
Technical Note

Project: **RWA-20-21-149**
 Client: **Pegasus Group**
 Subject: **VISSIM Technical Note Addendum**

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1. Introduction

Red Wilson Associates submitted a VISSIM modelling to support the proposals at the junction of Old Newgate Lane with Newgate Lane East in Fareham. The modelling included a base model, future base modelling and future proposed modelling of the proposed give-way layout (option 2). On behalf of Fareham Borough Council, Atkins have reviewed the modelling and provided comments. The purpose of this addendum is to demonstrate the validation of the journey times.

Following the initial response by RWA on 23/07/20 and the subsequent meeting on 17/08/20 the below amendments to the model have been made to ensure the model accurately represents existing conditions.

2. Base Modelling

Give-way Parameters

Give-way parameters have been amended for those turning right out of Old Newgate Lane to ensure they are specific to the vehicle class. HGVs and MGVs have been modelled in such a way that they are required to yield to both northbound and southbound vehicles on Newgate Lane from the give-way markings on Old Newgate Lane. Parameters for light vehicles remain as per the previously submitted model.

Journey Time Validation

TomTom journey time data has been obtained from Streetwise for both peak hours as an average between September to November 2019. The data has been collated as an average over all Tuesdays, Wednesdays and Thursdays in this period avoiding public holidays and school holiday periods. The raw data obtained can be found in Appendix A.

For each segment the average travel time has been used. This has been calculated as an average across the 15-minute time periods. Markers were placed in the model for each segment identified by TomTom and the journey times initially compared against the VISSIM model results. In the instance that the journey time did not validate analysis of the vehicle speeds were undertaken.

TomTom additionally provided speed surveys against different percentiles. These were transposed into the Desired Speed Distributions for the relevant segments. The analysis undertaken for the Speed Distributions can be found in Appendix B. The PM southbound

journey times were still seen to be lower in the model than the surveyed data owing to the fine tuning of the associated Desired Speed Distributions. This fine tuning can also be found in Appendix B.

TomTom mean average travel time data was used; however, when analysing the data provided for the side road the average appeared to on occasion vary significantly in each 15-minute period. This can be attributed to the lower number of hits for these links resulting in the average travel time being impacted by the travel times of vehicles stopping for short periods of time on this link possibly to enter houses or shops. This skewed the travel time making the surveyed value significantly higher than the modelled. As such the median travel time was used for these segments. Appendix B highlights which segments utilise the median travel time.

Tables 2-1 and 2-2 show a comparison between the modelled and surveyed journey times for the entire route for the AM and PM peak scenarios. The journey times for each segment can be found in Appendix B.

Table 2-1 AM Journey Time Validation

	Surveyed Journey Time (secs)	Modelled Journey Time (secs)	Difference (secs)	Difference (%)
Newgate Lane Northbound	116	121	5	5%
Newgate Lane Southbound	74	84	10	13%
Old Newgate Lane Westbound	30	27	3	10%
Old Newgate Lane Eastbound	51	48	3	5%

Table 2-2 PM Journey Time Validation

	Surveyed Journey Time (secs)	Modelled Journey Time (secs)	Difference (secs)	Difference (%)
Newgate Lane Northbound	76	88	6	15%
Newgate Lane Southbound	92	98	6	7%
Old Newgate Lane Westbound	38	32	6	18%
Old Newgate Lane Eastbound	32	27	5	16%

The results demonstrate a good correlation between the surveyed and modelled journey times with all differences being at or below 15% apart from one at 16% and one at 18%.

The actual differences for these routes are just five and six seconds; therefore, the model is deemed to have an acceptable level of validation.

3. Conclusion

Following comments received by Atkins, RWA have amended the base VISSIM model and the associated Desired Speed Distributions. The journey times have now been validated and demonstrate a good correlation against surveyed data. Amendments have also been made to the give-way parameters so that HGVs give way in one movement.

A precautionary assessment of the GEH has been undertaken to ensure this has not been affected as a result of the aforementioned changes to the model. The GEH for all movements across both peaks remains below 1.

Therefore, the model represents the existing conditions on street and provides a suitable baseline from which to assess the future flows and proposed scheme.