







**WOKINGHAM  
BOROUGH COUNCIL**

## Protocol for use of the Wokingham Transport Models by Developers

### Version Control

Version	Date	Produced by	Reviewed by	Authorised by	Notes
1	13/04/2010	NL/AL	MG		DRAFT
2	27/07/2010	MG	SB		Final approved version
3	28/07/2010	SB	CD		Final approved version with Appendix
4	08/02/2011	MG	SB		Revision following the updates of Wokingham models
5	21/04/11	MG	SB		Process map added as appendix 1.
6	24/08/11	MG	SB		Updated DC Team Lead contact details

## Introduction

- The following protocol is for the use of developers who need to use Wokingham Transport Models or any other transport models prepared by or on behalf of Wokingham Borough Council (WBC). The modelling work will be undertaken by WBC to a scope of works provided by the developer (taken to include its consultant) and agreed with WBC.
- The Wokingham transport models are prepared by or on behalf of WBC and are the property of Wokingham Borough Council. The models themselves, networks and matrices will not be released to external bodies.
- The process defined in this protocol is summarised in **Appendix 1**.

## Contacts

- All contact for agreement on access to the model shall be made through the WBC Highways Development Control team as shown in **Table 1** below.

**Table 1: WBC Highway Development Control Team Contacts** (updated August 2011)

Role	Name	Email address
Team Leader	Keith Rogers	keith.rogers@wokingham.gov.uk
For sites within the four Strategic Development Locations (SDLs)	Chris Easton	chris.easton@wokingham.gov.uk
For all other sites within the Borough	Alan Greenwood	alan.greenwood@wokingham.gov.uk

5. General contact during the modelling work is permitted between the modelling team and the developer (or its consultant) directly in order to complete the work in a timely manner. WBC will provide relevant contact details at the appropriate time. However, any change to the originally agreed scope of work must be notified to WBC in writing with reasons for the change. WBC will not unreasonably withhold agreement to changes in the scope of work.

## Traffic Models

6. WBC maintains a Wokingham Strategic Transport Model (hereafter referred to as WSTM). WSTM is based on 2010 transport data that represents an average weekday (Tuesday to Thursday). WSTM is available for
  - AM peak hour (08:00-09:00)
  - Average Inter peak hour (10:00-16:00)
  - PM peak hour (17:00-18:00)
7. WSTM consists of the following sub-models:
  - Highway model built using SATURN software suite
  - Public Transport model developed using VISUM software
  - Variable Demand Model (VDM) developed using DIADEM
8. To ensure compliance with modelling guidance the base year WSTM has been developed in accordance with the Department for Transport (DfT) web based Transport Analysis Guidance (WebTAG) on <http://www.dft.gov.uk/webtag> and the Design Manual for Roads and Bridges (DMRB) Volume 12. WBC will provide a copy of the WSTM Local Model Validation Report (LMVR) for the base year models on request. (This is also available on the Council's website.)
9. In addition, WBC maintains a 2010 Wokingham Town Centre Micro-simulation Model (hereafter referred to as WTCM) built using VISSIM. WTCM is available for
  - AM peak hour (08:00-09:00)
  - PM peak hour (17:00-18:00)
10. The WTCM base year model has been developed in accordance with the Highways Agency Microsimulation Guidance and the Design Manual for Roads and Bridges (DMRB) Volume 12. WBC will provide a copy of the WTCM Local Model Validation Report (LMVR) for the base year models on request. (This is also available on the Council's website.) All scenario tests undertaken in WTCM are based on the information provided by the WSTM.
11. Forecast scenarios are available for 2017 and 2026 for all time periods. Forecast scenarios take into account future development in the area based on the Adopted Core Strategy. The approach for the production of fully WebTAG compliant forecast year models is detailed in the "Wokingham Strategic Transport Model Forecasting Methodology". A copy of the document can be provided by WBC on request or via the Council's website.
12. All assessments, unless otherwise agreed, will be undertaken using the latest available 2010 base year models and 2026 forecast scenarios. Discussions should be held with WBC to determine the appropriate forecast scenario using the WSTM and/or WTCM.
13. All testing will be carried out against a 2026 forecast year unless the developer requests other future years which will be in addition to, not instead of 2026 unless agreed in writing between the developer and WBC. This provides a consistent basis on which all development can be assessed and will take full account of the cumulative impact of all

known developments, in particular the cumulative impacts associated with the delivery of development in the Council's Core Strategy up to 2026. The Council has also prepared a document detailing the 2017 & 2026 development and infrastructure assumptions against which development tests will be compared. This is only available on request.

