West Midlands Combined Authority

APP/P4.2

19 February 2019

Wednesbury to Brierley Hill Extension

Evidence Given on Behalf of the Applicant: WMCA Transport Modelling Summary Proof of Evidence

Himanshu Budhiraja

Transport and Works Act 1992

The Transport and Works

(Inquiries Procedure) Rules 2004

1. Qualifications and Experience

1.1. My name is Himanshu Budhiraja. I am a Divisional Director with Pell Frischmann, a consultancy firm specialising in planning, design, engineering, and construction services for public and private sector clients.

1.2. I am also the Discipline lead for Transportation within the Midland Metro Alliance (MMA), and in that role I am the Director responsible for the transport modelling undertaken to understand the impacts of the operation of the WBHE on the highway network. I am familiar with the tram route and the objectives of the Metro project.

1.3. I have an M.Sc. in Transport Planning and Traffic Engineering and I have been a Member of Chartered Institution of Highways and Transportation since 2005.

2. Scope, including Statement of Matters and Objections

2.1. I deal in my evidence with the following matters in the Statement of Matters issued by the Secretary of State for Transport **[GEN/3]**.

- Matter 4(a) the impacts on access to and within the area, including the effects on local road networks, access to businesses and car parks, and access by emergency vehicles; and
- Matter 4 (c) the impacts on members of the general public, including users of the Churchill Shopping Centre in Dudley and the Merry Hill Shopping Centre in Brierley Hill.

2.2. With regards to the above matters my evidence covers the impact of the operation of WBHE on the local road networks where the proposed WBHE interacts with the highway, including its impact on Churchill Shopping Centre in Dudley and the Merry Hill Shopping Centre in Brierley Hill. My colleague Mr. Ian Collins has covered specific impacts related to access and construction in his evidence **[APP/P3.1]**.

2.3. I also in my evidence respond to the major points raised in relation to my area of expertise for the remaining objections as listed in paragraph 7.1.

3. Overview of Transport Modelling Approach

3.1. Junction capacity assessment work undertaken in 2016 **[WBHE/F20]** and updated in 2018 **[APP/P4.3](Appendix A)**, has formed the basis of assessing the impact of WBHE on the local road network including in the vicinity of Churchill Shopping Centre.

3.2. The impacts of the operation of the WBHE in the vicinity of Merry Hill Shopping Centre, have been assessed using detailed transport modelling

using Merry Hill Local Model (MHL Model) and Key Area micro-simulation models, including Level Street, Mill Street and Merry Hill Key Areas **[APP/P4.3](Appendices C and F)**.

4. Impact of WBHE on the local road network

4.1. The impact of WBHE on the local road network has been informed by Junction Capacity Assessment. The assessment is done for one-hour time periods for AM peak, PM Peak and Saturday peak by comparing the with and without WBHE for forecast years 2021 and 2031.

4.2. The junction capacity assessment predicts that all junctions assessed bar Castle Hill / Trindle Road / Station Approach are predicted to operate within capacity in 2021 and 2031. This junction only shows a slight exceedance of capacity in the 2031 AM peak period **[APP/P4.3] (Appendix A, Table 2.2, Page 11)**. It should be noted that the forecast traffic flows does not take account of modal shift as a result of Metro or the redistribution of traffic associated with Dudley Interchange and Portersfield. These changes when considered may result in a lower volume of traffic on Castle Hill and are likely to result in better junction performance than that indicated by the model outputs.

5. Impact of WBHE on the highway network around Merry Hill

5.1. A local model of the Merry Hill area, known as the MHL model, was developed from the West Midlands-wide strategic PRISM model. Impact on the local area was assessed for interpeak and PM peak for 2031 for with and without WBHE scenarios.

5.2. The assessment has shown that:

- At the local area wide level **[APP/P4.1] (Table 1)** the with WBHE scenario during interpeak produces less congestion per vehicle on the network than the no WBHE scenario. Overall the PM network is congested as compared to the Interpeak network , and therefore changes are relatively small with similar levels of network performance in both the no WBHE and with WBHE scenarios;
- The network conditions for the journeys to and from Merry Hill shopping centre **[APP/P4.1] (Table 2)** will be improved in the interpeak period and will be slightly slower in the PM peak with WBHE. Given for the majority of the day network traffic conditions are closer to those in the interpeak model, it is expected that there will be an overall improvement for these journeys; and

- Introducing signalised junction at Level Street/The Embankment causes some reassignment of traffic, with some impacts on junction performance of four junctions including Level Street/ The Embankment, Mill Street/ The Boulevard, Dudley Road/Venture Way and Merry Hill/ The Boulevard. These junctions will still work satisfactorily but with some queuing in congested period for one or more turning movements, which is likely to be managed by optimising signal timings at these junctions to increase the overall throughput of the junctions.

