town Planning  
and Architectural Design Services**

**BA(HONS)ARCH TP, MRTPI**

T. 07885 809869  
E. pepper.jackie@yahoo.co.uk

Site 11 Woodland Way,  
Ongar, Essex CM5 9EP

Title Proposed new dwelling

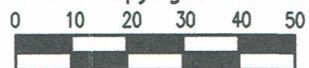
Drawing Location Plan

Scale 1:1250 @ A4  
Date May 2021  
Number 21.02.WW.09

## Location Plan

Scale 1:1250

Crown Copyright and database rights 2018.



## Appendix: B – Epping Forest District Council Guidance Note

## **Epping Forest District Council Habitats Regulations: Site-specific assessment processes in relation to the effects of development on atmospheric pollution**

**December 2020**

### **1. Introduction**

- 1.1 Under UK legislation, Epping Forest District Council (the Council) is a competent authority with a duty to ensure that plans and projects (including the emerging Local Plan) will not adversely affect the integrity of the Epping Forest Special Area of Conservation (EFSAC). As part of that responsibility, the Council has undertaken a Habitats Regulations Assessment (HRA) of its emerging Local Plan. The Habitats Regulations places a legal duty on the Council that it must carry out an Appropriate Assessment on any plan or project likely to have a significant effect on internationally important ecological assets, either alone, or in combination with other plans and projects. The Council's Local Plan evidence base has identified that development proposed for allocation within the emerging Local Plan would have an adverse impact on the Epping Forest Special Area of Conservation (EFSAC) as a result of, amongst other things, atmospheric pollution arising primarily from vehicle emissions.
- 1.2 In order to be able to draw a conclusion of no adverse effect on the integrity of the EFSAC in relation to atmospheric pollution, the Council has adopted an Air Pollution Mitigation Strategy (APMS). The APMS and the evidence published alongside it is based on the quantum, distribution and nature of development proposed for allocation in the emerging Local Plan and a small proportion of 'windfall' developments based on an annual average.
- 1.3 The Council recognises that planning applications may be submitted on Local Plan sites with proposals that differ in land use or quantum from that originally assessed as part of the Council's air pollution evidence base. In such cases, there is a need to undertake an assessment of the proposals against the evidence base to confirm if there are additional adverse effects over and above that which the APMS seeks to address, i.e. adverse effects which may arise if the Annual Average Daily Trips from the site is greater than that modelled. Of specific importance in this regard is the number of vehicle trips associated with each site expected to use roads within the EFSAC or within 200 metres of the EFSAC.
- 1.4 This guidance note has been prepared to set out the Council's process for reviewing and assessing potential impacts arising from proposals where additional vehicle trips through the EFSAC may occur in order to help applicants. This includes, for example, where the quantum or nature of development on a site differs from that modelled as

part of the emerging Local Plan's evidence base. It identifies the triggers for when such an assessment will be necessary, and the information required to be provided by applicants to enable the Council to undertake an appropriate analysis in accordance with the requirements of the Habitats Regulations.

- 1.5 Applicants are strongly encouraged to complete these assessments early in the process, and ideally through the Council's pre-application service. This will help the Council to assess applications, in consultation with Natural England, and determine them efficiently and effectively.

## **2. Scoping and triggers for HRA assessment**

- 2.1 The method of assessing transport and highway impacts associated with each development will need to proceed through a scoping exercise with the Council, Essex County Council (ECC) and in some cases Highways England (HE), ideally at the pre-application stage. During this exercise, the requirement for and scope of a Transport Statement (TS) or Transport Assessment (TA) to support an application will be determined, as well as the need to undertake a specific assessment of potential impacts on the EFSAC.
- 2.2 The triggers for determining if the transport impact of a development proposal being brought forward need to be assessed in relation to its effects on the EFSAC are:
  - a) If the development proposal is not specifically proposed for allocation within the emerging Local Plan (in relation to residential developments this will apply to proposals for six or more dwellings or those greater than 0.2 Ha recognising that a small sites windfall allowance has been included in the evidence work); or
  - b) if the development proposal represents a variation (which results to an increase in the quantum of development or changes the proposed use) from the site's land use allocation as set out in the emerging Local Plan.
- 2.3 In these instances, applicants will be required to provide evidence to support an assessment against the traffic and air quality modelling used to support the development of the adopted APMS. This assessment will be undertaken by the Council and, if necessary, its consultant team. The process for such an assessment is set out in the following section.
- 2.4 If a proposed development does not involve any of the above triggers, no additional assessment by EFDC's consultant team will be required. In either case a project-level HRA will still be required, and a TS or TA may be necessary for highway/transport assessment purposes to support a development proposal, the need for which should be determined and agreed at the pre-application phase.

