

# Birmingham Eastside Extension

APP/P4.1

Transport and Works Act 1992

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

APP/P4.1  
Eddie Mellor  
Transport Planning  
Main Proof of Evidence



**WEST MIDLANDS**  
COMBINED AUTHORITY



**TRANSPORT AND WORKS ACT 1992**

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

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**PROOF OF EVIDENCE**

**OF**

**Eddie Mellor  
Transport Planning**

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**FOR**

**WEST MIDLANDS COMBINED AUTHORITY**

**19 October 2017**



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### **Appendices (bound separately APP/P4.3)**

- Appendix 1 Microsimulation modelling report
- Appendix 2 Planning Application decision notices
- Appendix 3 Hotel LaTour Transport Statement
- Appendix 4 Note on the Proposed Bus Interchange

**1. QUALIFICATIONS AND EXPERIENCE**

- 1.1.1 My name is Eddie Mellor. I am a Divisional Director with Mott MacDonald, a global, employee owned multidisciplinary design consultancy. I am employed within the Integrated Transport Division which provides design services in all transport modes to the public and private sector
- 1.1.2 I am a Chartered Engineer, and a member of both the Chartered Institution of Highways and Transportation, and the Institution of Civil Engineers. I been employed by Mott MacDonald since 2004.
- 1.1.3 I am the Director responsible for Mott MacDonald's work in developing the Transport Assessment (TA) work on the Birmingham East Side Extension (BEE). I am familiar with the tram route and the strategic objectives of the metro project.
- 1.1.4 During my career, I have gained over 30 years' experience in Transport Planning in both the public and private sectors.
- 1.1.5 Rail (Manchester Piccadilly and Oxford Road Capacity) inquiries.

## 2. SCOPE OF EVIDENCE

### 2.1 Overview

- 2.1.1 My evidence covers the Transport Assessment of the scheme, including the modelling appraisal report of Mr Himanshu Budhiraja (Appendix 1). associated with the works proposed as part the Midland Metro Birmingham Eastside Extension(BEE) Transport and Works Act(TWA) Order application. I consider the following items.
- i. The existing transport network and level of service, and a summary of the scheme proposals.
  - ii. Compliance with the relevant transport planning policies at the national and local levels, both adopted and emerging are considered, in so far as they relate to the BEE TWA Order.
  - iii. The Transport Assessment (TA) [BEE/A13/1] and the Update to the Transport (UTA) [BEE/A13/4].
- 2.1.2 In response to the Statement of Matters(INQ/3), my evidence addresses transport topics relevant parts of:
- 2.1.3 Matter 2 - The main alternative route options considered by Midland Metro (Birmingham Eastside Extension) Scheme (“the scheme”).
- 2.1.4 Matter 3 – The extent to which the proposals in the TWA Order are consistent with the.
- iv. National transport policy.
  - v. Local transport policies.
- 2.1.5 Matter 4 – The likely impacts of construction and operating the scheme on landowners, tenants and local businesses, the public, utility providers and statutory undertakers including any adverse impact on their ability to carry on their business and undertaking.
- 2.1.6 Under Matter 4 I will consider:
- i. Matter 4(a) - the effects of construction and operation on the local road networks and bus services.
  - ii. Matter 4(b) - the impact on business access and car parking.
- 2.1.7 My evidence will specifically consider responses to the following objections:

- i. Phoenix CSR Ltd [OBJ/03].
- ii. Hotel LaTour [OBJ/12]

2.1.8 A summary of the transport modelling and assessment is considered in my proof of evidence. The microsimulation modelling report is appended in full (Appendix 1) Mr Budhiraja, the report author will be available to appear at the TWA Inquiry to answer question relating to this report.

2.1.9 Final summary and conclusions can be found in Section 11.

### 3. THE STATEMENT OF MATTERS

#### 3.1 Overview

3.1.1 The following section provides a description of the existing highway network and public transport provision in the vicinity of the 1.7km BEE route.

#### 3.2 Existing Layout

- 3.2.1 **Bull Street** is a one-way single carriageway road that provides access from High Street and Dale End in the south to Corporation Street in a north westerly direction. Bull Street is a bus and cycle only carriageway. The footways are continuous along its length with a crossing zone in the most southern part, another crossing zone along Bull Street and a signalised crossing at the Corporation Street junction. Bull Street is a busy retail street with three bus stops and a designated C1 cycle lane in the opposite direction to the road's one-way traffic system.
- 3.2.2 **Dale End / High Street** merges onto Bull Street continuously, with a priority junction at Dale End. High Street has sheltered bus stops and on-street disabled parking bays located south of the junction with Dale End. High Street is a one-way carriageway for all vehicles heading north, although only buses and cycles are able to continue onto the restricted Bull Street. All other vehicles must turn right onto Dale End. Dale End is a single carriageway road with vehicles travelling in both directions. A taxi rank is located on Dale End on both sides of the carriageway, which is the third busiest taxi rank in Birmingham.
- 3.2.3 There is no priority crossing for pedestrians, although tactile paving is used for a crossing point where Bull Street meets High Street. There is a dropped-kerb pedestrian crossing on Dale End. There are footways located on all sides of the roads, and a footpath is located east of the junction between McDonalds and BETFRED to allow pedestrian access to New Meeting Street.
- 3.2.4 **New Meeting Street** is a cul-de-sac with vehicular access from Albert Street, and provides parking and access to retail units. As stated above, there is footpath connecting New Meeting Street to High Street / Dale End. There are 21 private parking bays located to the rear of Martineau Galleries, together with seven on-street disabled parking bays.

- 3.2.5 The vehicular access to New Meeting Street is at a priority junction with Albert Street, with a drop-kerb pedestrian crossing for pedestrians travelling along Albert Street. The footways are discontinuous along New Meeting Streets length.
- 3.2.6 **Albert Street** is a single carriageway dual direction road connecting Dale End with Moor Street Queensway. Albert Street merges with Dale End in the north with two traffic signal controlled d crossing for pedestrians. There are two sheltered bus stops located on the eastbound side of the road, and three disabled on-street parking bays located on the westbound side of the road.
- 3.2.7 Pedestrian footways are provided on both sides of the road. Towards the traffic signal controlled junction with Moor Street Queensway there are two access points to an NCP multi-story car park which provides 1,160 parking spaces, with one access being a priority junction (Dingley's Passage). There is a drop-kerb tactile paving crossing for pedestrians crossing both these junctions. There is also a priority junction access to New Meeting Street, as well as access to a private car park on the south side of Albert Street.
- 3.2.8 Four cycle racks are provided on the southern side of Albert Street and although there is no segregated cycle lane there is a cycle area at the traffic signal controlled junction with Moor Street Queensway. The signal controlled junction at Moor Street Queensway allows for safe pedestrian crossing, with a central refuge between traffic lanes. The carriageway on Albert Street widens at the Moor Street Queensway junction allowing for traffic turning left / right to be segregated.
- 3.2.9 **Moor Street Queensway** is single and dual carriageway in parts, with a discontinuous bus lane connecting Birmingham Moor Street Rail Station in the south to Moor Street Queensway / James Watt Queensway (B4114) in the north. A central reservation separates traffic directions, whilst also providing as a safe crossing point for pedestrians at the Albert Street junction.
- 3.2.10 From Moor Street Queensway there is access to Carrs Lane (priority junction), Masshouse Lane (signalised junction) and The Priory Queensway (signalised junction), and Albert Street. At the northern part of Moor Street Queensway, the nearside traffic lane leads to James Watt Queensway (B4114) with a traffic signal controlled pedestrian crossing. The traffic signal controlled junction also provides controlled pedestrian crossing facilities.

- 3.2.11 Continuous pedestrian footways flank both sides of the road, with signal controlled crossing provided along Moor Street Queensway. This route is also a busy bus corridor, with 6 bus stops located along Moor Street Queensway.
- 3.2.12 The Albert Street junction is a three-arm traffic signal controlled junction. The northbound approach has three lanes, with one dedicated for vehicles turning left onto Albert Street and; two lanes continue along Moor Street Queensway. North of the junction on both sides of the road there are segregated bus lanes, with two additional lanes for traffic. Approaching the Albert Street / Moor Street Queensway junction southbound, there are two vehicular lanes and one bus lane (as well as a flagpole bus stop). One vehicle lane is dedicated for vehicles turning left onto Albert Street. The bus lanes are also signposted for taxis and cyclists.
- 3.2.13 **Masshouse Lane** is located east of the Moor Street Queensway Priory Queensway junction, and is one-way, three lanes in an East to West direction. Park Street continues from Masshouse Lane, and a drop-off bay is accessed via Park Street outside Hotel LaTour. A sheltered bus stop is also located adjacent to Hotel LaTour's entrance with 10 services per hour.
- 3.2.14 A pedestrianised area links Moor Street Queensway to the Hotel LaTour. Masshouse Lane to the rear of the Hotel LaTour entrance (north of the building) is a one-way three lane carriageway, with the central lane being bus only.
- 3.2.15 **Eastside Park** is a recently constructed park located east of Hotel LaTour, and is the first major park to be built in Birmingham for more than 130 years. The park adds 2.73 hectares of green space to the city centre, extending Park Street Gardens, taking in the former car park in front of Millennium Point, through to Cardigan Street. The park borders Curzon Street and New Canal Street, and lines the frontage of Millennium Point.
- 3.2.16 **New Canal Street** connects to Curzon Street, with two signal controlled pedestrian crossings allowing for safe pedestrian management. The old Curzon Street Rail Station and The Woodman public house are located at the north of New Canal Street, as well as vehicular access to derelict land (although this area is currently gated-off).
- 3.2.17 On the western side of New Canal Street is the recently constructed Eastside Park. Footways are evident on both sides of the road, with a drop-kerb pedestrian crossing at the Banbury Street priority junction on the eastern side of New Canal Street.

- 3.2.18 North of the signal controlled four arm junction with Fazeley Street is a rail bridge crossing New Canal Street which has a 5.4m height restriction. South of this junction on the eastern side of the road is an off-street pay and display car park. New Canal Street continues south to the Bordesley Street junction with pedestrian footways on either side.
- 3.2.19 There are no designated on-street parking zones along the length of New Canal Street, although several off-street pay and display car parks are located here. There are comprehensive waiting restrictions on both sides of the road,
- 3.2.20 **Meriden Street** runs from the south of the New Canal Street / Bordesley Street junction to the junction with Digbeth (B4100). South of the New Canal Street / Bordesley Street junction on the eastern side of the road lies a private off-street car park accessed by both Bordesley Street and Meriden Street. 60m south of the Bordesley Street junction a rail bridge crosses Meriden Street, with pay and display off-street parking (Coventry Street Car Park) located south of the bridge.
- 3.2.21 Between the Bordesley Street junction and the Coventry Street junction to the south there are pedestrian footways on either side of the road. The southbound side of the road is double yellow lined, and the northbound is single yellow.
- 3.2.22 Meriden Street continues south past the Coventry Street junction with vehicles travelling along Meriden Street having priority. The junction is a four-arm priority junction with Coventry Street running in an east-west direction. Located south of this junction are car parks on both sides of the road, one being a private customer car park (west side of the road) and one a pay and display (east side of the road). Meriden Street continues south towards Digbeth (B4100) with footways on either side of the road. On-street parking is prohibited 24hrs per day for the length of Meriden Street between Coventry Street and Digbeth (B4100).
- 3.2.23 The junction with Digbeth (B4100) is a three-arm signal controlled junction, with vehicles travelling along Meriden Street having a left-turn only onto Digbeth (B4100). There is a drop-kerb for pedestrians crossing Meriden Street at its most southern section.
- 3.2.24 **Digbeth (B4100) and High Street Deritend (Westbound).** Digbeth (B4100) runs from the Meriden Street junction in a south easterly direction onto High Street Deritend and towards Bordesley Rail Station. West of the Meriden Street junction is the Moat Lane signalised gyratory, which provides access to Digbeth (B4100).