14. All model data will be supplied on the basis that it is to be used for the stated reason only and should not be used for any other purpose without the written consent of WBC. WBC will require a letter of agreement to be signed by the developer prior to any work proceeding which will acknowledge the developer's acceptance of WBC's terms and conditions and the restricted use of this data to a single site.
15. In using these models, developers should not assume the tacit agreement of WBC to any scenario(s) tested.
16. In addition to the 2026 forecast year tests, an interim year test may be considered necessary. The need for this will be discussed and agreed with WBC as part of the agreement within the scope of works.
17. It should be noted that there would be additional costs for developing the model for an alternate future year scenario that is not defined in **paragraph 11** above and will be charged as described in **paragraph 34**.
18. Transport assessments for developments in Wokingham Borough are required to use the traffic model to assist in demonstrating the impact of the development. To assess developments three scenarios will be considered as follows<sup>1</sup>:
  - Scenario A (Reference Case) – without the development in question and without any form of transport intervention associated with the development
  - Scenario B – with the development but without any form of transport intervention
  - Scenario C – with the development and with any form of transport intervention as proposed by the developer.
19. WBC has prepared a Scenario A (Reference Case); see paragraph 12. Any changes to this will need to be discussed with and agreed by WBC. Charges may be made for all agreed changes.
20. It should be noted that WSTM models have been validated at a strategic level to match transport flows and journey times on major routes. It is possible that the model will not replicate details to a fine level of detail, such as turning movements in particular areas of interest. In such cases it may be appropriate to carry out some additional validation of the model in the area of interest (including additional data collection, if appropriate), or to extract a sub-area model for further analysis. This will be discussed on a case-by-case basis between WBC and the developer. A charge would normally be made for this process as described in **paragraph 34**.
21. Should a situation arise where the modelled highway network lacks junction details in the immediate vicinity of the development and local revalidation is not appropriate, it may be recommended that the assessment of the impact of the development on selected junctions is undertaken using the most appropriate junction modelling software (e.g. PICADY for priority junctions, ARCADY for roundabouts and OSCADY/LINSIG/TRANSYT for signalised junctions). For this assessment observed junction turning data could be factored up using traffic growth supplied by the model with the development trips added on top. The WSTM will also provide the forecast trip distribution for the development site.

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<sup>1</sup> Unit 3.16D, Appraisal in the Context of Housing Development, WebTag

## Development Thresholds requiring use of the Models

22. Transport Assessments (TA) and Transport Statements (TS) for developments within the model area will be required to use data from the traffic model to assist in demonstrating the impact of the development. This provides a consistent basis on which all development applications can be assessed. Whether the developer needs to produce a TA or TS to support their application will be subject to initial discussions with WBC however, as a guide **Appendix 2** shows the thresholds at which traffic modelling output would be required for submission with the TA/TS. These thresholds are based on the indicative thresholds contained in the DfT's Guidance on Transport Assessments.
23. WBC considers that all planning applications should be tested using the WSTM and/or WTCM, subject to applying the thresholds in **Appendix 2**, but regardless of any existing consent. This is to take account of any changes on the network between one consent being granted and a resubmitted scheme. This requirement will be negotiated on a case by case basis between WBC and the developer (or their consultant).

