

West Midlands Local Industrial Strategy

Foundations of Productivity Evidence Base

February 2019



West Midlands
Combined Authority

DELIVERING INCLUSIVE GROWTH

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Acknowledgement of Data/Evidence Input

Background

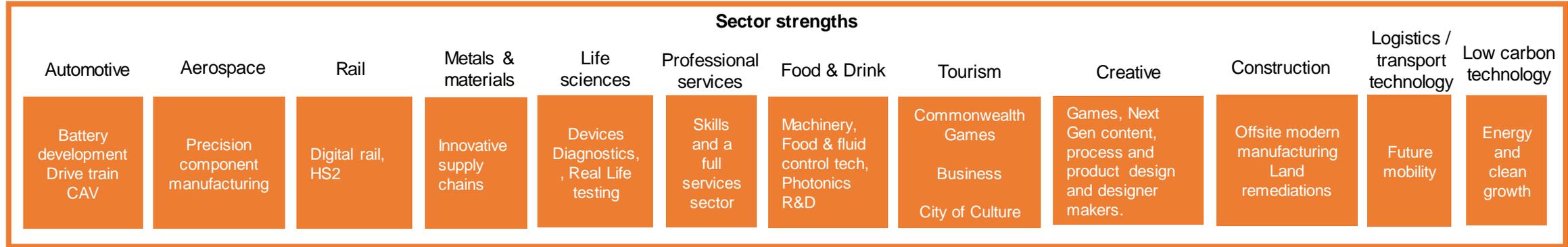
Not starting at Base Camp:

- There is genuine collaboration both across the LEPs and the stakeholders within and across public, private, universities and Local Authorities etc.
- Experienced Regional Economic Intelligence Unit (<https://www.blackcountrylep.co.uk/about-us/black-country-economic-intelligence-unit/>) in place, Network Intelligence Officers across LEP, LA's, Universities
- Existing SEP's underpinned by evidence base and a range of technical work - <https://www.wmca.org.uk/what-we-do/strategy/>
- WMCA SEP full sector approach– 7 transformational and 3 enabling
- Common rebasing of economic intelligence to development of a CA SEP, and an agreed Vision – Economy Plus Model (ambitions over and above 3 existing LEP SEP's)
- WMCA Science and Innovation Audit
- Existing Sector Groups and Links with Business Representative Boards
- Range of Commissions Commenced at the Launch of the WMCA:
 - Land - <https://www.wmca.org.uk/media/1412/wmlc-final-report.pdf>
 - Productivity and Skills – Detailed sector dashboards, Call for evidence, Sector deep dives, Academic Report on Foundations - <https://www.wmca.org.uk/what-we-do/productivity-skills/>
 - Mental Health - <https://www.wmca.org.uk/what-we-do/thrive/thrive-at-work/>
 - Leadership - <https://www.wmca.org.uk/what-we-do/leadership-commission/>
- Industry led....paved the way for Sector Action planning
- An Integrated Approach – Evidence not in isolation – Functional Complementarities
- About Productivity and Inclusive Growth - driving growth and productivity whilst improving outcomes for all our communities, businesses and residents.
- Focusing on our strengths and assets - Not about winners or sectors – comparatives advantages and driving strengths through all

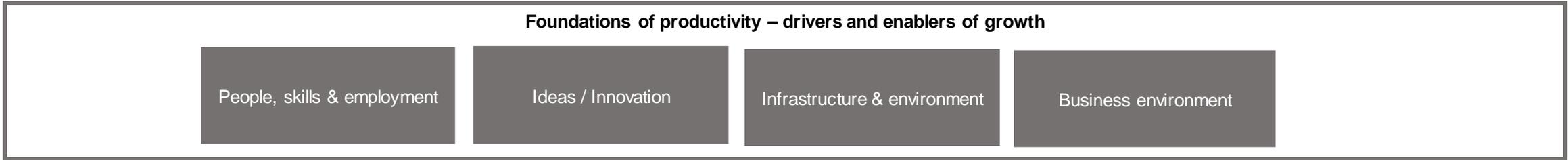
An Integrated Approach



A distinctive economy – Creative and innovative, with global supply chain strengths a diverse and young population, well connected, trading and entrepreneurial . Unique opportunities ahead in the Commonwealth Games and City of Culture.



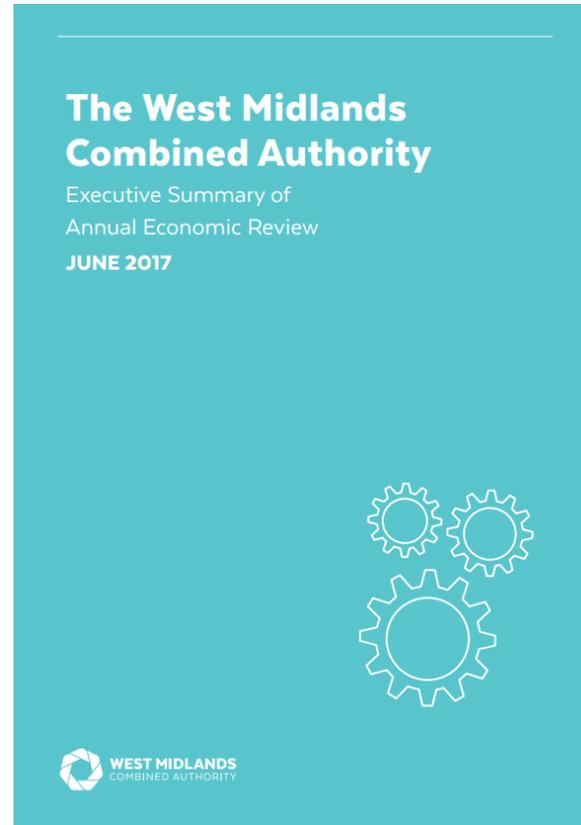
Actions to unblock barriers to productivity and growth, integrated in places and communities to drive inclusion



WM Local Industrial Strategy Development Process



Mapping Existing Evidence Base – Foundations



Read the Full Report – State of Region 2018 Executive Summary and Technical Report:
<https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/wmca-state-of-the-region/>

Strategic Economic Plan

- The WMCA is committed to pursuing and defining success in social and economic terms that feel real to citizens and bring benefits to all who live and work here.
- These principles are set out in the SEP and developed further in the performance management framework
- The key metrics have been separated into the following five pillars, that recognise the importance not only of growth and productivity improvements, but also the contribution of vibrant communities and resilient citizens in creating economic success and places that people want to live and work in.



Strategic Objectives:	Ambitions:
Economic growth - Developing the regional economy underpins our ambitions. As the export centre of the UK, our economic success is vital to Britain's future.	✓ Improved GVA in line with the UK Average
Business Competitiveness & Productivity - Britain's businesses are facing considerable uncertainties because of Brexit, but in the West Midlands we are steadily rebooting our reputation.	✓ Improved the productivity of our businesses focusing on our growth sectors; ✓ Improved competitiveness through energy and resource efficiency and stimulate new technology and business
Employment, Education and Skills - Building the right skills is key to delivering improved productivity and prosperity - enabling all groups to access jobs.	✓ Improved skills levels so that people have the skills and qualification to access jobs
Health and Wellbeing - We want improved life chances for all residents, including those facing particular disadvantages or difficulties.	✓ Improved life chances for all; ✓ To reduce our health inequalities and improve the health and wellbeing of our population including physical activity and mental health; ✓ To reduce offending and re-offending
Place - We will improve the connectivity of people and businesses to jobs, markets and housing - developing local places and communities.	✓ Improved the connectivity of people and businesses to jobs and markets; ✓ improved the quantity of high quality, readily available development sites; turning brownfield sites to high quality locations that meet our housing and business needs

Key Indicators

Economic growth

- GVA per head in 2017 is £23,903 which is £3,653 lower than the UK
- 9,424 new jobs created from 171 FDI projects in the West Midlands region – highest created outside of London (2017 - 2018)

Business Competitiveness & Productivity

- 58 business births per 10,000 population (2016 – 2017) which is in line with the UK average
- West Midlands is the fastest growing region in the UK for goods exports (27% WM 2015 – 17)

Employment, Education and Skills

- The proportion of working age population with no qualifications (2016-17) is falling faster than the UK average but need 86,036 people to be upskilled (WMCA -1.7pp, UK -0.3pp)

Health and Wellbeing

- Shorter healthy life expectancy than the UK: males 59.9 years (-3.7years), females 60.1year (-3.4 years) 2015-17

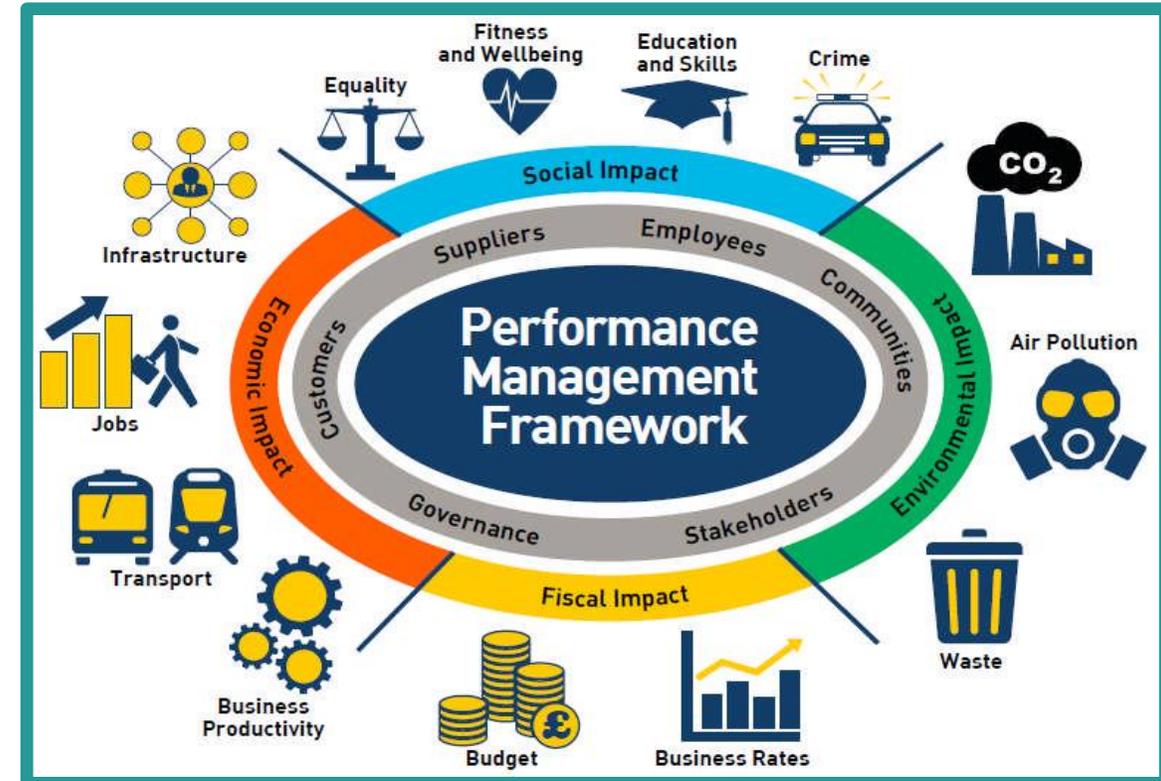
Place

- 15 day reduction in poor air quality days across the West Midlands (2015-2016)
- 11,500 net new homes in the WMCA area between 2016-17



Performance Management Framework

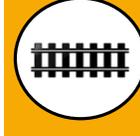
- The WMCA Performance Management Framework (PMF) provides a clear framework against which success can be measured.
- The Vision for the area has a number of smart objectives with clear targets.
- The PMF is composed of a selection of strategic headline indicators, which measure the impact of the various programme areas of the West Midlands Strategic Economic Plan (SEP).
- These indicators span a wide range of themes including productivity, employment and skills, infrastructure, competitiveness, sustainability and inclusive growth and measure the economic, social, fiscal and environmental impact.





Ideas

- HESA
- HEFCE
- Enterprise Research Centre
- Research Excellence Framework (REF)
- BEIS
- Innovate UK data
- Horizon 2020 data
- Nesta
- UKRI



Infrastructure

- Transport for West Midlands



Business Environment

- FAME database
- IBM
- IDBR
- Chamber Quarterly Economic Survey
- Exports
- DiT
- ONS Business Demography
- BRES
- HMRC UK Regional Trade in Good Statistics



People

- Oxford economic model
- ESFA Data Cube
- HESA data
- NOMIS
- Burning Glass
- EMSI
- APS
- Public Health England
- ASHE



Places

- Spatial Analysis
- Glenigan – Construction industry intelligence



Ideas

- [A Science & Innovation Audit \(SIA\) for the West Midlands](#)
- Prof Stephen Roper (ERC and Warwick Business School): [‘Business Innovation, Diffusion and Productivity in the West Midlands’](#) (WMCA Productivity & Skills Commission academic report)



Infrastructure

- [West Midlands Land Commission \(WMLC\) Report](#)
- Prof Jun Du (Aston Business School): [‘Infrastructure and Productivity: A Review’](#) (WMCA Productivity & Skills Commission academic report)
- Black Country LEP: [‘Energy as an Enabler: Linkages Between Local Energy Strategy, Productivity and Growth’](#)
- Energy Capital: [‘Powering West Midlands Growth: A Regional Approach to Clean Energy Innovation’](#)
- TfWM: [‘Movement for Growth: The West Midlands Strategic Transport Plan’](#)



People

- [WMCA Mental Health Commission Report/Action Plan: ‘Thrive West Midlands’](#)
- [WMCA Leadership Commission: ‘Leaders Like You’](#)
- [CITB and WMCA: ‘Construction skills gap analysis for the West Midlands Combined Authority area’](#)
- [WMCA Regional Skills Plan](#)
- Prof Anne Green (City-REDI, University of Birmingham): [‘Skills’](#) (WMCA Productivity & Skills Commission report)



Places

- [West Midlands Functional Economic Market Area Study \(FEMA\)](#)
- Prof Nigel Driffield (University of Warwick): [‘Inward Investment and Productivity’](#) (WMCA Productivity & Skills Commission academic report)
- What Work Centre for Local Economic Growth: [‘Developing Effective Local Industrial Strategies’](#)



Business Environment

- Prof Mark Hart (ERC), [‘Business Environment in the WMCA Region’](#) (WMCA Productivity & Skills Commission academic report)
- [West Midlands Productivity & Skills Commission final report](#)



Overarching

- [West Midlands Combined Authority \(WMCA\) devolution agreement](#)
- [West Midlands Combined Authority \(WMCA\) devolution agreement \(2\)](#)
- [WMCA Strategic Economic Plan \(SEP\)](#)
- [WMCA Strategic Economic Plan \(SEP\) Technical Appendices](#)
- City Redi: [‘Measuring Success – Review of Indicators and Recommendations’](#)
- [WMCA Launch Statement](#)



Ideas

Prof David Greenwood
 Jenny Illingsworth
 Assoc Prof Alan Pendry
 Dave Wright
 Prof Clive Roberts
 Prof David Bailey
 Prof Carl Perrin

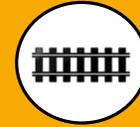
University of Warwick
 University of Birmingham
 Birmingham City University
 Coventry University
 University of Birmingham
 Aston University
 Coventry University



People

Prof Anne Green
 Dr Paddie Murphy
 Prof Tim Dafforn
 Prof Guy Daly
 Sinead Ouillon & Kam Kaur
 Prof Liam Grover
 Tim Jones, Antony Cobley,
 Lawrence Tallon
 Dr Iestyn Williams
 Tony Davis
 Prof Janet Lord
 Prof John Darling
 Prof Theo Arvanitis
 Prof Karen West

University of Birmingham
 Consultant
 University of Birmingham (sabbatical)
 Coventry University
 Coventry University
 University of Birmingham
 University Hospital Birmingham (UHB)
 University Hospital Birmingham (UHB)
 University of Birmingham
 WM AHSN
 University of Birmingham
 University of Wolverhampton
 University of Warwick
 Aston University



Infrastructure

Dr Yanguo Jing
 Prof Carsten Maple
 Prof Mohamed Gaber
 Prof David Lowe
 Prof Amar Aggoun
 Prof Giovanni Montana
 Dr Suzy Moat & Prof Tobias Preis
 Prof David Greenwood
 Matthew Rhodes
 Prof Mohammed Arif
 Glenn Barrowman
 Prof Martin Freer
 Prof Wenyan Wu
 Prof Sarah Hainsworth
 Prof Tony Bridgwater

