APPENDIX 6

Joint Air Quality Unit of Defra and DfT (JAQU)

Local Plan Transport Modelling Tracking Table (T1)

v1 - 7 Feb 18

Ref	Requirement	LA	JAQU Review
	Transport model specification : Model Selection		
	Present year validation if the model is more than 5 years old (e.g. ANPR, journey times etc.).		2015 Base year, with 2015 counts and journey time data.
	The coverage of the transport model should be robust enough to capture if any route choice will be impacted due to the proposed measures		Good coverage. Covers the City in detail and includes M27 and skeleton network beyond for any strategic rerouting,
	Validation should be based on comparison between observed (i.e. from ANPR data) and modelled vehicle composition, flows (on links and across screenlines/cordons), traffic pattern and journey time within the key study area (WebTAG Unit M3.11).		Good screenline and journey time validation. Matrices built from observed OD data as well as synthetic data (although old 2010/2011, but uplifted. The screenline calibration indicates strategic movements are well validated. Individual count calibration is much weaker.
	For light and heavy goods vehicles, validation will need to be reported for short screenlines using grouped counts to ensure a larger sample size.	This has been reported in an updated SRTM Validation Report and included	LGV and HGV results not reported

[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427124/webtag-tag-unit-m3-1-highway-assignment-modelling.pdf

		within Appendix A of this document	
	The assignment convergence meets WebTAG convergence criteria (WebTAG unit M3.1, section 3.3, Convergence Measures and Acceptable Values)		Yes – converges (future year not reported, but reasonable to assume that it will)
	Vehicle disaggregation: the transport model must split modes (e.g. HGV, LGV) to provide capability to distinguish between compliant and non-compliant vehicles under projection scenarios which include a Clean Air Zone.		Demand split into • Car employer's business • Car other • HGV • LGV Broken into compliant/ non-compliant for forecasting Taxis a fixed proportion based on ANPR surveys (applied by area i.e. higher proportions in the City Centre. Buses also modelled.
	If modelling does not fully meet above requirements in the key study area, please provide mitigation measures/implications.	Screenlines shown in T3, and expanded link validation in Southampton and New Forest is reported in Appendix A in the	Need to provide additional information for a CAZ focused validation report for example reporting on (mentioned by Jiao): • LGV/ HGV calibration • does weak link validation affect the AQ modelling • Focus on key areas relevant to CAZ testing • Any caveats etc.

		updated SRTM Validation Report	
	Overall model assessment		
	Base model fit		
	Model calibration/ validation		Looks good, just need to add missing reporting
	Present year validation (if relevant)		
	Transport model forecasting methodology		
	Baseline forecast (demand growth assumption as per WebTAG guidance) including the review of committed schemes and local development plan.		Need a forecasting report with assumptions listed, but would expect it to be reasonable: "Known developments and committed (funded) highway schemes are included within the models' Reference Case scenarios (2019, 2026, 2031 and 2036) to provide a representation of future year transport supply and demand."
	An uncertainty log providing a clear description of the planning status of local developments.	The SRTM Forecasting Report is still being reviewed and will be provided when ready. An additional chapter has been added to T3 (Section 4.2) for Forecast	Need a forecasting report with assumptions.

		Year Uncertainty	
	Description of the future year transport supply assumptions (i.e. planned road networks examined for the baseline, core scenario and variant scenarios)		Yes is described Included in Table 5 in report, no discussion of certainty
	Description of the travel cost assumptions as per WebTAG guidance (e.g. fuel costs, PT fares, parking).		No forecasting report – but would be confident is has reasonable assumptions
	Description on the proposed CAZ charging options, if relevant, and how the options are modelled in transport models (e.g. timeframes, eligibility etc.)		"The CAZ scheme is assumed to be a 'within cordon charge' the same as the London ULEZ as opposed to a charge for crossing the zone boundary." **Figure 3 Illustrative CAZ boundaries**  JAQU's assumptions for the behavioural responses of vehicle owners to the CAZ charges will be applied. When modelling the CAZ in Southampton the ULEZ charge will be used so that consistency is maintained with the JAQU behavioural response

data. This is currently £12.50 for cars and vans, and £100 for HGVs and buses and coaches.