- 3.2.25 At the Digbeth (B4100) / Meriden Street junction, pedestrians are currently separated from the highway by a pedestrian guardrail. In the centre of the road there is also a footway connecting pedestrians to different signalised crossings. This footway is again separated from the road by guardrails.
- 3.2.26 East of the Meriden Street junction Digbeth (B4100) comprises of three vehicular lanes in each direction with a pedestrianised central reservation. Here, the footway is separated from the road by guardrails, except where a traffic signal controlled crossing, bus stop (sheltered) and service area into South & City College are located.
- 3.2.27 At the Oxford Street priority junction with Digbeth (B4100), there is a dropped-kerb for pedestrians to cross the most southern part of Oxford Street. Pedestrian guardrails separate pedestrians from the highway between this junction and up to the Digbeth (B4100) / Milk Street junction; apart from where Birmingham Coach Stop DS5 and DS6 are located. The bus stops are both provided with shelters.
- 3.2.28 A segregated right-turn lane is provided into Rea Street.
- 3.2.29 There is a signal controlled pedestrian crossing situated west of the Milk Street / Digbeth (B4100) junction. The signal controlled junction is provided with a footway in the centre of the road which connects to another signal controlled crossing taking pedestrians to the south side of Digbeth (B4100). This central footway is again separated from the road by pedestrian guardrails.
- 3.2.30 On High Street Deritend, from the Milk Street junction to the Floodgate Street junction there are no guardrails to separate pedestrians and the highway, apart from at the junction with Floodgate Street on the western side of the junction along High Street Deritend. There is a drop-kerb for pedestrians to cross the most southern part of Floodgate Street. The central footway exists but not for pedestrian use here, up until a signalised crossing east of the Floodgate Street / High Street Deritend junction. This is to allow for pedestrians to currently cross both sides of the road.
- 3.2.31 Gibb Street is a small access road to the Custard Factory and other retail units, and tactile paving provides a pedestrian crossing point. Pedestrians are separated from the highway by guardrails at this junction. The Heath Mill Lane / High Street Deritend junction is a signal controlled junction for vehicles, although with no pedestrian crossing across High Street Deritend. A dropped-kerb on the southern section of Heath Mill Lane provides a pedestrian crossing point.

- 3.2.32 From the Heath Mill Lane junction, the pedestrian footway on High Street Deritend is separated from the highway in a number of places by guardrails. There are two car parks among other access points where the pedestrian guard railings are not evident. These access roads provide dropped-kerbs for pedestrians. Pedestrians remain separated by guardrails from the highway on the north side of the road where possible up until the Adderley Street junction.
- 3.2.33 **Digbeth (B4100) and High Street Deritend (Westbound).** On the south side of High Street Deritend, there is a signal controlled junction with Alcester Street, with provision for pedestrian crossing points. The pedestrian crossing is split into two sections, with a section of footway in the middle of the road surrounded by guardrails. The south side of the road in this section is less segregated from the pedestrian footways with guardrails as opposed to the north side.
- 3.2.34 The carriageway on High Street Deritend segregates buses and other vehicles, although vehicles may access bus lanes to enable a left-turn at junctions off the westbound side of High Street Deritend. Between the Stone Yard and Chapel House Street junctions on the south side of the road, guardrails or concrete bollards are evident across this length apart from where access is needed to the signalised pedestrian crossing. Both these junctions provide dropped kerbs for pedestrians to cross.
- 3.2.35 At the junction with Rea Street, pedestrians are separated from the highway with guardrails, and can cross Rea Street via a signal controlled crossing with tactile paving. There is a small refuge section in the middle of the road for pedestrians crossing, which is not provided with guardrails. A pedestrian crossing on High Street Deritend is in a similar format, albeit with a central crossing point provided with guardrails.
- 3.2.36 The Rea Street / High Street Deritend junction is a signalised three-arm junction, with the Birmingham Coach Station located directly west of the junction. From Rea Street to Mill Lane (the location of Birmingham Coach Station) the pedestrian walkway is wholly separated from the highway by guardrails. There is a non-signalised drop-kerb pedestrians crossing across Mill Lane.

### **3.3 Public Transport Baseline Conditions**

- 3.3.1 Rail, bus and coach currently provide public transport links in the Eastside area. These public transport networks would benefit greatly from tram connections to the city centre, Wolverhampton, and the proposed extensions.
- 3.3.2 The Birmingham ‘Big City Plan’, launched in September 2011 [BEE/E22/1 & E22/1] has designated the Eastside area (170 hectares) as an “area of transformation”. The Eastside area is home to the largest physical regeneration project in Birmingham aimed at transforming and revitalising a previously neglected part of the city centre.

### **3.4 Public Transport**

- 3.4.1 It should be noted that the operation of bus services in Birmingham and the West Midlands is de-regulated with the majority of the services operating commercially. Bus routings for commercial services are determined by bus operating companies, in liaison with Transport for West Midlands (TfWM), and are open to change on a commercial basis.
- 3.4.2 All services are reviewed by the operators and TfWM and will evolve to serve the changing nature of Birmingham City Centre and its commercial environment and passenger demand. It is not expected that the proposed highway modifications as a result of BEE will lead to the withdrawal of any bus services.
- 3.4.3 The bus stops and stands within a defined area of Birmingham City Centre are covered by a Statutory Quality Partnership Scheme (SQPS) [BEE/E31] Under this agreement the City Council and Transport for West Midlands (TfWM) have a statutory obligation to provide and maintain a stipulated number of bus stops and stands with a stated level of capacity. The SQPS document is a legally binding Quality Partnership Agreement
- 3.4.4 Within the SQPS, are objectives to deliver facilities that enable commercial operators to provide local bus services into the City without affecting commercial competition within the market. Therefore, when there is significant development in the SQPS area then additional stops and stands need to be provided in the vicinity to ensure that any forecast increase in demand can be accommodated in close proximity.
- 3.4.5 One of the objectives of TfWM [BEE/E23] is to aim for a fully integrated public transport network which includes easy and convenient interchange between all modes including traditional and high speed rail, Metro, BRT Sprint and bus. This

ensures public transport is attractive as possible and reduces the reliance on car trips. These combined measures are aimed at ensuring that public transport is an attractive option for people travelling to the city core or changing between services.

- 3.4.6 The TfWM 2016 West Midlands Travel Trends Report, [BEE/E32], provides useful information on the public transport baseline position in the West Midlands.
- 3.4.7 Buses currently form the primary mode of public transport in the West Midlands with 267 million bus journeys made in 2015/16. (Patronage and Fares – Bus Passenger Journeys). Whilst bus patronage has fallen slightly, it is important that such levels of public transport use remain, and the expansion of the tram network will increase public transport patronage.
- 3.4.8 Rail patronage increased in 2015/16 to 53.7 million trips, and metro patronage has remained at 5 million. (Patronage and Fares – Rail Patronage & metro Patronage)
- 3.4.9 The introduction of the SPRINT BRT network will further increase connectivity between transport modes across the West Midlands, also providing interchanges with the BEE at the Bus Interchange.

#### **4. THE SCHEME PROPOSALS**

- 4.1.1 The need for BEE is set out in detail in Section 4 of the Statement of Case (SOC) [BEE/F2] and the Birmingham Eastside Extension Draft Business Case [BEE/D23/1-5]
- 4.1.2 BEE comprises of 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 in the vicinity of the junction with Heath Mill Lane.
- 4.1.3 BEE will also provide an important link to the HS2 scheme, in particular connecting to the proposed HS2 Curzon Street station.

#### **4.2 Route Description**

- 4.2.1 The BEE route from Corporation Street to High Street Deritend is described in the following section. A detailed review of the BEE route can be found in the evidence of Mr Stephen Luke in Section 4, The Scheme Proposal of his proof reference APP/P3.1 Details of the alternative route proposals can be found in Section 8 of my proof of evidence.

##### **Corporation Street to Eastside Park.**

- 4.2.2 The BEE diverges from the existing tram system at the Corporation Street / Bull Street junction. This junction is currently traffic signal controlled, and will remain so with the introduction of the BEE (although the junction will be remodelled).
- 4.2.3 From the Corporation Street / Bull Street signalised junction, the BEE will continue south-east towards the Bull Street / Dale End junction. This junction is currently a priority junction but will be signalised upon the introduction of the BEE. To facilitate the link from the Bull Street / Dale End junction to the Moor Street Queensway / Albert Street junction, the King's Parade building (nos. 1-7) will be demolished to accommodate the BEE alignment.
- 4.2.4 From the Bull Street / Dale End junction to the Moor Street Queensway / Albert Street junction, the track alignment will be shared use along the new alignment. The track alignment will pass through an existing car park, which will become part of the Albert Street bus/tram interchange.

- 4.2.5 The existing signal controlled junction of Moor Street Queensway / Albert Street junction will be modified upon the introduction of the BEE. A Bus Interchange is to be provided directly east of the Moor Street Queensway / Albert Street junction.
- 4.2.6 At the Bus Interchange, the outbound and inbound track is tram-only. An access to the Bus Interchange will be provided from Masshouse Lane.
- 4.2.7 Directly east of the Bus Interchange at Hotel LaTour, a signal controlled junction is to be constructed at the existing Park Street / Masshouse Lane junction. East of the proposed signal controlled junction, both tracks will be segregated from vehicular traffic between the proposed signal controlled junction up to, but excluding, the New Canal Street / Fazeley Street junction. This section of the route follows the former Albert Street alignment which has been recently removed to enable the development of the Eastside Park.

#### **Eastside Park to Meriden Street**

- 4.2.8 The track alignment runs in a north-south direction at the New Canal Street / Fazeley Street junction. At the junction, the track alignment becomes shared use for all traffic.
- 4.2.9 Continuing south, the track alignment travels on existing highway up to the Digbeth B4100 / Meriden Street junction. This junction will remain traffic signal controlled although it will be reconfigured to allow for a tram-only stop line, and separate traffic stop line at the junction. All traffic and trams turn left at this junction, with the tram track alignment occupying two segregated central lanes along Digbeth (B4100).

#### **Meriden Street to Adderley Street**

- 4.2.10 The track alignment continues along Digbeth (B4100) and High Street Deritend in an east-west direction. The track alignment will be segregated from other vehicles for much of the length of this section, with two vehicular lanes either side of the track alignment. At the junction with Rea Street, there will be short sections of shared track to allow for vehicular movements at the junctions.
- 4.2.11 The BEE track alignment runs in the existing offside lanes in either direction of the carriageway along Digbeth (B4100) and High Street Deritend, and services will terminate between Rea Street and Milk Street. However, the track will be constructed as far as Heath Mill Lane to allow for a tram turn-back and lay over facility.
- 4.2.12 Furthermore, highway works will be undertaken to ensure the route has capacity to extend in an easterly direction for a potential extension towards Birmingham Airport.

This includes the reconfiguration of the High Street Deritend / Alcester Street junction, where approaches on the High Street Deritend junction are proposed to be reduced to two-lanes (apart from the eastbound approach which flares into three lanes to allow a right turn into Alcester Street).

### **4.3 Proposed Tram Stops**

- 4.3.1 The proposed number of tram stops has been carefully considered to provide an highly accessible and integrated public transport facility. There are four tram stop locations on the BEE route which are described in detail in section 5 of the proof of Mr Stephen Luke (APP/P3.1
- 4.3.2 The four trams stops provided are summaries as follows.
- 4.3.3 Albert Street, close to the proposed western Moor Street entrance of the HS2 Curzon Street Station Hotel LaTour
- 4.3.4 New Canal Street is to serve the New Canal Street entrance of the HS2 Curzon Street Station as well as other locations including,, Millennium Point, Thinktank, University buildings, Eastside City Park and the Eastside area
- 4.3.5 Meriden Street is to serve existing premises in the vicinity, as well as proposed developments within the HS2 Curzon Street Masterplan [BEE/E19].
- 4.3.6 The tram stop at High Street Deritend/Digbeth High Street is located between the Coach Station and the Custard Factory. As well as serving these locations, the tram stop will be a useful facility for designated redevelopment areas.
- 4.3.7 A turnback facility extends beyond this tram stop up to the junction with Heath Mill Lane to allow the tram vehicles to recharge batteries and turn around for the return journey towards the City Centre.

### **4.4 Proposed Bus Changes**

- 4.4.1 The following is a summary of bus changes resulting from the implementation of BEE:
- i. Bus stop provision on Bull Street is to be reduced from kerb-space for five buses to four (although the three existing shelters are to remain). Bus services will not be affected as bus stop BS16 can be utilised for the excess capacity.

- ii. Bus stops MS13 and MS14 on Moor Street Queensway are to be relocated to the Bus Interchange, and bus stop MS9 is to be relocated to bus stop MS10 (currently disused). Bus services will not be negatively affected by these changes.
- iii. Bus services using Park Street (south of the PA1 bus stop) will be diverted via Masshouse Lane and Moor Street Queensway as part of the HS2 proposal, where Park Street will be closed to general traffic. Once the BEE is operational, bus stop PA1 will be relocated to the Bus Interchange. Further services that operate on Park Street may also operate through the Bus Interchange.
- iv. All bus stops are to be retained along Digbeth (B4100), High Street Deritend and on the Moat Lane Gyratory.
- v. Bus lanes along Digbeth (B4100) and High Street Deritend are to be removed, reducing the vehicular traffic lanes from 3 to 2. The bus stops will remain on street, and therefore, the buses should not be delayed significantly than if the bus stops were in bus laybys.

4.4.2 The closure of Moor Street Queensway to general traffic (a proposal within the Curzon Masterplan) [BEE/E19] will improve bus service efficiency along Moor Street Queensway. City centre traffic would reduce as a result of the traffic restrictions, with an expected improvement in reliability and efficiency of the bus network.