Coventry University
 University of Warwick
 Birmingham City University
 Aston University
 University of Wolverhampton
 University of Warwick
 University of Warwick
 University of Warwick
 Energy Capital
 University of Wolverhampton
 University of Wolverhampton
 University of Birmingham
 Birmingham City University
 Aston University
 Aston University

Evidence Sources – Sectors/Sub-Sectors

	Ideas	People	Infrastructure	Business Environment	Places
Advanced manufacturing Automotive Rail Aerospace Food and Drink Metals and Materials	<ul style="list-style-type: none"> Rolls Royce Technology Centre – UoB Midlands Engine Science & Innovation Audit University of Birmingham 	<ul style="list-style-type: none"> Aerospace Academy Solihull College National Skills Academy Rail Sector Skills Research University of Birmingham 	<ul style="list-style-type: none"> Automotive council dashboards HS2 The Midlands Prospectus: Opportunities in Rail 	<ul style="list-style-type: none"> Midlands Aerospace Alliance Engineering 2017 Report Food and Drink Federation Black Country Bullet Drive Midlands Engineering 2017 Report Midlands Metro Alliance UK Rail Alliance 	<ul style="list-style-type: none"> West Midlands Growth Company: Make Your Mark Centres of Excellence
Business, Professional & Financial Services (BPFS) Legal and Accounting	<ul style="list-style-type: none"> City-Redi/BPS Birmingham West Midlands CA Sector Deep Dive 	<ul style="list-style-type: none"> BPS Birmingham 		<ul style="list-style-type: none"> PwC, Deloitte, City UK Midlands Engine Financial Centre of Excellence Report 	<ul style="list-style-type: none"> West Midlands Growth Company: Make Your Mark CBRE Law in Regions Report
Construction	<ul style="list-style-type: none"> The Centre for Low Impact Buildings, Coventry University 	<ul style="list-style-type: none"> CITB research & analysis WMCA Skills Gap Analysis Report 	<ul style="list-style-type: none"> Glenigan’s Database 	<ul style="list-style-type: none"> Engineering 2017 Report West Midlands Economic Forum CITB West Midlands report Barbour ABI Intelligence 	<ul style="list-style-type: none"> West Midlands Growth Company: Make Your Mark
Creative Creative agencies	<ul style="list-style-type: none"> Creative Nation Report (NESTA 2018) West Midlands Screen Bureau (CA/BFI) WMCA Creative, Culture & Tourism Group 	<ul style="list-style-type: none"> Skills & Employment Boards (GBSLEP/CWLEP/BCLEP) WMCA Diversity British Film Industry 2022 	<ul style="list-style-type: none"> Creative & Digital Cluster in Digbeth Maker & 3d Design Engineering Cluster in Jewellery Quarter Games Cluster focused around Coventry & Leamington Spa 	<ul style="list-style-type: none"> GBSLEP Creative Economy Mapping Study (BOP/GBSLEP) Games Industry in Coventry & Warwickshire Report (CWLEP/UKIE) WMCA Culture, Creative & Tourism Study (Tom Fleming/WMCA Creative Group) 	<ul style="list-style-type: none"> Centres of Excellence, Strong Cultural Offer across Region
Life Sciences Life Sciences and Health Care	<ul style="list-style-type: none"> West Midlands Academic Health Science Network Medical Devices Testing and Evaluation Centre 	<ul style="list-style-type: none"> WMCA Productivity & Skills Commission Industry engagement 	<ul style="list-style-type: none"> Midlands Health Data Records UK site West Midlands Growth Company 	<ul style="list-style-type: none"> Government Bioscience and Health Technology database: annual report 2016 	
Logistics and Transport	<ul style="list-style-type: none"> West Midlands Science & Innovation Audit 		<ul style="list-style-type: none"> West Midlands Freight Strategy West Midlands Strategic Transport Plan, ‘Movement for Growth 	<ul style="list-style-type: none"> West Midlands Growth Company IBM Research 	<ul style="list-style-type: none"> West Midlands Growth Company: “Make Your Mark
Environmental Technologies Low Carbon and Environment	<ul style="list-style-type: none"> Energy Capital Climate-KIC EBRI (Aston University) 		<ul style="list-style-type: none"> Aecom Powering Growth Report Productivity & Skills Commission/BC LEP Energy Report: “Energy as an Enabler 	<ul style="list-style-type: none"> Sustainability West Midlands Midlands Environmental Business Company (MEBC) members surveys 	

Grand Challenges – Academics Involvement

Ageing Society

Dr Paddie Murphy	Consultant
Prof Tim Dafforn	University of Birmingham (sabbatical)
Prof Guy Daly	Coventry University
Sinead Ouillon & Kam Kaur	Coventry University
Prof Liam Grover	University of Birmingham
Tim Jones, Antony Cobley, Lawrence Tallon	University Hospital Birmingham (UHB)
Dr Iestyn Williams	University Hospital Birmingham (UHB)
Tony Davis	University of Birmingham
Prof Janet Lord	WM AHSN
Prof John Darling	University of Birmingham
Prof Theo Arvanitis	University of Wolverhampton
Prof Karen West	University of Warwick
	Aston University

Clean Growth

Prof David Greenwood	University of Warwick
Matthew Rhodes	Energy Capital
Prof Mohammed Arif	University of Wolverhampton
Glenn Barrowman	University of Wolverhampton
Prof Martin Freer	University of Birmingham
Prof Wenyan Wu	Birmingham City University
Prof Sarah Hainsworth	Aston University
Prof Tony Bridgwater	Aston University

Future of Mobility

Prof David Greenwood	University of Warwick
Jenny Illingsworth	University of Birmingham
Assoc Prof Alan Pendry	Birmingham City University
Dave Wright	Coventry University
Prof Clive Roberts	University of Birmingham
Prof David Bailey	Aston University
Prof Carl Perrin	Coventry University

AI & Data

Dr Yanguo Jing	Coventry University
Prof Carsten Maple	University of Warwick
Prof Mohamed Gaber	Birmingham City University
Prof David Lowe	Aston University
Prof Amar Aggoun	University of Wolverhampton
Prof Giovanni Montana	University of Warwick
Dr Suzy Moat & Prof Tobias Preis	University of Warwick

CityREDI

Prof Anne Green	University of Birmingham
Prof Simon Collinson	University of Birmingham

Key Outputs Evidence Mapping Phase

1a

- Research library - <https://www.wmca.org.uk/media/2583/research-library-for-wm-lis-consultation.pdf>
- Annual State of Region and Detailed slide presentation on economy and foundations analysis includes data, tables, charts, maps and analysis of the local economy and the 5 foundations

1b

- 200 page sector analysis covering detailed stats and analysis of the comparative advantages and opportunities of all sub sectors

1c

- Presentation and Report on the outcomes of the Grand Challenges research and the opportunity spaces for the WM

All the information is available via: <https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/local-industrial-strategy-evidence-base/>

Expert Panel

We have established an expert panel which consists of:

Max Nathan, What Works Centre for Local Economic Growth

Charlotte Alldritt/Zoe Billingham, Centre for Progressive Policy

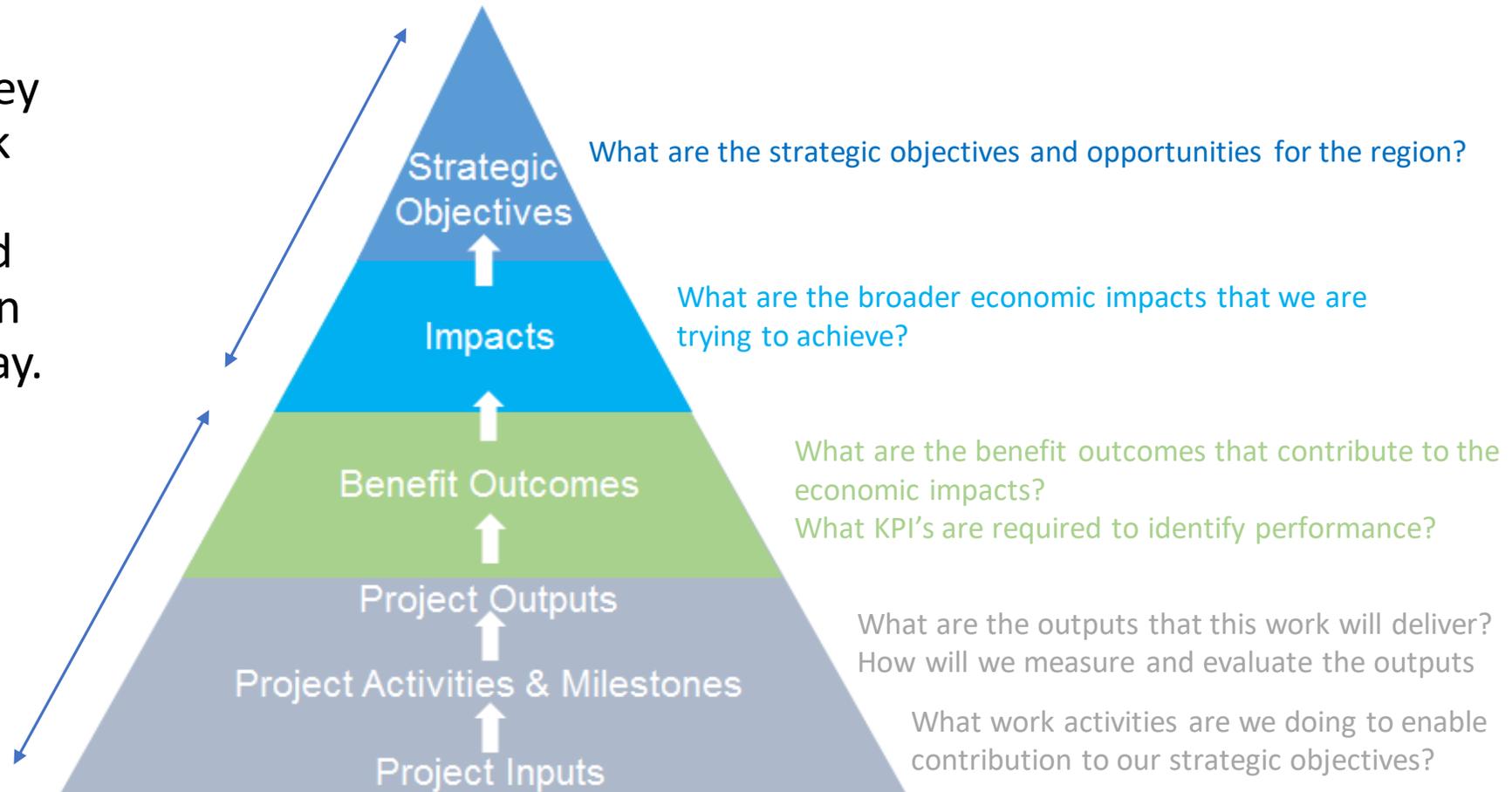
Naomi Clayton, from Centre for Cities

Andrew Paterson, BEIS

- The role of the panel is to:
 - Review and validates the totality of the existing evidence by giving endorsement
 - Where relevant, challenges the assertions made within the evidence
 - Suggest improvements by identifying gaps in intelligence, new ideas and recommendations about where the WM should go next
- The recommendation of the expert panel will also feed into the future developments of the evidence base
- The Evidence base is live and will be continuously updated and refreshed
- Work on progressing some of the gaps to date:
 - Supply Chain evidence
 - International benchmarking to enable a greater understanding of global opportunities to drive local productivity.

Performance – Monitoring & Evaluation

- Monitoring and Evaluation is a key supporting plank and all activity will be evaluated and monitored in an integrated way.



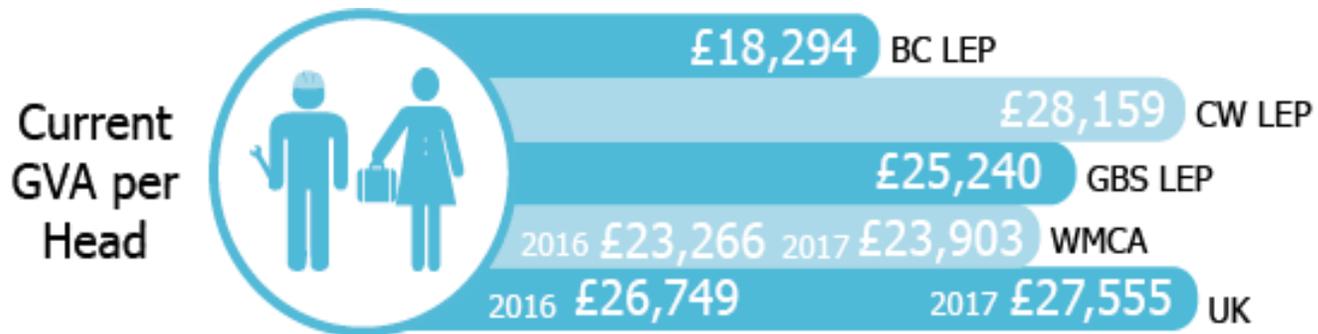
Economy Data



GVA

- The WMCA total Gross Value Added in 2017 was **£99bn**, contributing 5% to the total UK GVA.
- GVA per head in the WMCA is currently **£23,903** compared to UK average of **£27,555**

- GVA per hour has increased by more than double the rate of the UK over the past year and is currently **£28.90 per hour worked**. However, GVA per hour needs to increase by £3.70 to reach the UK level.



GVA per Hour Worked



Economic Renaissance

The West Midlands is a major part of the UK economy, generating **£99bn GVA** (5% of UK economic output) and achieving over **20% growth in the last 5 years**. Our region provides **2 million jobs** across a diverse range of sectors, including major multinationals and large numbers of SMEs, including those within essential global supply chains.

- GVA per hour has increased by more than double the rate of the UK over the past year
- There are 2 million jobs, a record high
- Higher level qualifications are increasing faster than the national rate
- The youngest population outside London in diverse and stable communities
- The West Midlands is the fastest growing UK region for goods exports
- FDI projects have almost tripled since 2011/12
- The number of people claiming out-of-work benefits is the lowest its been for over 10 years
- We are building more homes, with completions up by 25% over the last two years
- Good progress on clean growth, with a 24% increase in economic productivity and 18% decrease in carbon emissions over 5 years



With distinct challenges and potential

Whilst we are growing faster overall than the UK as a whole, **the output gap** in terms of GVA per head with the rest of the UK has increased. Performing to our full potential our economy would be nearly £15.1bn bigger.



The output gap demonstrates the unmet economic potential when the population does not have the equivalent GVA per head as the UK. It is calculated by multiplying the local population (4.14m) by the shortfall in GVA per head (£3,653) compared to the national average GVA per head

There are **3 key components** for calculating the output gap -



External challenges around Brexit and the global economy mean we must be clear about our offer and what makes this a great place to invest. It will help us respond to changing conditions for trade, investment, regulation and funding.

And we know that the benefits of growth are not felt by all, in terms of access to jobs and opportunities, stubbornly poor indicators on e.g. healthy life expectancy, and childhood obesity and growing problems of housing affordability.

We have low levels of access to green space, local hotspots of poor air quality, 12% of our households in fuel poverty, and still high levels of carbon emissions.

Output Gap Analysis



Insufficient Skill Levels

- This is calculated by comparing the number of people at each qualification level compared to the national average and the earnings differential as a result of any skills deficits.

Too Few in Employment

- This is based on the shortfall in the employment rate compared to the national average multiplied by the GVA per employee.

Economy Lacking Dynamism

- This is based on the residual from the overall gap after the skills and employment deficits have been taken into account.



