

Warwickshire County Council Modelling Protocol

Please find below Warwickshire County Council (WCC) model licensing notes and comments for the vehicle trip generation, trip distribution methodology and modelling as set out in our [protocol](#).

(a) Site Access Strategy

Prior to commencing the modelling, WCC would be grateful if you would confirm the site access strategy and your proposed methodology for assigning development trips via the primary and secondary access points onto the surrounding highway network. It would also be helpful if a suitable masterplan layout of the site could be provided indicating the likely number of units and area in each development parcel.

(b) Trip Generation

For a detailed vehicle trip generation estimate, WCC usually recommends locally-observed proxy data for the trip rates corresponding to the residential development according to the characteristics of your site.

The survey data should be used to derive average vehicle trip generation for the proposed residential component of your development during a neutral month. WCC recommend surveying the sites for at least 2 consecutive weeks to reduce any possible issue. The trip rates should then be calculated using data from neutral weekdays (i.e. excluding Mondays and Fridays where trip profiles tend to differ from those on the other weekdays) and Saturday. The trip rate should consider the following hourly periods indicated in the protocol:

- Weekday AM Peak: from 7:00 to 10:00
- Weekday PM Peak: from 16:00 to 19:00
- Saturday Peak (when applicable): from 11:00 to 14:00

Local data should be validated with TRICS trips rates. Please make sure that your TRICS data is with the following requirements:

1. On TRICS you must select the land use according to each classification (<http://www.trics.org/websystem/doc/TRLAND761.PDF>).
2. On the land use and trip rate selection you must exclude trips outside of mainland England and the cities due to the provision of public transport.
3. Your primary filter should be considering only surveys done on neutral weekdays (excluding Monday and Friday).
4. Finally, your secondary filtering should exclude any unclassified land use class.

Education trip generation for pupil trips should follow the advice set out in our [Education Trip Calculations Advice Note](#). Please also include an allowance for staff and visitor vehicle trip generation in your assessment.

(c) Trip Distribution

WCC may require the use of Mobile Network Data (MND) to inform travel distribution patterns linked to development proposals. More traditional methods (i.e. Census data) suffer from issues relating to age of data, coding inaccuracies and limited timeframe/snapshot. Due to these concerns, WCC purchased MND in 2016 to support model development and analysis of impacts linked to developments. The cost of initially purchasing the dataset and then processing the data must be covered through charging for access to the dataset. For use of MND please refer to our Mobile Network Data Advice Note which sets out the key principles. WCC would look to agree the LSOAs to be included in the MND analysis with you prior to you commissioning VM to extracting the data.

The cost a single MND model run is £400 + VAT. AM and PM distributions in matrix format appended to MSOA (or LSOA where available) and model zones and an assignment diagram for the MSOA level data are provided as standard for a typical use. Additional uses and provision of other information can also be provided but costs are in addition to those associated with the production of standard distribution information. Please note that costs associated with deriving the MND would need to be borne by your client in full and are not covered by the model licence fee.

(d) Model Licensing and Access Fee

In order to access the model for use in your assessment, you would be required to sign and return the licence agreement on behalf of the licensee. WCC will countersign the final page and return a copy to you for your records.

The model licence fee is based on the total number of vehicle trips entering and leaving the development site over the 6-hour modelled weekday period (i.e. 0700-1000 and 1600-1900). WCC will need to agree this with you before the model licence fee may be confirmed and prior to making the models available for use - please see our comments on trip generation in (a) above. WCC will also review model performance in the vicinity of the site prior to issue to ensure there are no coding anomalies which are likely to affect the validity of the assessment results.

Once WCC have agreed the licence fee, you must complete and return the fee schedule and supply a Purchase Order. WCC will then arrange for an invoice to be raised for payment (please confirm who this should be sent to with their contact details).

(e) Model Validity

WCC has taken all reasonable steps to ensure the models are fit for purpose for local development assessments and is satisfied that this is the case.

Please note however that the developer is responsible for ensuring Highways England is satisfied that the proposed modelling methodology and use of the current models is acceptable from its perspective.

If this is not the case, WCC would recommend that you agree an alternative modelling methodology which is acceptable to Highways England to supplement the Paramics modelling referred to in this note.

(f) Model Scenarios

Please refer to Expected Model Scenarios.

(g) Model Outputs

WCC would request you present the following model outputs ideally in spreadsheet format with supporting commentary in your TA:

1. Network Statistics (for each modelled scenario)

- a. Network Mean Delay
- b. Completed Trips
- c. Network Mean Speed

2. Queuing (for each modelled scenario)

Please provide average maximum queues by time period for each arm for all key junctions in the model, and junction throughput data. The queue routes will be included in the models prior to issue.

3. Delays (Journey Time Routes) (for each modelled scenario)

The model includes a set of journey time routes (journey paths) which will be included in the models prior to issue. Please present delays for each hourly period and section of route by direction.

4. Link Flows (for each modelled scenario)

WCC would request that directional and two-way flows on all key links in the model are reported on for this assessment. WCC will ask VM to provide a plot showing link locations.

(h) Interpretation of Results

WCC would expect you to interpret the results from your modelling and to present these ideally in Excel spreadsheet format with supporting commentary in the TA.

Should the results indicate that there are discernible impacts at particular locations, WCC would normally ask you to provide confidence interval (CI) analysis primarily to show whether the impacts are directly attributable to the proposed development. You would need to provide the CI outputs and charts in Excel format and submit your interpretation of the results. Modelling Consultants are not responsible on stating the acceptability of the model. WCC is only responsible on accepting or rejecting the model results. Please refer to [Model Analysis and Reporting](#) for further details.

(i) New Transport Infrastructure

Once the new transport infrastructure has been identified from the Paramics Model or any other model required by the WCC, the design notes should be according to WCC Designs Guide¹ and aligned to the transport strategy of the area.

¹ Please contact Development Management for further information.

(j) Summary of Model Protocol and Model Licence Documents:

- Advice Note 000 –Model Licensing
- Advice Note 001 –Education Trip Calculations
- Advice Note 002 – Expected Model Scenarios
- Advice Note 003 – Model Analysis and Reporting
- Advice Note 004 – Model Guidance for New Road Infrastructure
- Advice Note 005–Mobile Network Data
- Traffic Model Licence
- Traffic Model Licence Schedule