## **4.5 Bus Interchange**

4.5.1 One of the key aims of any multi-modal transport system is to provide easy and convenient interchange between modes, and convenient access to key destinations.

4.5.2 The planned bus interchange at Albert Street, will provide for convenient bus to bus interchange, and easy access to the Tram Stops on Albert Street and the city centre, and HS2 Curzon Street. The tram provides further direct connection to Birmingham Coach Station, HS2 Curzon Street, and national rail services at Grand Central (New Street) and Snow Hill.

4.5.3 HS2 will increase demand for bus services HS2 Phase 1 Environmental Statement [BEE/C2], there will likely be further bus passenger demand resulting from general growth in population and economic activity in the region.

4.5.4 The SQPS scheme is designed to manage the level of services using the kerb space at any one time by putting restrictions on the number of buses using each stop per

hour to ensure that buses can pull up to the kerb, dwell there for a sufficient period, and not require buses to double park or drop passengers off in the middle of the carriageway, as used to be commonplace.

- 4.5.5 The scheme is an important tool to support the management of the highway and the bus network. It cannot, by its nature be anti-competitive and therefore requires TfWM and Birmingham City Council (BCC) to provide the required amount of infrastructure and stops to support the network in a deregulated environment.
- 4.5.6 There are currently two bus stops located on Albert Street (between Dale End and Moor Street Queensway) which previously served some services terminating in the City Centre. Currently 58 buses an hour (during the peak periods) pass these stops from Dale End to Moor Street Queens Way and 29 buses from Moor Street Queens Way to Dale End.
- 4.5.7 The BEE proposals include retaining 2 bus stops on Albert Street one in each direction. The stops are conveniently located directly North of the proposed Metro stop, towards Dale End. The planned stops at this location will allow for interchange between buses and the Metro services.
- 4.5.8 Providing such convenient interchange, and close to the city centre, and the proposed redevelopment proposals in the area, will enhance sustainable development, and support the expansion of an integrated transport network that the bus stops on Albert Street will be an important component of.
- 4.5.9 The Section of Albert Street which is currently pedestrianised, adjacent to Hotel LaTour will be provided with 2 new bus stops as part of the BEE proposals. The need for these bus stops is set out in a technical paper 'Note on the Proposed Bus Interchange' prepared by TfWM (Appendix 4). This note references the requirements of the SQPS, and amongst other matters sets out the need to provide bus stop and adequate capacity (Section 4). Changes within the city centre, such as the closure of Park Street, and bus stops lost as a result of HS2 and BEE, means that 'kerb space' for buses is at a premium.
- 4.5.10 Section 5 of the Note, sets out the alternative locates which have been considered to find additional kerb space for bus stops. In conclusion, Albert Street adjacent to Hotel LaTour is preferred solution to maintain the required capacity, and meet the needs of the public.

## 5. TRANSPORT POLICY

### 5.1 Relevant National and Local Policy

5.1.1 in the following section I consider national and local transport policies which are relevant to the TWA Order. The table below sets out relevant transport policies, and the particular references of relevance to the TWA Order. Including the extent to which the TWA Order are consistent with National, Regional and Local Transport Policies, the national planning policy framework and local planning policies.

*Table 1: Summary of Relevant Planning and Transportation Policies*

<b>Transport Policies and Plans</b>	
<b>West Midlands Local Transport Plan 2011-2026</b>	<ul style="list-style-type: none"> <li>• Page 55 (Long-Term Theme 5: A Rail and Rapid Transit Network 'Backbone for Development')</li> <li>• Page 67 (Sub-Regional Balance of Long Term Themes)</li> </ul>
<b>Towards a World Class Integrated Transport Network (2013)</b>	<ul style="list-style-type: none"> <li>• Paragraphs 3.40 – 3.42 (Metro (light rail / tram-train))</li> <li>• Figure 3.2 (Midland Metro and Rapid Transit Lines)</li> <li>• Figure 3.4 (West Midlands Long Term Passenger Rail and Rapid Transit Network)</li> <li>• Page 104 – 106 (Draft "West Midlands Strategic Transport Interventions")</li> </ul>
<b>Movement for Growth: The West Midlands Local Transport Plan</b>	<ul style="list-style-type: none"> <li>• Paragraphs 4.35 – 4.43 (Metropolitan Rail and Rapid Transit Network)</li> <li>• Paragraph 4.46 (Investment in light rail)</li> </ul>

5.1.2 In addition to the above, I would draw attention to the following documents.

5.1.3 Birmingham Mobility Action Plan, (BMAP) White Paper, Birmingham Connected [BEE/E5]. BMAP sets a 20-year vision for improving transport and connectivity in the City. A key objective of the Plan is to set a strategy "to create a transport system which puts the user first and delivers the connectivity that people and businesses require". (page 2, 2nd paragraph) In the same section on BMAP it states "We also want to use the transport system as a way of reducing inequalities across the city by providing better access to jobs, training, healthcare and education as well as removing barriers to mobility"

5.1.4 .BMAP (Bus Proposals, page 22) states "Regular bus services will still have a vitally important role to play in the overall system. However, their role and standards need

to be very different from today. Ways in which existing bus services will need to change include responding to the development of the public transport network, providing a 'feeder' role into the other public transport modes and responding flexibly to development away from the city centre.".

- 5.1.5 In section 7 of my evidence I have provided a response to the matters the inspector wishes to be informed of. Under Matter 3, I have further considered European, Regional and Local transport policies

## **6. TRANSPORT ASESMENT**

### **6.1 Background**

- 6.1.1 The Transport Assessment has been undertaken in two stages. The first Transport Assessment (TA) [BEE/A13/1] was produced in July 2016. During consultation, West Midland travel Ltd., considered that the TA did not adequately consider peak City centre traffic conditions (Christmas trading). Although it is standard practice to undertake transport assessment in 'neutral' months, (ie those months that are not affected by season issues, such as holiday periods) It was agreed to undertake a further traffic data collection exercise in December 2016. Using this data an Update to the Transport Assessment (UTA) [BEE/A13/4] was produced. The UTA identifies any changes between the TA and the updated 2016 traffic data.
- 6.1.2 The additional traffic count data was used by Birmingham City Council (BCC) to update the Birmingham City Centre Strategic SATURN based Model. The model was recently updated for 2016 Base Year, 2026 and 2031 forecast years., and outputs from this model have informed the TA, UTA and Microsimulation modelling.
- 6.1.3 Midland Metro Alliance (MMA) undertook Microsimulation modelling of the BEE scheme, and the details of this are set out in the report of Mr Himanshu Budhiraja which is appended (Appendix 1).
- 6.1.4 The micro-simulation report a summary of the modelling process undertaken, and results. This modelling used new traffic data collected in December 2016 (which was also used in the UTA [BEE/A13/4]. The updated transport modelling was used to assess the impact of BEE on all traffic including bus services.
- 6.1.5 The Modelling report concludes, "Micro-simulation modelling results demonstrates that by implementing the Metro scheme, total vehicular delay for the local road network is improved due to a reduction in traffic demand in both peak periods for both 2026 and 2031 forecast years as well as the implementation of advanced traffic signal control. Additionally, the average delay (seconds per vehicle) remains similar to the Do Minimum scenario, showing no significant adverse impacts of the scheme on the local network and bus services".
- 6.1.6 In the following section I have set out, and summarised the transport assessment methodology. I have firstly summarised the TA, followed by the UTA. For ease of reference, the same heading structure as the TA and UTA has been used.

## **6.2 Policy Review**

- 6.2.1 The TA considered policy fit at Chapter 4. In paragraph 4.5 Conclusions, the TA concluded that “The policies reviewed as part of this chapter demonstrate a strong support for the expansion of the Midland Metro system in Birmingham’s Eastside area within planning policy”.
- 6.2.2 In addition it states “Both national and local policies encourage sustainable transport choices, promoting investment in transport infrastructure. The WMLTP details the positive impacts of Midland Metro extension in Birmingham city centre, supporting concepts of sustainability, increased patronage of public transport and increased reliability and efficiency”.

## **6.3 Modelling Methodology**

- 6.3.1 Chapter 5 of the TA describes the methodology for assessment of the scheme proposals to identify what impact the proposed BEE will have on the highway and its users. Work undertaken are described with findings.
- 6.3.2 In order to establish the effect of the BEE upon the local highway network, the Birmingham city centre strategic highway model (based on SATURN software) was used. AM and PM peak hour traffic flows for the following future scenarios:
- i. 2021 Do Minimum – without BEE
  - ii. 2021 Do Something – with BEE
  - iii. 2031 Do Minimum – without BEE
  - iv. 2031 Do Something – with BEE.
- 6.3.3 The Do Minimum scenario included committed transport schemes and committed developments for each future year, while comparison with the corresponding Do Something scenario allowed the impacts of the BEE scheme to be identified.

## **6.4 Impact on General Traffic**

- 6.4.1 Chapter 6 of the TA considered the impact of the BEE proposals on general traffic Table 6 1 and 6.2 below are extracted from the TA document This summarises the on-line and off-line junctions that were agreed with BCC to be included in the TA for appraisal. Table 6.1 and 6.2 of the TA list the key online and offline junctions with the

scheme effects on each junction. Details of the full junction analysis can be found in the TA document.

## **6.5 Junction modelling methodology**

- 6.5.1 Each of the junctions were assessed in detail for a Base Year (2015) as well as the forecast years 2021 and 2031. LinSig Version 3 and PICADY (within Junctions 9) have been used to model the Base Year and future scenarios. These software programmes are approved by the Department for Transport.
- 6.5.2 All 2015 Base Year junction models had been validated alongside the 2015 queue surveys, and the validation of the junction models can be found in Appendix C of the TA.

## **6.6 Summary of junction modelling.**

- 6.6.1 Traffic modelling work (strategic and local) were undertaken, along with detailed assessments of the identified online and offline junctions. The purpose of the assessments was to identify what impact the proposed BEE will have on highway capacity and general traffic.
- 6.6.2 Two junctions were identified to operate over capacity within one or more of the future year (Do Something) scenarios:
- i. Digbeth (B4100) / Rea Street
  - ii. High Street Deritend / Alcester Street
- 6.6.3 The two are located in Section 3 of the network (Digbeth B4100 and High Street Deritend), where the introduction of the tram reduces traffic lanes in each direction from 3 to 2. This was attributed to the proposed junctions running the eastbound and westbound traffic in separate stages to accommodate the right turn movements. As a result of these conclusions, mitigation options were modelled which showed the junctions to work within capacity.
- 6.6.4 Furthermore, an assessment was also undertaken to identify the impacts of the BEE proposals on offline junctions. Of the four junctions assessed across Birmingham city centre and Birmingham Eastside two were identified to operate over capacity within one or more of the future year Do Something scenarios:
- i. Heath Mill Lane / Liverpool Street

- ii. The Heath Mill Lane / Liverpool Street junction operates over capacity in the 2021 AM/PM Peak and 2031 AM Peak DS scenarios.

6.6.5 In order to mitigate against the capacity issues at the Heath Mill Lane / Liverpool Street junctions it was proposed that the cycle time is increased to 90 seconds, and an indicative arrow for on Great Barr Street for the right turn movement be introduced. This resulted in improved junction capacity and increases the PRC to a value greater than zero.

6.6.6 The full capacity assessment appraisal of the junctions Appendix F of the TA.

## **6.7 Impact on Bus Services**

6.7.1 Chapter 7 considered the impact of BEE on City centre bus services. The TA concluded that The BEE offers an opportunity for TfWM, Birmingham City Council and bus service operators to revise and implement improved services with increased connectivity to other modes of transport.

6.7.2 As part of the BEE proposals, new bus facilities are proposed on Moor Street Queensway, close to Hotel LaTour. to provide bus Interchange facility. Figure 7.2 of the TA refers. This interchange facility will accommodate bus stops that are directly affected by the BEE route alignment.

6.7.3 It was noted in the TA that the operation of bus services in Birmingham and the West Midlands is de-regulated. The majority of the services operating commercially. Bus routings for commercial services are determined by bus operating companies, in liaison with TfWM, and may change over time, responding to market conditions.

## **6.8 Impact on Light Rail**

6.8.1 Chapter 8 addressed the impact of the BEE scheme upon the existing light rail network and the policy implications of the development. The Chapter concluded.

- i. The proposed Midland Metro developments align clearly with transport strategy and policy in Birmingham.
- ii. Extending the tram along the proposed route will increase public transport access from the Eastside area into the existing employment, leisure and transport hubs.
- iii. Linking transport hubs is also highlighted as an important part of future public transport (WMLTP3).