### 3. HRA assessment process

- 3.1 For development sites that meet either of the triggers set out above, there will be a need to review the traffic generating characteristics of the site in further detail, and assess any potential adverse effects on the EFSAC over and above that accounted for in the Council's adopted APMS. This will enable the Council and Natural England to be satisfied that any adverse effects in connection with each site application will either not arise, or if they do, will be either appropriately mitigated through the APMS or identify where further mitigation measures are required.
- 3.2 It is expected that for development proposals requiring a TS/TA, the trip generation methodology feeding into the HRA assessment will be scoped by the applicant and reviewed by the Council/ECC/HE at an early stage as appropriate.
- 3.3 The assessment process follows four steps, set out as follows:

#### **Step 1:**

As part of pre-application and transport scoping discussions with the Council, applicants will be required to provide the following information relating to each development site:

- (a) The land use and quantum of the authorised existing use of the subject land as was correct at February 2017<sup>1</sup>, or confirmation that the site was vacant or not generating traffic at that time (in which case proceed to [c]);
- (b) Calculation of the number of vehicle trips in Annual Average Daily Traffic (AADT) generated by the site under its existing use, including:
  - i. Total AADT generated by the site, including heavy duty vehicles as a proportion of total AADT (HDV%).
  - ii. Proportion of site generated AADT on roads within 200 metres of the EFSAC, including HDV%.

These calculations must be supported by evidence such as traffic surveys or other appropriate data source, e.g. TRICS, journey to work data, etc<sup>2</sup>. If it can be clearly demonstrated that a site which was vacant prior to February 2017 could be brought back into use for the purposes for which it was authorised (without the need for any planning permission) the Council may be in a position to consider taking this into account in calculating (b) above.

---

<sup>1</sup> This date is significant as it represents the period during which traffic survey data was collected to inform the "Baseline" scenario for the Local Plan transport modelling.

<sup>2</sup> The source of the evidence, calculation methods and all relevant details must be provided. When using empirical data such as TRICS, applicants should ensure they rely on data points which best represent the nature and location of land uses on each site.



- (c) A schedule of the land use and quantum proposed at the site (as is best known at the time).
- (d) Calculation of the forecast number of vehicle trips (AADT) generated by the site under its proposed use to the end of the plan period in 2033:
  - i. Total AADT forecast to be generated by the site, including HDV%.
  - ii. Proportion of site generated AADT on roads within 200 metres of the EFSAC, including HDV%.

These calculations must be supported by evidence such as traffic surveys or other appropriate data source, e.g. TRICS, journey to work data<sup>3</sup>, etc

- (e) A calculation of the net AADT figure (proposed (d) minus existing (b)) both in total and for roads within the EFSAC or within 200 metres of the EFSAC.
- (f) Details of any mitigation measures proposed to be secured through recognised planning mechanisms in support of the application, and if the proposed mitigation is expected to impact on trip generation and/or distribution. Forecasts under (d) and (e) should be provided for both 'with' and 'without' the proposed mitigation.

### **Step 2:**

Council officers will undertake an initial appraisal of the existing (if applicable) and proposed AADT forecasts and liaise with the applicant to ensure the required information has been supplied and is fit for purpose. Where applicable, the proposed methodology will also be reviewed against any pre-application scoping discussions and advice from ECC/HE.

### **Step 3:**

The relevant site information and AADT will be provided to the Council's appointed transport consultant to check against the site-specific land use and trip data previously forecast in the Council's evidence base.

