Birmingham Eastside Extension

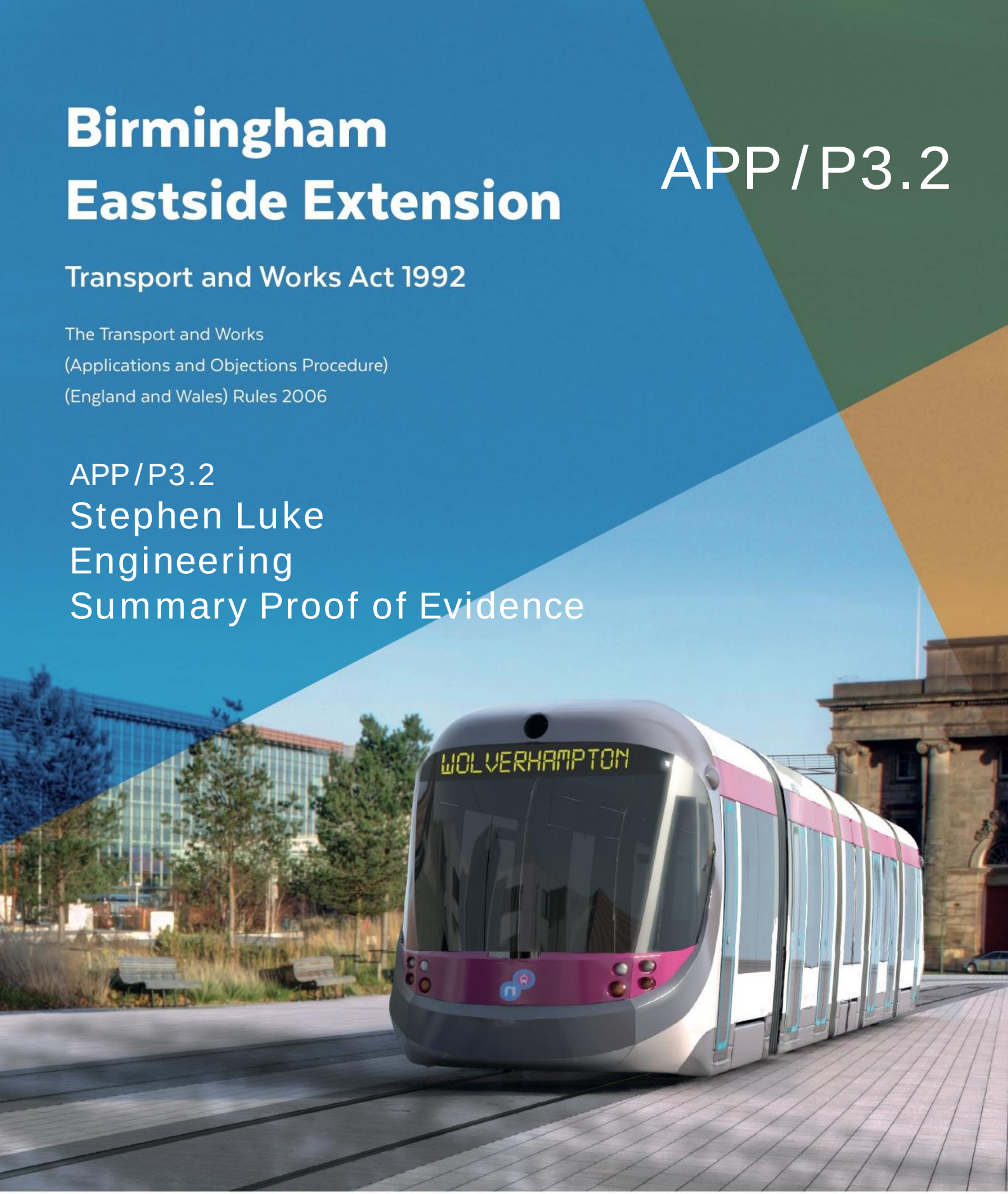
APP/P3.2

Transport and Works Act 1992

The Transport and Works
(Applications and Objections Procedure)
(England and Wales) Rules 2006

