



Birmingham Eastside Extension

ES Volume 2 Technical Appendix U: Economic
Impact Assessment

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West Midlands Combined Authority



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1 Economic impact assessment

1.1 Introduction

- 1.1.1 The West Midlands Combined Authority (WMCA) is proposing to develop an extension to the Midland Metro light rail network from Bull Street/Corporation Street to High Street Deritend in Birmingham. The proposed extension is approximately 1.9 km in length and is known as the Birmingham Eastside Extension (BEE)¹.
- 1.1.2 The BEE will expand the tram network within the city and in doing so, enable more people to use the tram to access employment and reach new areas of the city. The BEE will connect to Birmingham's proposed HS2 station and will provide local and regional access to Birmingham Coach Station and key strategic sites in the city centre. The BEE's route brings it in close proximity to a number of development sites which the BEE may influence in bringing forward. Understanding this economic effect is the focus of this report.
- 1.1.3 This report should be read alongside Chapter 18 of ES Volume 1 Main Statement.

1.2 Our approach

- 1.2.1 This appendix estimates the potential economic impact, measured in terms of jobs and Gross Value Added (GVA), of the proposed BEE to the Birmingham and the West Midlands economy. Mott MacDonald's Economic & Social Development team has, on behalf of the West Midlands Combined Authority, considered the benefits supported through:
- **Temporary construction effects** - the number of jobs and GVA supported by the proposed investment in the BEE during a two-year construction phase (2020 to 2022).
 - **Longer term impacts through development of surrounding sites.** We present an analysis of the likely economic impact from the development of a number of sites and provide a series of quantified impacts in terms of net additional jobs and GVA created by this development. This has been achieved using Mott MacDonald's proprietary Transparent Economic Assessment Model (TEAM), using methods and assumptions aligned with the HM Treasury's *Green Book* and Homes and Communities Agency's (HCA's) *Additionality Guide*.
- 1.2.2 Our analysis is structured as follows:
- In section 1.3, we present an overview of the rationale and expectations for the wider economic impacts of the BEE on Birmingham and West Midlands.
 - In section 1.4, we examine the Curzon Investment Plan and how this links with the BEE.
 - Section 1.5 presents our analysis of the temporary construction impacts

¹ VIADUCT Ltd.

- In section 1.6, we present our analysis on the potential longer term wider economic impacts of the BEE through development of sites surrounding the extension.
- In section 1.7 we present a summary of our conclusions.

What is Gross Value Added?

GVA is most commonly understood as the value of the output (i.e. sales, turnover) minus the cost of purchased goods and services used in the production of that output (intermediate consumption). Intermediate consumption relates to costs used in the production process, which could relate to raw materials, rental costs, utilities, transport, legal and business costs etc.

GVA is used to calculate Gross Domestic Product (GDP) for national accounting purposes. GDP cannot be calculated at the level of the individual business, which renders it an infeasible metric for measuring economic activity at sub-national or industry level.

In this context, GVA refers to the economic productivity of the workers employed in businesses that occupy premises on the development sites linked to the BEE and the corresponding economic productivity captured through indirect (supply chain) and induced (consumption) multiplier effects.

Source: Mott MacDonald

Notes on our approach

- 1.2.3 This section should be read in conjunction with the **Chapter 18 – Socio-Economics** which includes an assessment of the socio-economic effects of the BEE.
- 1.2.4 Mott MacDonald was asked to quantify some of the economic effects likely to arise from construction of the BEE. Our approach has adopted two main areas of investigation:
- Consideration of the employment effects from the construction phase currently scheduled to be between 2020 and 2022. Our analysis has built on the capital cost (capex) estimates provided by the West Midlands Combined Authority. At this point (ex ante) it is too early to conduct a more detailed assessment of the supply chain and multiplier effects as details are not yet known.
 - Consideration of the employment and productivity (GVA) effects from development sites on the route (a form of wider economic benefit) which are likely to be developed in future and a proportion of the economic benefit being attributed to the tram extension.
- 1.2.5 Due to significant time constraints, we have only spoken with two local planning officers and we have been unable to undertake the extensive discussions with local authority planning and economic development officers or local property experts in the property development sector that we would normally aim to speak with. As such, whilst the quantification of effects we have arrived at should always be viewed as a conservative and broad estimate, as opposed to a definitive forecast of impact, more extensive dialogue, and further statistical research, would have helped us understand underlying market conditions, current uses on sites and the importance of the tram as part of a wider complex mix of factors supporting regeneration and development in the area.