- iv. There will be minimal disruption to the current Midland Metro network during the construction phase of BEE due to the BCCE scheme building passive provision for a delta junction at the Corporation Street / Bull Street junction
- v. During operation, there will not be an increase in trams operating on other parts of the tram network following the introduction of BEE.
- vi. The junction capacity assessments summarised in Section 6 also demonstrate that in capacity terms the Corporation Street / Bull Street junction will operate within capacity for the 2021 and 2031 Do Something scenarios.

## **6.9 Impact on Heavy Rail.**

- 6.9.1 Chapter 9 considered heavy rail impacts in terms of baseline conditions, future scheme and impact of construction. The assessment summarised that BEE would directly interface with the proposed HS2 terminal at Curzon Street, and through existing infrastructure, would link the HS2 terminal with New Street Station and Snow Hill Station. Moor Street Station is also in close proximity to the BEE at the Moor Street Queensway junction and the Bus Interchange.
- 6.9.2 The TA acknowledged that linkage between Birmingham's stations is important, and the BEE along with the current BCCE has the capability to integrate all stations.

## **6.10 Impact on Coaches**

- 6.10.1 Chapter 10 of the TA considered the impact of the BEE scheme upon the coach network in Birmingham, with specific regard to the National Express Coach Station located directly along the BEE route High Street Deritend. The Chapter concluded that the operations of the National Express Coach Station will not be adversely affected. Positive benefits were identified from improved connectivity to the City centre, main transport nodes including HS2 at Curzon Street.

## **6.11 Impact on Walking and Cycling**

- 6.11.1 Chapter 11 considered the walking and cycling implications on the BEE routes. The assessment considered the policy fit, both national and local, and the role that walking and cycling play in the city.
- 6.11.2 The assessment summaries, that one of the reasons the BEE alignment was selected was because it would have the least impact on walking and cycling. In addition

- i. The proposals would deliver mainly positive benefits, such as increased number of controlled pedestrian crossing.
- ii. 5 years traffic collision data showed there had been 48 pedestrian accidents and 13 cyclists accidents along the route

6.11.3 The proposed scheme would in most cases enhance the existing cycling and pedestrian infrastructure, whilst providing a step change in public transport provision within Birmingham city centre and the Eastside area.

## **6.12 Impact on Parking**

6.12.1 Chapter 12 considered the impact of BEE on both on-street and off-street parking. On-street parking opportunities, along the BEE route are very limited. There are a number of private and public car parks which are accessed from the route.

6.12.2 The TA considers each particular section of the BEE route in detail, and considers observed parking activity. The TA appraisal considers the impact on car parking to be minimal. This conclusion is reached because;

- i. Access to all off-street car parks will be retained.
- ii. There is minimal disruption to on-street parking provision.

## **6.13 Impact on Taxis**

6.13.1 In Chapter 13, the TA notes that there are three taxi ranks located in proximity of the BEE scheme.

- i. The Dale End rank is considered to be important in Birmingham's taxi network, and consequently access to the rank has been safeguarded as part of the BEE proposals.
- ii. The rank on High Street Deritend is to be removed as it has no formal recognition by BCC.
- iii. The Mill Lane taxi rank will remain, and will be unaffected by the BEE proposals.

6.13.2 Future proposals highlighted in the Curzon HS2 Masterplan offer improvements to the existing taxi provision by designating Moor Street Queensway as a bus, taxi and cycle only road. This will improve taxi services in Birmingham city centre and Digbeth.

6.13.3 BEE will not affect the routing of taxis within Birmingham City Centre.

## **6.14 Impact on Access and Servicing**

- 6.14.1 Chapter 14 of the TA considered the effect of the BEE scheme, and the associated highway modifications on the access and servicing of the properties within the BEE study area.
- 6.14.2 The assessment considers alterations to access routes as a result of the proposed track alignment and subsequent highway modifications. This is assessed on a strategic level, before considering the impact on accesses to off-street areas at an individual property level.
- 6.14.3 The TA concluded that some further work was required to understand the detailed impact of the BEE, however, where service areas are impacted upon by the scheme, solutions have been identified and incorporated into the tram alignment design. The TA notes that there will inevitably be some rerouting of servicing trips, it is considered that the impact upon existing service access will be minimal.

## **6.15 Impact on Road Safety**

- 6.15.1 Chapter 15, provided a road safety assessment examining the formal accident record over the five year period up to the 30th July 2015 along the BEE track alignment and wider assessment area.
- 6.15.2 In total, there were 94 collisions over the five year period. Whilst there were no fatalities, 17 of the collisions were serious. A general trend was noted, in that number of collisions increasing over time.
- 6.15.3 Although there had been a number of accidents recorded on the BEE alignment, and at nearby offline junctions during the assessment period, the majority of these were caused by driver error. Measures are proposed where possible to minimise the impact on road safety, such as re-location of signalised pedestrian crossing, signalisation of problem junctions to remove safety concerns.

## **6.16 Impact on Emergency Services**

- 6.16.1 Chapter 16 noted that BCC are responsible for maintaining the city highway network. As part of that activity, BCC has a role to liaise with emergency services. Including maintaining suitable access within the city.
- 6.16.2 The TA noted that during construction, access for emergency vehicles will need to be maintained at all times, and a maximum length of work of 100m will be adopted.

- 6.16.3 When BEE is operational existing priority and emergency routes that are directly impacted by BEE should be maintained.

### **6.17 Impacts from Construction**

- 6.17.1 Chapter 17 noted that a construction strategy for BEE had been developed for the purpose of the EIA. the draft construction strategy would be reviewed and refined as the BEE progresses into detailed design. The construction impact assessment considered all transport mode receptors including

- i. General Traffic
- ii. Access traffic
- iii. Construction traffic
- iv. Emergency Services access
- v. Public transport services
- vi. Light Rail
- vii. Heavy Rail and HS2
- viii. Buses
- ix. Pedestrians and cyclists

- 6.17.2 The TA concluded that continual access to parts of Birmingham city centre and Digbeth will be required at all times during the construction of the BEE. Temporarily, the construction of the BEE is likely to affect the movement of traffic and as construction proceeds it may have an effect on property access. Appropriate arrangements will be required to facilitate vehicular and pedestrian access to allow the general life of the area to operate. Such challenges have been successfully tackled during the implementation and construction of the BCCE.

- 6.17.3 The TA also notes the importance of a Construction Code of Practice and liaison between the contractor, TfWM and BCC.

### **6.18 TA Summary and Conclusions**

- 6.18.1 Chapter 18 provides a summary and conclusion for each of the technical chapters in the TA, together with a general conclusion. The TA concluded:

- 6.18.2 “Based upon the summaries provided above it can be concluded that the BEE scheme can be introduced without causing significant detriment to the existing highway, the wider public transport network, pedestrian/cycling provision and its users.”

6.18.3 “Generally the scheme will result in positive benefits and the proposals and mitigation measures to offset impacts are wholly aligned with the vision of Birmingham City Council, its transport policy, and regeneration ambitions”.

### 6.19 Update to the Transport Assessment

6.19.1 The (UTA) was prepared to take account of changes which have occurred since the submission of the TWA Order application and to present the results of some additional transport modelling which has been undertaken by the applicant.

6.19.2 Since the submission of the TA in 2016, BCC completed an update of the Birmingham City Centre Model (BCCM). In addition, new traffic surveys were undertaken in December 2016. Together this now provides AM and PM peak traffic flow data which has been used to re-evaluate the impact of BEE during the following scenarios:

- i. 2016 Base Year
- ii. 2026 Future Year without BEE
- iii. 2026 Future Year with BEE
- iv. 2031 Future Year without BEE
- v. 2031 Future Year with BEE

6.19.3 It should be noted that the Base and Future years have been updated from the original TA. This data has been used to update the following assessments:

- i. Junction capacity assessments.
- ii. EIA traffic and transport chapter, including; Air quality, Noise, and Greenhouse Gas assessments

6.19.4 The UTA follows the same structure as the TA and where aspects of the document have changed updates to these sections are provided. The UTA also notes where no changes or updates were required.

6.19.5 The following table, (Table 1, Chapter 1 of the UTA) summarises the areas of assessment which have been updated.

Chapter / Section	Details of Update
Chapter 1	Setting the scene and overview of changes to TA included in this document
Chapter 2	No change from the TA
Chapter 3	No change from the TA

Chapter / Section	Details of Update
Chapter 4	No change from the TA
Chapter 5	Updated modelling methodology including derivation of forecast year flows from SATURN model and updates to modelling parameters
Chapter 6	Updates to junction operational assessment results and relative impacts
Chapter 7	Includes information on VISSIM modelling carried out to help understand BEE impacts on bus services
Chapter 8	No change from the TA
Chapter 9	No change from the TA
Chapter 10	No change from the TA
Chapter 11	No change from the TA
Chapter 12	No change from the TA
Chapter 13	No change from the TA
Chapter 14	Updates to access and servicing following recent audit / walk through of site issues
Chapter 15	Updates to injury collision data and analysis on account of most recently available 5 year period of data
Chapter 16	No change from TA
Chapter 17	No change from TA
Chapter 18	Revised summary and conclusions from the update to the TA
Appendix A	Updated base year model junction assessments and calibration results
Appendix B	Includes new LMVR and forecasting report produced by Atkins (dated March 2017)
Appendix C	Updated traffic flow diagrams
Appendix D	Updated access and servicing impacts following recent audit
Appendix E	Full injury accident collision data for most recently available 5 year period
Appendix F	Junction Capacity Assessment Outputs
Appendix G	VISSIM Model Outputs.

6.19.6 The following section provides a summary of those Chapters which were updated in the UTA.

## 6.20 Modelling Methodology

6.20.1 Chapter 5 provides an update on modelling methodology. Three appraisals were undertaken

- i. 2016 Base Year junction capacity assessments using the surveyed flows.
- ii. 2026 & 2031 Do-Minimum. (without BEE)
- iii. 2026 & 2031 Do-Something. (with BEE)

6.20.2 The Do Minimum scenario includes committed transport schemes and committed developments for each future year, while comparison with the corresponding Do Something scenario allows the impacts of the BEE scheme to be identified.

## 6.21 Impact on General Traffic

6.21.1 Chapter 6 reports the updates to the junction modelling undertaken, and the assessment results and to reflect the updated traffic modelling. This Chapter revisits each of the on-line and off-line junctions identified in the TA and reassesses them, and is comprehensively reported.

6.21.2 To summarise, updated modelling work has been undertaken, along with detailed assessments of the identified on-line and off-line junctions.

6.21.3 Along with the use of BEE, local junction models using standard LinSig and Junctions 9 (PICADY) software packages have been revisited and updated.

6.21.4 The on-line junctions were assessed and it was identified that all of the junctions would operate within capacity in the future year DS scenarios. Furthermore, an assessment was also undertaken to identify the impacts of the BEE proposals on off-line junctions. In total, four junctions across Birmingham City Centre and Birmingham Eastside were identified. Of these junctions, only Heath Mill Lane / Liverpool Street was identified to operate over capacity in one or more of the time periods modelled in both the DM and DS scenarios.

6.21.5 However, it is noted that with BEE (2026 DS), and the associated traffic signal improvements the junction operates better than in the DM scenario. This is not attributable to the BEE scheme

6.21.6 The junction is predicted to operate over capacity without the BEE scheme in place and therefore the proposed mitigation scheme provides betterment beyond the likely operation of the junction should the BEE scheme not come forward.

## **6.22 Impact on Bus Services**

- 6.22.1 Chapter 7 incorporates details of the VISSIM modelling carried out by MMA (Appendix C) to provide further understanding of the impact of the BEE scheme on bus services.
- 6.22.2 The Chapter concludes that the VISSIM modelling demonstrates that the BEE proposals will have only a small impact on journey times through the network. However, if the bus lanes were to be retained along High Street Deritend, this would result in severe congestion
- 6.22.3 Overall, the modelling demonstrates that the network will operate within capacity with the introduction of BEE and there will be minimal overall impact to buses.
- 6.22.4 (Heath Mill Lane / Liverpool Street operates over capacity without the BEE 9 as mentioned in Chapter 6 above). Only one bus service (97) uses this junction and therefore the impact of the BEE scheme on this bus service is likely to be positive.

## **6.23 Impact on Access and Servicing**

- 6.23.1 Chapter 14 has been update has been updated to consider the most recent collection of data to confirm existing conditions. The TA noted that further work was required to better understand the impacts on access and servicing.
- 6.23.2 The study undertaken provides a detailed analysis of the servicing and access requirements, which are examined in 8 sections of the route. The Chapter summarises that there are some access issues to be resolved during construction and operation.