A short technical note will be prepared setting out any difference in AADT between the site allocation assumptions used in the Council's evidence base and the applicant's forecasts, including any reasoning for this (e.g. difference in land use assumptions, application of a different trip rate and/or trip distribution, mitigation impacts, etc).

The assessment will indicate either:

- (a) There is no forecast increase in AADT at any location that would alter the outputs of the evidence base; or

- (b) There is likely to be an increase in AADT of any number at any location that may alter the outputs of the evidence base.
- (b1) Whether there is an overall increase in the distance travelled by vehicles or HDVs associated with the development on roads within the EFSAC or within 200 metres of the EFSAC as this would result in an increase in pollution within the EFSAC.

Where outcome (a) is reached, no further site-specific assessment of HRA impacts will be required. Where outcome (b) is reached and/or (b1) is also true, the assessment will move to Step 4.

**Step 4:**

The relevant transport data will be provided to the Council's appointed air pollution modelling consultant, who will undertake a revised assessment to determine the effects against those presented within the Council's evidence base and subsequently addressed through the adopted APMS.

Specifically, the revised assessment outcomes will be reviewed to determine if the mitigation measures identified within the APMS will be capable of satisfactorily addressing any further impact, or if additional measures need to be secured. Such measures will need to be considered on a site-by-site basis and may require additional assessment(s).