## Modelling Brief

24. The developer shall supply WBC with a proposed scope of work outlining the testing required. This can be discussed and agreed with WBC in principle and is expected to include:
  - The forecast year and time periods to be assessed
  - Development location plan (indicating red line boundaries - where these form part of wider Strategic Development Locations (SDL) the test must include an indication of development in the remaining land parcels)
  - Access locations (indicating the development served from each) along with any junction improvements to be delivered by specified forecast years including any necessary interim improvements that will remain
  - Scaled layout plan of roads and key junctions within and adjacent to the development, separately indicating existing and proposed streets, controls to movement (including bus priorities) including design speed and entry capacity/green-time of junctions as appropriate
  - Numbers of housing units and mix of housing (number of dwellings by number of bedrooms & floor areas) and indicative location of where these units are located
  - Number and Gross Floor Area (GFA) of commercial units including type (by planning use class) including anticipated staff/visitors/customers, parking provision and access/parking controls, and indicative location of where these units are located
  - Public transport changes/improvements (detailing routes, frequency, capacity and indicative fare schedules)
  - Demand management measures necessary to achieve forecast travel demand along with further intervention measures proposed to deliver and preserve these
  - Travel demand by transport mode for all land uses (for all origins and destinations) along with levels of internalisation anticipated where community land uses are provided within any zone. This should be discussed with and agreed by WBC prior to commencement of any modelling tests

**Appendix 3** indicates the information required as a minimum to enable the traffic modellers to reliably modify the base model to reflect the proposed development.

**[NB:** Without the above information, the model test will not be undertaken and WBC will be required to consider/determine applications based on information supplied which is unlikely to be adequate in terms of meeting the tests of CP4 and CP6 of the Core Strategy]

25. Where reasonably practicable trip rates and distribution will be discussed and agreed between the developer and WBC. In the absence of any detailed trip distribution for the proposed development an alternative method would need to be agreed. The approach adopted by WBC in the development of its Core Strategy is to use default trip rates which are detailed in the “Wokingham Strategic Transport Model Forecasting Methodology” and is the Council’s preferred approach in the absence of detailed trips rates. However this does not imply acceptance of these by WBC. For example, this assumes the delivery of key community land uses and robust demand management measures integral to the design and function of the development.
26. If required, further assessment of different highway schemes can be provided. WBC will advise on the additional costs for such work on a case-by-case basis.
27. After consideration of the proposed scope of works and receipt of development details, WBC will prepare a short note confirming the modelling approach to be adopted. The work will commence when the scope of work and the timescales are finalised between WBC and the developer.

## Modelling Results

28. Model output, unless otherwise agreed, will be in the form of a standardised technical note that provides the following information:
  - Details of the input data used and assumptions made (if appropriate)
  - Forecast flows
  - Absolute flow differences on key links (as agreed between WBC and the Developer)
  - Change in V/C (Volume over Capacity) ratio
  - Change in journey times on key routes
29. Junction turning flows for use in developer junction operational assessments will only be provided if this is agreed as part of the brief.
30. WBC will not carry out any analysis of this data. It will be for the developer to use the data as necessary to support their application.
31. Modelling work may require an iterative process between modeller and developer to tweak designs to reach maximum/expected capacity e.g. signal timings, number of lanes on junction approaches etc. Each iteration that is not specified in the initial brief will attract an additional charge as stated in **paragraph 34**.
32. In order to check the developer’s highways proposals, it may be necessary for the developer to provide any operational assessments, junction redesigns and revised or new highway alignment information back to WBC for further testing and assessment on the traffic model. The revised information on subsequent impacts will be issued to the developer as an additional technical note. The revision of junction or link options will attract an additional charge as stated in **paragraph 34**.
33. Copies of any reports or analysis generated by this work will be retained and may be used by the Council in any form. The models, including any modifications made as part of this work, will remain the property of the Council. WBC will undertake not to divulge this information to any other third party without first gaining the developer’s agreement.

