

## **TECHNICAL NOTE**

**Date:** 17<sup>th</sup> January 2014

**Project:** South Keresley Sustainable Urban Extension

**Title:** Model Specification Note – Coventry Visum Highway

### **Model**

#### **1. INTRODUCTION**

1.1 This Model Specification Note has been prepared by Phil Jones Associates (PJA) on behalf of Lioncourt Homes, in relation to the proposed development of land at South Keresley, Coventry.

1.2 The purpose of this document is to set out the input parameters required by Jacobs, in order for runs of the Coventry Visum Highway Model (CVHM) to be undertaken. This note also identifies the model outputs required by PJA for the preparation of the Transport Assessment.

#### **2. DEVELOPMENT PROPOSALS**

2.1 Lioncourt Homes are progressing with proposals for a new Sustainable Urban Extension (SUE) which will include residential, education and community uses. An indicative Masterplan is appended to this note which illustrates the development proposals that include:

- Up to 800 Dwellings;
- A new Primary School – 1 Form Entry; and
- Local Centre – 4,000sqm GFA of A1-A5 uses (any single retail element will not exceed 2,500sqm GFA).

#### **3. VEHICULAR ACCESS STRATEGY**

3.1 It is proposed that two points of access will be provided on Tamworth Road and Bennetts Road South, as indicated in the Masterplan and detailed in PJA drawing nos. 968-01 rev A & 968-02 rev B (appended to this note). Both access junctions will take the form of priority junctions with ghost right turn facilities.

3.2 As shown in the Masterplan it is also proposed that a residential distributor link road will be provided between Bennetts Road South and Tamworth Road. The new road will incorporate a 20mph limit and due to its design and layout it is anticipated that speeds will average between 15-20mph.

#### 4. MODELLING SCENARIO REQUIREMENTS

4.1 The modelling scenario requirements are detailed as follows and summarised in Table 4-1:

- Forecast years of 2015 and 2022
- Peak periods of AM and PM
- Development scenarios as follows:
  - i. Reference Case: Base + Committed Development (*CCC to provide*);
  - ii. Development Scenario 1: Partial Development: 150 units off each access (300 total) Primary School off Bennetts Road, no link road;
  - iii. Development Scenario 2: Full Development: 800 units, Primary School and Local Centre, link road implemented.

**Table 4-1: Required Modelling Scenarios**

Scenario			2015 (AM&PM)	2022 (AM&PM)
i.	Ref Case	Base + Committed Development	Y	Y
ii.	DS1	Ref Case + 150 units off Tamworth Rd, 150 units & Primary School off Bennetts Rd, no link road	Y	N
iii.	DS2	Ref Case + Full 800 units, Primary School & Local Centre, with link road	N	Y

#### 5. MODELLING ASSUMPTIONS

##### *Trip Rates*

5.1 We are aware that a number of assumptions were made in relation to trip generation in the previous Keresley Development Study undertaken for the Council. Prior to agreeing that these assumptions are again used for this study, we require further information on the data used in order to consider whether the assumptions made are reasonable as we are aware that CCC have received independent advice that the trip rates used previously may be overly robust.

5.2 In addition to the residential uses proposed, there will also be a Primary School and a Local Centre within the site. In work undertaken to date for a manual approach to generating traffic flows it has been assumed that all trips associated with the Primary School would be internal to the site, for the Local Centre it has been assumed that 70% of trips would be internal with the remaining 30% of trips being pass-by. On the basis that the impact of these uses on the external highway network would be minimal, we'd suggest that these uses are not included within the model, however confirmation is sought from CCC that this is acceptable.

### ***Distribution***

5.3 It is accepted that the trip distribution assumptions will be as per the previous Keresley Development Study undertaken for the Council.

## **6. REFERENCE CASE MODELS**

6.1 It is accepted that the Reference Case Forecast Years will be developed through the re-application of the development matrices and TEMPRO control factors for the 2015 and 2022 scenarios. Coventry City Council will provide the latest 2015 and 2022 future year development list to be included within the Reference Case scenarios.

6.2 A list of all committed and future developments included in the model along with a plan showing their locations should be provided to PJA for reference. This will be detailed within the Transport Assessment and used to inform the Environmental Assessments on air quality and noise.