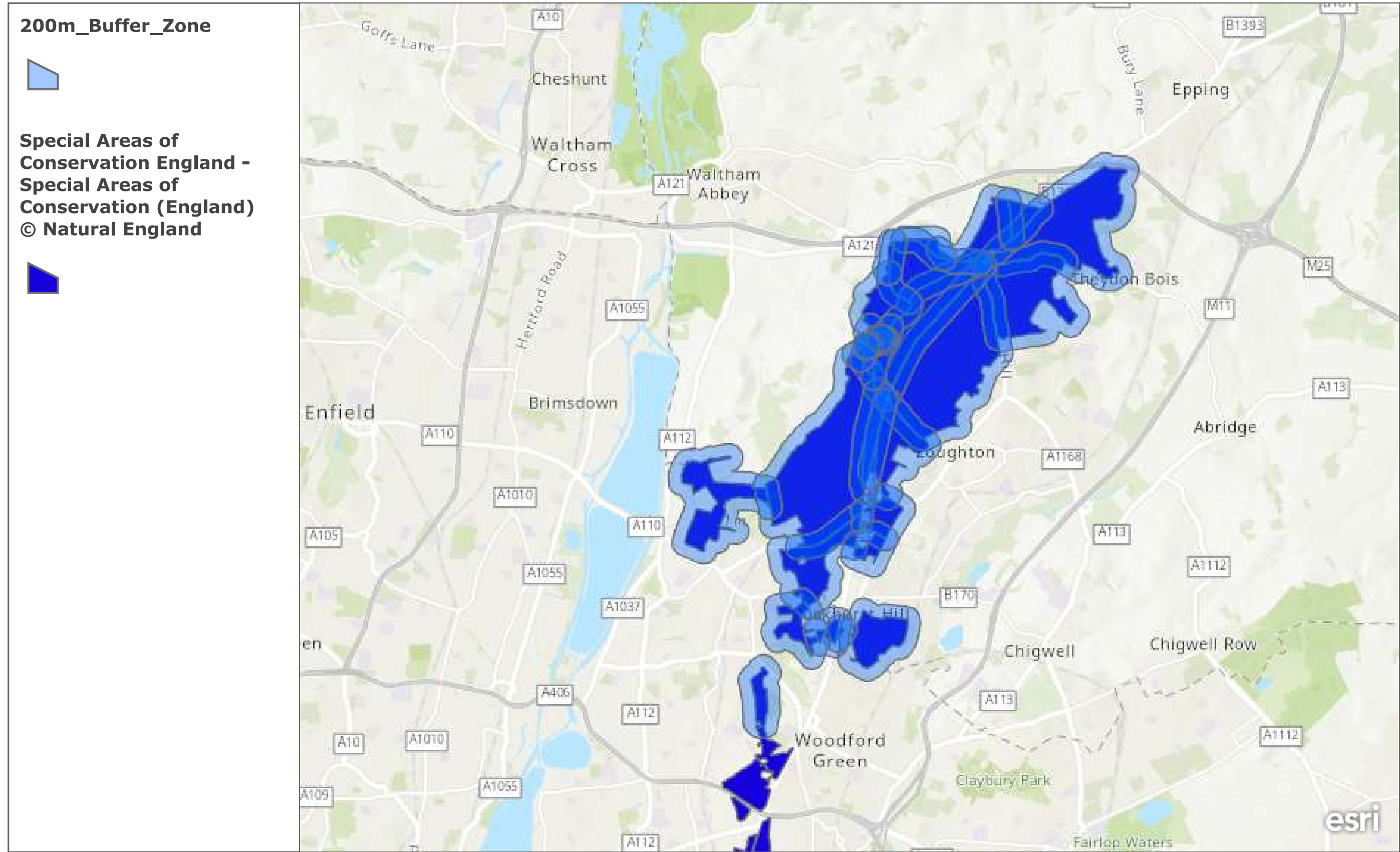
**4. Costs**

- 4.1 Site promoters will be responsible for covering the Council's costs associated with undertaking the above assessments. The level of cost associated with each site will depend on how many assessment steps the application proceeds through.
- 4.2 These costs are separate from any contribution applicants will be required to make towards the implementation of the APMS.
- 4.3 The costs for undertaking each step assuming one enquiry and the corresponding technical note per site is as follows:

<b><u>Step 1:</u></b>	Nil (To be completed by the applicant)
<b><u>Step 2:</u></b>	£215-800 per site (internal EFDC review)
<b><u>Step 3:</u></b>	Initial assessment (EFDC appointed consultant) £900 plus VAT per site
<b><u>Step 4:</u></b>	initial assessment (EFDC appointed consultant) £3,180 plus VAT per site