## **6.24 Impact on Road Safety**

- 6.24.1 Chapter 15 revisits the accident study area, and uses updated accident data This assessment considers the formal personal injury collision record over the five year period 1January 2012 to 31 December 2016.
- 6.24.2 The Chapter draws a similar, conclusion to the TA in that, although there have been a number of collisions recorded on the BEE alignment and at nearby off-line junctions during the assessment period, the majority of these were caused by driver error and gross negligence.

- 6.24.3 Measures have been included within the scheme design to minimise the detrimental impact on road safety, such as re-location of signalised pedestrian crossings and signalisation of problem junctions to improve road safety.

## **6.25 UTC Summary and Conclusions**

- 6.25.1 Chapter 18, provides Chapter conclusions and UTA summary. The TA has been reviewed in detail to determine where changes have occurred. Where changes are identified the impacts of the proposed BEE scheme on these transportation aspects has been evaluated, and these are set out in the UTA Chapters.
- 6.25.2 The junction modelling results indicate all junctions along the proposed BEE alignment operate within capacity during all modelled scenarios. One junction Liverpool Street / Heath Mill Lane which is not located along the proposed BEE alignment is identified to operate over capacity in the do minimum scenario. The proposed BEE scheme is shown to dramatically improve the predicted operation of the junction; therefore, the impact of this scheme on this junction is positive.
- 6.25.3 Updates to injury collision data has been acquired for the most recently available 5 year period. Whilst there are changes to the specifics of the collision data analysis of the number, severity and classification indicates the findings remain unchanged from the TA.
- 6.25.4 Outputs from this model have informed the TA, TA Addendum, and Microsimulation modelling.

## **6.26 Conclusions**

- 6.26.1 The TA and UTA considered all highway users in the assessment, appraised the BEE impact on the planned tram route, together with a number of adjacent off-line junctions. and concluded that there was little detrimental from the BEE Scheme.
- 6.26.2 The TA and UTA have informed the Environmental Statement (ES) [BEE/A13/1 – 3] and Update to the ES [BEE/A13/5] are part of the Technical Appendices with each document. I am familiar with the update to the ES and the additional traffic modelling, and updated highway network changes have been used to inform the ES Addendum.
- 6.26.3 In so far as the The ES Update relates to traffic and transport, the report concludes (section 2.10) “that the embedded mitigation associated with the scheme design and proposed construction is sufficient to ensure that no adverse significant effects are

forecast in either 2026 or 2031”. The report identifies a total of thirteen links are forecast to experience beneficial significant effects as a result of the operation of BEE.

- 6.26.4 The ES Update identifies no links which are forecast to experience adverse temporary or permanent significant effects as a result of either the construction or operation of BEE.

## **7. STATEMENT OF MATTERS**

### **7.1 Overview**

7.1.1 In this section I will consider the following matters the Secretary of State for Transport particularly wishes to be informed for the purpose of his consideration for the application:

7.1.2 Matter 2 - The main alternative route options considered by Midland Metro (Birmingham Eastside Extension) Scheme (“the scheme”).

7.1.3 Matter 3 – The extent to which the proposals in the TWA Order are consistent with the:

- i. National transport policy.
- ii. Local transport policies.

7.1.4 Matter 4 – The likely impacts of construction and operating the scheme on landowners, tenants and local businesses, the public, utility providers and statutory undertakers including any adverse impact on their ability to carry on their business and undertaking.

7.1.5 Under Matter 4 I will consider:

- i. Matter 4(a) - the effects of construction and operation on the local road networks and bus services.
- ii. Matter 4(b) - the impact on business access and car parking.

### **7.2 Matter 2 The main alternative route options**

7.2.1 In responding to Matter 2, I will be relying on the findings of the Environmental Statement (BEE/A13/1), the ES Non-Technical Summary(BEE/A13/3) and Update to the Environmental Statement(BEE/A13/5).

#### **Background to alternative route options**

7.2.2 The Midland Metro is an extensive, electrically powered light-rail / tram connecting Wolverhampton city centre with Birmingham city centre. The existing Midland Metro links key areas and local centres along the route such as West Bromwich and Wednesbury.

7.2.3 Line 1 (Wolverhampton to Birmingham Snow Hill) was opened in 1999 and consisted of 20.1km of mainly reserved track, with a short on-street section in Wolverhampton.

There are 23 stops along this section of the network, including 3 with National Rail interchanges and 4 park & ride sites. At peak times, 8 trams departed Birmingham Snow Hill (Wolverhampton bound) per hour.

- 7.2.4 The Birmingham City Centre Extension (BCCE) recently saw the route extend from Snow Hill Station to New Street Station, with intermediate stops on Bull Street and Corporation Street. From 6 December 2015, services ran through Snow Hill to Bull Street (the first-time trams to have run in the city centre since they were withdrawn in 1954). The final part of the BCCE (Bull Street to New Street Station) opened on Monday 30 May 2016.

### **Future Network Expansion**

- 7.2.5 The provision of a Light Rail Transit (LRT) System is a core element of the Local Transport Plan for the West Midlands. BCC. TfWM have been and are currently developing various extensions to the existing Midland Metro Line 1. These are as follows:

- i. Centenary Square Extension (CSQ)
- ii. Edgbaston Extension (EDGE)
- iii. Wolverhampton City Centre Extension (WCCE)
- iv. Wednesbury to Brierley Hill Extension (WBHE)
- v. Birmingham to Eastside Extension (BEE)
- vi. East Birmingham Solihull Extension(EBSE).

- 7.2.6 The proposed route for BEE is shown in the Order Plans [BEE/A11]. BEE consists of a 1.7km twin track extension to the Midland Metro network forming a delta junction with the BCCE line at the junction between Corporation Street and Bull Street. BEE will provide a link to regeneration areas and transport hubs. The extension will consist of both segregated and shared use track, which is described in summary earlier in by proof in Section 4 THE SCHEME PROPOSALS, and in detail in the proof of Mr S Luke APP/P3.1.

### **Interface with HS2**

- 7.2.7 Birmingham's long-term future will benefit from HS2. Population increases and economic changes are expected to increase the demand for journeys between Birmingham and London. Upgrading existing infrastructure is currently providing the means to cope with increasing demand, but the proposed HS2 line will provide a significant capacity increase for passengers and freight within the UK, whilst

providing improved links to continental Europe. The proposed terminus station at Curzon Street in Birmingham will be one of the largest new stations built in Britain in the last 100 years, handling large numbers of passengers when it opens in 2026.

- 7.2.8 The BEE will link the terminus station with other central Birmingham stations connecting onward journeys to the wider rail network.
- 7.2.9 National, local, and economic benefits are predicted as a result of HS2, with forecasts of increasing jobs created as a result.. This is highlighted in the HS2 West Midlands Connectivity Package<sup>3</sup> TfWM – HS2 Unlocking the Benefits, West Midlands Connectivity Package [BEE/E15] which emphasises the importance of linking the HS2 Curzon Street Station with other modes of public transport.
- 7.2.10 Significant heavy rail investment in the Curzon area has triggered a “Curzon Street HS2 Masterplan” formally adopted by Birmingham City Council in August 2015 [BEE/E19] Curzon Street Station will act as a catalyst for regeneration in Birmingham Eastside, unlocking many regeneration sites. The Masterplan seeks to ensure the station is fully integrated into the urban fabric of the city centre, requiring high quality walking, cycling and public transport connections continuing into and throughout the city.
- 7.2.11 A key proposal of the Masterplan is therefore the Midland Metro extension through to Birmingham’s Eastside. The Curzon Masterplan finally sets out to provide around 14,000 (net) jobs and 2,000 homes. The economic advantages of rapid transit networks are well documented and, again, an integrated transport network consisting of the Midland Metro extension to Eastside will facilitate and encourage such development.
- 7.2.12 Further detailed evidence on the importance of linking HS2 to BEE can be found in the Proof of Evidence of Mr Stephen Luke of his proof APP/P3.1.

### **BEE Route Options**

- 7.2.13 The appraisal of the BEE route options was considered in two discreet phases. The first relates to the section between the Birmingham City Centre to HS2 at Curzon Street Station. There were seven options and two were taken to final consultation.
- 7.2.14 The second section from HS2 Curzon Street to Deritend was undertaken separately and two routes were assessed, Fazeley Street or the chosen Meriden Street /

Digbeth route. These were also consulted upon. The following section details the optioneering and consultation undertaken. Consultation report [BEE/E10].

7.2.15 Route selection considered 4 data sources:

### **Survey Information**

7.2.16 The development of the route options was undertaken with the use of the following:

- vii. Ordnance Survey Mapping.
- viii. Birmingham City Centre Interchange (BCCI), Proposed Layout
- ix. Flown Topographic Survey from 2005 (Limited to the areas west of Park Street. Curzon Street and Eastside areas are not included).
- x. Topographic information for the Eastside Park scheme from 2006 (including Curzon Street).
- xi. Utility search (plan only) based on utility company records.
- xii. Envirocheck Report.

7.2.17 At the time, the route option appraisal was undertaken no CAD information had been received from the HS2 project team for the HS2 station outline or highway layouts. HS2 features were assumed as indicative only.

7.2.18 No environmental or traffic surveys were undertaken as part of the assessment other than visual surveys during site walkovers.

### **Assumptions**

7.2.19 The following assumptions have been made during this appraisal:

7.2.20 It was assumed the BCCI will be in place prior to Metro Construction.

7.2.21 Options passing through the Martineau Galleries Phase 2 development will be designed and built at the same time the development and therefore no demolition of buildings in this area were considered.

7.2.22 It was assumed that the road closures proposed by HS2 / Eastside will be undertaken prior to / alongside the Metro construction and have not been considered as one of the possible impacts caused by the Metro.

### **Constraints**

7.2.23 There are a number of key constraints that were identified in the proposed route options. They are:

- i. HS2 site.
- ii. Listed Buildings on Carrs Lane and near the Eastside Terminus.
- iii. Thinktank Science Garden.
- iv. Hotel LaTour.
- v. Park Street Burial Grounds.
- vi. BCCE Alignment.

7.2.24 There are also various constraints connected with the HS2 station such as potential car parking facilities and access roads which have not been displayed on the constraints plan drawing as they were not available at the time of the route study.

7.2.25 The timing of the development of Martineau Galleries Phase 2 was considered as a constraint on a number of the options considered should the development not take place at the same time as the construction of this extension work.

### **Third Parties**

7.2.26 Initial discussions were held with the following third parties:

7.2.27 HS2 Project Team – Several working group meetings were attended where potential metro routes were shown and discussed.

7.2.28 Birmingham City Council – Members of Birmingham City Council attended the working group meetings with the HS2 team.

7.2.29 Hammersons – Developers of Martineau Galleries Phase 2. Centro (TfWM) held a meeting with Hammersons in which the potential of a Metro route through the development was discussed.

### **Birmingham City Centre to HS2 at Curzon Street Station**

7.2.30 Seven route options from Bull Street to the proposed HS2 station were assessed within report [BEE/A13/2] Environmental Statement Technical Appendix C, Appendix Three, HS2 Link Route Options Report (February 2014). These options can be summarised in the following table:

Table 2: 1.1.1 Route options for Birmingham Eastside Extension.

Option	Description
1	Option 1 would run from Bull Street to High St, Carrs Lane, Moor Street Queensway, Park St and Curzon St.
2	Option 2 would run along the southern edge of the Martineau Galleries re-development and on Albert Street. It would then follow Moor Street Queensway towards Curzon Street, similar to Option 1.
3	Option 3 would start at the Bull St/Corporation St junction and run through the Martineau Galleries Phase 2 re-development. It would then run on Moor Street Queensway before terminating at the Millennium Point within the Eastside Quarter.
4	Option 4 would start at Bull St and run through the northern part of the Martineau Galleries re-development. It would then follow Priory Queensway, Masshouse Lane and Park St before terminating at Millennium Point.
5	Option 5 would run in front of the Wesleyan Building. It would then turn towards Priory Queensway to follow the remainder of the route similar to Option 4.
6	Option 6 would start at New St/Corporation St, continuing along New St and High St before either joining Option 1 into Carrs Ln or continuing on to pass through the proposed Martineau Galleries Phase 2 re-develop't
7	Option 7 is comprised of an eastbound track along the line of Option 2 and a WB track along the line of Option 1.