1.3 Overview of the wider economic impact of the BEE

- 1.3.1 The BEE presents Birmingham with an opportunity to improve the city's standing as major transport hub and enhance accessibility and economic growth in the city centre. As stated in the pre-submission draft Birmingham Development Plan, "[t]he vital role that the City Centre plays as a transport hub is already being strengthened with the £600 million major redevelopment of New Street Station and the £128 million Metro extension"².
- 1.3.2 Ensuring that Birmingham has excellent connectivity within its own boundaries as well as with the surrounding districts is essential to both the short- and long-term economic and social welfare of the city. The 'Birmingham Big City Plan: City Centre Masterplan' published in July 2011, acknowledged this when it declared in its opening comments that *in "order to achieve the ambitions for the city the quality of the external and internal connectivity will need raising"*³.
- 1.3.3 This BEE has the potential to improve accessibility for some areas and thus open up key areas of land for development, regeneration and support the delivery of growth opportunities for the city. For example, in relation to the Curzon Street Station, the Metro station is expected to be *"a big driver of activity to animate the space and that will help retail and food outlets to thrive through the length of the viaduct area"*⁴.
- 1.3.4 The Metro Alliance lists a number of key benefits from the Metro extension, including:
- *"Providing new and improved public transport links for the Eastside and Digbeth areas and between key **population, education and employment centres in the City**"*
 - *"Reducing journey times between Digbeth, Eastside and Birmingham City Centre and **complementing the regeneration projects in these areas**"⁵. [Emphasis added]*
- 1.3.5 We have spoken with two planning officers at BCC which has provided us with additional insight into the expected impact of the BEE. From these discussions, the overall impression was that the BEE has the potential to boost the scale and pace of development of key sites across Birmingham's city centre while complementing other transport investments such as HS2.
- 1.3.6 From our consultations, we understand that the extension to the Metro system will make a number of sites along its route more attractive to developers and may allow sites to be

2 http://bigcityplan.birmingham.gov.uk/wp-content/uploads/2013/01/Pre_Submission_Part_2.pdf page 40, paragraph 5.31.

3 https://www.birmingham.gov.uk/downloads/file/1024/big_city_plan_part_1 page 9, paragraph 3.

4 http://www.birmingham.gov.uk/birminghamcurzonhs2_page_32, paragraph 2.

5 <http://www.metroalliance.co.uk/eastside-extension/> page 1, paragraph 5.

- developed sooner than they might otherwise be. For example, pre-application discussions have indicated that a number of sites are likely to come forward for development with or without the Metro extension, however the BEE could play a major role in increasing the developers' ambition in terms of the mix and use of the land and also the likely scale of development, encouraging development to be brought forward sooner than it might otherwise have been.
- 1.3.7 The BEE will improve access across the city centre, allowing people to move more freely and quickly to access work, home, retail or community activities. The BEE will offer new routes to users and therefore offer time savings for some users. These time savings could make Birmingham city centre more attractive to commuters as a place to work and visitors for leisure purposes due to the ease of access. The attraction of working age commuters and visitors will provide benefits in terms of stimulating demand for local goods and services.
- 1.3.8 The new routes proposed with the BEE will also serve to reduce the number of people who have to change trams to reach their destination. As well as saving time, this offers the potential benefits of a reduction in accidents.
- 1.3.9 In April 2011 the Greater Birmingham and Solihull Local Enterprise Partnership (LEP) chose Birmingham City Centre as the location for its first Enterprise Zone (EZ)⁶. The EZ comprises 26 sites across the City Centre, in 7 clusters identified as offering significant growth opportunities that would help achieve the city's vision of becoming "*the natural home for Europe's entrepreneurs and wealth creators with an enterprise culture supported by investment in infrastructure*"⁷. Key to successfully achieving the ambitious plan for the EZ and encompassing regeneration programme a diverse range of solutions must be implemented including construction of the BEE. The BEE is described as one of the "*headline investments*" of the entire Birmingham City Centre EZ programme.
- 1.3.10 The 'Greater Birmingham and Solihull LEP Birmingham City Centre Enterprise Zone Investment Plan 2013/2014 to 2022/23' suggests that undertaking the BEE would directly contribute to the "***provision of high quality and safe connections to economic opportunities for SMEs in Digbeth and the Jewellery Quarter***"⁸.

⁶ The EZ was first launched in 2011 and provides the unique ability to retain and then target the uplift in business rates to fund local infrastructure and unlock development.

⁷ <http://bigcityplan.birmingham.gov.uk/wp-content/uploads/2013/01/EZ-Prospectus-FINAL.pdf> page 4, paragraph 2.

⁸ <http://centrefenterprise.com/wp-content/uploads/2014/09/Enterprise-Zone-Investment-Plan.pdf> page 5, paragraph 9 and Birmingham Big City Plan Curzon Investment Plan page 20, paragraph 4.