Further Reading

- **West Midlands Combined Authority (WMCA) devolution agreement:** <https://www.wmca.org.uk/media/1375/westmidlandsdealdocument.pdf>
- **West Midlands Combined Authority (WMCA) devolution agreement (2):** https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/662138/A_Second_Devolution_Deal_for_the_West_Midlands.pdf
- **WMCA Strategic Economic Plan (SEP):** <https://www.wmca.org.uk/media/1382/full-sep-document.pdf>
- **WMCA Strategic Economic Plan (SEP) Technical Appendices:** <https://www.wmca.org.uk/what-we-do/strategy>
- **Measuring Success – Review of Indicators and Recommendations:** <https://www.wmca.org.uk/media/2237/measuring-success.pdf>
- **WMCA Launch Statement:** <https://www.wmca.org.uk/media/1380/launch-statement.pdf>

Foundations of Productivity Evidence



Foundation 1 - Ideas



Ideas - Context

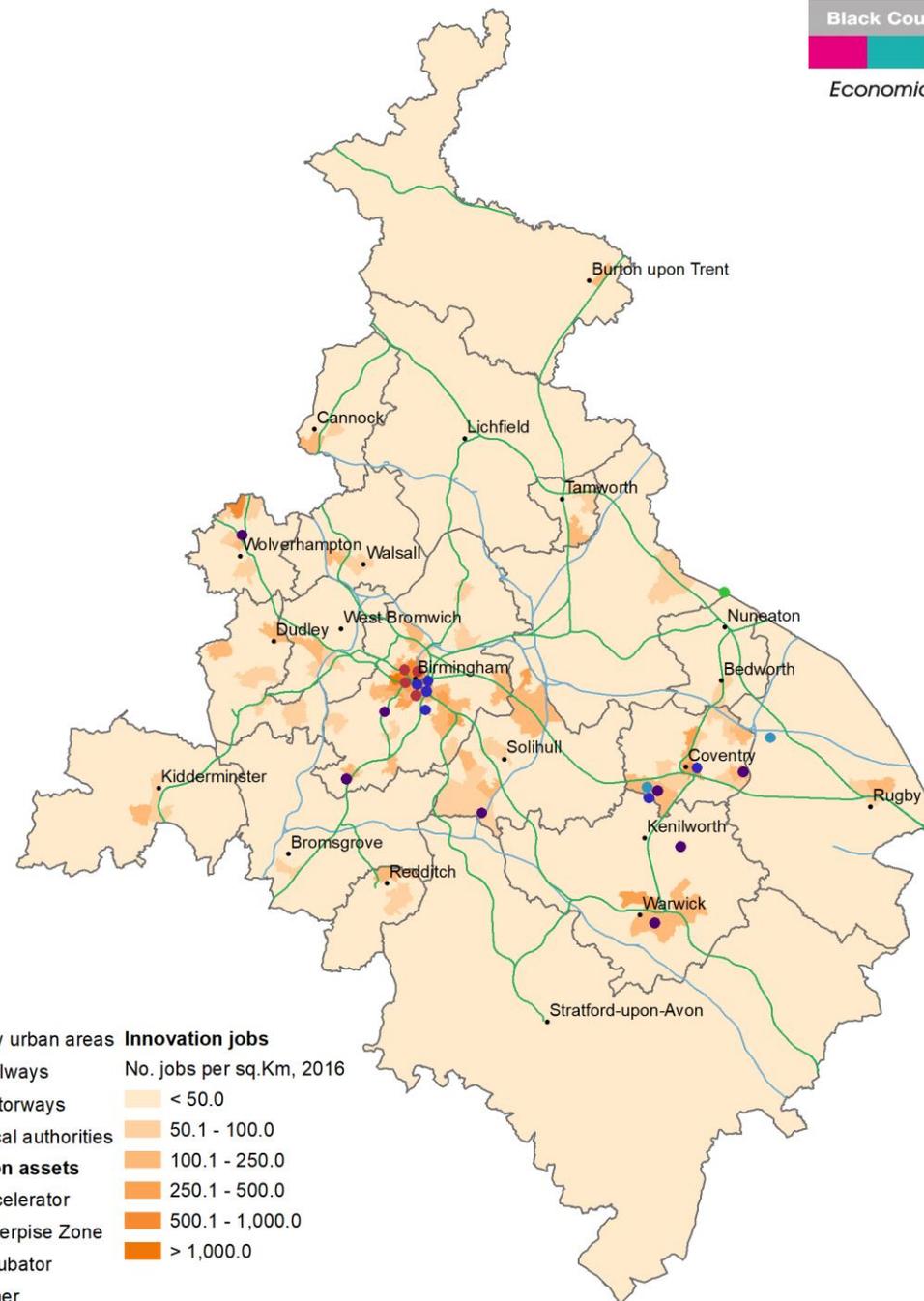
This is an innovative economy, built on the development and commercialisation of new ideas, processes and products.

The 2017 Science and Innovation Audit frames our understanding how innovation happens and is supported in the region.

Industrial Strategy establishes the actions we need to drive innovative activity further and maximise impact on productivity. Improving innovation and making best use of research assets is central to productivity growth.

Example map showing innovation assets

Innovation Jobs are defined as those in a selection of SIC code sector groups based on the OECD sector definition for “high-level Science and Technology” and the UK Innovation Survey industrial category of “high-tech manufacturing”.



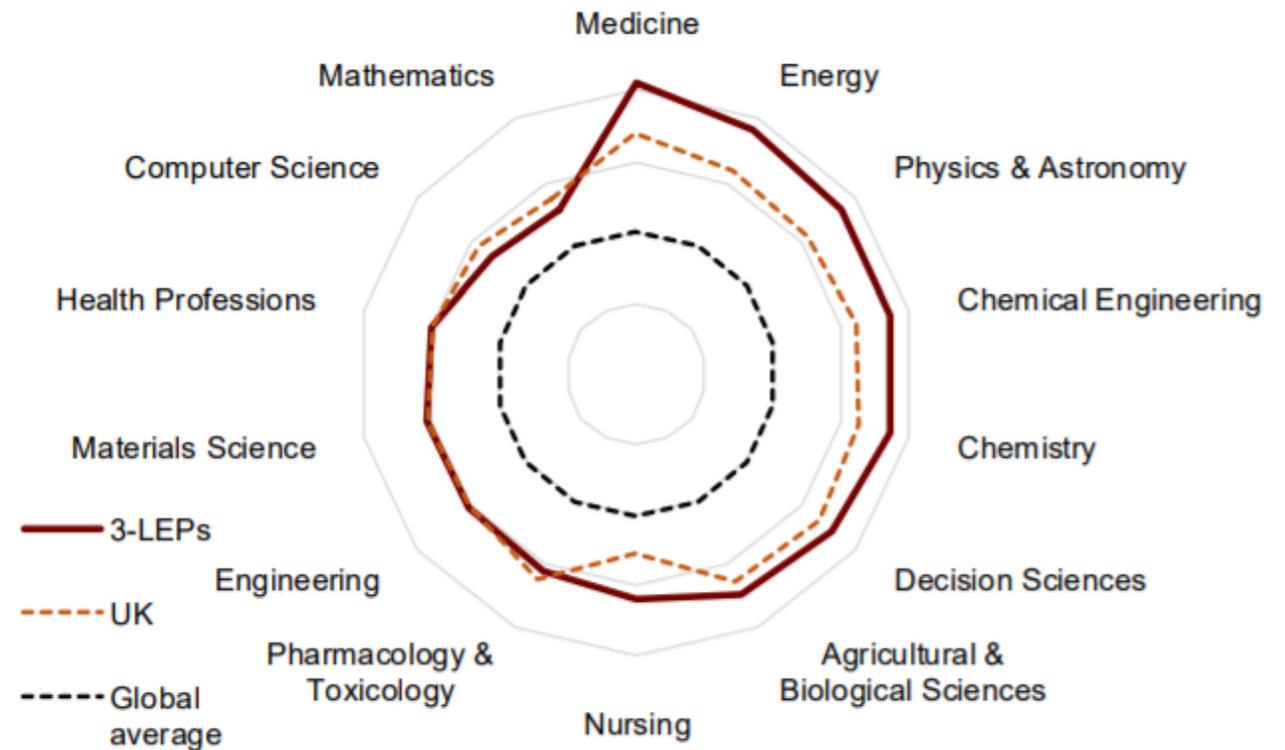
Innovation Ecosystem

- The West Midlands has a **sophisticated and thriving innovation ecosystem**, with a diverse mix of research and applied universities with commercially engaged academics, science parks, incubators and accelerators.
- **GBSLEP has the highest number of accelerators per 10,000 new businesses of any LEP (1.43)**
- Strengths in advanced manufacturing, digital technologies and data and systems integration.
- Home to **two of the UK's strategically important Catapults** (High Value Manufacturing and Energy Systems).
- Market strengths of next generation transport, sustainable construction, energy storage & systems and technologies for better health identified in the SIA.
- Unique **5G opportunity** and good superfast broadband availability.
- WM performs well in attracting research funding, **8% of Innovate UK funding**) – higher than its share of businesses.
- Commercially engaged academics.
- Locally available funding from range of sources has increased – but opportunity to go further, particularly around smaller scale commercial research and process / new ways of doing business.
- **Greater innovation through the utilisation and enhancement of our current assets, and further policy action, can improve our business dynamism, productivity and contribute to the narrowing of our output gap. Innovative companies also provide good jobs and can enhance the region's infrastructure and talent pool.**

Higher Education

- Over **150,000 students** were enrolled across our **eight universities** in 2015/16, 7% of the UK total.
- **At least one of our universities was ranked in the top 20 nationally for the power and/or quality of their research** in 33 of the 36 REF Units of Assessment.
- WMCA universities have particular research strength in subject areas including **Medicine, Energy, Physics and Astronomy, and Chemical Engineering, and Chemistry**
- Levels of collaboration for innovation are moderate by UK standards though, and this partly contributes to our **low levels of new-to-the-market innovation compared to international competitors.**
- The **LIS commitment to support business & university/Catapult collaboration** will aim to drive productivity through innovation in both frontier firms (typically through new-to-the-market innovation) and less dynamic firms (typically via new-to-the-firm innovation), **creating tangible benefits for varied levels of our economy.**

Field Weighted Citation Index for the 3-LEP HEIs relevant subject areas



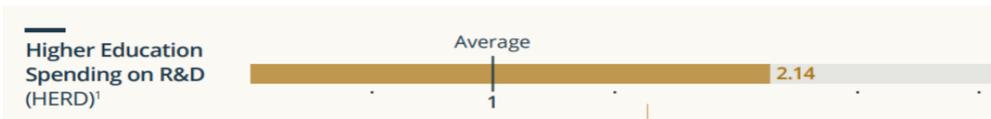
West Midlands
Combined Authority

Source: Benchmarking Local Innovation 2017 (ERC & EEN), based on 2012-2014 period

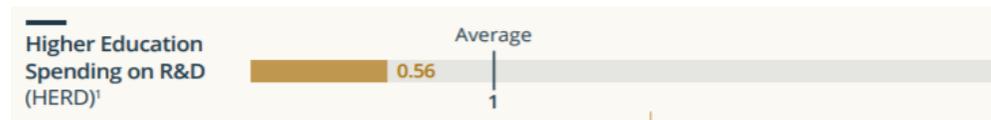


Higher Education: Spatial Differences

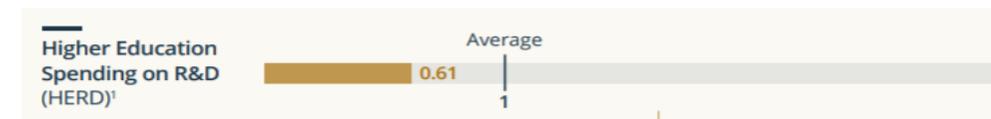
Black Country



Coventry & Warwickshire



Greater Birmingham & Solihull

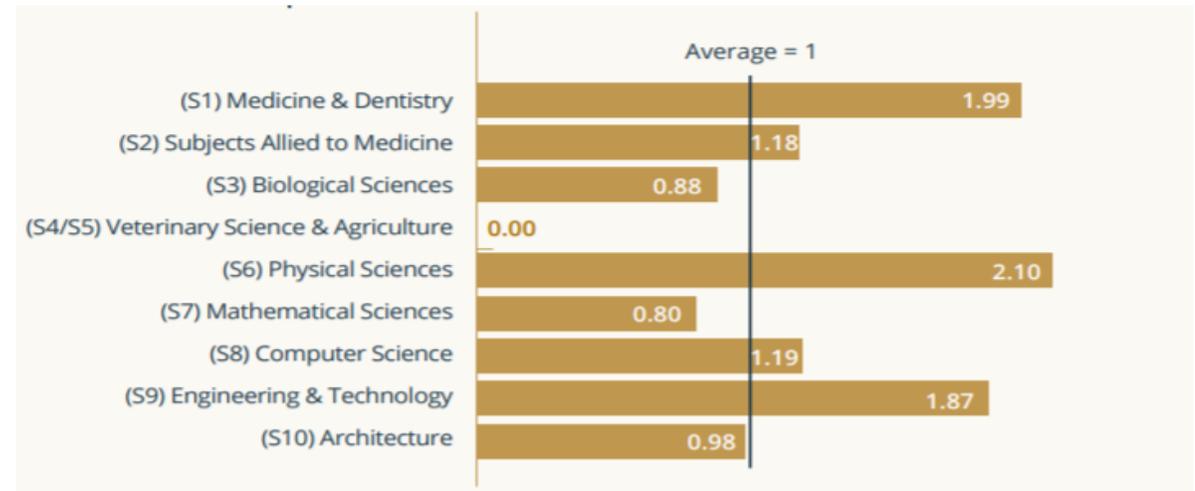


Out of the three WMCA LEPs, the **Black Country has by far the highest HE spending on R&D** – double the national average. CW and GBS are below average on this measure.

However, the Black Country is below average across all subject groups for submissions to the **Research Excellence Framework (REF)**. As shown below, **GBS has particular strengths within this on medicine & dentistry, physical sciences and engineering/technology**. CW is also above average across multiple subject areas, most notably mathematical sciences and physical sciences.

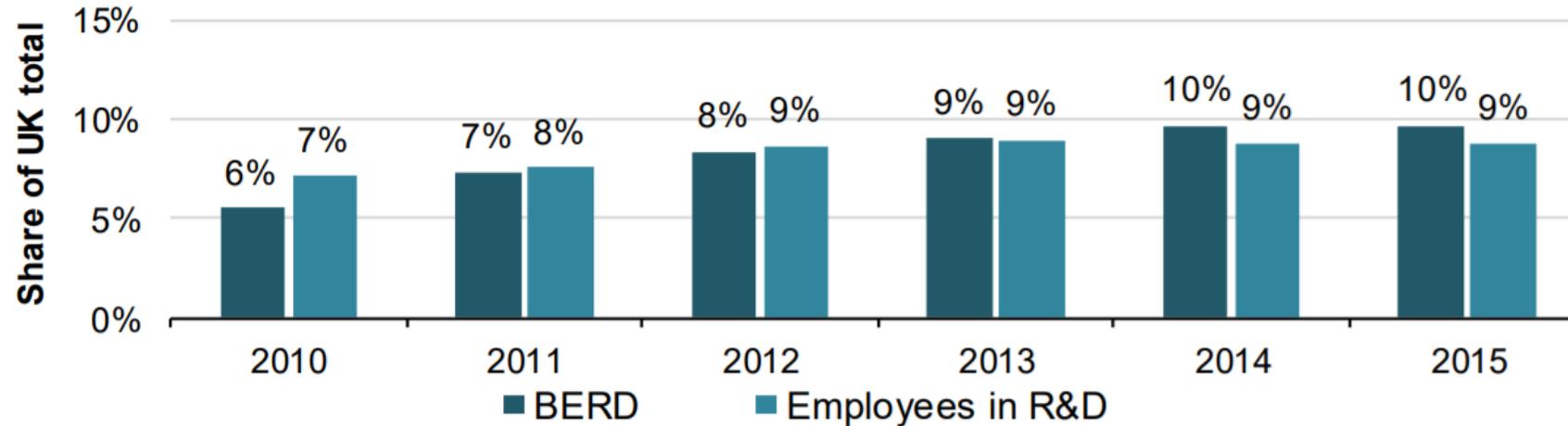
Greater Birmingham & Solihull

Indicator of Staff Submitted for Involvement in Innovative Research Production to the Research Excellence Framework (REF)



R&D Investment

Private sector R&D expenditure and employment in the West Midlands (region) level (2010-15)



Source: SQW analysis of Research and Development in UK Businesses

- Businesses across the WM region invested **£2.2bn in R&D in 2015, accounting for 10% of the UK total, with an increase in the share of all UK BERD (Business Enterprise R&D) undertaken in the West Midlands since 2010.**
- Levels of investment in R&D and design are however moderate by UK standards and low compared to international competitors. So that firms of all sizes can capitalise on the region's distinctive strengths such as clean & connected mobility, the LIS provides broad and sector-specific actions to raise innovation activity. For example, at the sector level, **our LIS will consider proposals such as CITEC, a programme dedicated to cross-sector, demand-led innovation**, including for the aerospace and rail industries, allowing some of our smaller companies to feel the benefits of R&D investment and innovation.