6. <u>Operational impact at the identified "Key Areas" for the WBHE Scheme</u>

6.1. Three "Key Areas" were identified for detailed microsimulation modelling, and included Level Street (between Dudley Road/Venture Way and Pedmore Road); Mill Street (between Venture way and The Boulevard); and Merry Hill (between Coppice Lane and Mount Pleasant).

6.2. Vissim micro-simulation software was used to assess the impact for interpeak and PM peak for 2031 for without WBHE and with WBHE scenarios. The assessment **[APP/P4.1] (Table 2)** shows:

- For the ***Level Street Key Area***, the overall highway performance along Level Street Key Area, including the side roads, shows an improvement with the introduction of WBHE, with reduced average delays in the interpeak and PM peak. The new Level Street / The Embankment signalised junction, introduces some additional delay, which is largely mitigated by traffic signal timing optimisation. Travelling eastbound in the PM peak there is predicted to be slight increase in the overall journey times, caused by delay at the new signals and changes in traffic patterns;
- For the ***Mill Street Key Area***, the MHL Model predicts a small increase in traffic volumes in both peaks. The assessment shows an improvement in the PM peak, with lower average delay per vehicle. In the interpeak, the average journey time of vehicles passing through the Key Area model increases by one second, showing minimal impact on this Key Area; and
- For ***Merry Hill (A4036) Key Area***, the MHL Model predicts an increase in traffic in the interpeak due to traffic reassigning to Mount Pleasant and results in increased southbound journey times along Merry Hill. In the PM peak the MHL model predicts a decrease in traffic with improved journey times in both directions and improved overall highway performance.

7. Response to objectors

7.1. My evidence addresses the remaining objections:

- OBJ/07 Jessops Europe Limited;
- OBJ/10 Intu;
- OBJ/11 Waterstones Booksellers Ltd.;
- OBJ/15 MFG;
- OBJ/20 and OBJ/20/W1 McDonalds Restaurants Limited and Astrad Limited and AR Sirkhat;
- OBJ/21 Argos Ltd; and
- OBJ/22 and OBJ/W.1.1-1.4 TJX UK (trading as TK Maxx).

7.2. Detailed traffic modelling has been undertaken in response to concerns raised during discussions with WMCA about the impacts of operation of the WBHE by the above remaining objectors. As summarised in sections **Error! Reference source not found.** and **Error! Reference source not found.** of my evidence **[APP/P4.1]** this has been undertaken at local area wide and more detailed junction operation level in the vicinity of Merry Hill. The detailed transport modelling demonstrates that the road network in the vicinity of Merry Hill Shopping Centre will operate within capacity or not be significantly worse than the Without WBHE scenario in the forecast year of 2031.

7.3. There is no intention to change The Embankment road permanently, other than at its junction with Level Street. The current access arrangement to Intu Merry Hill Shopping Centre for all vehicles, including car trips, deliveries and servicing will remain the same. The only exception is U-Turn movements at Level Street/The Embankment junction, as with WBHE this junction will be converted to signal-control. These movements are marginal as confirmed by the traffic surveys **[APP/P4.3] (Appendix E)**.

7.4. The pedestrian access will be safer with provision of controlled crossing facilities at the new traffic signals at Level Street/The Embankment junction.

7.5. In summary, the impacts of the operation of the WBHE on the highway network in the vicinity of Merry Hill Shopping Centre have been assessed using detailed transport modelling with no significant impacts predicted.

8. Conclusion

8.1. The need for the land and rights proposed to be acquired has been fully justified.

8.2. Funding is available and the project is ready to proceed, and I urge the Inspector to recommend the powers applied for.

9. Witness Declaration

9.1. The evidence I shall give is true, given in good faith and represents my professional opinion regarding the merits of the Proposed Order and I have carried out my assessment in accordance with the Code of Professional Conduct of the Chartered Institution of Highways and Transportation.