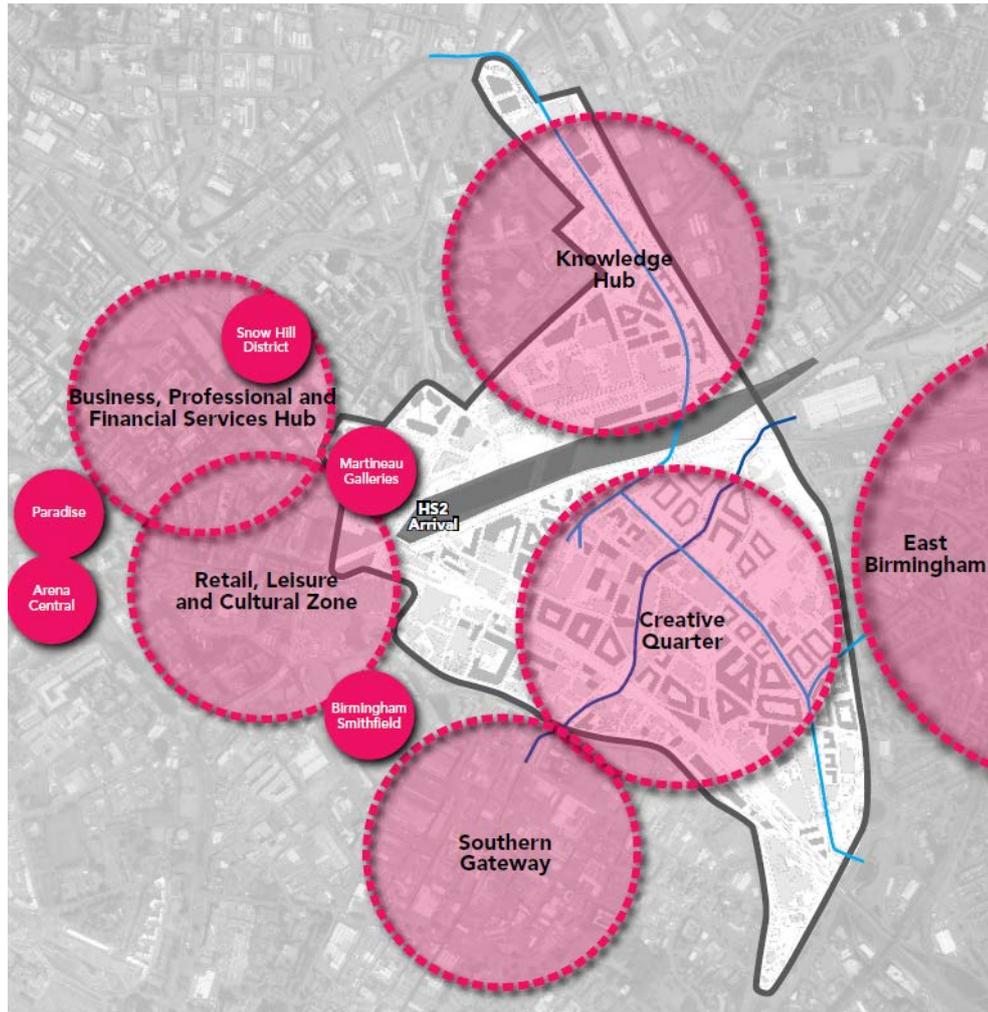
1.4 The Curzon Investment Plan (September 2016)

- 1.4.1 The 'Birmingham Big City Plan: Curzon Investment Plan' (September 2016)⁹ follows on from the Curzon Masterplan (2014) and responds to the opportunities for redevelopment and urban (re-)development arising from the HS2 terminus station (Birmingham Curzon) proposed for the area from 2026. The Curzon Investment Plan sets out how the regeneration potential of this opportunity will be maximised largely funded through the Birmingham EZ.
- 1.4.2 The Curzon Investment Plan (2016) notes (in its Foreword) that the recently agreed expansion of the EZ, with an additional 44ha of land and the time period for the retention of the uplift in business rates extended from 2038 to 2046, will provide the mechanism to fund a £724m investment programme for the Curzon area. Delivering this infrastructure across the Curzon area will help drive major growth and regeneration with over 600,000sqm of commercial space, **4,000 homes, 36,000 jobs and over £1.7bn of private sector investment attracted.**
- 1.4.3 The BEE of Metro is included as part of the infrastructure package needed to realise the potential of the Curzon Masterplan area and will also be a contributory factor in delivering the economic growth noted above. The 4,000 new homes in the area are expected to lead to a population increase of 6,000 residents in the area with the access and connectivity provided by the tram extension being important in supporting the area's development.
- 1.4.4 The Curzon Investment Plan goes on to conclude that *"with the potential for such large job creation there is a real opportunity to tackle the wider issue of unemployment and worklessness across the city"* and that *"there are areas of high deprivation close to the Curzon area, and beyond, that could benefit from the regeneration benefits associated with this programme."*¹⁰ It is clear therefore that the implementation of the BEE as part of the wider Birmingham City Centre EZ programme has the potential to bring widespread economic benefits to some of the most deprived areas of the city and their populations.

⁹ This was provided to us by BCC, The plan was announced on 14 September 2016 and has been taken to Cabinet for approval.

¹⁰ Birmingham Big City Plan Curzon Investment Plan page 20.

Figure 1.1: Birmingham Curzon and wider regeneration opportunities



KEY			
	Masterplan boundary		Places for growth
	HS2 line and station		Canal
	New development block		River Rea

Source: 'Birmingham Big City Plan: Curzon Investment Plan' (September 2016), Plan 3.

1.5 Temporary construction impacts

Introduction

- 1.5.1 WMCA plans to invest **£35.9m** in the BEE¹¹. The BEE involves the construction of approximately 1.7km of both on street and off-street twin-tracked tramway with additional 0.2km of highway works, and subsequent operation of the tram system¹².
- 1.5.2 It is currently anticipated that the delivery of the BEE will be phased over a period of approximately 24 months, to include: enabling works, demolition, and construction activities. Construction (including enabling works) is anticipated to commence in 2020, finishing in late 2021. Service diversions will have taken place prior to 2020. The extension is expected to be operational in 2022.
- 1.5.3 The general construction methodology for a Light Rail Transit (LRT) system and the indicative construction programme is detailed elsewhere in this report¹³. In this section, we assess the direct, indirect and induced impacts on GVA and jobs that the construction expenditure of the BEE is likely to support.