- 7.2.31 Option 1 -As with all the options, Option 1 accommodates trams travelling in both directions in and out of the Eastside area. The track begins from the Bull Street/Corporation Street junction, travels along lower Bull Street, High Street and along Carrs Lane. It then turns onto Moor Street Queensway and enters the HS2/Eastside area. The track then continues alongside the Eastside Promenade and terminates at the proposed Eastside Terminus site between the Thinktank Science Garden/Eastside Park and Curzon Street.
- 7.2.32 The alignment along High Street and Carrs Lane requires the demolition of one building, at the time occupied by a Dorothy Perkins shop at ground level.
- 7.2.33 Option 2. Option 2 begins at the Bull Street/Corporation Street junction at which point it pulls away from the Bull Street highway and runs along the southern edge of the Martineau Galleries Phase 2 development. Two buildings on Dale End were considered as required for demolition being demolished (McDonalds and Bet Fred) although these do form part of the proposed Martineau Galleries Phase 2 development.
- 7.2.34 Once past these buildings the route continues to the rear of these buildings onto Albert Street until it reaches Moor Street Queensway. The route crosses Moor Street Queensway at an existing signalised junction.
- 7.2.35 The proposed track alignment is would to be shared with traffic along Albert Street and as it crosses Moor Street Queensway but generally segregated from traffic elsewhere, except where crossing the existing carriageway at Dale End, which was assumed to be removed as part of Martineau Galleries Phase 2.

- 7.2.36 Option 3. The route begins at the Bull Street / Corporation Street junction and immediately diverts through the centre of the proposed Martineau Galleries Phase 2 development. It would exit the development at its own junction near Albert Street and crosses Moor Street Queensway at a similar point to Option 2. Once across Moor Street Queensway the stop arrangement and terminus are as Options 1 and 2.
- 7.2.37 A separate traffic junction alongside the Metro junction was considered at Albert Street tying into the existing highway layout. Assumptions were made about the Martineau Galleries Development proposals, and based on plans which indicated the entrances to the proposed Martineau Galleries Phase 2 development being from Dale End to the north and Albert Street to the east. At the time of the route assessment these entrances are shown as leading to what was considered to be an underground car park / servicing area. The route was assumed to be segregated through the new development. As this Option 3 had a major impact on any development proposals for Martineau Galleries Phase 2 it was considered that it could only be developed further if done so in conjunction with the proposed development with particular consideration needed to access requirements and pedestrian movements.
- 7.2.38 During initial meetings with Hammersons, the site's developer, they indicated that a stop located within the development would be desirable. If Option 3 was to be progressed, then consideration would have needed to be given to the distance between stops and the added effect on runtime to the HS2 / Eastside stop locations.
- 7.2.39 Option 4 The route begins at the Bull Street/Corporation Street junction and turns north alongside Corporation Street through the proposed Martineau Galleries Phase 2 development before joining onto The Priory Queensway at a new traffic signal junction. The route passes across The Priory Queensway Bridge that runs over Dale End. From The Priory Queensway the route continues through the junction with Moor Street Queensway which would need to have significant changes made to it. From here it enters Masshouse Lane, at which point the tracks would leave the highway at a further signal controlled junction and then split in order to serve both the stop near the HS2 western entrance and the Eastside Terminus. The two stops would need to be connected by an additional track, creating a delta junction.
- 7.2.40 At the time of the route study topographic survey data was not available for the recent Hotel LaTour development alongside the Moor Street Queensway / Masshouse Lane junction. The effect of the required radii around the hotel was not

definitively known. It was assumed likely that the alignment may affect the hotel, or at least leave a narrow footpath around it in this location. The curve around the hotel also pushed any stop very close to the HS2 station building. The track running through the Martineau Galleries Phase 2 development would be segregated before becoming shared with buses and taxis along Priory Queensway until the junction with Moor Street Queensway at which point the Eastbound track becomes segregated.

- 7.2.41 The westbound track at this point would be shared with all traffic travelling on the currently one-way section of highway along Masshouse Lane. Both Lanes are then segregated upon leaving the highway and entering Eastside. The route would run through the western part of Martineau Galleries phase 2 which would create a problem in laying out the delta arrangement at the Bull Street / Corporation Street junction.
- 7.2.42 An alternative option considered in this area was to run along Corporation Street which would help compact the delta junction in the area but would require the removal of the existing building, comprising the Square Peg public house and courts, on the northern side of the junction. The Metro would then have to pass through Old Square and would lead to a major remodelling of this junction to provide a safe route for the Metro and traffic.
- 7.2.43 Option 5. This route relocates the delta junction with the BCCE to Colmore Circus Queensway and runs on a segregated track through the Wesleyan Square. Although no buildings are affected, regrading of the pedestrian area would be required as there are several different levels in the square at present. The route then re-joins Colmore Circus on the eastern side of the square in a segregated lane before continuing through Old Square and onto Priory Queensway where it replicates Option 4 through to Eastside.
- 7.2.44 Option 6. This route relocates the delta junction with the BCCE to the New Street / Corporation Street junction. The route would then continue along New Street and High Street before either joining Option 1 into Carrs Lane or continuing on to pass through the proposed Martineau Galleries Phase 2 development. Initial development of this option indicated that in order to make the delta junction work, buildings would be required from both the northern and southern side of New Street / Corporation Street and would also affect the Pallasades ramp. It would also require realignment

of the BCCE in the area producing an undesirable alignment of tight curvature through the junction.

- 7.2.45 Level and gradient differences between the north and south sides of the junction would also lead to the BCCE being raised by approximately 1m through the junction. This would require regrading of a long length of the BCCE, having further adverse effects on properties along Corporation Street. Initial discussions with Birmingham City Council indicated that any option along New Street would not be desirable due to its impact on local events such as the Christmas Market.
- 7.2.46 Due to the obvious engineering and alignment issues with this option, coupled with the extensive building modification and impact on local events, this option was not progressed further and was not included in the appraisal process.
- 7.2.47 Option 7. The eastbound track of Option 7 essentially follows the path of Option 2, travelling from the Bull Street / Corporation Street junction in a segregated lane around the southern side of the Martineau Galleries Phase 2 development, across Moor Street Queensway and into Eastside. The westbound track then follows a similar line to Option 1, turning south along Moor Street Queensway upon leaving Eastside and travelling along Carrs Lane with buses and into High Street and Bull Street before re-joining the line of the BCCE. The alignment through Carrs Lane was developed to avoid the demolition of the building on the corner of Carrs Lane / High Street (previously Dorothy Perkins). This has the effect of pushing the Metro to the southern side of Carrs Lane. An alternative considered was to remove the building (as in Option 1), moving the Metro alignment to the northern side of Carrs Lane, retaining more space to the south for buses which use this route.

### **Appraisal of Options**

- 7.2.48 The aim of the appraisal was to reduce the number of options considered from the seven described above down to two. The final two options would then be developed further and appraised more thoroughly as well as being put through a public consultation process before deciding on a final preferred option.
- 7.2.49 Each of the seven options was evaluated against the following eight categories:
- i. Environment
  - ii. Deliverability
  - iii. Safety
  - iv. Accessibility

- v. Integration
- vi. Engineering
- vii. Operations.
- viii. Sustainability

7.2.50 Each of these categories was then split into a series of sub-categories, broadly based on the WebTAG appraisal system, with additional categories included where required for tram specific schemes. Each of the options were assessed against these sub-categories and given a rating of:

- i. Major Positive
- ii. Minor Positive
- iii. Neutral
- iv. Minor Negative
- v. Major Negative

7.2.51 Some categories have been shown as “NA” as they were not appropriate at this stage of the options development. However, they would be appropriate at a later date if the option is one of the preferred options taken forward for further development. The full appraisal summary tables are included Appendix H of the options report.

### **Appraisal Conclusion**

7.2.52 Option 1 has mainly neutral impacts, although it does have two major negatives and ten minor negatives. Although feasible, it was not considered a desirable option due to the main negative being the expected impact on the bus network along Moor Street Queensway.

7.2.53 Option 2 had no major negatives and shows mainly neutral impacts, along with 3 minor negative and five positive scores, two of them major. The main positive aspects include having a fairly direct route and good runtime with low impacts on the existing transport networks.

7.2.54 Option 3 From the evaluation it is considered that Option 3 provides the best solution, scoring the highest number of major positives, with five, and only a single minor negative score. This option provides the most direct route with the lowest runtime. The assumption was that the option would be developed alongside the Martineau Galleries Phase 2 scheme provides many of the routes positive aspects, helping to limit impacts on existing public transport networks and should allow the

route to be designed with neighbouring buildings, urban realm, and pedestrian requirements in mind. However due to the developers of Martineau Galleries Phase 2 indicating that no land would be provided for the tram route and the risk that the development will not be progressed within the same timescales as the Metro it was recommended that the option is not taken forward.

- 7.2.55 Options 4 and 5 were assessed as having four major negative impacts, the highest of all of the options evaluated. They also had some of the highest minor negative scores and the fewest positive. These options also come out as the most expensive options other than Option 7, where the split track increases the costs. The biggest negatives attached to the two options relate to engineering issues and operation of the tramway.
- 7.2.56 The delta arrangement within Eastside Promenade was expected to lead to large complications in level through the area and could lead to complicated timetabling or delays whilst Metro vehicles negotiate the various crossings in the area. Checks were needed to be made as to whether the horizontal alignment was even feasible past Hotel LaTour, without impacting on the building itself. The environment created by the delta junction would also lead to the worst integration around HS2 of all the options. Although it would be possible to locate a stop close to the main entrance of HS2, the track would need to run alongside the building, limiting use of the frontage and impinging on the required maintenance zone as requested by HS2.
- 7.2.57 The connections to the BCCE of Options 4 and 5 were also the least acceptable of all options. Option 4 would require impacting existing buildings in Martineau Galleries Phase 1 or require removal of the Square Peg public house / courts building.
- 7.2.58 Option 7 was not recommended for further development as it essentially combines all the main negative aspects of Option 1 (demolition, increased westbound runtimes, impact on Moor Street Queensway and the bus network, potential impact on Moor Street rail tunnel) with few additional benefits when compared to either Option 1 or 2, other than reducing the impact on Carrs Lane when compared with Option 1. Additionally, the potential for a stop on Moor Street Queensway directly in front of the HS2 Station building is lessened as only a Westbound stop would be possible.

### **Recommendations**

- 7.2.59 It was recommended that Option 1 and 2 be developed further and taken through to the next stage of appraisal. During the next stage of appraisal, further detailed

design and appraisal work was undertaken of the two preferred routes in October 2014.

### **Phase 2 Appraisal**

- 7.2.60 Following completion of the appraisal process to down-select from seven to two Route Options, further work was undertaken to review the two preferred options
- 7.2.61 Option 1 and 2, were assessed with respect to environmental, deliverability, safety, accessibility, integration, engineering operations and sustainability issues.
- 7.2.62 This work recommended that Option 2 be taken forward to the next design stage. Option 2 was viewed as favourable in terms of lower costs, faster journey times, less potential for delays and fewer impacts upon the local highway and bus network.

### **Summary and Recommendations**

- 7.2.63 The result of the further option appraisal was heavily weighted towards option 2.
- 7.2.64 As option 2 takes a more direct route through New Meeting Street and option 1 navigates Carrs Lane and Moor Street Queensway, it was viewed that option 2 was more desirable due to its straighter route geometry, shorter length and the route of Option 1 producing more issues for existing public transport.
- 7.2.65 The presence of the railway tunnel underneath the Moor Street and Carrs Lane junction has the potential to create further issues to Option 1. At the time the appraisal was undertaken anecdotal evidence suggested the crown of the tunnel could be only 1.2m below existing ground levels. If strengthening was required to the tunnel then this could have had a major impact on cost and programme, and create a large amount of disruption on Moor Street Queensway. It is also considered possible that retaining structures would be required around this junction to allow a suitable Metro alignment to be used.
- 7.2.66 The results of the work recommended that Option 2 be taken forward to the next design stage. Option 2 is viewed as favourable in terms of lower costs, faster journey times, less potential for delays and fewer impacts upon the local highway and bus network.

### **High Street Deritend Route**

- 7.2.67 Two Options were selected for further consideration (HS2 Curzon Street to Deritend). Which are described below.

- 7.2.68 The Fazeley Street Route would run along Fazeley Street from the junction with New Canal Street. It would continue onto Liverpool Street, where a tram stop would be located close to the junction with Great Barr Street and Heath Mill Lane. The route would turn east into Adderley Street where it would terminate.
- 7.2.69 The High Street Deritend Route would run southwards along New Canal Street before running onto Meriden Street and turning left onto High Street Deritend. The route would operate along the centre of High Street Deritend, with a tram stop located close to the junction with Milk Street serving Digbeth Coach Station and the Custard Factory. The route would continue into Adderley Street where it would terminate.
- 7.2.70 The two route options were taken to public consultation between 10 and 31 October 2014. The High Street Deritend Route was eventually taken forward as it was strongly preferred by the public at consultation and provided connections to existing infrastructure such as the Coach Station and Custard Factory.
- 7.2.71 Following consultation and confirmation of the BEE route, the BEE alignment was shortened to terminate on High Street Deritend in order to avoid abortive works. The rationale for this being that the BEE would require a terminus facility tram stop at Adderley Street. However, this will not be required when the route is extended further towards Birmingham Airport as it would become a 'through' tram stop. In order to provide this short term terminus facility additional land acquisition would be required (and involve building demolition), to allow for tram movements without blocking general traffic for a stationary tram. Additional land acquisition and building for a short-term measure was considered to be unjustifiable.
- 7.2.72 The final route alignment from Corporation Street to High Street Deritend is shown in [BEE/A11].