## Appendix: C – EFSAC Map

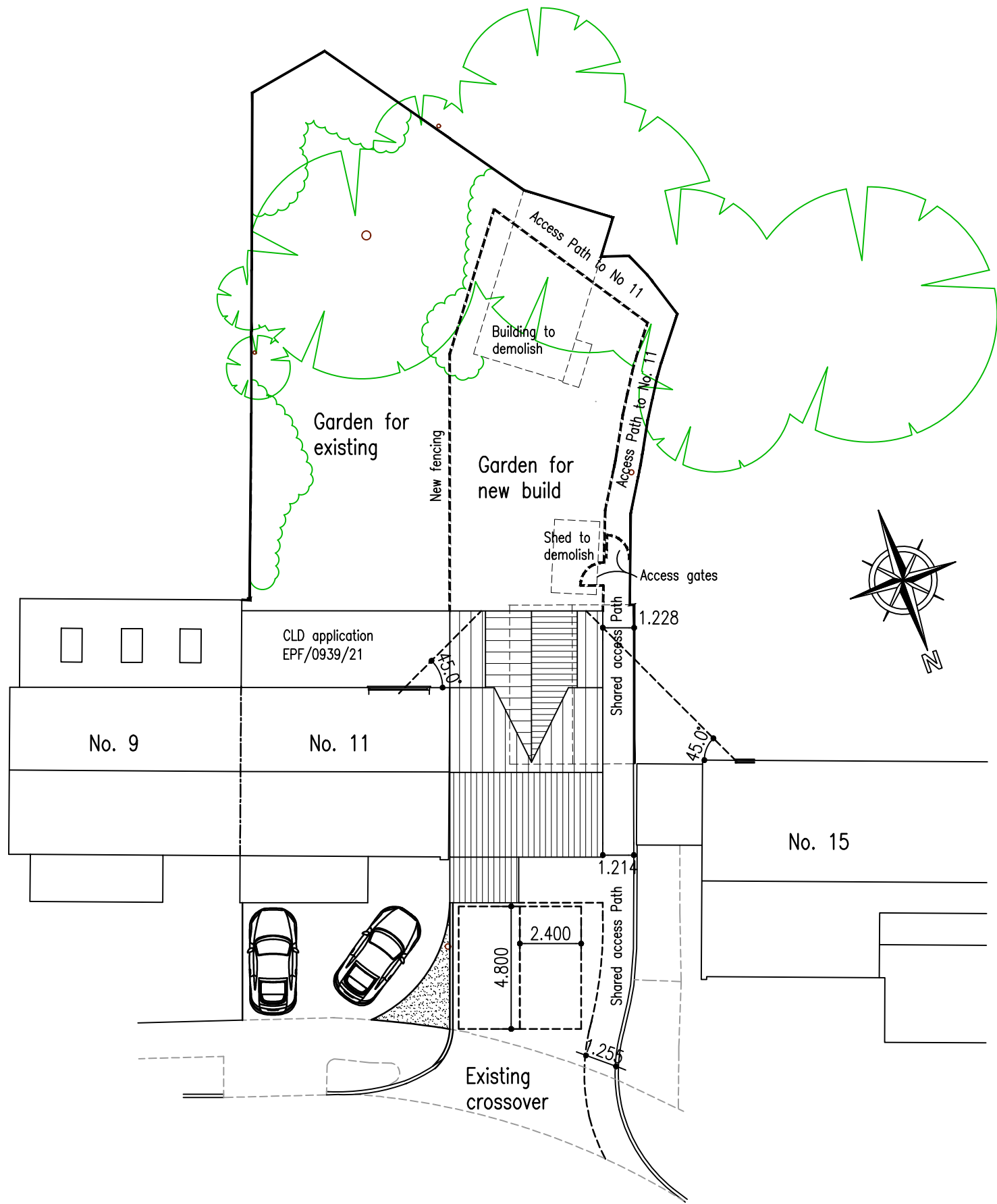
# SAC Map



Esri, Intermap, NASA, NGA, USGS | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

## Appendix: D – Proposed Site Layout

Note  
These drawings have been produced from  
existing building and topographical survey  
information provided by Laser Survey Services



**JTP Chartered Town Planning  
and Architectural Design Services**

**BA(HONS)ARCH TP, MRTPI**

T. 07885 809869  
E. pepper.jackie@yahoo.co.uk

Site 11 Woodland Way,  
Ongar, Essex CM5 9EP

Title Proposed new dwelling

Drawing Proposed Site plan

Scale 1:200 @ A3  
Date Mar 2021  
Number 21.02.WH.13

## Appendix: E – TRICS Outputs

Calculation Reference: AUDIT-743101-210812-0837

## TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
	KC KENT	1 days
	WS WEST SUSSEX	1 days
04	EAST ANGLIA	
	NF NORFOLK	3 days
08	NORTH WEST	
	CH CHESHIRE	2 days
09	NORTH	
	DH DURHAM	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: 24 to 799 (units: )  
 Range Selected by User: 6 to 1817 (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: 13/08/16 to 08/10/20

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

Selected survey days:

Monday	2 days
Tuesday	3 days
Wednesday	2 days
Thursday	3 days

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

Selected survey types:

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 undertaken using machines.*

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	7

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

Selected Location Sub Categories:

Residential Zone	10
------------------	----

*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,*



Secondary Filtering selection:

Use Class:

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:

1,001 to 5,000 1 days  
5,001 to 10,000 9 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  
25,001 to 50,000 2 days  
50,001 to 75,000 3 days  
75,001 to 100,000 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 2 days  
1.1 to 1.5 7 days  
1.6 to 2.0 1 days

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

Travel Plan:

Yes 8 days  
No 2 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.*

LIST OF SITES relevant to selection parameters

1	CH-03-A-10 MEADOW DRIVE NORTHWICH BARNTON Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i>	SEMI-DETACHED & TERRACED      40 04/06/19	CHESHIRE      <i>Survey Type: MANUAL</i>
2	CH-03-A-11 LONDON ROAD NORTHWICH LEFTWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: THURSDAY</i>	TOWN HOUSES      24 06/06/19	CHESHIRE      <i>Survey Type: MANUAL</i>
3	DH-03-A-01 GREENFIELDS ROAD BISHOP AUCKLAND  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i>	SEMI DETACHED      50 28/03/17	DURHAM      <i>Survey Type: MANUAL</i>
4	HC-03-A-23 CANADA WAY LIPHOOK  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i>	HOUSES & FLATS      62 19/11/19	HAMPSHIRE      <i>Survey Type: MANUAL</i>
5	HF-03-A-03 HARE STREET ROAD BUNTINGFORD  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: MONDAY</i>	MIXED HOUSES      160 08/07/19	HERTFORDSHIRE      <i>Survey Type: MANUAL</i>
6	KC-03-A-07 RECULVER ROAD HERNE BAY  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	MIXED HOUSES      288 27/09/17	KENT      <i>Survey Type: MANUAL</i>
7	NF-03-A-04 NORTH WALSHAM ROAD NORTH WALSHAM  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	MIXED HOUSES      70 18/09/19	NORFOLK      <i>Survey Type: MANUAL</i>
8	NF-03-A-05 HEATH DRIVE HOLT  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: THURSDAY</i>	MIXED HOUSES      40 19/09/19	NORFOLK      <i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

9	NF-03-A-06	MIXED HOUSES	NORFOLK
	BEAUFORT WAY		
	GREAT YARMOUTH		
	BRADWELL		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	275	
	Survey date: MONDAY	23/09/19	Survey Type: MANUAL
10	WS-03-A-06	MIXED HOUSES	WEST SUSSEX
	ELLIS ROAD		
	WEST HORSHAM		
	S BROADBRIDGE HEATH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	799	
	Survey date: THURSDAY	02/03/17	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.*

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	181	0.085	10	181	0.340	10	181	0.425
08:00 - 09:00	10	181	0.174	10	181	0.429	10	181	0.603
09:00 - 10:00	10	181	0.170	10	181	0.199	10	181	0.369
10:00 - 11:00	10	181	0.124	10	181	0.165	10	181	0.289
11:00 - 12:00	10	181	0.142	10	181	0.170	10	181	0.312
12:00 - 13:00	10	181	0.162	10	181	0.160	10	181	0.322
13:00 - 14:00	10	181	0.169	10	181	0.158	10	181	0.327
14:00 - 15:00	10	181	0.176	10	181	0.206	10	181	0.382
15:00 - 16:00	10	181	0.301	10	181	0.183	10	181	0.484
16:00 - 17:00	10	181	0.297	10	181	0.162	10	181	0.459
17:00 - 18:00	10	181	0.372	10	181	0.161	10	181	0.533
18:00 - 19:00	10	181	0.353	10	181	0.195	10	181	0.548
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.525			2.528			5.053

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

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

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

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

#### Parameter summary

Trip rate parameter range selected:	24 - 799 (units: )
Survey date range:	13/08/16 - 08/10/20
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	181	0.002	10	181	0.001	10	181	0.003
08:00 - 09:00	10	181	0.003	10	181	0.002	10	181	0.005
09:00 - 10:00	10	181	0.007	10	181	0.004	10	181	0.011
10:00 - 11:00	10	181	0.003	10	181	0.003	10	181	0.006
11:00 - 12:00	10	181	0.002	10	181	0.005	10	181	0.007
12:00 - 13:00	10	181	0.002	10	181	0.002	10	181	0.004
13:00 - 14:00	10	181	0.001	10	181	0.001	10	181	0.002
14:00 - 15:00	10	181	0.002	10	181	0.001	10	181	0.003
15:00 - 16:00	10	181	0.003	10	181	0.002	10	181	0.005
16:00 - 17:00	10	181	0.002	10	181	0.002	10	181	0.004
17:00 - 18:00	10	181	0.003	10	181	0.001	10	181	0.004
18:00 - 19:00	10	181	0.002	10	181	0.002	10	181	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.032			0.026			0.058

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.

