Analytical Assurance Statement: 3rd Line of Assurance

Appropriateness	Compliance	Uncertainty	**Fit for Purpose**
Green/Amber	**Green/Amber**	**Amber**	**Green/Amber**

Supervisor:	Paul McKee (PM for RTM maintenance) Claire Minett (RIS3 TPG Liaison)	Assurer:	Roger Himlin (TPG)
Producer:	RTM teams (Producers of the RTM2 base models and forecasts, consisting of Arup, WSP, Mott MacDonald and AECOM) Glen McAdam NH TPG (COVID-19 adjustments and processing of outputs)		

This analytical assurance note relates to the processing of National Highways' second-generation Regional Traffic Models (RTM2s) for use in multiple workstreams of the Roads Investment Strategy 3 (RIS3) draft Strategic Business Plan (dSBP), in particular the delay model and the carbon analysis.

The second-generation of the RTM's were originally produced between 2020 and 2022 with the model base year (2019) being calibrated and validated to National Highways satisfaction, and model forecasts being developed in accordance with the Department for Transport's Transport Analysis Guidance (TAG). The forecasts predictions of car growth and freight growth were based on NTEM 7.2 and RTF18 respectively, which have since been superseded, and the suite of models generalised cost parameters being based off an old TAG Databook (May 2021 for the forecasts).

The forecast models for the RTMs were updated in 2023, and incorporate the following:

- An update to car and freight growth forecasts, to now use NTEM8 and NRTP22 respectively.
- Updated generalised cost parameters, based off of the January 2023 TAG Databook.
- Network assumptions based on the latest RIS3 Do Minimum list at the time of producing the RIS3 supply models (January 2023).

Due to being produced within a constrained programme, the forecasts were not formally assured prior to their use in the RIS3 analysis. Rather, interim assurance was conducted within the RTM2 project board, and a set of deep-dive sessions were held to investigate the model outputs, at which the model teams presented any issues. The RIS3 team was able to then to agree use of the models. This statement now functions as the formal third-line assurance.

The original forecasts produced directly from the RTM2s were not adjusted for the effects of COVID. The models were then adjusted for COVID-19 by a member of the National Highways Transport Planning Group in line with the DfT's latest guidance on the matter and following a methodology which has been shared at AWG/SRADG and which the DfT had sight of. There is naturally uncertainty in any assumptions relating to the COVID-19 factors to apply to the forecasts given that the long-term impact of COVID-19 is uncertain. It is assumed that COVID-19 effects decay in the future, which forms a reasonable worst-case assumption for the carbon analysis as this is the only workstream using model years beyond 2031.

The outputs from the COVID-19 adjusted models have been processed since that overlap areas have been rationalised (i.e. in areas where there is simulation coding in two RTMs, only the results from one are presented). This represents an improvement over the previous analytical method.

The following shortcomings are present in the analysis:

- The detailed link information (i.e. road name, road type, road class, type of carriageway) relies on inheriting data from OSMasterMap. The geo-rectification between the RMTs and OSMasterMap is broadly satisfactory but is not overly accurate at a link-by-link level. Some links may be misclassified as SRN/other.
- The long-term impact of COVID-19 is uncertain. The effect that it will decay in into the future represents a worst-case assumption to make for the carbon analysis.
- The RTMs suffer from convergence issues in the later years, due to their size and due to the increase in demand. This particular affects the High Economy and Vehicle-Led Decarbonisation Common Analytical Scenarios, albeit both the Trans-Pennine South and the South East models suffer from convergence issues in the core scenario from as early as 2051. This is mitigated to a small extent by the fact that the RTMs convergence criterion is stricter than that laid out in TAG Unit M4.
- The RIS3 Do Minimum list provided at the beginning of the forecasting process rapidly became out-of-date, as did various assumptions that the operation of the variable demand model interacts with (including public transport assumptions given the recent axing of the northern leg of HS2). Given that the main use of the RTMs in the RIS3 DSBP analysis is the carbon analysis and the delay forecasting; this is not thought to represent a serious issue as:
    - The northern leg of HS2 was not due to be built before 2031, and the delay model uses outputs up until 2031 only.
    - The model is not overly sensitive to changes in public transport travel times.

Conclusion

The processing of the RTMs is thought to be broadly appropriate given their intended use in RIS3. Similarly, the method of processing the RTMs is thought to be broadly compliant given that the RTMs are developed in accordance with TAG guidance. It should be noted that some RTMs, in particular TPS and SERTM, struggle to converge in later years and thus dop not strictly achieve TAG guidance. Similarly, it should be noted that some assumptions that form model inputs are already out-of-date.

The subject of this Analytic Assurance Statement is part of a staged decision-making process: **No**
If "Yes", the section below **must** be completed.

If the scope and quality of the analysis does not change during the next stage, the outcome of the **next stage** would be:

Appropriateness	Compliance	Uncertainty	**Fit for Purpose**
N/A	**N/A**	**N/A**	**N/A**