Innovate UK

Innovate UK grant funding to organisations based in the WMCA (3-LEP) area

	2010	2011	2012	2013	2014	2015	Total
Annual grant (£m)	37.5	59.9	27.9	42.4	35.2	44.6	247.5
% UK total	13%	17%	4%	8%	6%	6%	8%

Source: SQW analysis of Innovate UK funded projects database

- Over 400 organisations in the 3-LEP WMCA participated in projects securing Innovate UK funding between 2010 and 2015, equating to grants of **£247.5m**. This is **8% of the UK total** which is a **higher share of Innovate UK funding than our population of firms would suggest (6%)**.
- **There's a spatial imbalance** to the success of funding applications. Coventry & Warwickshire lead the way on innovation, with GBSLEP and particularly BCLEP needing improvement in their grant award performance. **The Black Country is below average across all Innovate UK categories for grants offered.**
- **As well as continuing to support high-level, high-tech innovations to meet the industrial strategy grand challenges**, our LIS commits to **encouraging a broader and more inclusive innovation policy that can help supply chain SMEs from across the region to contribute to the WMCA's distinctive strengths**. LIS actions such as the **launch of a new fund for wrap-around support for businesses looking to grow into new sectors, supply chains & markets will help redress the regional imbalance.**
- Furthermore, sector asks will drive positive change across the economy. **In aerospace, the lack of innovation funding that reaches SMEs can be reversed through a shift in focus from the funding body (ATI) to a more inclusive model.**



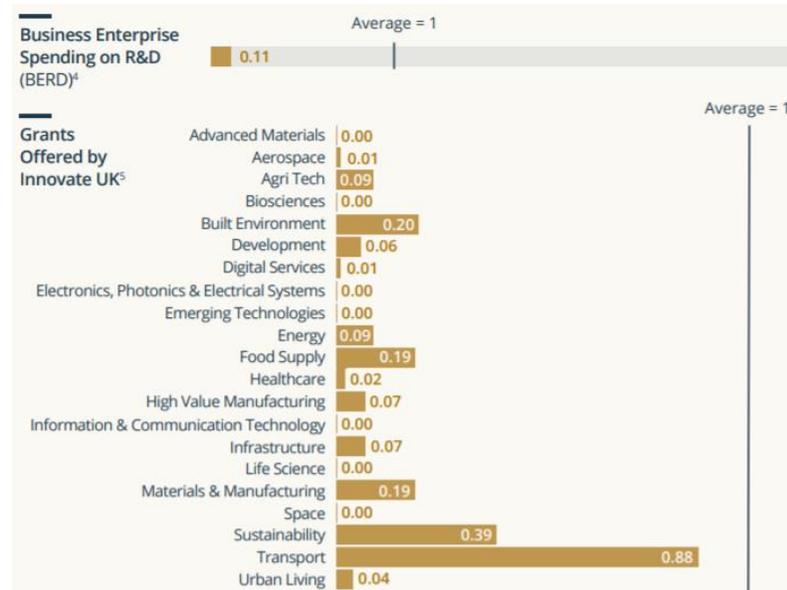
West Midlands
Combined Authority

Note: This data reflects the findings of the WM SIA – later releases may now be available which will be considered in the near future.

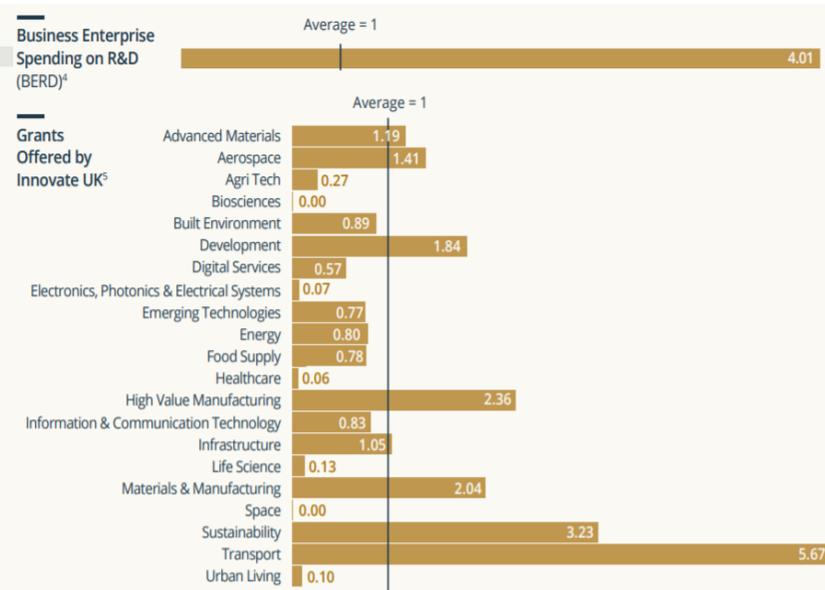


BERD and Innovate UK: Spatial Differences

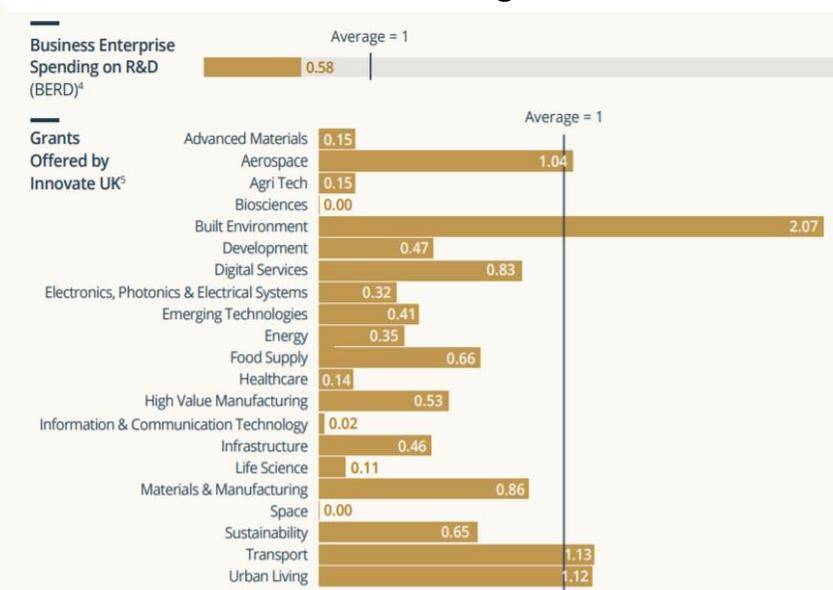
Black Country



Coventry & Warwickshire



Greater Birmingham & Solihull



There are large differences across LEPs when it comes to BERD and grants offered by Innovate UK. The Black Country is well below average for BERD and across all themes for Innovate UK awards. Greater Birmingham & Solihull is also generally below average for both measures, but has had Innovate UK success in a number of areas including the Built Environment, Transport, aerospace and urban living. **Coventry & Warwickshire performs extremely well on BERD, 4 times above the national average.** On Innovate UK grant awards, success has been driven in the transport, sustainability and high value manufacturing themes.

Ideas Sector Example: Aerospace

- Though there have been successful programmes (e.g. NATEP), attempts to support innovation in aerospace are **patchy and poorly co-ordinated, with a disproportionate focus on large businesses.**
- An Aerospace Technology Institute report from 2016 suggests that **less than 3% of aerospace R&D spending comes from SMEs.**
- ATI spend approximately 98% of their Midlands R&D funding on one company – Rolls Royce. There's **clearly scope for more distributive and inclusive approach to innovation in the sector.**
- The fact that only 1.8% of ATI's spend in the UK goes into the West Midlands reflects that our **industry make-up is predominantly SME suppliers across the industry (see the diagram on the right),** and that these companies are currently left out of much of the sector's innovation funding.
- LIS-backed programmes like **CITEC** aim to reduce the disproportionate nature of innovation funding in the sector and **stimulate technology development in within the supply chain**

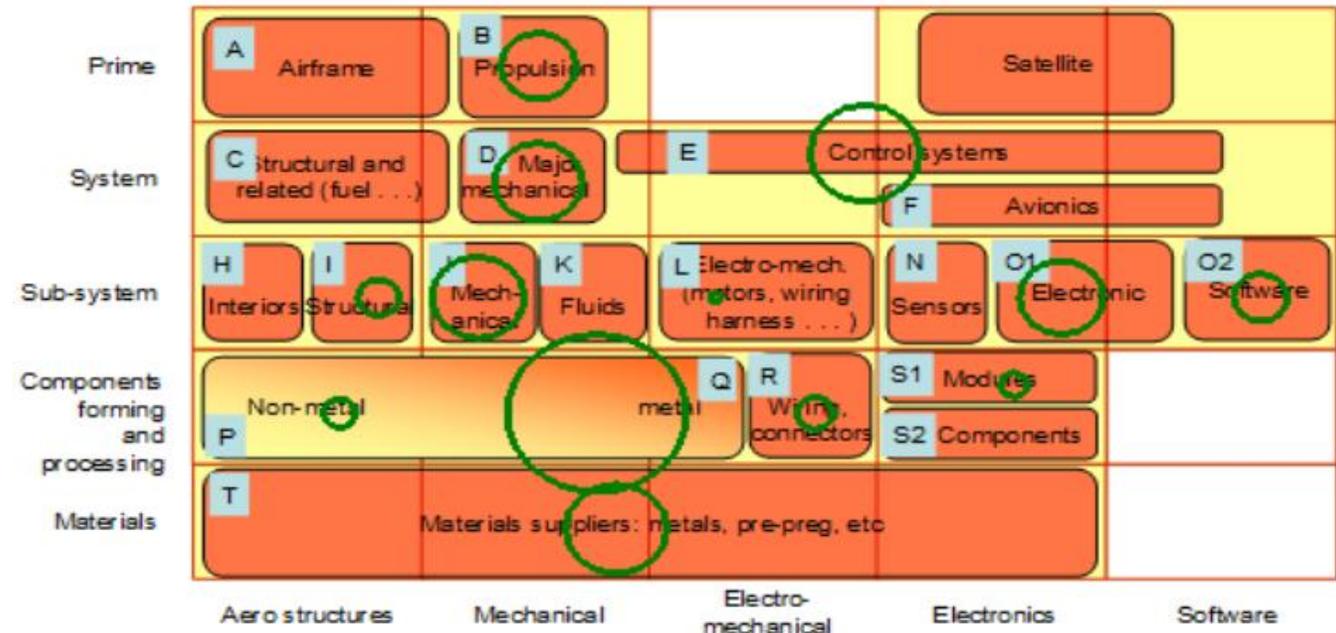


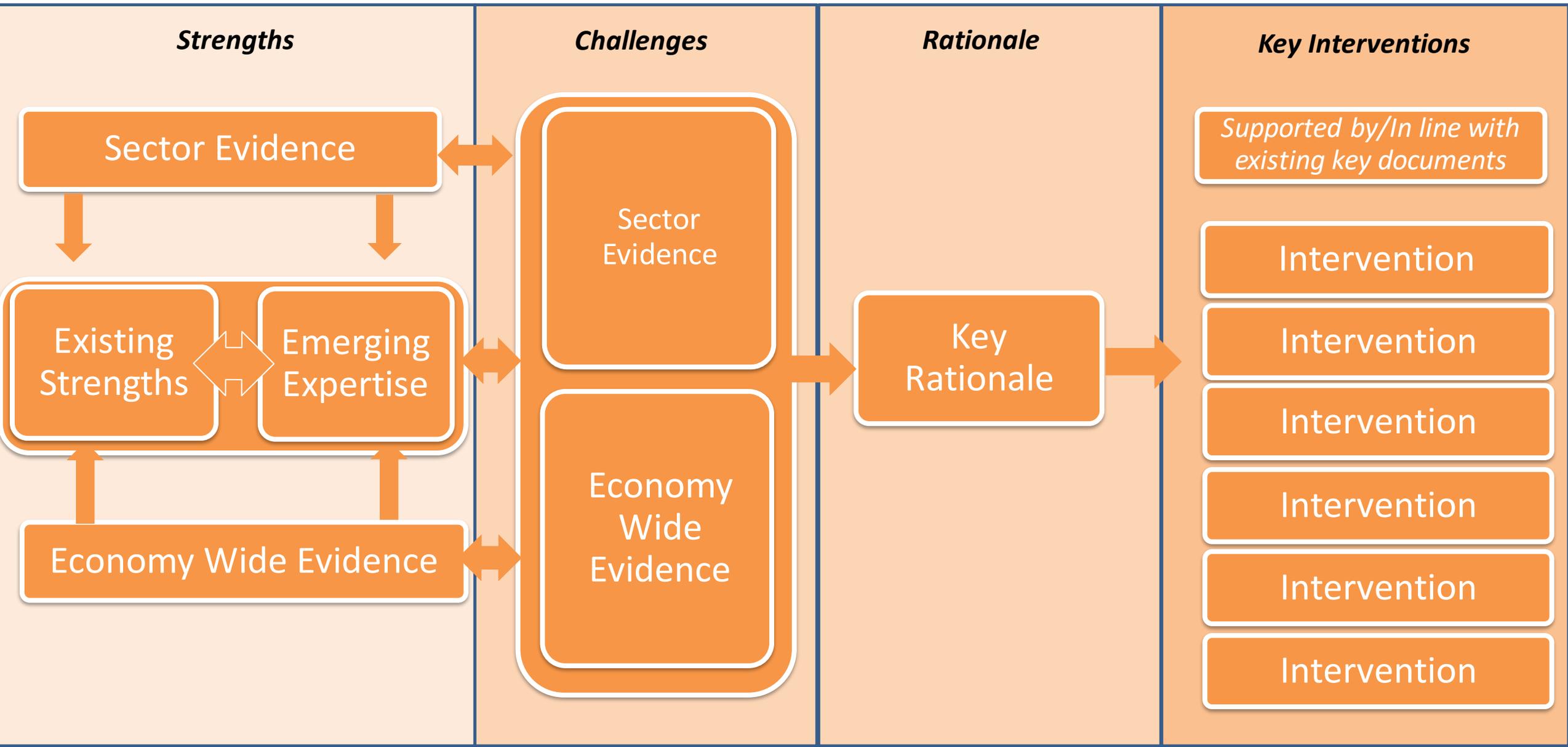
Figure 4.1: West Midlands "flying parts" sectors: relative sizes



Summary Story: Ideas

- Science & Innovation Audit identified the WMCA as an **innovative economy with a sophisticated and thriving innovation ecosystem**.
- The region has high-performing universities and Catapult centres, with a cluster of accelerators in GBSLEP. We also perform above average for Innovate UK funding awards, though there is a **spatial imbalance** within this.
- Levels of collaboration for innovation, new-to-the-market innovation and R&D investment are moderate by UK standards and low compared to international competitors.
- Closing the gap on competitors will require a **blend of sector-specific and broad interventions**, e.g. our LIS commitment to **support better university/business partnerships and sector-level activity such as exploring the viability of the CITEC programme, a demand-led innovation project that will catalyse positive improvements across many sectors, including life sciences, rail and aerospace**.
- Capitalising on the region's identified competitive advantages will be central to raising innovation through focused LIS actions, for example the **development of a West Midlands Future Mobility Zone for our mobility and innovation strength, positively impacting on sectors like automotive**.
- Importantly, our LIS encourages a **broader and more inclusive innovation policy** that can help supply chain SMEs from across the region to contribute to the WMCA's distinctive strengths and national grand challenges. In aerospace for example, there's a need for the ATI to rebalance funding so that it **reaches more SMEs, helping them to contribute to future mobility and clean growth in particular**.

West Midlands LIS: Evidence to Intervention Framework – by Foundation of Productivity



West Midlands LIS: Evidence to Intervention Framework – ‘Ideas’

Strengths

- Home to two of the UK’s strategically important Catapults: advanced manufacturing and energy systems.¹
- Market strengths in next generation transport, sustainable construction, energy storage and technologies for better health.²
- University research strength across major subjects such as medicine, energy, physics, engineering and chemistry.³
- Leading the way on technologies in key sectors, such as CAV, battery manufacturing, digital rail, energy storage, future healthcare, and sustainable construction.⁴

Long-standing, sophisticated and thriving innovation ecosystem, driven by innovation in industry and academia with a particular focus on key identified market strengths.