Methodology and findings

- 1.5.4 In 2014, using data for the West Midlands construction sector, approximately 23.5% of the total purchase of goods, materials and services within the sector was spent on salaries¹⁴. Therefore, in the absence of detailed spending plans, we have used this proportion of the BEE proposed expenditure to estimate that approximately £8.4m of the total CAPEX will be spent on salaries during the 24 month construction phase.
- 1.5.5 We have estimated that 93% of the £8.4m CAPEX spend on salaries (£7.8m) will be spent on employees based in the West Midlands, i.e. 7% will leak out of the West Midlands to be spent on employees based elsewhere. This was estimated based on travel to work data in the 2011 Census which showed that 7% of work trips to the West Midlands originated outside of the West Midlands.

¹¹ VIADUCT Ltd.

¹² VIADUCT Ltd.

¹³ Volume 1: Main Statement, Chapter 6.

¹⁴ Annual Business Survey, ONS, 2014

- 1.5.6 Taking the average mean annual salary figure in the West Midlands construction industry for 2015 (£31,423)¹⁵, the direct salary expenditure (£7.8m) will support approximately 250 direct job years. Given in standard HM Treasury guidance one full-time equivalent (FTE) job is equal to 10 employment years, **in total 25 FTE jobs will be created from the construction phase.**
- 1.5.7 Construction activity feeds through to numerous other related business activities such as building materials, steel, architectural services, legal services and insurance, and the majority of these linkages tend to result in job creation in the local economy. In the absence of detailed input-output modelling, the composite multiplier (which captures both indirect and induced impacts) has conservatively been assumed to be 1.2, which suggests a further five jobs may be generated from the BEE's construction. This multiplier is based on national guidance¹⁶ for estimating the likely scale of the composite multiplier at the sub-regional level.
- 1.5.8 Applying this multiplier, we estimate that the BEE's construction expenditure would support a **further 5 FTE indirect and induced jobs.** Therefore, as detailed in the calculations in the table below, the construction of the BEE during the 24 month construction phase would support **approximately 30 construction jobs in Birmingham and the West Midlands.**
- 1.5.9 Taking the average GVA per worker in the West Midlands (£41,447) in 2014¹⁷, **we estimate that the BEE's construction expenditure would support a one-off value of approximately £1.2m GVA over the two year construction period in the West Midlands' economy.**

¹⁵ ONS Annual Survey of Hours and Earnings (ASHE), 2015

¹⁶ Additionality Guide, Homes and Communities Agency, 2014, Table 4.12.

¹⁷ Regional GVA accounts and workforce jobs, ONS, 2014

Table 1.1: Construction phase impacts

Construction phase impacts		Value	Formula	Source
CAPEX (PV) (£m)	£	£35,887,025	(a)	Birmingham Curzon Investment Plan
% of capex spent on salary	%	23.5%	(b)	Annual Business Survey, ONS, 2014
Salary expenditure	£	£8,438,180	(c)=(a)*(b)	Calculation
CAPEX in West Midlands - 7% leakage	£	£7,847,507	(d)= (c)*(1-7%)	Assumption
Average mean salary in West Midlands construction industry (full-time workers)	£	£31,423	(e)	2015. ONS annual survey of hours and earnings
Direct job years supported	No.	250	(f)=(d)/(e)	Calculation
1FTE= 10 employment years		10	(g)	HM Treasury Guidance
Direct jobs supported	No.	25	(h)= (g)/(f)	Calculation
Multiplier of 1.2		0.20	(i)	HCA Additionality Guide 2014
Indirect & induced jobs supported	No.	5	(i)= (h)*(i)	Calculation
Total jobs supported	No.	30	(j)= (h)+(i)	Calculation
Average GVA per worker in West Midlands	£	£41,447	(k)	Regional GVA accounts and workforce jobs, ONS, 2014
Total GVA supported (£m)	£	£1,242,090	(l)= (j)*(k)	Calculation

Source: Various as indicated. Note that these values are broad estimates only and not intended to be interpreted as precise values.

- 1.5.10 These impacts are all considered net additional to the West Midlands as it is unlikely that the construction sector is at full capacity and therefore the development is unlikely to displace other construction activity.

1.6 Land use and wider economic impacts

Introduction

- 1.6.1 The BEE route will pass through a part of Birmingham that has a strong connection to industry and commerce and so has an urban character comprising of warehouses and other commercial buildings. We have assessed the potential economic impact from the development of a number of sites and provide a series of quantified impacts in terms of net additional jobs and GVA created by this development. This has been achieved using Mott MacDonald's proprietary Transparent Economic Assessment Model (TEAM).