## **7. TRAFFIC COUNT DATA**

7.1 Traffic count and ATC survey data which was collected in 2013 has been sent electronically along with this note. This traffic data can be used to develop a base year model which includes Sandpits Lane and to compare traffic flows in the vicinity of the development.

7.2 The surveyed junctions are listed below and their locations can be seen on the plan appended to this note.

- J1 – Long Ln, Brownhill Green Rd, Coundon Wedge Dr, Wall Hill Rd (Roundabout)
- J2 – Long Ln, Tamworth Rd (Priority)
- J3 – Tamworth Rd, Sandpits Ln (Priority)
- J4 – Tamworth Rd, Waste Ln (Priority)
- J5 – Tamworth Rd, Keresley Green Rd, The Scotchill, Keresley Rd (Roundabout)

- J6 – Bennetts Rd South, Sandpits Ln (Signals)
- J7 – Bennetts Rd South, Penny Park Ln (Priority)
- J8 – Keresley Rd, Wallace Rd, Norman Place Rd (Roundabout)
- J9 – Keresley Rd, Sadler Rd, Radford Rd, Norman Place Rd (Roundabout)
- J10 – Radford Rd, Beake Ave, Engleton Rd (Signals)
- J11 – Bennetts Rd North, Exhall Rd (Priority)
- J12 – Penny Park Ln, Parkville H'way, Parkgate Rd, Beake Ave (Signals)
- J13 – Beake Ave, Burnaby Rd (Signals)
- J14 – Coundon Wedge Dr, Holyhead Rd, Allesey Rd, Pickford Way, Birmingham Rd (Roundabout)

7.3 The Network Flow Diagrams for the 2013 base scenarios which have been used within the current Transport Assessment are also appended to this note. The average peak hours across the network were identified as 07:45-08:45 and 16:45-17:45 and all flows are in vehicles.

## **8. MODEL OUTPUTS**

8.1 The following outputs from the model will be required:

- Network Link Flow Plots;
- Network Link Flow Change Plots;
- Select Link Development Trip Routes Plots;
- Link Volume/Capacity Plots;
- Junction Delay Plots; and
- Tabulated Junction Turning Flows for each Scenario at the same 14 Junctions for which traffic count data was provided in Section 7 of this note. Also to include the two access junctions on Tamworth Road and Bennetts Road South.

**Phil Jones Associates**

## Adrian Forte

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**From:** Simm, Ben <Ben.Simm@coventry.gov.uk>  
**Sent:** 06 February 2014 23:15  
**To:** Mike Edwards  
**Cc:** Mark Nettleton; Adrian Forte; Archer, Joanne  
**Subject:** RE: Keresley Modelling: Trip Rates Used for Previous Keresley Study

Mike / Adrian,

This seems logical, therefore happy for you to progress on this basis.

Thanks

Ben

### Ben Simm

Transport Planning Officer  
Coventry City Council

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**From:** Mike Edwards [mailto:mike@philjonesassociates.co.uk]  
**Sent:** 30 January 2014 18:36  
**To:** Simm, Ben  
**Cc:** Mark Nettleton; Adrian Forte  
**Subject:** Re: Keresley Modelling: Trip Rates Used for Previous Keresley Study

Hi Ben

Are we ok to move forward on this basis now?

Regards

Mike

Mike Edwards  
Phil Jones Associates  
07568 128442

On 28 Jan 2014, at 15:43, "Adrian Forte" <[adrian@philjonesassociates.co.uk](mailto:adrian@philjonesassociates.co.uk)> wrote:

Hi Ben,

Sorry for the delay in getting back to you on this.

We have now undertaken a sensitivity test which has looked back at the surveyed ATC data which was used to calculate trip rates. The trip rates we proposed originally were based upon the Average

5-day traffic flows, however, when the worst day is considered (in this case the Tuesday) the percentage change from the average is 5%. Hence why we are proposing an uplift of 5%.

	Combined Peak Two-way Trip Rates					
	Wed	Thu	Fri	Mon	Tue	Average (used)
<b>Trip Rate</b>	1.28	1.27	1.28	1.25	1.35	1.29
<b>Deviation from Average (Trip Rate)</b>	-0.01	-0.01	-0.01	-0.04	0.06	-
<b>Percentage change from Average</b>	0%	-1%	0%	-3%	5%	-

I trust this all makes sense, if not, just give me a call.