- Unique 5G capabilities will allow the region to capitalise on rapid innovation of data use.¹⁰
- The region leads on tech such as CAV, digital rail and EVs - all will be driven by data and innovation.¹¹

- Innovative economy built on the development and commercialisation of new ideas, processes and products.⁵
- Diverse mix of research and applied universities with engaged academics, science parks, incubators and accelerators (of which our region has one of the largest concentrations in the UK).⁶
- At least one of our universities was ranked in the top 20 nationally for the power and/or quality of their research in 33 of the 36 REF Units of Assessment.⁷
- The region performs above its weight for attracting research funding (e.g. 8% of Innovate UK funding)⁸ and BERD - £2.5bn private sector R&D in 2017 and growing.⁹

Challenges

- Innovation in key sectors is concentrated around clusters of OEMs and large firms who collaborate with universities and Catapults.¹²
- Many smaller, often supply chain firms, find it difficult to engage with the innovation ecosystem.¹³
- For example, less than 3% of aerospace R&D spending comes from SMEs.¹⁴
- 46% of the West Midlands’ output gap is caused by weak performance in competition, investment, enterprise & innovation across sectors.¹⁵

- Levels of collaboration for innovation, new-to-the-market innovation and new-to-the-firm innovation are moderate by UK standards and low compared to international competitors.¹⁶
- Spatial imbalances exist across key indicators: e.g. for BERD, CW is 4 times above the UK average, with the Black Country well below.¹⁷
- Similarly, West Midlands Innovate UK funding awards are concentrated in CWLEP (2/3s of regional awards since 2014/15).¹⁸

Rationale

Despite considerable R&D and innovation strengths and world-class assets, the West Midlands performs moderately on key innovation measures like collaboration, new-to-the-market innovation and new-to-the-firm innovation. Spatial and structural imbalances potentially hold the region back, with innovative activity too heavily concentrated within large firms and certain places in key sectors. Innovation needs to become “business as usual” across sectors and geographies across the West Midlands

Key LIS Interventions

In line with the intelligence set out in the *West Midlands Science & Innovation Audit*¹⁹

Encourage a broader and more inclusive innovation policy that can help supply chain SMEs contribute to the region’s distinctive strengths.

Sharing and development of intellectual property for collaborative innovation and consideration of where IP finance can improve the access to finance for innovative companies.

Support business networks and programmes to join-up assets and entrepreneurs, and help identify the opportunities for collaboration.

Create new support programmes integrated with local supply chains, including through demonstrator projects & peer-to-peer networks.

Create a West Midlands foresight programme to generate new ideas and promote awareness of latest market demand

Develop an Industry-focused regional grant scheme with a range of funding options

Wrap-around business support with innovation and R&D at its centre

'Ideas' Foundation: Flow Diagram Sources

Reference number	Source & Key Dates	Link/Info
1	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf The SIA acknowledges the Catapult centres that are located in the West Midlands: two centres within the High Value Manufacturing Catapult network (at Warwick Manufacturing Group and the Manufacturing Technology Centre) and the Energy Systems Catapult in Birmingham: The Catapult centres are a network of world-leading centres designed to transform the UK's capability for innovation in specific areas and help drive future economic growth. See https://catapult.org.uk/ for further details.
2	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf The SIA identified four evidence-based Market Strengths, areas by which the region has distinctive strengths and genuine competitive advantage from our science and innovation base.
3	SIA analysis of Sci-Val Data (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf (page 12) shows the Field Weighted Citation Index for the 3 LEP HEIs relevant subject areas.
4	West Midlands LIS overall document and supporting sector action plans.	Available on request, these documents provide greater evidence on the specific technologies outlined in key sectors.
5	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf
6	West Midlands Science and Innovation Audit (2017), Nesta (2017): Business Incubators and Accelerators: The National Picture.	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf The Nesta report reports that the West Midlands region has the largest Percentage of total accelerators in the UK outside London (p.32)
7	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf
8	SQW analysis of Innovate UK funded projects database, on behalf of the West Midlands SIA (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf - p.24
9	Business enterprise research and development, UK: 2017 (ONS)	Yearly ONS release on BERD that splits by NUTS1 UK region. This data is therefore based on the West Midlands region .
10	Government (DCMS) commitment in September 2018 to make the West Midlands the UK's first large-scale 5G testbed	https://www.gov.uk/government/news/west-midlands-to-become-uks-first-large-scale-5g-testbed
11	West Midlands LIS overall document and supporting sector action plans.	Available on request, these documents provide greater evidence on the specific technologies outlined in key sectors.
12	West Midlands LIS sector action plan evidence (e.g. metals & materials, aerospace, rail).	Available on request (in development).
13	West Midlands LIS sector action plan evidence (e.g. metals & materials, aerospace, rail).	Available on request (in development).
14	Aerospace Technology Institute (2016): 'Raising Ambition for UK Industrial Strategy'	https://www.ati.org.uk/wp-content/uploads/2017/10/ATI-Fathom-Consulting-Raising-Ambition-for-UK-Industrial-Strategy-Nov-2016.pdf - page 18
15	Black Country Economic Intelligence Unit Analysis of ONS GVA per head data (2017 latest data)	Included within overall WM LIS document – available on request.
16	'Business innovation, diffusion and productivity in the West Midlands' (WMCA Productivity & Skills Commission 'Foundation' Report) (2018)	https://www.wmca.org.uk/media/2229/business-innovation.pdf - see outlined the four key innovation challenges (pp 3-4).
17	Smart Specialisation Hub – LEP Profiles (2018)	https://smartspecialisationhub.org/lep-profiles/ - full data downloadable
18	Smart Specialisation Hub – LEP Profiles (2018)	https://smartspecialisationhub.org/lep-profiles/ - full data downloadable
19	See reference 1 above	

Further Reading

- **Business Innovation, Diffusion and Productivity in the West Midlands:**
<https://www.wmca.org.uk/media/2229/business-innovation.pdf>
- **A Science & Innovation Audit (SIA) for the West Midlands:**
<https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf>

Foundation 2 – People



People – Context

A high performing labour market has a crucial role to play in enabling local people, businesses and the wider West Midlands economy to flourish and thrive. We want to better match the skills of the people in our region with the current and future needs of our businesses, to accelerate productivity and deliver economic growth.

In Summer 2018 we published the findings of the Productivity & Skills Commission and our response, the Regional Skills Plan. The Regional Skills Plan aims to ensure:

- More people move into employment
- More people move into higher skilled jobs
- More skilled employees available to support business growth and productivity
- All communities benefit from the region's economic growth
- An agile and responsive skills system that is more aligned to the needs of business and individuals

We know what we need to do to increase skill levels and recently secured a Skills Deal with Government. This is an important step which could unlock up to £69m for business, young people and adults.

Opportunity through our commissioning of the £100m+ Adult Education Budget to generate a shift in the way the region works together to deliver more for our residents and businesses.

WMCA (3 LEP) Population Age Profile



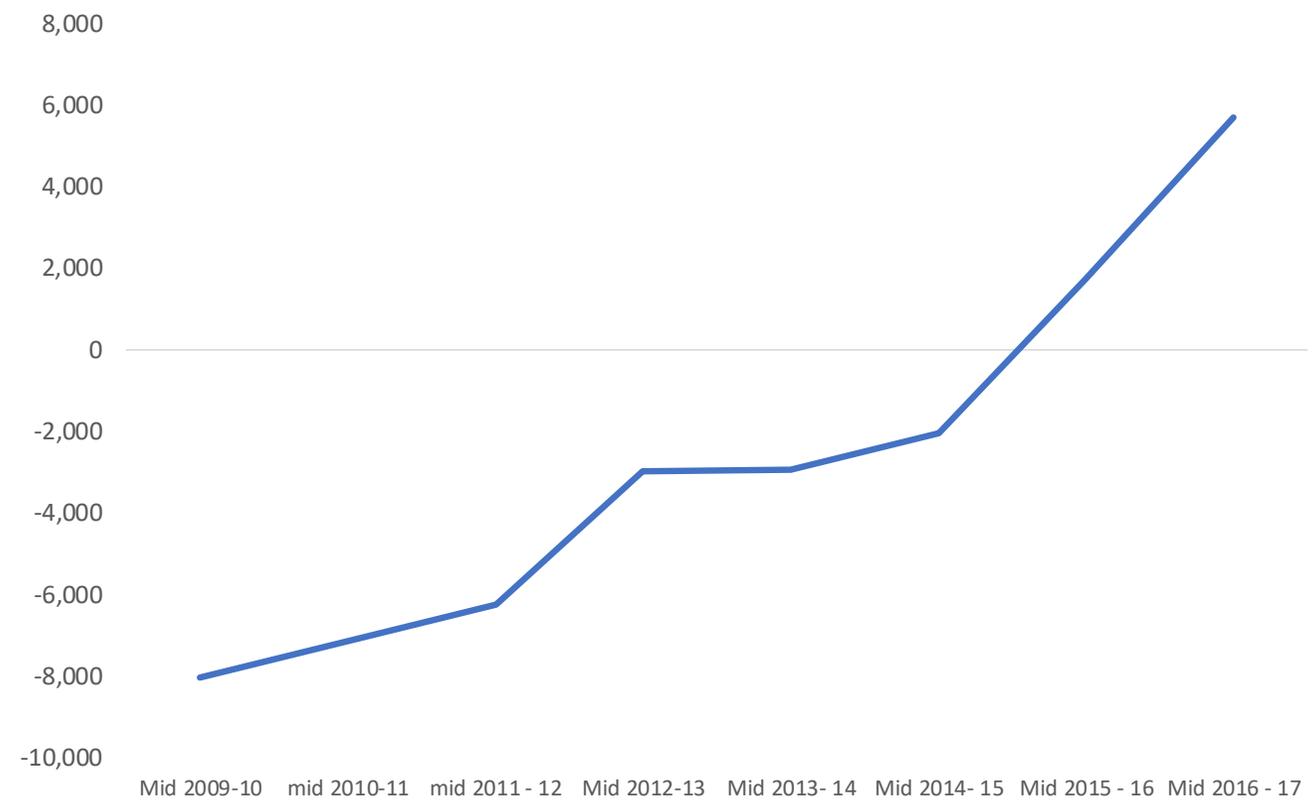
- WMCA total population is currently **4.1 million**
- In the last 10 years WMCA population has increased by **8.4%** (+65,665) for those aged under 15 years, **+5.6%** (+137,615) 16-64 year olds and **18.7%** (+111,227) aged over 65
- From 2017 to 2041, WMCA population is set to increase to 4.65m.
- **A 6.5%** (+54,958) growth for children aged under 15 years old if forecast by ONS, a faster rate than England (1.9%). **+6.7%** (+173,000) for those aged 16-64 years old (England 3.3%) and **+39.7%** (+279,777) for the over 65's.
- Currently the 0-15 age cohort account for 20% of the pop and this is forecast to be 19% in 2041; 63% for the 16-64 year olds falling to 59% by 2041 and an increase proportion of 65+ from 17% currently to 21% in 2041.



Migration

- The West Midlands region historically lost residents to other regions within the UK until mid 2015 – 16 where there was a steady increase.
- Between 2015-16 and 2016 -17 inflows **increased significantly to result in a net inflow of 5,698 people**. This is a **235.4% increase** which is the highest percentage increase than any other region within the UK.
- Since mid 2007 – 08 the West Midlands has had a net influx of international migration. **Mid 2016 – 17 net inflow was 28,224 people**, however this is a 20% decrease compared to the previous year; this is the first year to see a decrease since mid 2012.

West Midlands Region Internal Migration Net Inflow



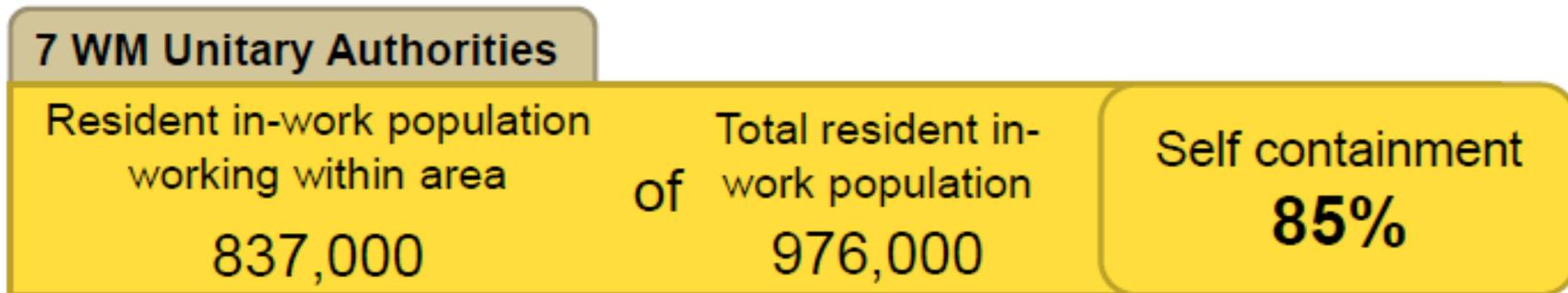
Source: ONS – Migration Indicators Suite

Travel to Work

The self-containment percentage for the three LEP areas combined is:

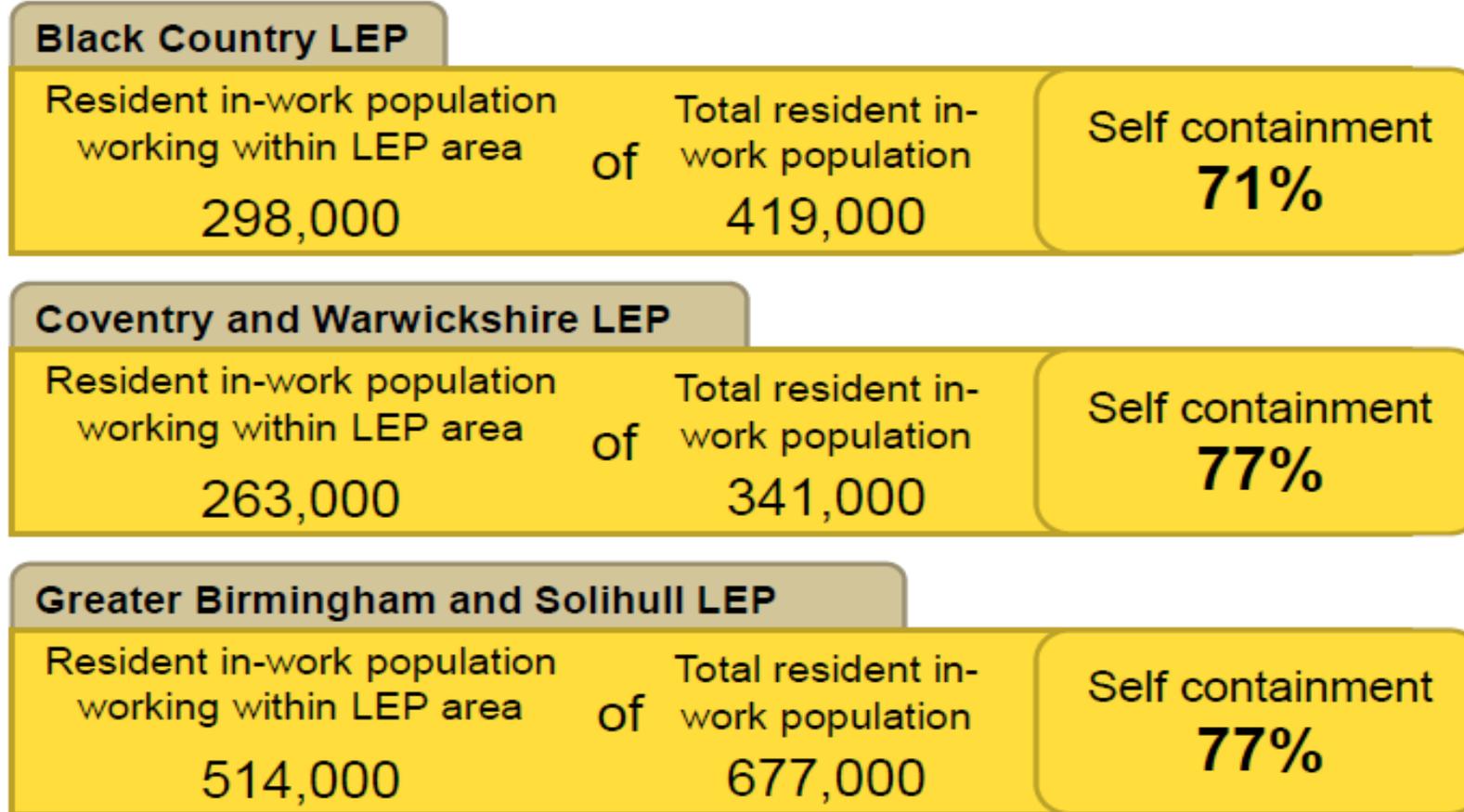


The self-containment percentage for the 7 West Midlands unitary authorities is:



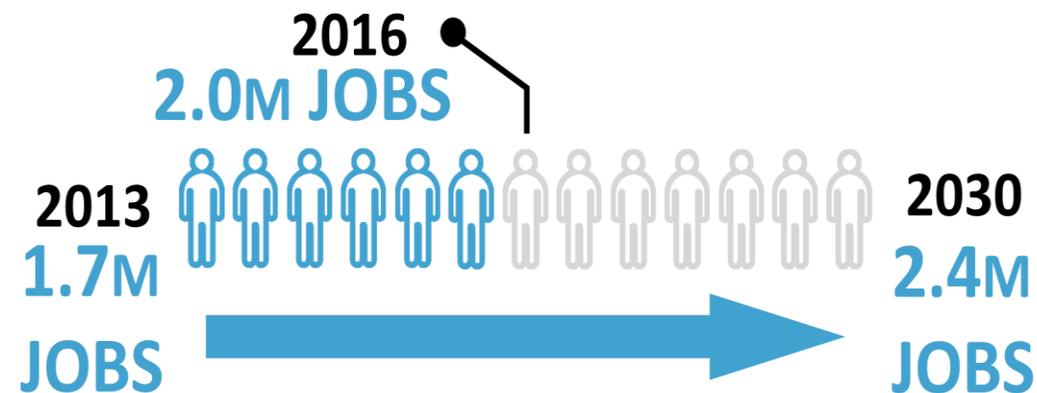
Travel to Work

The self-containment percentage for the three LEP areas are:



Jobs & Earnings

- Jobs are increasing and there are currently **2 million people working in the WMCA area**. The number of people claiming out-of-work benefits is at the lowest level for over 10 years.
- However, the region has the **lowest employment rate of any mayoral combined authority (70%)** and an above average unemployment rate of 5.7%. There are particularly weak spots such as Sandwell, Birmingham and Wolverhampton.
- The total average annual earnings for residents employed full-time across the WMCA rose by £472 on the year before to **£27,574** in 2017.
- However, one in four jobs pay below the 'real living wage' and **salary levels vary within different parts of the West Midlands**: the median full time weekly wage for Black Country residents is £479 (the lowest of any LEP), compared to £533 in GBS LEP and £556 in Coventry and Warwickshire

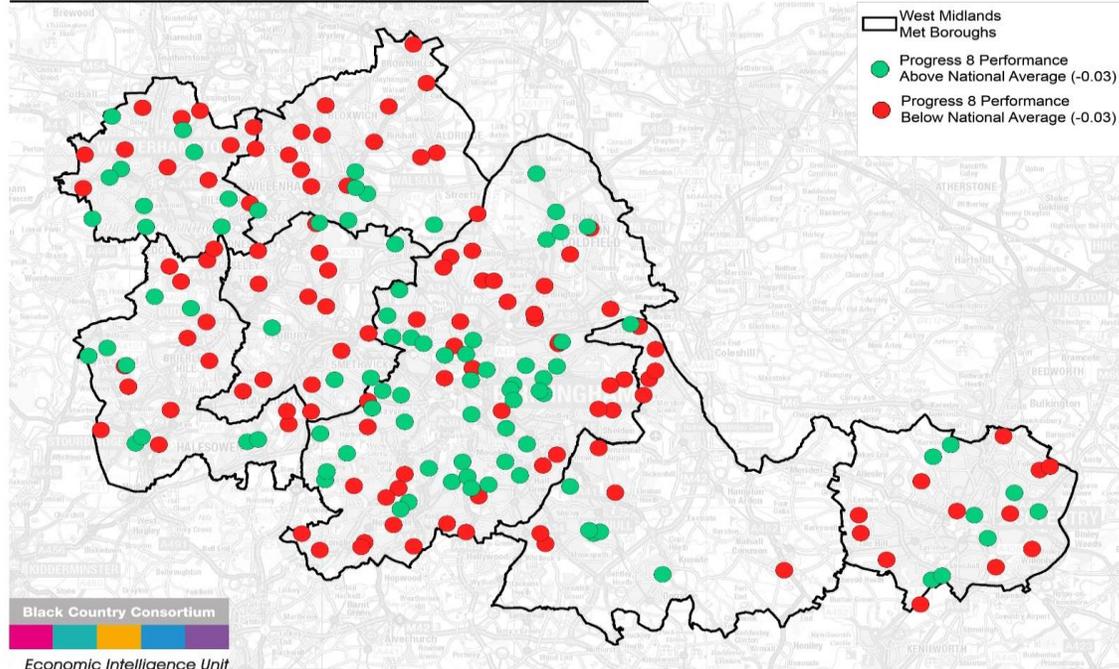


- The LIS reinforces the regional commitment to raise the number of well-paid jobs further. In response to the identified challenges, we will, amongst other actions, **deliver the £4.7m Employment Support Pilot** to support those out of work, **establish an employment support framework** for the region and **deliver current and future training and skills provision through the Adult Skills Budget**.
- The West Midlands economy should serve inclusive, social goals which is underpinned by providing the population with well-paid, stable jobs.



Schools & Careers

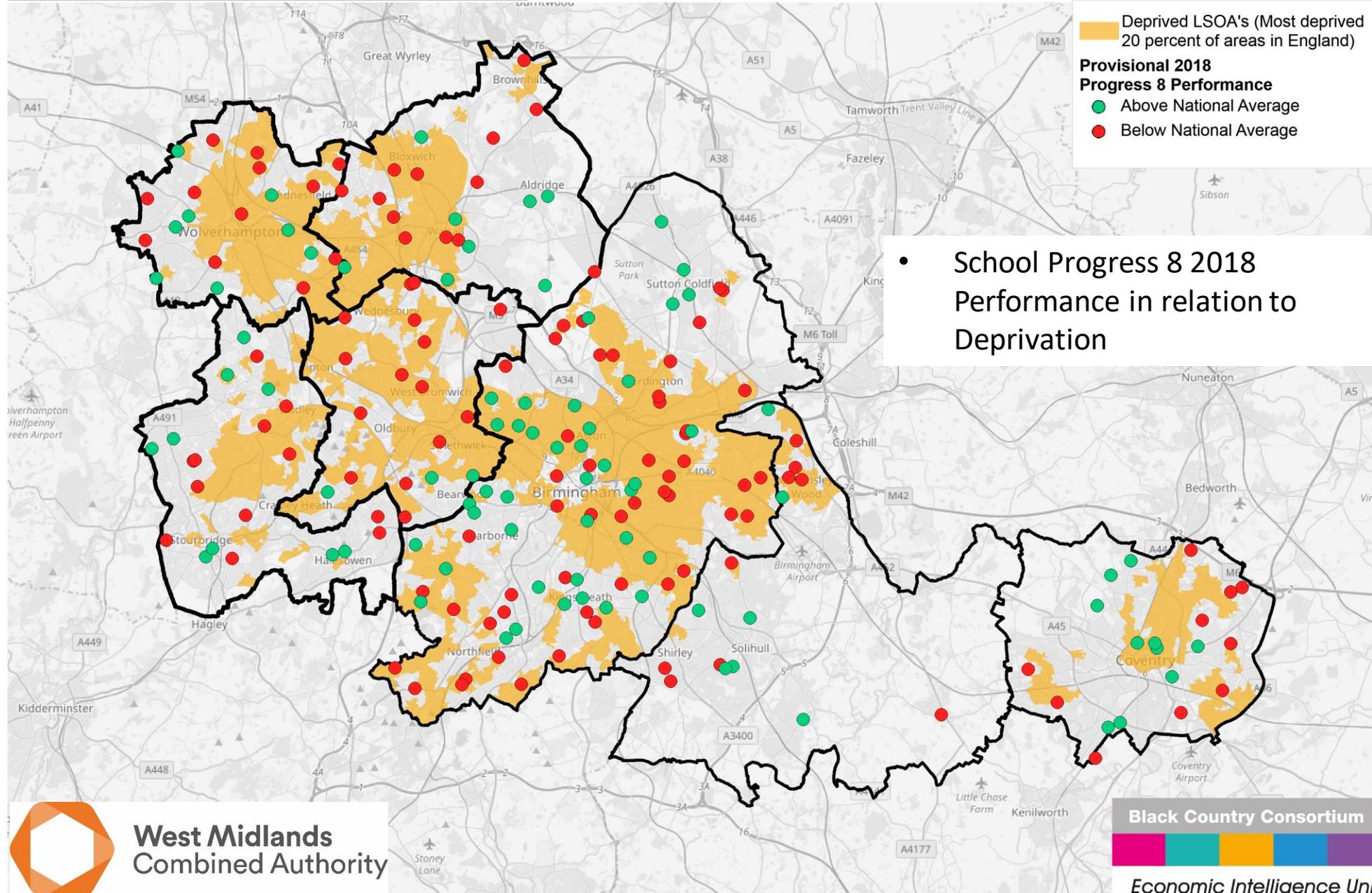
WEST MIDLANDS 2016-17 PROGRESS 8 PERFORMANCE



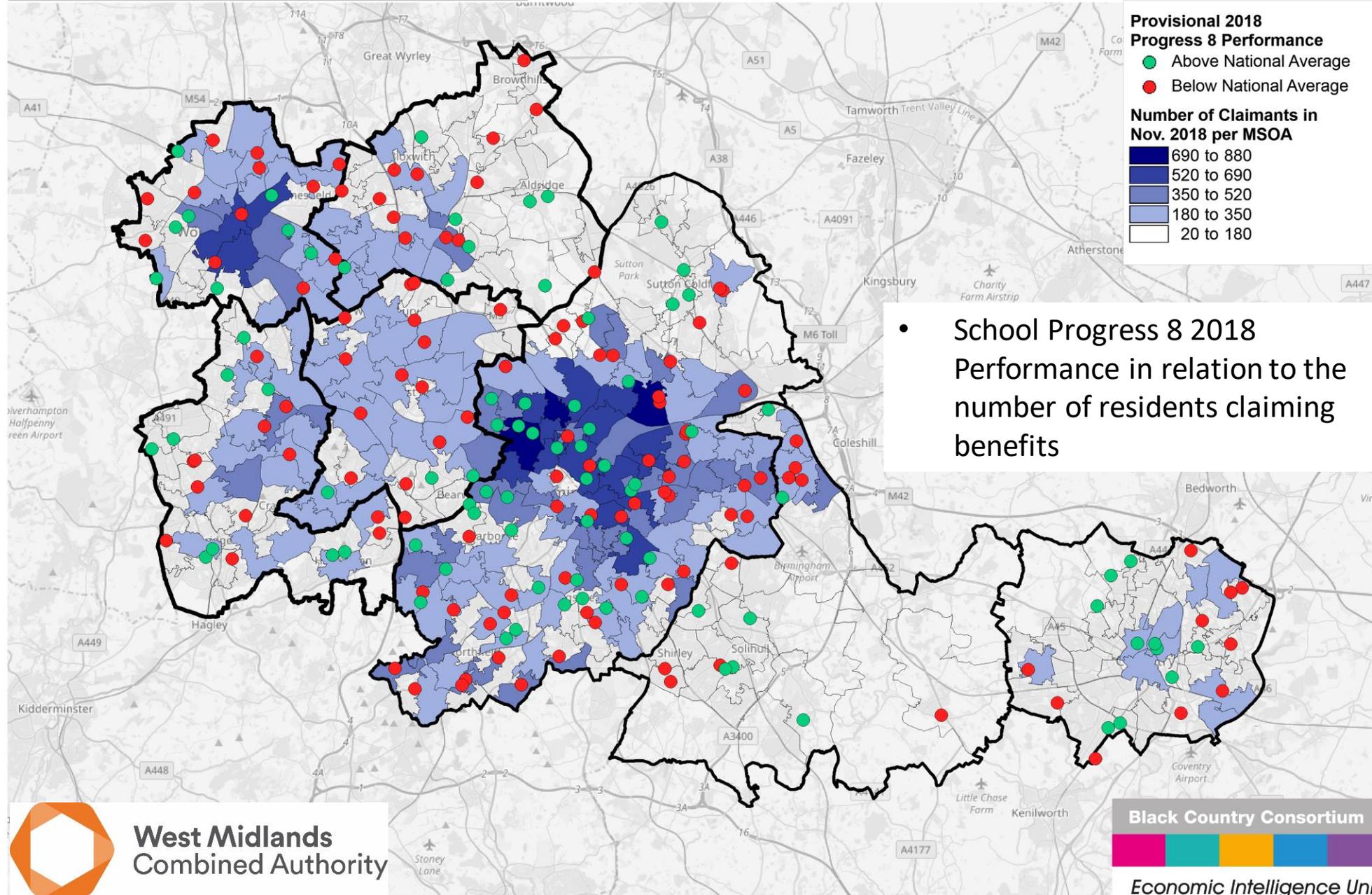
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- In 2016/17 there were **90 Schools in the 7 MET WMCA (41.5%) rated above the national average**, while 127 were deemed below (58.5%). More generally, the West Midlands has below national average outcomes in schools, but there are spatial variations within the region.
- Schools in Birmingham and Solihull performed the strongest while those located in Walsall and Sandwell were weakest.
- There are increased concerns about the **lack of awareness of job and career opportunities** – amongst young people, graduates and adults looking to upskill. This has been reported in key sectors such as metals/materials, aerospace and BPFS.
- The LIS policy response to these issues will be driven by the creation of a **West Midlands Career Learning Hub** to improve the focus and impact of careers education and the **creation of employer-led taskforces** to drive curriculum and skills provision that meets employers' needs across key sectors.
- On schools, the WMCA – through the LIS - is committed to developing a skills ecosystem that supports local authorities in their work to improve school performance and young people's attainment.

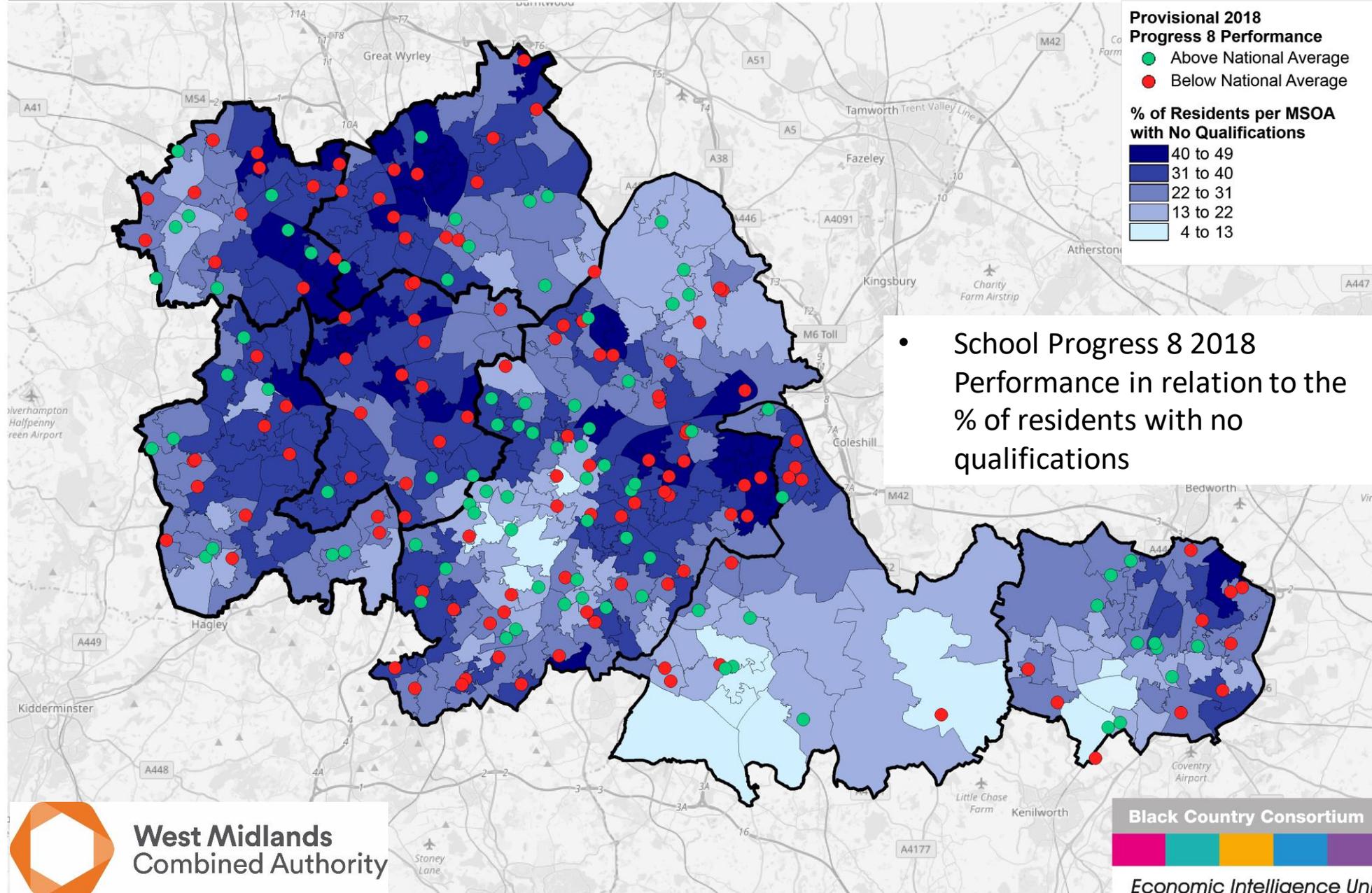
CONNECTING THE LABOUR MARKET



CONNECTING THE LABOUR MARKET



CONNECTING THE LABOUR MARKET



Skills: Employer Skills Survey (ESS) 2017

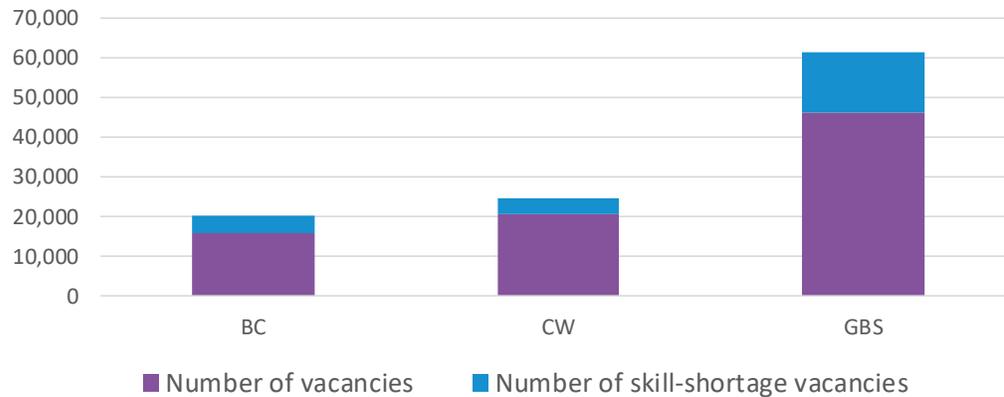
Black Country Consortium



Economic Intelligence Unit

- In the UK one in five employers (20%) reported having vacancies, **skilled shortage vacancies 4%**
- The percentage of Black Country establishments with **any** vacancy was 20%, **skilled shortage vacancies 6%**
- Coventry and Warwickshire establishments with **any** vacancy was 29%, **skilled shortage vacancies 11%**
- GBS establishments with **any** vacancy was 21%, **skilled shortage vacancies 5%**