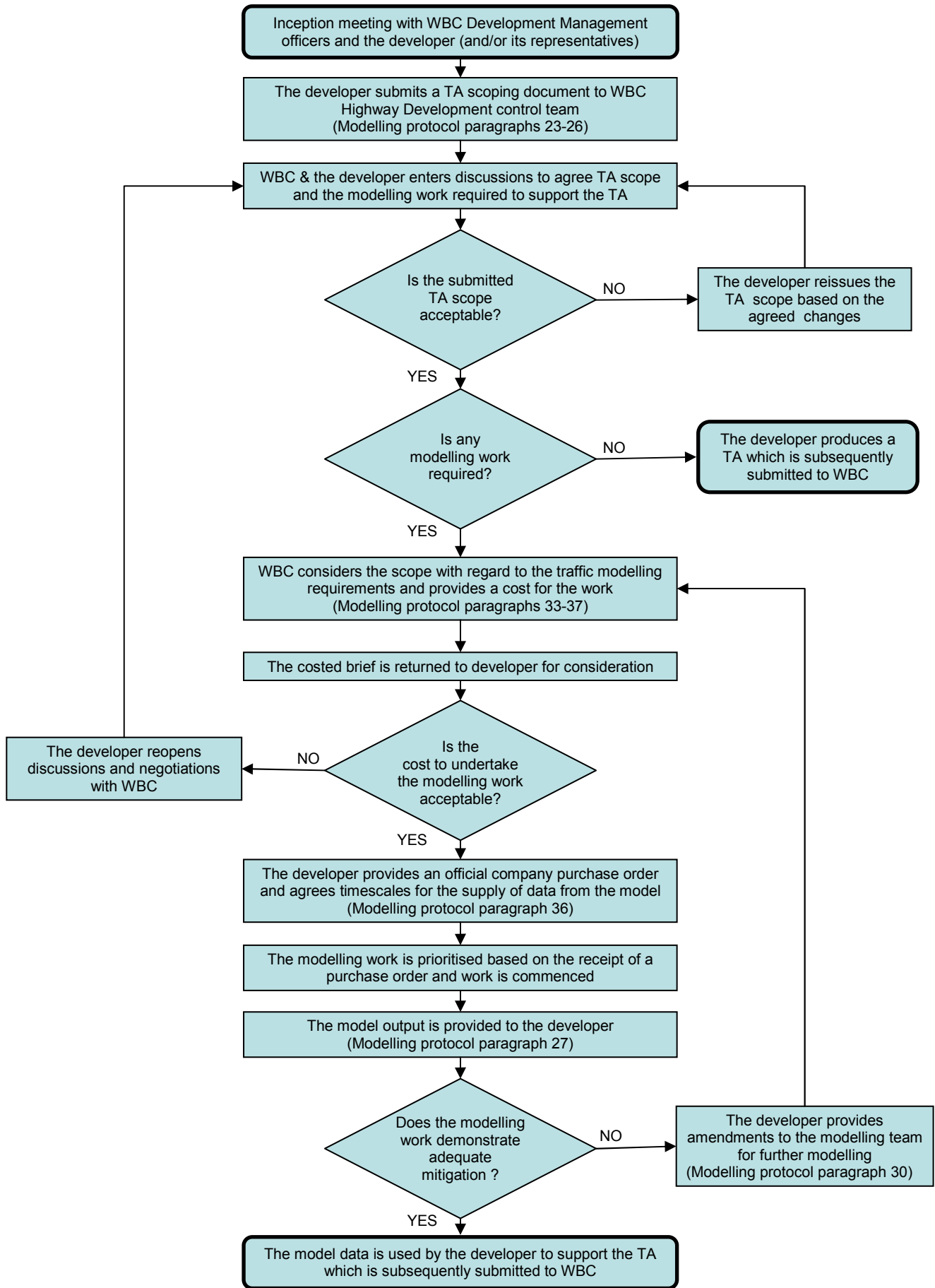
## Charges

34. All requests, other than the provision of existing reports will be charged with a **40%** uplift on the hourly rates for carrying out the required analysis. On receipt of the brief there will also be a charge of **£650** to cover the cost of processing each request.
35. Charges for use of the model will be used to ensure that the traffic models are maintained and extended, where required, to support assessment of transport proposals within the Borough.
36. Charges are dependent on the work required to amend and run the traffic model(s) for the development scenarios requested. The amount of work will depend on whether the information requested is available from an existing scenario already modelled or whether it requires the development of new scenarios, modification of or new traffic model zones, network modifications and the number of model runs and analysis.
37. Work will not start until the Council has received a purchase order from the developer (or consultant) made out to WBC. The work will be progressed in line with the standard terms and conditions of WBC. WBC will invoice the work on a monthly basis depending on the amount of modelling work to be undertaken or an invoice on completion of each stage to be agreed at any inception meeting.
38. The subsequent review of any model test (on supply of operational assessment and revised layouts, etc, as set out above) will be completed relative to each purchase order instruction but will be recorded separately (as a new work stage) so that it is identifiable from the original modelling work. An instruction will be sought from the developer (or consultant) to proceed with any new stage of the work, after the initial order.