Therefore the trip rates (uplifted by 5%) to be used within the model are set out in the table below...

	AM Peak			PM Peak		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
PJA Surveyed (5% increase)	0.18	0.45	0.63	0.47	0.25	0.72

Regards  
Adrian

**Adrian Forte**  
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**From:** Simm, Ben [<mailto:Ben.Simm@coventry.gov.uk>]  
**Sent:** 27 January 2014 10:35  
**To:** Adrian Forte  
**Cc:** Mike Edwards; Mark Nettleton  
**Subject:** RE: Keresley Modelling: Trip Rates Used for Previous Keresley Study  
**Importance:** High

Adrian,

I have reviewed these and it looks ok. However before I agree can you just clarify the justification of the 5% and how you derived this figure.

Thanks

Ben

**Ben Simm**  
Transport Planning Officer  
Coventry City Council

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**From:** Adrian Forte [<mailto:adrian@philjonesassociates.co.uk>]  
**Sent:** 21 January 2014 17:17  
**To:** Simm, Ben  
**Cc:** Mike Edwards; Mark Nettleton  
**Subject:** RE: Keresley Modelling: Trip Rates Used for Previous Keresley Study

Hi Ben,

Further to our conversation yesterday I've been reviewing the trip rates for Keresley and how they've progressed over the last year or so. Table 1 below shows the suggested vehicle trip rates in chronologically proposed order which include:

1. PJA Total Person TRICS Trip Rates (April '13) – using TEMPRO mode splits for vehicles;
2. CCC Total Person TRICS Trip Rates (April '13) – using 2011 Census mode splits for vehicles; and
3. PJA Surveyed Vehicle Trip Rates (May '13) – using TEMPRO mode splits for vehicles across journey purposes.

**Table 1:**

	AM Peak			PM Peak		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
1. PJA TRICS	0.105	0.395	0.5	0.313	0.193	0.506
2. CCC TRICS	0.18	0.66	0.84	0.463	0.279	0.74
3. PJA Surveyed	0.17	0.43	0.60	0.45	0.24	0.69

Further to this, I've now use the original TRICS total person trip rates and applied the TEMPRO mode splits/journey purposes adjusted by the 2011 Census JtW splits, in order to calculate the vehicle trip rates. These are shown in Table 2 below.

**Table 2:**

	AM Peak			PM Peak		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
TRICS with TEMPRO & Census JtW	0.108	0.396	0.504	0.375	0.186	0.561

These rates are comparable with the trip rates proposed back in April last year and again suggest that the trip rates you have asked us to use are overly robust. We still feel that use of the trip rates derived from survey flows is the most appropriate way forward, however as a compromise we are willing uplift the observed trip rates by 5% to reflect the potential for some slight variation in demand which may be associated with housing mix etc. – see Table 3 below for uplifted trip rates for your consideration.

**Table 3:**

	AM Peak			PM Peak		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
PJA Surveyed (5% increase)	0.18	0.45	0.63	0.47	0.25	0.72

Taking all this into consideration, would you be willing to agree with the use of the PJA surveyed trip rates - increased by 5%? If this is not acceptable, then in order to move forward the only option

available is to run the model with the higher CCC rates you have requested, however we will only use the modelling data to inform the distribution of our development traffic and any re-assignment of background traffic.

If you could confirm with us before the end of the week it would be greatly appreciated.

Regards  
Adrian

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**From:** Sulaimi, Firuz [<mailto:Firuz.Sulaimi@jacobs.com>]  
**Sent:** 20 January 2014 17:26  
**To:** Adrian Forte; [Ben.Simm@coventry.gov.uk](mailto:Ben.Simm@coventry.gov.uk)  
**Cc:** Mike Edwards; Mark Nettleton; Smith, Geoff  
**Subject:** RE: Keresley Modelling: Trip Rates Used for Previous Keresley Study

Adrian,

I can confirm that these are trip rates and figures that have been provided by Coventry City Council for the previous study. We did not tabulate the trip generation rates.