Methodology

- 1.6.2 Thirteen sites have been identified in the Environmental Statement as key development sites in Birmingham city centre that may be affected by the BEE. We explored the current and future potential land use of these sites by gathering planning information and speaking with two officers from BCC's planning department.
- 1.6.3 Of the 13 sites, based on our research and consultations, we have identified seven sites which we consider will be directly influenced by the BEE. We found that the BEE is likely to have a lesser impact on the remaining six sites which are more likely to be impacted by other factors and developments such as HS2.
- 1.6.4 The findings from our research have been used to deliver a high level run of TEAM. Due to time constraints and limited data availability, our assessment is high level and we have made a number of key assumptions. These assumptions are detailed below. The findings from this economic impact assessment are presented below. At each stage of our analysis we have endeavoured to produce conservative estimates.
- 1.6.5 The impact area for the assessment is the West Midlands. The following key strands of analysis have been undertaken:
- A brief review of the sites and locations highlighted by the Environmental Statement as likely to be impacted by the proposed Metro extension – utilising the document review and consultations. We reduced the long list of sites down from 13 to seven key sites which we expect the BEE will impact.
 - Quantitative economic impact assessment, using TEAM, of those development sites identified as likely to be influenced by the scheme and the potential scale of economic growth associated with them.
 - Assessment of the economic benefits that could potentially arise from these development sites which are attributable to the infrastructure improvements.
- 1.6.6 The quantitative economic analysis of land utilisation has been undertaken using TEAM to assess high level economic impacts. TEAM (as summarised in the figure below) is a versatile tool designed to calculate the economic impact of proposed infrastructure intervention and policy measures. It has been designed by experts in economics, economic development and regeneration and is in-line with HM Treasury Green Book principles and HCA Additionality guidelines. The tool measures the potential stimulus to economic activity from interventions by estimating the consequential employment, salary, GVA and investment benefits that would otherwise not have arisen.

Figure 1.2: TEAM – Used for economic impact assessment



Source: Mott MacDonald

Development sites

- 1.6.7 The 13 development sites considered in this section are relevant either as baseline developments, committed developments or future/potential developments dependent on when they are due to be constructed and be operational. Where a development is included here as a baseline development then it is considered to be part of the predicted environmental baseline when the BEE starts construction and therefore may constitute receptors for certain BEE impacts. Where a development site is considered as a committed development, as it will start construction after the BEE construction has begun, then it may generate cumulative impacts when combined with the BEE that need to be assessed.
- 1.6.8 Developments assumed to be within the environmental baseline:
- Masshouse; and,
 - HS2 Curzon Street Station.
- 1.6.9 Committed developments to be considered cumulatively:
- Exchange Square (Phase 1);
 - Exchange Square (Phase 2);
 - Bull Ring Trading Estate;
 - Beorma Quarter (Phase 2 and 3); and
 - Smithfield.
- 1.6.10 Future/potential developments that are not committed but are part of BCC plans for the area:
- Martineau Galleries.
 - City Park Gate comprised of various plots of land.
 - Typhoo Wharf.
 - Smithfield Court.
 - Connaught Square.
 - Custard Factory Extension.
- 1.6.11 The details of these sites that we have obtained and use in our analysis are presented in the table below.

Table 1.2: Development sites identified as linked to the scheme

Site No.	Development site	Status	Current land use	Site Area	Description and proposals	Proposed Use	Included in economic impact assessment?	Justification for inclusion / exclusion in the impact assessment? Based on site literature review and consultation with planning authorities.
1	Martineau Galleries	Future / Potential	Mixed use - majority retail (low value); a six-storey car park; some office space (currently vacant); one upscale hotel; some derelict buildings on fringes.	Unconfirmed	Large regeneration site in Birmingham city centre with existing planning permission. Outline planning permission granted in 2006 for 915,000 sqft of retail, 270,000 sqft of office space, a hotel (320,000 sqft) or 850 residential units, 215,000sqft of leisure space and 54,000 sqft of cultural space. This has now lapsed.	Retail and office space	Yes	Martineau Galleries is a site that will be next to the tram line and so more people will be able to access this area as well as enabling public transport access to other key areas of the city such as the Jewellery Quarter; this will connect this site up to other key retail centres throughout the city. According to consultations, developers at this site may be waiting for the BEE or HS2 to be developed before bringing this site forward, thus development likely depends in part on the BEE.
2	Masshouse (Plot 3)	Baseline	Block of Flats (12 storeys), green open space to the rear	0.03 ha	Currently a ground level car park on land left over after the demolition of Mass House Circus, proposals to develop in to residential uses in private rental sector.	Commercial/ retail/ residential	No	This site is small and well connected through existing public transport services; this makes the attribution of any future economic impacts to the tram difficult as there are too many other factors that could affect future economic growth.
3	Exchange Square (Phase 1)	Committed	Ground level car park, some land unused	4.3326 ha	Part of the same development as Masshouse, planning consent has been given to several proposals to construct residential buildings on this site.	Mixed Use	No	
4	Exchange Square (Phase 2)	Committed	Ground level car park, some land unused	1.7971 ha		Mixed Use	No	
5	City Park Gate	Future / Potential	Major upscale Hotel with large car park, Birmingham Moor Street Station located here, vacant unused land, a few vacant/ abandoned buildings on the edge of the site.	Plot 1- 0.3202 ha,	City Park Gate was identified as a site for multiple land uses, only a hotel, the Hotel La Tour has been constructed out of those originally identified.		No	This proposal will not be taken any further as the land it uses is required for HS2. The only phase of this proposal that has been constructed is the Hotel La Tour.
6	Eastside Curzon Park/ HS2 Curzon Street Station	Baseline	Green space/parks, large car park, premises for storage company, student accommodation.	550m length for station building.	This is the HS2 station and infrastructure designated to be constructed in Birmingham over the next 10 years.	HS2 Station	No	As this is an HS2 Station, the economic impact of the tram will be minimal in comparison to HS2 and will be difficult to accurately quantify.