**Appendix: F – Trip Distribution Spreadsheet**

# WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

ONS Crown Copyright Reserved [from Nomis on 10 August 2021]

population All usual residents aged 16 and over in employment the week before the census  
units Persons  
date 2011  
usual residence E02004530 : Epping Forest 004 (2011 super output area - middle layer)

place of work	All categories:		EFSAC
	Method of travel to work (2001 specification)	Driving a car or van	
Redbridge	111	102	Yes
Waltham Forest	84	77	Yes
Enfield	39	36	Yes
E02004541 : Epping Forest 015	18	12	Yes
E02004535 : Epping Forest 009	12	9	Yes
E02004540 : Epping Forest 014	11	8	Yes
E02004534 : Epping Forest 008	7	5	Yes
Watford	5	5	Yes
Barnet	4	4	Yes
Cotswold	3	3	Yes
E02004533 : Epping Forest 007	3	2	Yes
Luton	2	2	Yes
Hertsmere	2	2	Yes
Three Rivers	2	2	Yes
Hillingdon	2	2	Yes
Runnymede	2	2	Yes
Hounslow	2	1	Yes
Slough	1	1	Yes
Windsor and Maidenhead	1	1	Yes
Aylesbury Vale	1	1	Yes
South Oxfordshire	1	1	Yes
Elmbridge	1	1	Yes
Epsom and Ewell	1	1	Yes
Guildford	1	1	Yes
Spelthorne	2	1	Yes
Surrey Heath	1	1	Yes
East Dorset	1	1	Yes
Tower Hamlets	78	34	50/50
Broxbourne	27	26	50/50
E02004536 : Epping Forest 010	21	19	50/50
E02004538 : Epping Forest 012	20	15	50/50
St Albans	9	7	50/50
Dacorum	2	2	50/50
Brentwood	199	162	No
E02004530 : Epping Forest 004	321	139	No
Harlow	137	113	No
Chelmsford	109	99	No
E02004531 : Epping Forest 005	115	92	No
E02004529 : Epping Forest 003	102	76	No
Havering	71	68	No
Basildon	49	44	No
Newham	41	34	No
Barking and Dagenham	40	33	No
Uttlesford	31	30	No
E02004537 : Epping Forest 011	36	29	No
Westminster,City of London	159	25	No
East Hertfordshire	26	23	No
Thurrock	26	22	No
E02004527 : Epping Forest 001	33	20	No
E02004532 : Epping Forest 006	21	18	No
Islington	32	15	No
Braintree	14	14	No
Welwyn Hatfield	11	11	No
Haringey	13	11	No
E02004539 : Epping Forest 013	10	10	No
E02004542 : Epping Forest 016	10	10	No
Hackney	20	9	No
Southwark	20	7	No
Southend-on-Sea	7	6	No
Camden	27	5	No
Rochford	5	4	No
E02004528 : Epping Forest 002	4	3	No
Castle Point	3	3	No
Colchester	4	3	No
Maldon	3	3	No
Brent	3	3	No
Bromley	4	3	No
Lewisham	4	3	No
E02004543 : Epping Forest 017	2	2	No
Charnwood	2	2	No
Huntingdonshire	2	2	No
South Cambridgeshire	3	2	No
North Hertfordshire	2	2	No
Stevenage	2	2	No
Mid Suffolk	2	2	No
Bexley	2	2	No
Greenwich	2	2	No
Kensington and Chelsea	5	2	No
Lambeth	6	2	No
Wandsworth	2	2	No
Dartford	2	2	No
Gravesham	2	2	No
Tonbridge and Malling	2	2	No
Stockport	1	1	No

Results		
Passes EFSAC	284	17.9%
50/50	103	6.5%
Doesn't pass EFSAC	1,201	75.6%
Total	1,588	

Kingston upon Hull, City of	1	1 No
Richmondshire	1	1 No
Sheffield	1	1 No
Bradford	1	1 No
Wakefield	1	1 No
Leicester	1	1 No
Nottingham	1	1 No
Blaby	1	1 No
Stoke-on-Trent	1	1 No
Warwick	1	1 No
Babergh	1	1 No
Ipswich	1	1 No
Croydon	1	1 No
Ealing	1	1 No
Merton	1	1 No
Medway	1	1 No
Milton Keynes	2	1 No
Eastbourne	1	1 No
Ashford	1	1 No
Crawley	1	1 No
		1,588

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.