APP/P3.2

Stephen Luke
Engineering
Summary Proof of Evidence



WEST MIDLANDS
COMBINED AUTHORITY

TRANSPORT AND WORKS ACT 1992

PROPOSED MIDLAND METRO (BIRMINGHAM EASTSIDE EXTENSION) ORDER 201[X]

SUMMARY PROOF OF EVIDENCE

OF

Stephen Luke
Engineering

FOR

WEST MIDLANDS COMBINED AUTHORITY

19 October 2017

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1. QUALIFICATIONS AND EXPERIENCE

1.1.1 This evidence is prepared by Stephen Luke MSc, BEng (Hons), CEng, MICE.

1.1.2 I have been a member of the Institution of Civil Engineers since 1995 and hold an MSc in Transport Planning and Operations from Newcastle University (1995) and a BEng (Hons) in Civil Engineering from Nottingham University (1990). In 2017 I commenced a distance learning MSc in Sustainable Urban Development at Herriot-Watt.

1.1.3 I have over 30 years of experience in the planning and development of urban public transport, both in local government and private consultancy. I currently hold the positions of Transport Planning Practice Leader for Mott MacDonald which is a UK and European role and Deputy Practice Leader for Light Rapid Transit internationally have held these positions since June 2016.

1.1.4 Between 2012 and 2016, I was a Project Director with Mott MacDonald in Australia responsible for urban public transport development including roles on Sydney CBD and South East Light Rail, Brisbane Metro and the Metro Tunnel in Melbourne with includes modifications to the Melbourne Tram Network [the longest tram network in the world]. Preceding this I was Project Director responsible for Urban Public Transport advisory services with a full international remit. Other Light Rail specific experience includes management of studies to examine extensions to the Nottingham Express Transit including a link to the East Midlands HS2 Station Hub, Tyne and Wear Metro, several potential extensions to the London Tramlink system, extensions to Blackpool Tram, Cross River Tram (London) and planning for metropolitan wide BRT/LRT networks in South Africa (Durban and Johannesburg) and the UAE.

1.1.5 In this matter, the West Midlands Combined Authority have instructed me to act as expert witness on engineering matters for the Public Inquiry in respect of the 'called-in' Birmingham Eastside Extension (BEE) in the City of Birmingham. I was not involved in the scheme prior to being instructed in May 2017 to act as expert witness.

2. SUMMARY AND CONCLUSIONS

2.1 Scheme Proposals

2.1.1 The track alignment and associated infrastructure for BEE has been developed to accord with current Midland Metro system design parameters and technical requirements, Office of Road and Rail Regulation Tramway Technical Guidance Notes [BEE/C1], UKTram Guidance and best practice from other street running tramways. The geometric design parameters utilised in the development of the track alignment for BEE have been established to provide passenger ride quality, promote vehicle stability and reduce vehicle and infrastructure maintenance requirements commensurate with the existing Midland Metro Network.

2.2 Route Description

2.2.1 The BEE is a 1.7km extension of the existing Midland Metro network from the junction of Corporation Street and Bull Street to a terminus on High Street Deritend near the junction with Heath Mill Lane.

2.2.2 The extension is on street, with around 51% sharing road space with other vehicular traffic and around 49% segregated running.

2.2.3 From the junction on Bull Street, the BEE will run on street along this highway in a southeast direction sharing space with other vehicular traffic; southbound along Bull Street it is proposed as tram and cycles only, and northbound tram, bus and cycles only. The route then crosses Dale End with a tramstop on the realigned Albert Street to serve the HS2 station, Moor Street Station and the Dale End area of the city centre. From here it continues over Moor Street Queensway running adjacent to Eastside Park and a proposed pedestrianised area as part of the HS2 scheme, then for a short distance alongside Park Street with a tramstop at the north end of New Canal Street under the HS2 station. This tramstop will provide interchange with the secondary (eastern) HS2 Curzon Street Station access and will also serve Millennium Point, the Education Quarter and other destinations.