Site No.	Development site	Status	Current land use	Site Area	Description and proposals	Proposed Use	Included in economic impact assessment?	Justification for inclusion / exclusion in the impact assessment? Based on site literature review and consultation with planning authorities.
7	Typhoo Wharf	Future / Potential	Commercial - Car parks supplying local businesses, manufacturing businesses (metal work, two-storey), call centre offices, nightclubs and bars towards Digbeth	3 ha	A key strategic site in the heart of Digbeth totalling around 3 ha and part of the Birmingham Curzon Masterplan area and linking to the Knowledge Hub proposals. Also known as the STEAMhouse project the development will reuse historic buildings on the former wharf site into a collaborative innovation centre focusing on the creative sector. The site will also have high quality public space with bars, restaurants and active uses on the ground floor. It is estimated that the site could eventually create up to 10,000 jobs.	Mixed Use	Yes	The site will be next to the Metro tram line and it is anticipated that a new tram stop will be integrated into the site alongside the public realm improvements. The tram will also provide the connection between Digbeth and the wider Knowledge Hub proposals. Consultations showed that there are a range of derelict sites in this area and that this area has been identified for a tram stop for some time. Having a stop here is anticipated to attract developers to the area, by making the area more attractive to them through enhancing connectivity to the city centre. Other consultees described the tram as having a 'direct impact' on the development of this site.
8	Smithfield Court	Future / Potential	Mixed use - South & City College Birmingham - Fusion Centre, college car park	2.23 ha	Located in Digbeth and the Curzon Masterplan area this site has planning consent for a 22,300sqm mixed-use development with a focus on office uses.	Mixed Use	Yes	Questions over level of attribution possible with this site. Consultation suggested that there are more significant factors likely to affect the development of this site than the tram. While this site is anticipated to be developed, it will be difficult to accurately attribute growth to the tram. Site previously had planning consent for large offices but this has now lapsed.

Site No.	Development site	Status	Current land use	Site Area	Description and proposals	Proposed Use	Included in economic impact assessment?	Justification for inclusion / exclusion in the impact assessment? Based on site literature review and consultation with planning authorities.
9	Southern Gateway	Committed	Mixed Use - Built up area, many hotels (midscale) and restaurants, college buildings, high-street stores and 3 food stores (midsize), 1 multi-storey car park and several private ones, 'Birmingham Market'	22 ha	This is the Birmingham Smithfields development which will be a 14 ha site providing a major cultural and leisure destination, business space and new residential community (2,000 new homes). It will include vibrant markets (including the relocation of existing Bull Ring Markets) providing revitalised shopping and eating offer, eateries, restaurants, small retail outlets and business space for start-ups and small enterprises ¹⁸ . In a press report in Birmingham Newsroom among other publications, BCC is quoted as saying that this site has a total size of 300,000sqm, and will generate 3,000 jobs and £470m of GVA ¹⁹ .	Mixed Use	Yes	An integrated public transport network is highlighted in the masterplan as integral to creating what aims to be one of the most accessible destinations in the city. The BEE will provide quick and convenient connections to New Street Station, Moor Street Station, Birmingham Coach Station, the HS2 terminus at Birmingham Curzon and the wider city. Consultations said that, on the basis that Smithfield Market is a key site in this area; the tram could be significant in supporting the development of proposals to deliver 2,000-3,000 houses in the Smithfield Market site. Proposals exist to run a spur off the line to Smithfield Market in the next phase of the development of the tram network. This is anticipated to make the area more attractive to developers as the area will be much better connected to the city centre.
10	Connaught Square	Future / Potential	Mixed Use - 2/3 ground level car park, 1 pub on the corner of the site, vacant land	2ha	2 ha mixed use residential and business - 700 residential units, 4* hotel, business space from retail units and Irish community centre	Mixed Use	Yes	While consultations suggested that this site could be delivered without the tram stop, developers have been pushing for a stop to be built here. It is anticipated that having a stop here could increase the speed and scale of development rather than being the key to the development happening at all. Here the tram is anticipated to be more of a catalyst to growth than an enabler of growth. The site had a consent for residential with retail on ground floor but this has now lapsed. We understand that this site will be developed in some form regardless of the BEE.

