

Leicestershire County Council (A511 Growth Corridor) (Side Roads) Order 2023

Leicestershire County Council (A511 Growth Corridor) Compulsory Purchase Order 2023

PINS Ref: NATTRAN/EM/HAO/299

Summary of LCC 2: Proof of Evidence of Mark Dazeley Traffic Modelling

dated 20 May 2024

1 INTRODUCTION

1.1 Qualifications and Experience

1.2 I, Mark Dazeley, am a Regional Director within AECOM where I lead the Strategic Modelling team in the South East. I have worked for AECOM for 25 years.

1.3 Section 1 of my Evidence sets out my qualifications. In brief, I am a chartered member of the Institute for Logistics and Transport and have 25 years' experience as a transport planner. I have specialised in multi-modal development and forecasting demand for travel across all modes of transport.

1.4 This summary proof of evidence (hereinafter referred to as this **Summary**) summarises my Proof of Evidence (my **Evidence**) which is made in support of the Leicestershire County Council (A511 Growth Corridor) (Side Roads) Order 2023 (the **SRO**) and the Leicestershire County Council (A511 Growth Corridor) Compulsory Purchase Order 2023 (the **CPO**) (together, the **Orders**) in connection with the Leicestershire County Council A511 Growth Corridor (referred to in this Summary as the **Scheme**).

1.5 The facts and matters set out in this Summary are true to the best of my knowledge and belief. Where reference is made to facts which are outside my knowledge, I set out the source of my information and I believe such information to be true.

1.6 Scope of Evidence / Involvement in the Scheme

1.7 My Evidence describes the Pan-Regional Transport Model (**PRTM**) and a derived A511 Strategic Transport Model (**ASTM**), how the ASTM was applied to produce forecasts for the assessment of the Scheme and to explain why those forecasts can be relied upon.

1.8 Supporting Documents

1.9 Section 1.4 of my Evidence sets out the documents produced by the Department for Education and which I cite in my Evidence.

2 Outline of Evidence

2.1 I cover the following matters in my Evidence:

2.1.1 Why the ASTM is required, how it was developed, and the overall scope of the model.

2.1.2 Why the ASTM is suitable for testing the impacts of the Scheme.

2.1.3 Why forecasting assumptions are required to assess transport interventions and what assumptions have been adopted.

2.1.4 The forecast effects of the Scheme on travel demands and conditions.

2.1.5 The methodologies used to appraise the Scheme and the results of the appraisal.

2.1.6 Uncertainties in modelling transport schemes and the outputs of sensitivity tests designed to understand the implications of these for the forecasts.

3 **The need for the Scheme**

- 3.1 The transport model used for the Scheme has been developed to support the Scheme's business case and reflects the most appropriate guidance and assumptions available at the time of its development. Please see Section 3.3.1 of my Evidence for examples of model outputs used to inform design and appraisal.
- 3.2 In preparing the forecasts that are the subject of my Evidence consideration has been had to the Department for Transport's guidance on modelling and appraisal of transport schemes in Transport Analysis Guidance (TAG).
- 3.3 The ASTM forecasts for the Scheme are based on the November 2023 version of TAG which was the latest available version of the guidance during the model development and forecasting.
- 3.4 Details as to the provenance and development of the Leicester and Leicestershire Integrated Transport Model and PRTM models from 2009 to date can be found at Sections 3.5 and 3.6 of my Evidence.
- 3.5 The PRTM was used as part of an initial assessment of alternative package options: 28 potential interventions were formulated. The DfT's Early Appraisal Sifting Tool was used to assess five scheme packages against the Scheme objectives. Of these five, Package 1 was identified as the preferred option, containing nine elements. Package 1 now constitutes the Scheme.
- 3.6 My Evidence sets out the development of the ASTM for the Scheme over 2023-2024 including accounting for impacts of COVID-19 on travel patterns. As such I am satisfied that the ASTM is suitable for assessing the Scheme and to forecast how travel demand would change as a result of the Scheme.