2.2.4 The BEE route then runs on street along New Canal Street with a tramstop on the northern side of the junction with Bordesley Street to provide a connection to the Typhoo Wharf development and other proposed developments as well as existing businesses. From here, the tram continues on-street along Meriden Street sharing space with other traffic to turn east at the junction with Digbeth to run in a segregated alignment in the middle of the highway. At the junction of Rea Street and Floodgate

Street there would be a terminus tramstop to serve Birmingham Coach Station, South and City College Birmingham, the Custard Factory and other destinations.

2.2.5 From the terminus tramstop there will be a 0.2km length of track to the junction of Heath Mill Lane to provide a turnback facility. The proposed Order limits extend to the junction of Clyde Street to provide some highway alterations to facilitate the BEE.

2.2.6 It is envisaged that Overhead Line Electrification (OLE) will extend along approximately 33% of the BEE to facilitate the operation of the tram. Due to industry advances in on-board tram battery power technology, it is proposed that approximately 67% of the BEE route will be 'catenary free' with trams operating on battery power and not requiring the use of affixing OLE to buildings or the use of poles. The section requiring OLE extends from the junction with BCCE at Bull Street to the tramstop at Albert Street, and a short length from the terminus tramstop on High Street Deritend going south east along the turn back facility; the remainder of the BEE will be catenary free. This will reduce the visual impact of the BEE as detailed in the ES [BEE/A13/1-3].

2.3 Statutory Undertakers Equipment

2.3.1 Most of the construction of BEE will take place within the highway boundary where utilities are maintained by the utility companies. Utility companies have therefore been contacted to provide information initially on the location of their apparatus and later to determine the nature and extent of any diversions they consider to be necessary because of the BEE

2.3.2 The strategy will be to undertake most of the requisite diversion works before the commencement of the BEE infrastructure works. This has both a time and cost benefit to a project and significantly de-risks the scope since the act of undertaking the diversions gives greater certainty of ground conditions and provides contractors with a clear site'.

2.4 Construction

2.4.1 A draft Construction Strategy has been prepared. It is proposed this would be further developed and defined by the Midland Metro Alliance.

2.4.2 The draft Construction Strategy envisages the main works being undertaken within a series of fenced off sections of carriageway.

2.4.3 The exact sequence of work and areas to be occupied will be subject to development by the Midland Metro Alliance and to agreement of temporary traffic management arrangements with BCC's Traffic Manager and the Police.

2.4.4 To provide an efficient and consistent temporary traffic management regime, the intention is to maintain the direction of traffic on the existing network wherever possible and keep the direction of respective lanes during construction.

2.4.5 Suitable footways will be maintained throughout the period of construction to enable the flow of pedestrians. Access to premises will be maintained.

2.5 Operations

2.5.1 Tram services will run every 6 minutes in the peak hours Monday to Friday and every 15 minutes off-peak.

2.5.2 The posted speed limit on street is 30 mph (48kph). Run time analysis (considering junctions, alignment and stops) indicates that trams will operate below this speed limit.

2.6 Secretary of States Matters

2.6.1 This Proof of Evidence has addressed the following matters [INQ3]:

- Matter 4a – Scheme Impacts. Dust
- Matter 4c – Flood Risk and Groundwater
- Matter 6 – Mitigation Measures. Mitigation of harm in relation to construction through the proposed Code of Construction Practice, and measures to avoid, reduce or remedy any major or significant adverse environmental impacts of the scheme in terms of noise and vibration during construction

2.6.2 The findings of the Environmental Statement indicate that there are no significant areas of concern associated with these matters.

2.7 Response to Objectors

2.7.1 In response to specific objections my evidence addresses:

- Martineau Galleries No 1 Ltd, Martineau Galleries No 2 Ltd [OBJ/06]
- Quintain City Parkgate [OBJ/07]

- Network Rail [OBJ/09]
- Hotel LaTour [OBJ/12]

2.7.2 Residual objections relating to the scheme in terms of engineering have been considered further and rebutted.

2.8 Conclusion

2.8.1 The engineering of the BEE has been carried out in accordance with accepted standards, has considered all appropriate options and reached a robust and justified proposal. The permanent land take for the scheme is justified and is limited to the minimum required to provide for a safe and efficient scheme.

2.8.2 The project is ready to be delivered and I urge the Inspector to recommend the powers applied for.