¹⁸ https://www.birmingham.gov.uk/downloads/file/1047/birmingham_smithfield_exhibition_document

¹⁹ <http://birminghamnewsroom.com/smithfield-500-million-plan-to-create-a-brand-new-place-for-the-city/>

Site No.	Development site	Status	Current land use	Site Area	Description and proposals	Proposed Use	Included in economic impact assessment?	Justification for inclusion / exclusion in the impact assessment? Based on site literature review and consultation with planning authorities.
11	Custard Factory Extension	Future / Potential	Commercial - 2 storey manufacturing businesses dominate this site (Light Industrial and Manufacturing), 5 private car parks/ loading bays	Unconfirmed	Extension of existing Custard Factory - SMEs	Commercial	Yes	The Custard Factory has many businesses based there and a range of land uses at present, but the low footfall is limiting the success of the site, preventing further development. The tram is considered to be really important to this site as a way of increasing footfall in the site by enabling greater public transport access to the site and connecting it to the city centre.
12	Bull Ring Trading Estate	Committed	Mixed Use - 2 car dealerships on site + 1 electrical company premises, car parks to the rear of all the premises	4.7137 ha	47,137sqm gross internal area, 38,850sqm class C3 residential, 8,287sqm commercial car showroom, A3 cafes & restaurants, D2 leisure and community, A2 offices / B1 offices and up to 2,499sqm retail and 670 car parking spaces	Mixed Use	Yes	This site has had development consent in place for around 10 years, according to consultees. A barrier to growth at this site is the poor access to the City Centre; the tram can improve this access and therefore make the site considerably more attractive to developers.
13	Beorma Quarter (Phase 2 and 3)	Committed	Large hotel (6 storeys, mid-scale), several shops present (2 food store), Business college on site, large car park behind the hotel.	4.5614 ha	Beorma Quarter is a development in the City Centre which includes a 27 storey tower block alongside refurbished listed buildings for office, retail, a hotel and leisure uses. Phase 1 is currently being constructed	Mixed Use	No	Beorma is located very close to the City Centre; it is next to the Bull Ring and therefore is too close to the core of the city to benefit from the tram. The tram could enable more people from outside the City Centre to reach the area, but the footfall in this area is already high. Other consultations suggested that the development of this site is not dependent on the Metro as there is no direct impact from the tram.

Source: Mott MacDonald research and consultations

- 1.6.12 The potential economic benefits of the development sites identified have been assessed using TEAM through the following steps:
- Inputting the key site details as outlined in Table 1.2 into TEAM.
 - Calculation of direct economic impacts through feeding the proposed uses by size through TEAM to calculate:
 - Direct effects of the sites in terms of employment and economic output (measured by GVA) of the sites being fully developed.
 - Indirect and induced effects of the sites being developed from those supported further down the supply chain and employment and activity supported by the incomes of those directly or indirectly employed (through consumption multiplier effects).
 - The gross economic impacts throughout the analysis.

- 1.6.13 It should also be noted that the precise location of tram stops can influence the pace and scale of development but that has not been taken into consideration as part of this analysis. Furthermore, the footfall generated by the tram will also influence the ground floor uses of developments and through the planning process there could be discussions about ground floor convenience stores and service provision (e.g. dry cleaners, hairdressers, coffee shops etc.) arising because of the adjacent tram stops. However, we have not been able to consider this fine grained detail in this study.

Key assumptions

- 1.6.14 The key assumptions used in our analysis for all sites are as follow:
- Employment land densities where applicable follow the HCA's Employment Land Density Guide 2015 - B1 (13sqm per job), A1 (18sqm per job), A3 (18sqm per job).
 - GVA per worker figure based on average GVA per worker for West Midlands using GVA Regional Accounts and Workforce Jobs, 2014 (£41,900).
 - 75% occupancy assumed for the building footprints.
- 1.6.15 The key assumptions which vary for each of the sites are detailed in the table below.

Table 1.3: Key site specific assumptions used in TEAM analysis

Site No.	Site Name	Land uses
1	Martineau Galleries	Existing 2006 planning permission (now lapsed): 915,000 sqft of retail, 270,000 sqft of office space, a hotel (320,000 sqft) or 850 residential units, 215,000sqft of leisure space and 54,000 sqft of cultural space. No information regarding hotel which is not modelled
7	Typhoo Wharf	No detailed information regarding land uses. TEAM estimates based on the site size (3.2 ha), 2 storey assumption, 70% plot ratio, 85% Gross to net floorspace converter and splitting across B1 (75%) to reflect innovation uses and A3 (25%) to reflect ground floor uses.
8	Smithfield Court	This site did have planning consent for a 22,300sqm mixed-use development with a focus on office uses. For TEAM analysis assumed that 50% of this floorspace would be B1 use.
9	Southern Gateway (Birmingham Smithfield)	No detailed information regarding land uses for TEAM assessment (infeasible to base on site size). Well documented jobs figure used by BCC.
10	Connaught Square	Insufficient details to estimate using TEAM
11	Custard Factory Extension	Insufficient details to estimate using TEAM over size of the extension
12	Bull Ring Trading Estate	Existing outline planning permissions used to inform TEAM analysis - 47,137sqm gross internal area, 38,850sqm class C3 residential and 8,287sqm split across variety of uses including retail (up to 2,499sqm), commercial car showroom, A3 cafes & restaurants, leisure and community and offices. For simplicity assume 2,499sqm of retail and rest is split between B1 office and A3 restaurants and cafes.