### **Summary and conclusion**

- 7.2.73 It is my opinion that a thorough process of option development, appraisal and consultation was undertaken to settle on the preferred route for BEE.

### 7.3 Matter 3

- 7.3.1 The extent to which the proposals in the TWA Order are consistent with National and local transport policy

#### **Transport Policies**

- 7.3.2 The broad policy context is set out in the proof of evidence of Mr Paul Ellingham (APP/P6.1)
- 7.3.3 The national agenda for transport is focused upon the twin objectives of supporting economic development and reducing carbon emissions. Associated with these is improving social inclusion through the provision of wider social and economic benefits. The national planning policy context has been shaped in recent years through the National Planning Policy Framework (NPPF) 2012 [BEE/E1], and National Planning Practice Guidance 2014 [BEE/E2/2-4]. These and further planning and policy guidance documents relevant to BEE are discussed below.

#### **European Transport Policies**

- 7.3.4 The European Commission Transport White Paper 2011: Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system (March 2011) [BEE/E13] sets out a vision for the future of the EU transport system and defines a policy agenda for the coming decade. The White Paper recognises that transport is fundamental in economic and social terms. In the urban context, the White Paper encourages a mixed strategy approach involving land use planning, pricing schemes, efficient public transport services and infrastructure for non-motorised modes (as provided by the BEE) and charging/refuelling of clean vehicles to reduce congestion and emissions. The expansion of the Midland Metro network is part of a wider strategy for improving connectivity across the West Midlands and one of the key objectives of the BEE is to maximise the transport benefits that arise from HS2 in Birmingham City Centre. In particular, the BEE will bring about connectivity and interchange between high speed services, heavy rail services and the light rail network. In doing so the Scheme achieves the aspirations of the White Paper by aligning a non-motorised efficient mode of transport to the wider regeneration objectives set out in the various land use and development plan documents at a local level.

#### **National Transport Policies**

### 7.3.5 Transport White Paper

7.3.6 The Transport White Paper, *Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen* [BEE/E10] was published in January 2011. It seeks to create growth in the economy whilst also tackling climate change by cutting carbon emissions, thus contributing towards the achievement of these two key Central Government objectives. As such, the White Paper includes the vision for ‘a safer transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities’.

7.3.7 Midland Metro delivers high quality and capacity public transport connectivity, helping modal shift from private vehicles, reducing carbon emissions, producing no pollutants at the point of use and enables people to improve their health and wellbeing through increased walking to conveniently located tram stops. A key part of the BEE will be to ensure safe and frequent services as part of the light rail network expansion and a number of measures will be implemented to deliver these objectives through the detailed design process.

### **West Midlands Transport Policies**

7.3.8 West Midlands Strategic Transport Plan: *Movement for Growth*, West Midlands Combined Authority, June 2016.

7.3.9 The Strategic Transport Plan [BEE/E14] sets out a vision and strategy for the development of the West Midlands transport system. It outlines five key challenges that the West Midlands faces:

- i. Support economic and population growth by linking ‘jobs and people’ and ‘products and markets’;
- ii. Meet the challenges of capacity and congestion greater demand for movement brings;
- iii. Reduce the environmental impacts from transport;
- iv. Improve people’s health through the encouragement of more active lifestyles; and
- v. Raise the standard of living by improving access to leisure and essential services.

7.3.10 Tackling these challenges lead to three key aims of the Strategy:

- i. Improving national and regional links to boost the West Midlands’ economy;

- ii. Improving links across the Metropolitan Area to provide better access to jobs, leisure, and services; and
- iii. Improving links within local communities to reduce the reliance for short distance trips.

- 7.3.11 The Strategy stresses the importance of investment in both infrastructure, technology and behaviour change for achieving its objectives at both the national, metropolitan, and local level. The Strategy is to develop a high-quality metropolitan public transport network, allowing residents and workers to travel across the conurbation in a space efficient, environmentally friendly way. Midland Metro is recognised as a key aspect of an integrated rapid transit network, and future expansion is outlined as part of a long-term metropolitan rail and rapid transit network. Future expansion along the City Centre – East Birmingham – Birmingham International/NEC axis is supported as part of the region’s long-term transport vision. BEE is an integral part of this extension to the network.
- 7.3.12 Towards a World Class Integrated Transport Network: Supporting Growth and Regeneration in the West Midlands, April 2013
- 7.3.13 The WMCA has produced a long-term vision document for public transport ‘Towards a World Class Integrated Transport Network’, [BEE/E11] which updates the previous ‘Integrated Public Transport Prospectus’ [BEE/E18]. This document was updated in 2013 to include a wider narrative on the critical roles of highways, freight, cycling, walking and land use planning to enable promotion of a truly integrated transport system, with an increased emphasis on transport infrastructure boosting economic activity.
- 7.3.14 The aim of the prospectus is, “a prosperous, healthy, inclusive and sustainable West Midlands, served by a world class transport network. Such a network will be customer focused, offer excellent local connectivity and easy access across the West Midlands, so that people can reach jobs, skills and the range of services and leisure opportunities they demand for a high quality of life.”
- 7.3.15 With the extended economic geography of the West Midlands travel to work area, there needs to be a more extensive, high capacity, fast, rail and rapid transit network serving the centres and major employment zones together with the main growth centres and regeneration areas. This needs to be complemented by an effective and efficient high capacity local bus network.

- 7.3.16 The BEE scheme contributes to this by providing greater rapid transit penetration between modes in Birmingham City Centre improving connections and integration between Metro, bus, and rail networks.
- 7.3.17 West Midlands Local Transport Plan (2011-2026): Making the Connections, 2011(WMLTP)
- 7.3.18 The West Midlands Strategic Transport Plan [BEE/E14] replaces the WMLTP [BEE/E10] as the strategic transport planning document for the West Midlands Metropolitan Area. However, to show consistency with the policy background against which the BEE was developed it is still of value to consider supporting points made in the WMLTP.
- 7.3.19 WMLTP [BEE/E10] focuses on providing sustainable travel and transport choices with improved connectivity within and between centres. When adopted it became the statutory transport plan for the West Midlands. The enabling role of the transport network is identified as supporting economic growth and regeneration in the West Midlands, and is consistent with national policy. The identified role that transport can play includes improving accessibility and connectivity, and supporting a better quality of life, as captured in the five objectives below:
- i. Underpinning private sector-led economic growth and regeneration.
  - ii. Tackling climate change.
  - iii. Improving public health and safety.
  - iv. Tackling deprivation and worklessness.
  - v. Enhancing well-being and quality of life.
- 7.3.20 These objectives form the foundation of the WMLTP policies, which are designed as a route to achieving these objectives. The key policies are summarised below:
- i. Enable regeneration and thriving centres, corridors, and gateways.
  - ii. Encourage modal transfer and create sustainable travel patterns.
  - iii. Use the rail and rapid transit network as the 'backbone for development'.
  - iv. Improve local accessibility and connectivity.
  - v. Integrate transport effectively and reliably.
  - vi. Improve the environment and reduce carbon emissions.
- 7.3.21 In addition to these region-wide objectives and policies, the WMLTP also identifies the main challenges at a sub-regional level. With specific reference to Birmingham

and Urban Solihull, and the Eastside Extension, the following key challenges are identified:

- i. Maximising the benefits of HS2.
- ii. Improving the accessibility and connectivity of the re-developed New Street station.
- iii. Need for Midland Metro extensions to serve high volume corridors.
- iv. Need to promote more sustainable transport modes.

7.3.22 In so far as the above transportation plans and strategies and with reference to the Evidence given by Mr Adams(APP/P1.1) and Mr Ellingham(APP/P6.1) I believe the Order is in accordance with these in all respects.

#### **7.4 Matter 4**

7.4.1 The likely impacts of construction and operating the scheme on landowners, tenants and local businesses, THE PUBLIC, utility providers and statutory undertakers including any adverse impact on their ability to carry on their business and undertaking.

7.4.2 In this section of my evidence I will consider the transport issues relating to

- i. Matter 4(a) - the effects of construction and operation on the local road networks and bus services.
- ii. Matter 4(b) - the impact on business access and car parking.

7.4.3 Work carried out as part of the TA [BEE/A13/1] and UTA [BEE/A13/4] has considered the effects on transport users, and this is detailed in Section 6 of my proof. Detailed construction impact appraisal has been undertaken by Mr Stephen Luke (APP/P3.1).

7.4.4 The following table references where the effects of construction and operation on local roads and bus services have considered.

	<b>Construction</b>	<b>Operation</b>
<b>4 (a) Local Roads</b>		
General traffic	Section 7 of Proof APP/P3.1	TA/UTA Chapter 6
Light Rail		TA Chapter 8
Coaches		TA Chapter 10
Cycling and Walking		TA Chapter 11
<b>4 (a) Bus Services</b>		TA/UTA Chapter 7
<b>4 (b) Parking and Access</b>	Section 7 of Proof APP/P3.1	TA/UTA Chapter 14, including Appendix F

## **7.5 Construction Impacts**

### **Local Roads**

- 7.5.1 Continual access to parts of Birmingham city centre and Digbeth will be required at all times during the construction of the BEE. Temporarily, the construction of the BEE is likely to affect the movement of traffic and as construction proceeds it may have an effect on property access.
- 7.5.2 A draft code of construction practice (CoCP) [BEE/A13/2] will set the minimum standards for construction activity and will include a Construction Traffic Management Plan
- 7.5.3 The construction impacts of the BEE have not been appraised as part of the Transport assessment, due to the transient nature of the works.
- 7.5.4 Construction operation is covered in Section 6 of the proof of Mr Stephen Luke (APP/P3.1). Areas considered in the Proof of Evidence are:
- xiii. Development of a Construction Strategy Report.
  - xiv. Utility Diversions.
  - xv. Construction Areas.
  - xvi. Site Compounds.

- xvii. Traffic Management.
- xviii. Sequence of operations.
- xix. Specific Construction considerations.

- 7.5.5 As with the development of previous sections of Midland Metro, it will be essential to develop a robust construction traffic management plan to minimise the effect of the construction of BEE on traffic, people, and day to day business in the City. This will be a requirement of the Construction Strategy Report.
- 7.5.6 Construction works will need to be undertaken in phases. As far as is practicable, impact on traffic movements, loading and access will be maintained. Based on past experience of developing the Midland Metro network, it has been assumed that no section of works will last longer than 4months.
- 7.5.7 Appropriate arrangements will be required to facilitate vehicular and pedestrian access to allow the general life of the area to operate. Such challenges have been successfully tackled during the implementation and construction of the BCCE. The contractor appointed to construct the scheme will bring knowledge and expertise in their management.
- 7.5.8 The scale of the project will require extensive detailed planning in conjunction with the Highway Authority and organisations such as Emergency Services, public transport operators, cyclists, people with disabilities and local businesses.
- 7.5.9 Extensive planning and liaison will be required between the contractor, TfWM and BCC. It will be necessary to continue the planning exercise, and revise plans throughout the construction of the works in order to minimise disruption.

#### **Parking and Access.**

- 7.5.10 Given the mobile nature of works it has been assumed that access during construction will be maintained to premises. Section 7.7 of Mr Luke's proof (APP/P3.1) considers the main construction impacts on access.

#### **Buses**

- 7.5.11 During certain construction activity there may be some delay to bus. These impacts will be temporary.
- 7.5.12 A detailed assessment has been undertaken of the impact of the BEE route on access to businesses and parking. This has been carefully considered for

operational impacts. In addition, the Draft Construction Strategy [BEE/A12/2] Environmental Statement Technical Appendix D1.

- 7.5.13 As noted above construction activity will be managed to control the temporary effects of construction activity.

## **7.6 Operational Impact**

- 7.6.1 Below I have summarised the operational impacts.

### **Local Road Network**

- 7.6.2 Impact on local roads is covered in detail in both the TA and UTA. In addition to the TA and subsequent update, modelling work has also been undertaken using the updated the Birmingham City Centre Strategic Highway Model, together with Microsimulation, and local junction modelling. Of the junctions assessed, and modelling work undertaken, only one of the modelled junctions (Heath Mill Lane/Liverpool Street) is expected to operate over capacity in the Do Something scenario, however this is an improvement on the Do Minimum (DM) scenario.