Regards

Firuz

Firuz Sulaimi | Jacobs | Senior Consultant | Transport Planning | +44 (0)2476 253565 | +44 (0)2476 253501 fax | [Firuz.Sulaimi@jacobs.com](mailto:Firuz.Sulaimi@jacobs.com) | [www.jacobs.com](http://www.jacobs.com)

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**From:** Adrian Forte [<mailto:adrian@philjonesassociates.co.uk>]  
**Sent:** 20 January 2014 17:17  
**To:** Sulaimi, Firuz; [Ben.Simm@coventry.gov.uk](mailto:Ben.Simm@coventry.gov.uk)  
**Cc:** Mike Edwards; Mark Nettleton; Smith, Geoff  
**Subject:** RE: Keresley Modelling: Trip Rates Used for Previous Keresley Study

Firuz,

Many thanks for sending through the trip rate assumptions previously used. There appears to be an error within the PM peak trip rates/generated traffic, would you be able to clarify this for us? – see highlighted yellow in your email below.

Ben,

These trip rates appear to be the same ones that CCC were suggesting at the start of last year. As stated previously we feel that they are overly robust particularly in the AM peak period, especially after we undertook our own surveyed trip rates in May last year. It is also understood that you received independent advice that the CCC trip rates were overly robust.

There looks to be two options at this stage as we want the modelling to be progressed as quickly as possible:

1. We agree on the lower trip that were observed by PJA which we believe to be reliable and robust; or



2. We go ahead and run the model with the higher CCC trip rates. However, by doing so please note that we are not agreeing to the CCC trip rates, we are simply accepting that we will use the modelling data to inform the distribution of our development traffic and any re-assignment of background traffic.

As you will understand this is a priority which needs to be bottomed out in order to get the modelling underway, it would be greatly appreciated if you could give this some thought and get back to us with your views in the next few days.

Kind regards  
Adrian

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**From:** Sulaimi, Firuz [<mailto:Firuz.Sulaimi@jacobs.com>]  
**Sent:** 20 January 2014 16:07  
**To:** Adrian Forte; [Ben.Simm@coventry.gov.uk](mailto:Ben.Simm@coventry.gov.uk)  
**Cc:** Mike Edwards; Mark Nettleton; Smith, Geoff  
**Subject:** RE: Keresley Modelling: Trip Rates Used for Previous Keresley Study

Adrian / Ben

Below is the previous trip rates used for the Keresley Development. These were provided from Coventry CC. Hope may assist with the final trip rate assumptions.

Regards

Firuz

**Scale of Development:**

The potential amount of housing proposed to be delivered at this location is 3,500 dwellings.

**Trip Rates and Trip Generation:**

The trip rates have been calculated using TRICS using the multi modal category and private houses type. The total p

	Arrivals	Departures	Two – Way
AM Peak	0.257	0.943	1.2
PM Peak	0.79	0.393	1.183

Based on the proposed development of 3,500 trips this equates to the following Total Person Trips.

	Arrivals	Departures	Two – Way
AM Peak	900	3,300	4,200
PM Peak	2,314	1,393	3,707

In order to ascertain the likely trips generated by modal share data for the Bablake Ward from the 2011 Census data

Mode of Transport	Modal Share	AM Peak			PM Peak		
		Arrivals	Departures	Two – Way	Arrivals	Departures	Two – Way
Vehicle Trips	70%	630	2,310	2,940	1,620	975	2,595
Public Transport	9%	81	297	378	208	125	333
Cycling	5%	45	165	210	116	70	186
Walking	7%	63	231	294	162	98	260

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**From:** Adrian Forte [<mailto:adrian@philjonesassociates.co.uk>]

**Sent:** 17 January 2014 12:10

**To:** Smith, Geoff; [Ben.Simm@coventry.gov.uk](mailto:Ben.Simm@coventry.gov.uk)

**Cc:** Sulaimi, Firuz; Mike Edwards; Mark Nettleton

**Subject:** RE: Keresley Modelling

Geoff / Ben,

Please see attached the modelling specification tech note which addresses trip rates, distribution, scenarios to be modelled and model outputs required.

There are a few things that need clarification/agreement in relation to trip rates which are detailed in Paragraphs 5.1 & 5.2 of the note.

If you have any queries please don't hesitate to contact me.

Kind regards

Adrian

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**From:** Smith, Geoff [<mailto:Geoff.Smith@jacobs.com>]

**Sent:** 10 January 2014 11:52

**To:** Adrian Forte

**Cc:** Sulaimi, Firuz

**Subject:** RE: Keresley Modelling

Thanks we will review early next week and get back with any questions.

I think we are still awaiting the signal data from the Council to get started.

Cheers

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