Note: No assumptions apply for the other six sites as they were not included in our TEAM analysis.

Source: Mott MacDonald research and consultations

Findings

As noted above in our description of the assumptions used in our analysis, there are insufficient details to estimate the impacts using TEAM of development of two sites: Connaught Square and the Custard Factory Extension. As such, our analysis is likely to be an underestimate of the potential benefits as it excludes these sites.

Using TEAM analysis, we estimated the jobs and GVA that would be supported by development of the remaining five sites (once fully developed and occupied) would amount to over 11,000 jobs and £470m in GVA per annum.

- 1.6.16 We believe the BEE will make a contribution to development, as do the planners we spoke with at BCC. However, we agreed with the BCC consultees that the scale of contribution is likely to be low given the range and scale of other infrastructure activity ongoing and planned for this area. In some similar studies where we believe the attribution of the infrastructure to be low and where we have followed the same methodology, we have factored in an attribution rate of less than 5%. This aligns to the conservative approach we have adopted in this analysis.

1.6.17 Therefore, we consider that it is reasonable and conservative to assume that 1-2%²⁰ of these benefits could be attributed to the BEE. In other words, these benefits would likely be at least 1% lower if the BEE were not built. **As such, we estimate that the BEE will support between c.110 and 230 new jobs and between approximately £4.7m and £9.5m GVA per annum in the West Midlands.**

1.6.18 Due to insufficient information, we have been unable to include the likely benefits from development at Connaught Square and the Custard Factory Extension in our analysis. As such, our benefit estimations are likely to be an under-estimate of the true total benefits.

Table 1.4: Key site specific assumptions used in TEAM analysis

Site No.	Site Name	Documented job figures per annum	TEAM estimated per annum	Final total job figures used (gross)	Total GVA per annum, £m (assuming GVA per worker figure of £41,900*)
1	Martineau Galleries	4,000-6,000	5,184	5,184	£217.2
7	Typhoo Wharf	10,000	2,056	2,056	£86.1
8	Smithfield Court	n/a	643	643	£27.0
9	Southern Gateway (Birmingham Smithfield)	3,000	n/a	3000	£125.7
10	Connaught Square	n/a	n/a	n/a	n/a
11	Custard Factory Extension	n/a	n/a	n/a	n/a
12	Bull Ring Trading Estate	n/a	398	398	£16.7
	TOTAL			11,281	£472.7
	Attribution 1%			113	£4.7
	Attribution 2%			226	£9.5

Source: Mott MacDonald research and consultations

1.6.19 As our GVA estimate is an annual flow, we have capitalised this in order to estimate the net present value (NPV) of the benefits. We have assumed that the benefits will accrue gradually until the completion of HS2 in 2026 at which point full benefits will be achieved each year, and that the benefits will then continue to be achieved for at least 20 years to 2046. Applying a standard discount rate of 3.5%²¹, the estimated NPV of all GVA benefits is approximately £6,400m. **Assuming 1-2% of this can be attributed to the BEE, we estimate that between £64m and £130m GVA will be supported by the Metro extension (between 2022 and 2046) in the West Midlands.**

²⁰ In our discussions with BCC planners we agreed that there were many external factors influencing development along the BEE route but that the BEE has a role to play in delivering economic growth. With the benefit of further discussions and analysis our assessment could be refined but based on the material we have assembled in the time available we consider 1-2% attribution to be appropriate and for some sites (e.g. Typhoo Wharf and Custard Factory Extension) this will be a conservative assessment.

²¹ Additionality Guide, Homes and Communities Agency, 2014, page 53.

1.7 Conclusion

- 1.7.1 Our estimates of the **temporary construction effects** are based on the expected capital expenditure of £35.9m to build the Metro extension. We found that:
- The direct salary expenditure on construction will support approximately **250 direct job years**.
 - Given in standard HM Treasury guidance one full-time equivalent (FTE) job is equal to 10 employment years, **in total 25 FTE jobs will be created from the construction phase**.
 - Applying a composite multiplier, we estimate that the BEE's construction expenditure would support a **further 5 FTE indirect and induced jobs**.
 - Therefore, the construction of the BEE during the 24 month construction phase would support short term level of employment equivalent, for comparison purposes, to **approximately 30 'permanent' jobs in the West Midlands**.
- 1.7.2 Taking the average GVA per worker in the West Midlands²², **we estimate that the BEE's construction expenditure would support GVA equivalent, for comparison purposes, to approximately £1.2m GVA in the West Midlands' economy over the two year construction period..**
- 1.7.3 Using Mott MacDonald's TEAM model, we estimated of the **wider economic impacts support by the BEE will results in around 110-230 new jobs and approximately £4.7m-£9.5m GVA per annum in the West Midlands**.
- 1.7.4 As our GVA estimate is an annual flow, we have capitalised this in order to estimate the NPV of the benefits. **Assuming 1-2% of all benefits can be attributed to the BEE, we conservatively estimate that between £64m and £130m GVA will be supported by the metro extension (between 2022 and 2046).**

²² Regional GVA accounts and workforce jobs, ONS, 2014