No mention of mode shift below

Table 6 JAQU assumptions on behavioural response to the CAZ

Proportions of non-compliant vehicle kilometres which react to the zone								
	Petrol Cars	Diesel Cars	Petrol LGVs	Diesel LGVs	RHGVs	AHGVs	Buses	Coaches
Pay charge – Continue into zone	7.1%	7.1%	20.3%	20.3%	8.7%	8.7%	0.0%	15.6%
Avoid Zone – Vkms removed, modelled elsewhere	21.4%	21.4%	10.0%	10.0%	0.0%	0.0%	0.0%	0.0%
Cancel journey – vkms removed completely	7.1%	7.1%	6.0%	6.0%	8.7%	8.7%	6.4%	12.5%
Replace Vehicle – vkms replaced with compliant vkms	**64.3%**	**64.3%**	**63.8%**	**63.8%**	**82.6%**	**82.6%**	**93.6%**	**71.9%**

Source: JAQU, CAZ Technical working group minutes – 15/2/17

	Description of forecasted vehicle composition assumptions, if deviating from EFT assumptions		In line with JAQu guidance: "a local fuel type and Euro class distribution has been projected forward from the local ANPR results to provide Euro class distributions for each of the future modelling years. This project has been carried out in line with the draft methodology provided by JAQU. This has been done by deriving future scaling

			factors from the national NAEI data, applying these to the local ANPR results and then normalising to 100%. This gives an evolution of the local fleet that is slightly behind the national fleet. "
	What and how to interpret and implement CAZ non-compliant user behaviour change, if relevant: replacing vehicle for compliance, avoiding zone, cancelling journeys, mode shift and other		See above
	Outline of methodology for non-compliant user behaviour research, if undertaken.		Using JAQU assumption – should comment on to what extent this is applicable/ acceptable for Southampton. Also how would you test different levels.
	Describe how the transport modelling implications are fed into the air quality modelling (e.g. speed, congestion etc.)		Sensible methodology : • AADT flows for future baseline years will be provided from the SYSTRA sub-regional traffic model. • Projected fleet split (vehicle type): All future year scenarios will have the 4 core vehicle category fleet splits provided from the traffic model • Car, • LGV, • HGV ○ Rigid ○ Arctic • Bus/ Coach • Projected fuel type and Euro class distribution descreibed above • Future year scenarios average vehicle speed data: Average link speeds for all future year scenarios will be calculated by adjusting the observed baseline speed data (Traffic Master) by the ratio of the 2015 baseline vs future baseline journey times calculated by the traffic model

			• Projected vehicle NOx emission rates will be calculated using the latest COPERT v5 NOx emission functions applied to the projected average flows, fleet and vehicle age composition for each future baseline year being modelled.
	Overall forecasting methodology assessment		
	Forecasting assumptions		Needs more details, but seems to be sensible in line with WebTAG, JAQU guidance.
	Policy options and the implementation in the model.		All responses modelled, should comment on use of JAQU assumptions for behaviour change and its applicability to Southampton conditions. What happens if charges are different than ULEZ. Only options modelled are focused on upgrading the fleet, modelled in the AQ model.
	Modelling Non-compliant vehicles behaviour change.		See above
	<u>Final Transport Modelling</u>		
	The detailed vehicle fleet composition for each policy scenario and the baseline (broken down by vehicle type and Euro standard) so that changes to the fleet are clear.		
	Details of modelling methodology		
	Forecast assumptions: demand growth, network changes and transport costs growth		
	Baseline forecast		
	Scenario testing (policy options)		
	What and how to implement transport modelling forecast to air quality modelling		
	Impact analysis and key findings		
	Overall forecasting assessment		
	Forecast assumptions		

	Policy option modelling		
	Impact analysis and further application to AQ modelling		

JAQU review

Green – Accepted – Information meets requirement
Grey – Accepted - Information meets requirement and JAQU to provide assistance in meeting requirement
Yellow – Requires further information or a response to a question to be provided either in the table or in the report
Red – Information provided does not meet the requirement