Number of skill shortage vacancies compared to total number of vacancies



Number of skills gaps



		Total	Black Country	Coventry and Warwickshire	Greater Birmingham and Solihull
Occupation most affected by need for new skills	Managers	43%	39%	40%	43%
	Professional occupations	8%	7%	7%	6%
	Associate professional and technical occupations	4%	4%	3%	4%
	Administrative and secretarial occupations	6%	10%	8%	9%
	Skilled trades occupations	8%	10%	8%	8%
	Caring Leisure and Other Service Occupations	4%	3%	4%	5%
	Sales and customer service occupations	7%	10%	10%	10%
	Process plant and machine operatives	4%	4%	5%	4%
	Elementary occupations	6%	5%	5%	2%
Don't know		10%	8%	9%	8%

ESS 2017: Skills Training

- Nationally, establishments reported 13% of 'staff not fully proficient'
- Black Country establishments reported a higher prevalence of 'staff not fully proficient' (15%)
- Coventry and Warwickshire establishments reported a lower prevalence of 'staff not fully proficient' (11%)
- GBS establishments also reported a higher prevalence of 'staff not fully proficient' (14%)

- **Skills gaps are exacerbated due to the low number of establishments training staff** – (66% nationally equating to 4 days of training per year per staff member). *However, there are indications that the volume and quality of training may not be being maintained.*
- 62% of Black Country establishments train staff, equating to less than 3.5 training days
- 65% of both Coventry and Warwickshire and Greater Birmingham and Solihull establishments train staff, equating to less than 3.6 training days



Source: UKCES Employer Skills Survey 2017

ESS: % of establishments who anticipate a need for new skills in next 12 months

Black Country Consortium



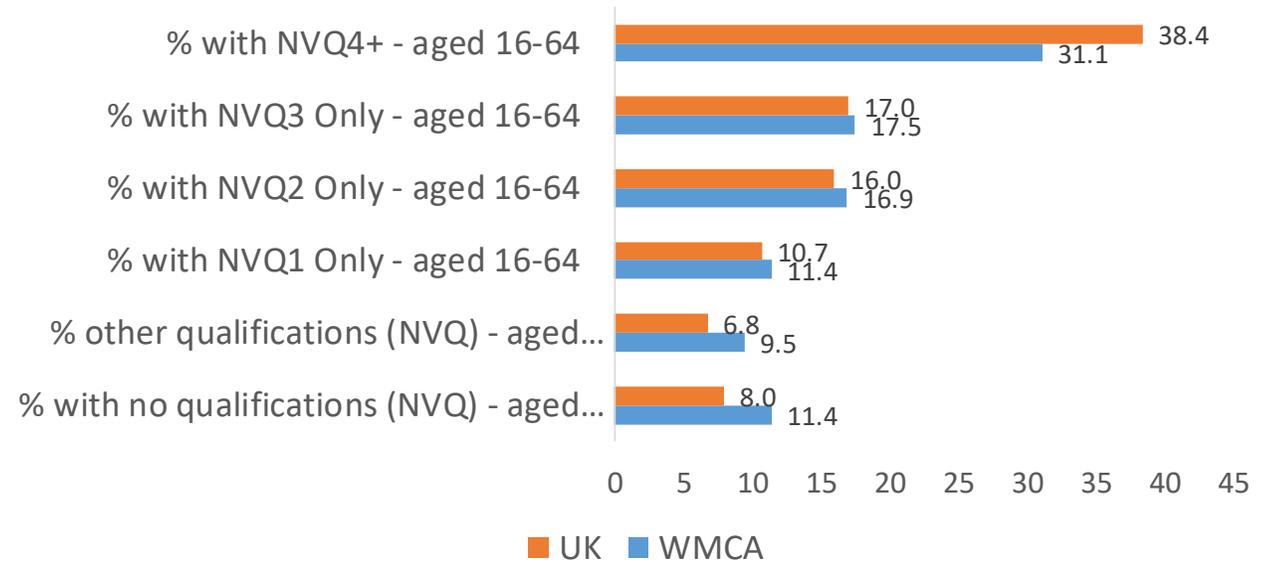
Economic Intelligence Unit

	Total	Black Country	Coventry and Warwickshire	Greater Birmingham and Solihull
Computer literacy / basic IT skills	31%	36%	30%	33%
Advanced or specialist IT skills	30%	31%	27%	30%
Solving complex problems requiring a solution specific to the situation	38%	43%	34%	41%
Reading and understanding instructions guidelines manuals or reports	26%	38%	35%	29%
Writing instructions guidelines manuals or reports	22%	24%	25%	25%
Basic numerical skills and understanding	15%	19%	17%	19%
More complex numerical or statistical skills and understanding	19%	15%	17%	19%
Communicating in a foreign language	12%	11%	11%	13%
Manual dexterity	13%	17%	16%	13%
Adapting to new equipment or materials	43%	55%	51%	41%
Knowledge of products and services offered by your organisation and organisations like yours	48%	54%	53%	49%
Knowledge of how your organisation works	30%	41%	30%	30%
Specialist skills or knowledge needed to perform the role	47%	57%	48%	41%
None of the above	12%	10%	13%	13%
Don't know	*%	0%	0%	*%
COMPLEX ANALYTICAL SKILLS	43%	47%	42%	46%
OPERATIONAL SKILLS	52%	59%	56%	56%
DIGITAL SKILLS	48%	55%	47%	49%
Instructing teaching or training people	35%	43%	38%	31%
Sales skills	31%	33%	28%	32%
Customer handling skills	36%	39%	38%	38%
Persuading or influencing others	31%	26%	36%	30%
Team working	39%	46%	47%	44%
Managing or motivating other staff	39%	42%	40%	39%
Ability to manage own time and prioritise own tasks	45%	51%	48%	45%
Setting objectives for others and planning human financial and other resources	31%	38%	28%	32%
Managing their own feelings or handling the feelings of others	33%	37%	36%	35%
Making speeches or presentations	19%	16%	23%	15%
None of the above	28%	27%	26%	28%
Don't know	1%	0%	0%	*%
MANAGEMENT AND LEADERSHIP SKILLS	53%	57%	55%	53%
SALES AND CUSTOMER SKILLS	44%	46%	43%	46%
SELF-MANAGEMENT SKILLS	52%	59%	55%	52%

Qualifications

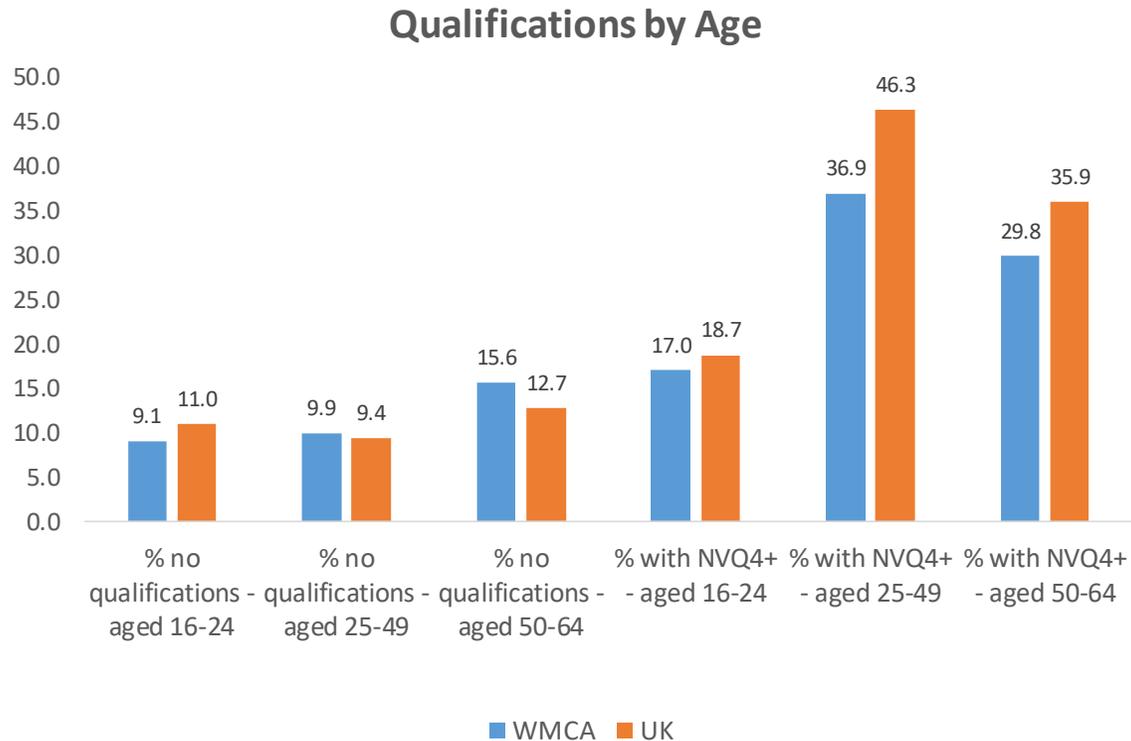
- Qualifications are key to progression; people with NVQ4+ tend to earn significantly more than those with lower qualifications. A lack of qualifications in many areas of the WMCA can partly explain distinct skills gaps.
- **Less than a third of WMCA residents are qualified to NVQ Level 4+.** In order to match the National average it requires **a further 184,867 people to be qualified to this level.**
- **There are also more people with No Qualifications than the national average.** To reach the current UK average (8%) 86,036 people need to be upskilled.
- **Insufficient skills levels contribute £3.2bn to the region’s £16.9bn output gap,** confirming this as a key route to improving productivity.
- A ‘missing middle’ exists of technical skills at Levels 3 and 4, holding back our manufacturing firms.

Qualification Comparison



- Building on recent attainment progress, the WM LIS commits to action that **recognises the inter-dependence of schools, further education (FE), higher education (HE),** adult and community learning and private and voluntary training providers and **facilitates stronger collaboration with employers, to address skills needs.**
- Sectors like BPFs will **develop better links with local HE and FE colleges to facilitate business growth through attraction and retention,** better meeting demand with supply. This will aid in the region successfully capitalising on its global professional services strength.

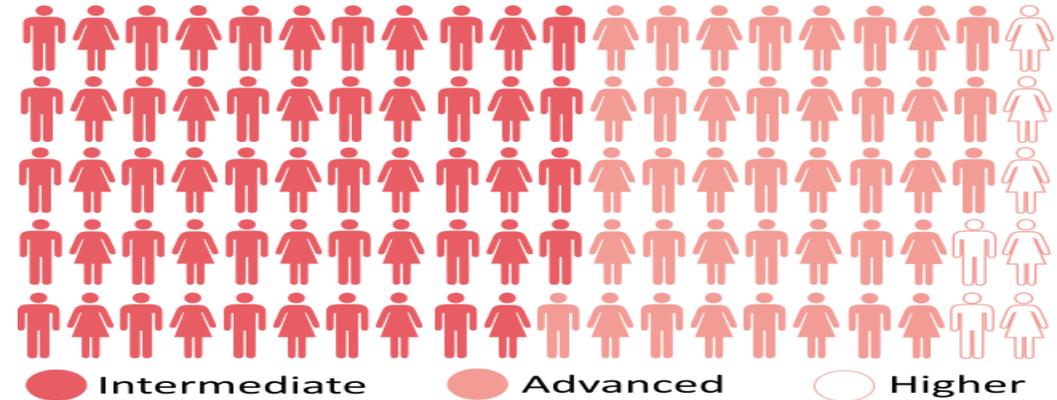
Qualifications by Age



- There are a higher proportion of residents employed in the WMCA area with only NVQ Levels 1,2,& 3 than the national average. ***This is generally true across all age cohorts.***
- There are however significantly fewer people employed with NVQ4+ (35.9%) than the national average (43.9%). ***This gap has increased by 0.9pp in the last year and 2.9pp in the last 10 years.***
- The most significant age cohorts are those aged 25-49 (-9.4pp) and those aged 50-64 (-6.1pp). There is only -1.7pp difference for those aged 16-24.
- **The proportion of people with ‘no qualifications’ in employment has fallen since 2007 (-4.6pp)**
- However, the gap to the national comparator has only reduced by -0.4pp – ***suggesting that although WMCA residents are upskilling other areas are upskilling faster.***
- Those aged 50-64 (112,400 people) account for the largest proportion of those in work with no qualifications ***while those aged 16-24 (9.1%) are below the national average (11.0%).***

Apprenticeships

- The number of apprenticeships across the WMCA area **increased by 400 to 42,470** or 1% against a national drop of -2.9% in 2016/17.
- In terms of level there were **22,890 Intermediate (53.9%)**, **16,480 Advanced (38.8%)** and **3,100 Higher (7.3%)**.
- The WMCA's ambition is to **raise overall apprenticeship starts to 84,000 by 2030**. To do this the **WMCA needs to create nearly double the current number of apprenticeship starts per annum**.
- Apprenticeship provision currently **doesn't always meet the needs of employers**; this was pointed out in our development of aerospace, automotive and metals/materials sector action plans, which identified a **particular shortage of engineers & other technically-proficient staff**.
- Reversing this in manufacturing sectors will require an **extension of employer-led training solutions and equipping training providers** appropriately.



- A more high-level set of actions will be around accelerating the uptake of quality apprenticeships, partly by **maximising Levy investment for the West Midlands**.
- Furthermore, in order to close the technical skills gap, through the WM LIS we will **support the introduction of new T-level routes and seek full backing for Dudley's Institute of Technology proposal**.
- Much work has been done to understand the specific roles required in the construction sector going forward, and, with the CITB, a number of actions will **aim to improve the regional construction labour market**. For example, the WMCA will **oversee the development and delivery of a comprehensive regional construction skills training offer, including apprenticeships**.

Higher Education

According to HESA 2015/16 data, 105,910 HE students attended 8 WMCA based universities. This is 73% of all HE students attending West Midlands region universities. Birmingham City University & Coventry University are most attended, both surpassing 25,000 students. Warwick is the smallest in terms of students with 1,080. Almost two-thirds of WMCA students are undergraduates (74%, with the other 26% being postgraduates).