4 **Suitability of the ASTM**

- 4.1 We are currently engaging with DfT to gain approval of the use of the model for the assessment of the Scheme for the Full Business Case.
- 4.2 Section 4 of my Evidence sets out why the ASTM is suitable to assess the Scheme and why I am satisfied that the outputs are being used appropriately. In brief, Section 4 discusses the following:
 - 4.2.1 model detail.
 - 4.2.2 model accuracy.
 - 4.2.3 model sensitivity.
 - 4.2.4 how the outputs are used in the Outline Business Case and junction design.
- 4.3 I am satisfied that the ASTM zoning system complies with TAG Unit M3-1 principles for the purpose of assessing the scheme.
- 4.4 The highway model includes a representation of the road links and junctions, including information on the speed and capacity of links, and the type and capacity of junction. Travel

levels, patterns and trip purposes vary across the day and as such the model is required to capture this variation.

- 4.5 I assess the accuracy of the ASTM in assessing the Scheme. The accuracy has been assessed against the DfT's acceptability guidelines. The modelled traffic flows of some of the roads which formed part of the assessment do not meet TAG criteria. Nonetheless, this should not have a material impact on the Scheme assessment due to the location of these specific roads within the network. Traffic count locations close to the Scheme do show a good fit against modelled flows and as such I am satisfied that the model demonstrates a good reproduction of demand and travel times.
- 4.6 TAG recommends that modelled journey times are within 15% of the observed times (or within one minute). In each of the time periods, the modelled journey times for all 30 routes are within 15% of the observed times. This demonstrates that the model accurately reflects observed highway network speeds (and hence delays).
- 4.7 I am satisfied that the ASTM has been developed with appropriate rigour, in accordance with the methods and criteria tolerances set out in TAG, has suitable functional scope and detail and that it responds appropriately. I conclude that the ASTM is suitable to produce forecasts for the Scheme.

5 Core Forecast Scenario – Without the Scheme

- 5.1 The ASTM is used to forecast travel demand and associated network conditions. Section 5 of my Evidence describes the forecasts of future travel demand if the Scheme were not to come forward. A table of forecast traffic flows without the Scheme can be found at Section 5.5 of my Evidence.
- 5.2 The model forecasts that without the Scheme journey times for the route will increase by half a minute in 2027 and by one minute and forty seconds in 2042.

6 Forecast Impact of the Scheme

- 6.1 Section 6 of my Evidence describes the forecast travel demand with the Scheme in place.
- 6.2 In summary, the Scheme is expected to significantly relieve traffic impacts in the Coalville area. It thereby reduces traffic on the eastern part of Grange Road, on the A511 between Birch Tree and Bardon Road junctions and on Waterworks Road and Cropston Drive between the A511 and Greenhill Road. This will, overall, result in a significant reduction in travel time over these roads during peak hours.

7 Scheme Appraisal

- 7.1 Section 7 of my Evidence describes the process by which the transport forecasts were used in the appraisal of the Scheme on the following areas:
- 7.1.1 Economic impacts.
 - 7.1.2 Transport impacts.
 - 7.1.3 Accident impacts.
 - 7.1.4 Construction delays.

7.1.5 Journey time reliability.

7.1.6 Noise and air quality.

7.2 The Scheme forecasts that transport user benefits over the 60-year appraisal period would be around £57.5m.

7.3 The Scheme is forecast to generate significant travel time savings. However, the Scheme is also forecast to marginally increase overall distance travelled (vehicle-kms), but results in reduced vehicle operating costs (and therefore indirect tax revenues) and marginally reduced greenhouse gas emissions, attributed to traffic travelling at more fuel-efficient speeds. The Scheme is also forecast to marginally increase traffic in the corridor, resulting in a reduction in the forecast number of accidents over the 60-year appraisal period (due to more traffic using the Major Road Network, with its lower accident rates).

8 **Forecasting uncertainty and sensitivity testing**

8.1 There are intrinsic uncertainties in forecasting future travel behaviour and conditions. Section 8 of my Evidence sets out the sensitivity testing undertaken to provide confidence in the Scheme appraisal.

8.2 Based on the Department for Transport's Value for Money Framework, the Scheme represents medium or high value for value for money in all sensitivity tests.

9 **Conclusion**

9.1 I consider the ASTM is suitable for the assessment of the Scheme and that its outputs can be relied on for these purposes.