## Future Model Development

39. In accordance with S30 of the Town & Country Planning Act WBC reserves the right to update the model and the model protocol as necessary. Where reasonably practical this shall be notified to interested parties and/or on the Council's website but may affect the assessment of pre-application and planning applications.
40. The traffic model will be periodically updated to take account of committed developments. The Council will inform the developer of the appropriate Reference Case against which the developer's scheme/scenario will be compared.

# Appendix 1: Wokingham Transport Model Process Map



## **Appendix 2: Modelling Requirement Thresholds**

Ref	Land Use	Size	Threshold	
			Highway (SATURN)	Public Transport (VISSUM)
1	Food retail (A1)	GFA	> 800sq.m	>2500sq.m
2	Non-food retail (A1)	GFA	> 1500sq.m	>4000sq.m
3	A2 Financial and Professional Services	GFA	> 2500sq.m	>5,000sq.m
4	A3 Restaurants and Cafes	GFA	> 2500sq.m	#
5	A4 Drinking establishments	GFA	> 600sq.m	#
6	A5 Hot food takeaway	GFA	> 500sq.m	#
7	B1 Business	GFA	> 2500sq.m	>5,000sq.m
8	B2 General industrial	GFA	> 4000sq.m	>8,000sq.m
9	B8 Storage of distribution	GFA	> 5000sq.m	>10,000sq.m
10	C1 Hotels	Bedrooms	> 100 beds	>250 beds
11	C2 Residential institutions – hospitals, nursing homes	Beds	> 50 beds	>150 beds
12	C2 Residential institutions – residential education	Student	>150 students	>300 students
13	C2 Residential institutions – institutional hostels	Resident	>400 residents	>800 residents
14	C3 Dwelling Houses	Dwelling Unit	> 80 units	>250 units
15	D1 Non-residential institutions	GFA	> 1000sq.m	> 2500sq.m
16	D2 Assembly and leisure	GFA	> 1500sq.m	>3000sq.m

# considered on individual merit



### **Appendix 3: Information to be included in Briefs**

Third parties will need to supply the following information to allow their option to be tested:

**Administration** - Please provide the following information:

Development Title

Consultant contact details, including email and telephone number

Has the development already been discussed with the Planning Officer? Please give brief contact/discussion details and details of advice received.

**Development details** - Please provide the following information as a minimum:

Description of the Development, including any change of use

Site address details

Plan showing development location and overall layout

Description of the current use of the site

Is the site currently vacant? If no, describe current trip generations

Will the existing trips be maintained with the new development?

Is a new or altered vehicle access proposed to or from the highway? Are there any new roads to be provided within the site? Do the proposals require any diversions or highway changes away from the immediate site accesses? Provide plan(s) showing access arrangements including junction details (1:1250)

Land use details, for each element of the development and for each scenario (if more than one is required for testing) – see table overleaf

Trip rates for each land use and time period, including TRICS outputs if used.

If appropriate, state allowance for Smarter Choices and internalisation of trips. Start with trip rate and provide information on reductions made for each element e.g. Smarter Choices.

Trip distributions for each land use, including justification for methodology used.

Completion date(s) and phasing

Is a new or altered bus service proposed to or from the development? Are there any new bus links to be provided within the site? Do the proposals require any diversions or bus priority changes away from the development?

Proposals for Demand Management (e.g. Smarter Choices) encouraging non-private car usage including Cycle / Walk / PT Usage

Details of car parking provision at the site

**Required outputs** - Please state the required outputs – Standard model outputs shown in paragraph 0

Examples would include:

Assessment years and time periods

Highway network plots

Journey time information. Please state route(s) and show on a map base.

Junction details e.g. delay, turning movements

Additional analysis e.g. select link. Please state and show on a map base.

Dates when information is required

**Development Mix**

Please provide land use details for each element of the development. A table should be completed for each scenario if more than one scenario is required for testing.

Development Mix		Existing	Lost by change in use	Proposed	Net
-	Proposed Housing - no. units				
A1	Shops - m2				
	Net tradable area - m2				
B1	Office - m2 and/or employees				
B2	General Industrial - m2				
B8	Storage/Distribution - m2				
-	Other (specify)				





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