### **Parking and Access**

- 7.6.3 The impact on parking provision as a result of the BEE scheme is minimal. In route Sections 2 and 3 there is no designated on-street parking and, therefore, no on-street provision will be removed or displaced.
- 7.6.4 There are several off-street pay-and-display and private car parks along the BEE route, as well as other streets with on street parking within the Digbeth area, both to the east and west of New Canal Street and Meriden Street, and access to these will remain as existing. Three car parks identified are to be removed as part of the overall development of the area to the east of Moor Street Queensway (including the BEE and HS2). These three car parks will be removed due to the HS2 construction works.
- 7.6.5 The impact on parking provision as a result of the BEE scheme is minimal, with existing parking bays being retained or relocated where possible. Current parking facilities at New Meeting Street and Albert Street will be affected but displaced parking bays will be relocated where necessary to alternative locations.

### **Buses**

- 7.6.6 Detailed microsimulation modelling work was undertaken (summarised in Appendix 1) which addressed potential areas of concern about bus operations and impact on

journey times. the appraisal of the impact on buses, identified minimal impact on bus operations.

### **Existing Light Rail**

- 7.6.7 Extending the tram along the proposed BEE route will increase public transport access from the Eastside area into the existing employment, leisure, and transport hubs. This in turn has the potential to attract investment, people, and businesses into the Eastside area; physically, socially, and economically improving the area. Coupled with the HS2 development, and further extensions of the Metro line, this extension has the potential to transform Birmingham's Eastside.
- 7.6.8 During operation, there will not be an increase in trams operating on other parts of the tram network following the introduction of BEE.

### **Car Parking**

- 7.6.9 The impact on parking provision as a result of the BEE scheme is minimal. In route Sections 2 and 3 there is no designated on-street parking and, therefore, no on-street provision will be removed or displaced.
- 7.6.10 There are several off-street pay-and-display and private car parks along the BEE route, as well as other streets with on street parking within the Digbeth area, both to the east and west of New Canal Street and Meriden Street, and access to these will remain as existing. Three car parks identified are to be removed as part of the overall development of the area to the east of Moor Street Queensway (including the BEE and HS2). These three car parks will be removed due to the HS2 construction works that are planned to commence in 2017. Therefore, this is not considered to represent a material impact as part of the BEE proposals.
- 7.6.11 The impact on parking provision as a result of the BEE scheme is minimal, with existing parking bays being retained or relocated where possible. Current parking facilities at New Meeting Street and Albert Street will be affected but displaced parking bays will be relocated where necessary to alternative locations. (this needs to be details as to where the relocations is, and any disabled parking impacts).

### **Access and Servicing**

- 7.6.12 As part of the UTA, a study was undertaken on off-street and on-street servicing requirements for premises on the BEE route. This report can be found appended to the UTA[BEE/A13/4] Appendix D. The study concluded that some work was still

required to support specific servicing requirements. However, there are solutions that can be delivered through the BEE Scheme.

## 8. RESPONSE TO OBJECTORS

### 8.1 Phoenix CSR Ltd [OBJ/03 MD]

8.1.1 Phoenix Cars is a primarily a car dismantling business. The objection raised by Phoenix CSR Ltd relates to the business operator not being able to conduct their business as a result of BEE passing their premises on Canal Street. There are two issues raised in the objection:

- xx. Use of the highway New Canal Street.
- xxi. Access to premises.

8.1.2 The first point concerns Phoenix CSR parking scrap cars on New Canal Street, and carrying out dismantling operations on the adopted highway. This is an activity would be considered to be an obstruction of the highway and, is a matter to be dealt with by Birmingham City Council as the Highway Authority.

8.1.3 The second point relates to premises access requirements. A detailed access study has been under taken and which can be found in [BEE/A13/4] Appendix D of the UTA (The conclusion being that Phoenix CSR access will not be unduly restricted by BEE tram operations.

8.1.4 In summary, Phoenix CSR should not be undertaking vehicle dismantling in on the highway, and their off-street access will not be unduly restricted by the BEE tram.

### 8.2 Hotel LaTour [OBJ/12]

8.2.1 Hotel LaTour (HLT) raises a number of objection points in their Statement of Case (SoC). Under the BACKGROUND TO THE OBJECTION the following points relating to transport and access are raised:

- i. 12(v) – *“HLT have objected to the bus shelters [the two existing stops on Moor Street Queensway frontage]. Some of the concerns relate to the potential of these bus shelters to give rise to anti-social behaviour. They would also give rise to unpleasant views for diners at HLT’s restaurant. To date, no response to these issues (including potential mitigation strategies) has been provided by TfWM Bus Team”.*
- ii. 12(vi) – *“HLT will seemingly lose parking spaces. At present, it does not seem that HLT has any certainty as to whether any alternative parking spaces will be provided. Indeed, whilst it has been suggested that the land owned by Quintain could be used by HLT, this option would be lost if Quintain*

*developed their land. Despite this being raised within the December 2016 meeting, no substantive response has been forthcoming”.*

### **Response to 12(v)**

- 8.2.2 There are two main point of concern from HLT appears to be:
- iii. Antisocial behaviour in the bus shelters.
  - iv. Unpleasant views to diners in HLT restaurant.
- 8.2.3 Matter 1. The 2 bus stops on Moor Street Queensway were originally installed as alighting stops only, and this was the case when HLT opened for business. Subsequent to this, the stops have been upgraded to alighting and boarding stops, and have been upgraded with the provision of high quality bus shelters.
- 8.2.4 HLT were aware of the existing alighting stops on Moor Street Queensway. Indeed, the Transport Statement accompanying the HLT planning application (Appendix 3) (see 12(vi) below) states “The site has excellent links to public transport, adjoining Moor Street Queensway which facilitates the main bus corridor through Birmingham City Centre with bus only travel on the western side”. So presumably the location of the stop is not in question, it is therefore a matter of the provision of shelters and the use of the stops for boarding.
- 8.2.5 Shelters - Bus stops and stands within a defined area of Birmingham City Centre (including Moor Street Queensway) are covered by an SQPS [BEE/E31]. I have set out in Section 3 the important role the SQPS plays including providing sufficient bus shelter capacity in the city.
- 8.2.6 Key objectives of the SQPS are:
- v. To ensure that facilities are provided to enable commercial operators to provide local bus services into the City without affecting commercial competition within the market.
  - vi. To ensure that bus is part of a fully integrated public transport network, and that public transport is attractive as possible and reduces the reliance on car trips.
  - vii. To provide and manage bus stop capacity.
- 8.2.7 The bus shelters provided on Moor Street Queensway in front of HLT are of the highest quality in Birmingham, costing in excess of £30,000 each. The bus shelters were specifically chosen for this location, and are set back from the HLT building

frontage, towards the kerb edge. For example, the shelters do not have a traditional seat, they have a perch, which is proven to reduce antisocial activity. The stops are also part of a maintenance schedule.

8.2.8 This means the shelters are inspected twice per day by a drive-by cleaning crew. In addition, TfWM operate a 'fixit' service where issues with bus stops can be reported. The service is highly responsive. For example, offensive graffiti will be removed within 2 hours of being reported.

- viii. The maintenance regime includes
- ix. Shelter cleaning
- x. Shelter roof cleaning
- xi. Offensive graffiti
- xii. Graffiti
- xiii. Body spills
- xiv. Smashed glass and tape off
- xv. Callout to safety critical damage
- xvi. Replacement of glazing
- xvii. Lights not working

8.2.9 In terms of response times for non-urgent issues in the City Centre reported during normal working hours will be attended to by the cleaner within 1 working days as he is a dedicated centre cleaner.

8.2.10 Response time to emergency call outs, offensive graffiti, and body spills averages to under 1 hour. And any glass breakages are generally cleared and glazing frame taped off within 4 hours and replaced within 1 working day.

#### **Unpleasant views to diners**

8.2.11 HLT is set in an urban environment in a busy city centre. In such locations bus facilities are part of the normal street fabric.

### **Summary and conclusion**

8.2.12 The bus stops and shelters on Moor Street Queensway are high quality and well maintained. Incidents of vandalism, graffiti etc are quickly dealt with., Moor Street Queensway is a typical urban street environment.

### **Response to 12(vi)**

8.2.13 With regards to the first point it is worth reviewing the planning consent process for Hotel LaTour. Outline planning permission was granted in April 2008 2008/00460/PA (Formerly C/00460/08/FUL) (Appendix 2) for the City Park Gate development, which comprised of a number of development plots. This application was accompanied by a Transport Assessment (TA) which assessed the transport implications of the City Park Gate outline masterplan proposals.

8.2.14 A further Full planning application was submitted and approved in July 2009 for a proposed hotel development on Plot 4 (2009/02984/PA).(Appendix 2) This was not HLT.

8.2.15 The plans were subsequently revised for the Hotel LaTour proposal and a new Full planning application (2010/02883/PA) (Appendix 2) was submitted, and approved in 2010. This application was supported by a Transport Statement (TS) (Appendix 3) which supported the proposals (CITY PARK GATE, BIRMINGHAM - PLOT 4 – HOTEL LATOUR” dated May 2010 and produced by TPI The Transport Consultancy).

8.2.16 The TS was a supplementary document to the City Park Gate TA. The TS specifically consider the Hotel LaTour (Plot 4) proposals and considered:

- i. the consented development;
- ii. the current transport situation;
- iii. sustainability;
- iv. parking;
- v. the impact of development;
- vi. servicing

8.2.17 With regards to the requirements for car parking provision, the outline planning permission for City Park Gate provided a total of 881 carparking on-site, including residential parking.

- 8.2.18 With this consent Plot 4 (Hotel LaTour site) was to provide 187 car parking spaces to serve the then allocated residential units and a possible hotel. Of the 187 spaces, 25 were allocated for a hotel use.
- 8.2.19 The 2010 Planning Application submitted for Hotel LaTour included no provision for parking.
- 8.2.20 The TS, (paragraph 2.7) states “This omission of car parking spaces is deemed appropriate given the sustainable location of the site adjoining alternative forms of transport provision such as the Moor Street Queensway bus mall and Moor Street Railway Station and being within easy walking distance of the core city centre”.
- 8.2.21 Furthermore, at paragraph 3.4 the TS expands on the highly sustainable location of Hotel LaTour, “The site has excellent links to public transport, adjoining Moor Street Queensway which facilitates the main bus corridor through Birmingham City Centre with bus only travel on the western side.
- 8.2.22 Currently around 26 bus services use the route and access all areas of Birmingham and further afield. In addition, Moor Street Railway Station is adjacent to the site which also gives access to local and national destinations. The site also has excellent pedestrian and cycle links”.
- 8.2.23 In Summary, the 2010 Planning Application for Hotel LaTour was submitted with no parking provision. The Transport Statement (Appendix 3) that accompanied the Planning Application set out that given that the accessible location of the hotel, that no car parking was required.
- 8.2.24 HLT is in an accessible location as set out in the TS. Accessibility to HLT will be further enhanced by proposed transport measures, such as BEE and HS2. I consider that these enhancements further strengthen the conclusions of the TS that HLT requires no parking provision.

## 9. CONCLUSIONS

9.1.1 With reference to the Statement of Matters and objections lodged to the Order, I have dealt with in full or part the following matters that I believe to be of relevance to the scope of my evidence.

### 9.2 Matter 2

9.2.1 With regards to the main alternative BEE route options I have demonstrated that there was extensive route development work undertaken. This process involved the consideration of alternative routes, detailed appraisal, and consultation.

### 9.3 Matter 3

9.3.1 I have demonstrated that the objectives of the Scheme are consistent with relevant National Regional and Local transport policy. The Scheme is also consistent with the wider regeneration and transport related objectives set out in the Curzon Street Masterplan and City Centre Masterplan. The Scheme will support the regeneration initiatives in Eastside, Digbeth and Deritend, and provide an importantly connect HS2 Curzon Street to the Midland Metro network.

### 9.4 Matters 4 (a) and (b)

9.4.1 I have considered the effects of construction and operation of the Scheme on, Matter (a) the local roads network and busses, and Matter (b) business access and parking. I am content that much of the transport assessment work (TA and UTC) and traffic modelling has adequately considered these matters. Impacts have been carefully considered.

### 9.5 Objections

9.5.1 Phoenix CSR Ltd – servicing of their promises can be managed around tram timetabling. The dismantling/repair of vehicles on the highway is not permitted.

9.5.2 Hotel LaTour – The bus shelters on Queens way which are a concern to Hotel LaTour are well maintained, and of high quality. They normal street scene for a typical urban environment. With regards to the loss of car parking, the Transport Assessment supporting the Hotel LaTour planning application required no car parking to be provided.

9.5.3 In conclusion, I respectfully request that the SoS approves the BEE Order.

**10. STATEMENT OF TRUTH**

- 10.1.1 The evidence I shall give is true, given in good faith and represents my professional opinion regarding the merits of the Order proposal and I have carried out my assessment in accordance with the Code of Professional Conduct of the Institution of Civil Engineers.

**Eddie Mellor**

**19 October 2017**