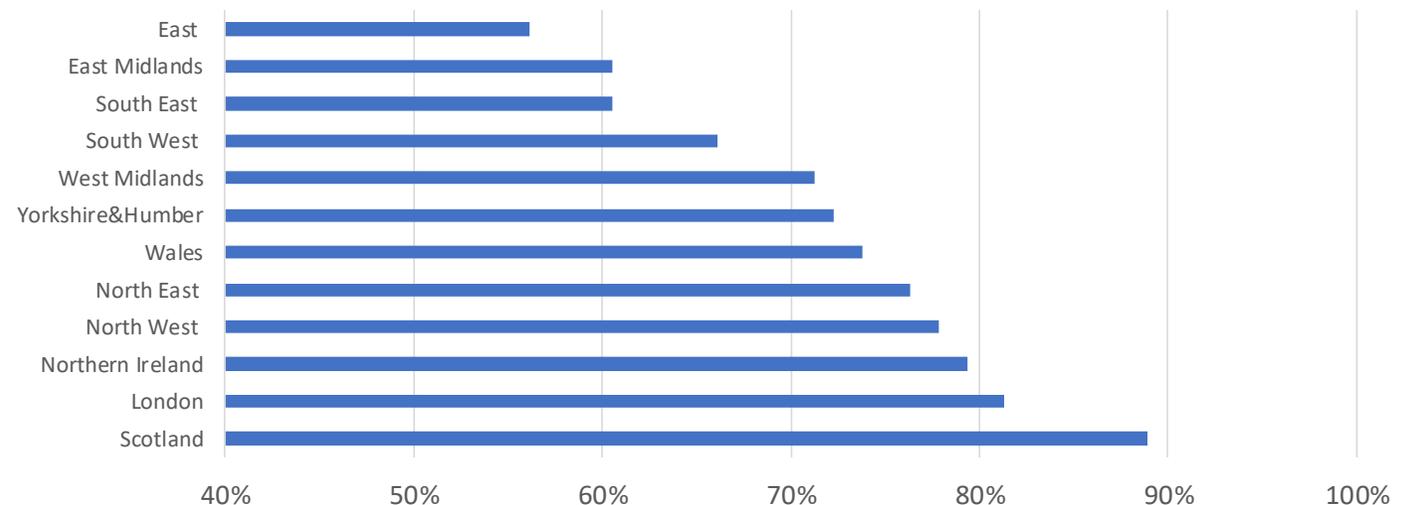
71% of HE leavers who are “from” the West Midlands region originally (their home/domicile region) go on to work in the West Midlands. This ranks WM 8th out of the 12 UK regions (see below)

- Similar to other large cities outside London, Birmingham experiences a big inflow of people aged 18-21 – students – but then see outflows of people aged 22 and above.
- Centre for Cities analysis from 2016 shows that **76 per cent of the students who went to study in Birmingham left upon graduation.**



West Midlands
Combined Authority

% of of 2015/16 HE leavers who work in their home (domicile) region

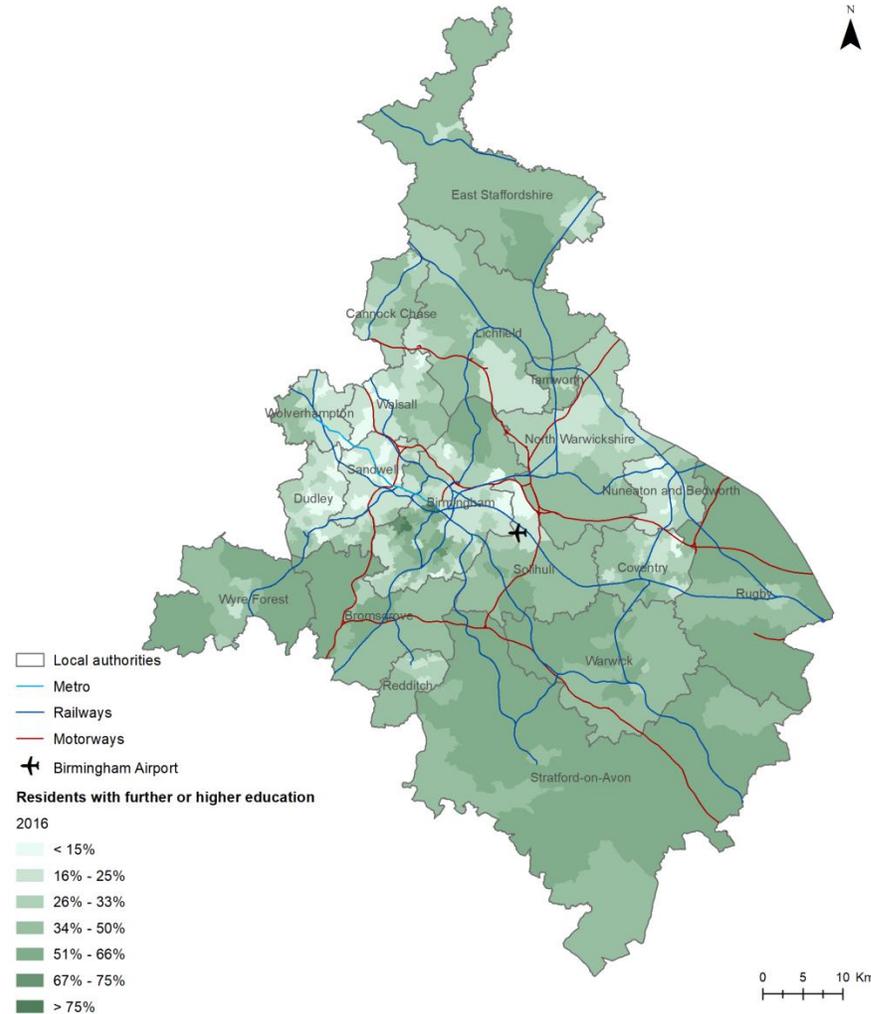
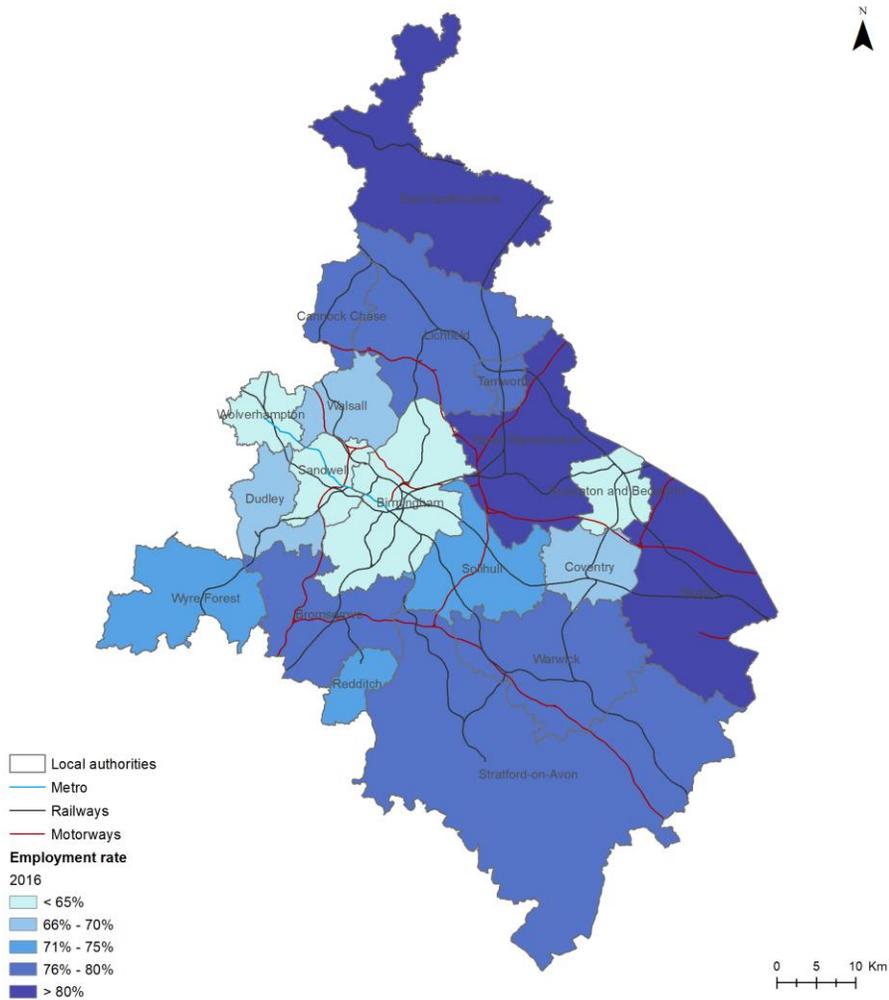


Inclusive Growth

- The West Midlands (7MET) has a significant **healthy life expectancy gap for men – 59.9 years compared to an England average of 63.6, and women – 60.1 years compared to the England average of 63.5.**
- In 2015, **20% of the WMCA population lived in the top 10% most deprived areas.**
- Black and minority ethnic (**BAME**) **employment rates are 15% lower than for white groups.** There are similar disparities for those with disabilities and low/no qualifications.
- Increasing automation and the digitization of production **threatens redundancy for jobs and skills based on low-skilled functions and routine tasks.**
- The ‘gig economy’ – concerns about whether these jobs can provide social and economic security when majority of workers receive scant training and there is limited opportunity for career progression.
- Supporting inclusive growth is a strategic thread through the West Midlands LIS.
- We want to ensure that **all our residents and communities can touch, taste and feel the benefits of rising prosperity.**
- Through the LIS this will be done through a number of initiatives, including using **targeted inclusion to unlock participation in particular cohorts;** taking a **place-based approach** though specific sites and corridors; **targeted action to reduce youth unemployment** and bespoke solutions such as through the ‘**Thrive to Work**’ programme.



People – Regional Variations

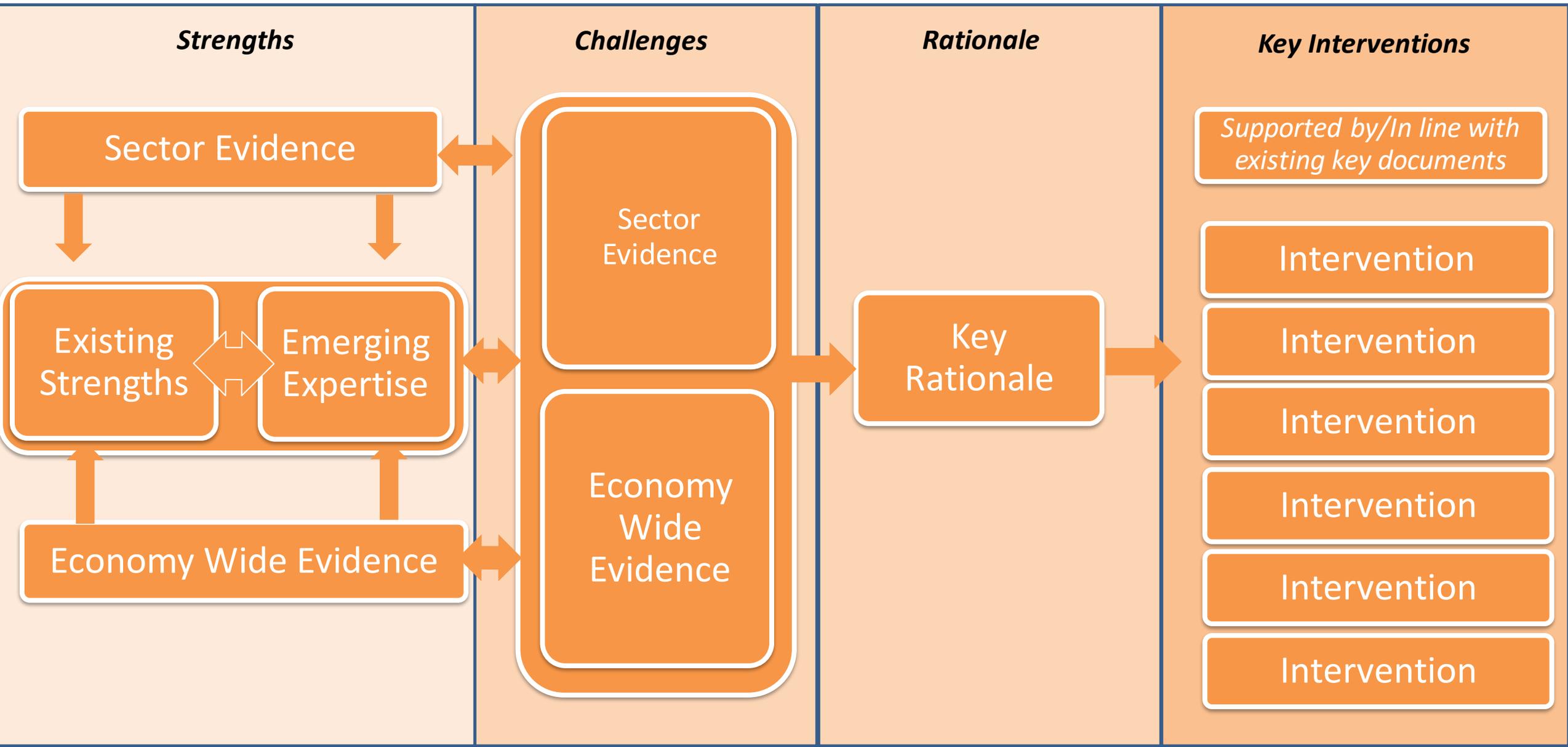


Example maps showing employment rate and proportion of residents with further or higher education (NVQ Level 4 and above)

Summary Story: People

- The right skills-base will allow the West Midlands to build on its competitive advantages and can be a **central driver of productivity; the impact of the LIS on communities in the WMCA is paramount.**
- **Low employment and high unemployment** reflect an economy with **weak skills** and, consequentially, below **average earnings and high deprivation.**
- Despite improvements, **school performance and the level of qualifications remain below average and contribute to the West Midlands' £16.9bn output gap.**
- Deprivation, ill-health and inequalities in certain areas of the region provide the need for focused action to **drive inclusive growth** across the region.
- Responding to unemployment through the LIS will include delivering ongoing projects such as the **Employment Support Pilot and future training and skills provision through the Adult Skills Budget.**
- There's a need to **advance employer-led training support across sectors** to drive a rise in apprenticeships and relevant qualifications. Providing the right skills to sectors like automotive, metals/materials and aerospace will **allow our industries to successfully enhance our clean and connected mobility competitive advantage.**
- Specific sector activity, such as **creating collaborative links between education and the sector in BPFs and delivering a comprehensive regional skills offer in construction,** aim to boost the long-term productivity of these sectors and to enable inclusive growth across the economy.
- A number of initiatives in the LIS will drive inclusive growth in the region, including using targeted inclusion to **unlock participation in particular cohorts;** taking a place-based approach through specific sites and corridors; targeted action to reduce youth unemployment and bespoke solutions such as through **'Thrive to Work'.**

West Midlands LIS: Evidence to Intervention Framework – by Foundation of Productivity



West Midlands LIS: Evidence to Intervention Framework – ‘People’ Foundation

Strengths

- Wide-range of sector specific programmes and centres which support local industry - e.g. MTC's Advanced Manufacturing Apprenticeship Centre, Hs2 National College, Construction Gateway, Elite Centre for Manufacturing Skills.¹
- Institute of Technology bids (IoTs) demonstrate appetite for uplifting provision in technical skills for key manufacturing and construction sectors.²
- Skills and talent pool a key USP for the region in some of our largest sectors: - BPFs, Life Sciences & Healthcare. – boosted by HE sector.³

An improving skills landscape supported by a growing set of effective support providers, both for overarching skills and sector-specific. Young population creating a future opportunity.

- HS2, Commonwealth Games and City of Culture can drive skills development within and across sectors.
- Devolution opens up opportunities – e.g. the Skills Deal.
- New training centres, e.g. IoTs

- Young and diverse population: 1.8 million people under age 25.⁴
- Employment rate is growing faster than the UK as a whole⁵ and the number of people claiming out-of-work benefits is at the lowest level for over 10 years.⁶
- Since 2012, the number of people with higher level skills increased by 113,000, faster than the national average.⁷
- The number of people with no qualifications is falling faster than the UK average.⁸
- NEETS are down: from 7.8% in 2016 to 7.1% in 2017.⁹
- Education and training collaboration is strong in the region, e.g. the West Midlands Further Education Skills & Productivity Group.

Challenges

- There's a 'missing middle' of technical skills at levels 2, 3 and 4, impacting on key industrial sectors.¹⁰
- A quarter of vacancies are described by businesses as "hard to fill", reflecting sector skills shortages which may be made worse by Brexit.¹¹
- Construction sector analysis demonstrates the current supply and demand gap for required skills in the industry.¹²
- Mixed response on the current apprenticeship system, with firms and in major sectors suggesting it doesn't meet the needs of industry.¹³

- Concentrations of low employment and high deprivation - 20% of the population live in the top 10% most deprived areas.¹⁴ Our society is unbalanced.
- Left-behind communities reflected by healthy life expectancy gap with UK¹⁵ and poor child development.¹⁶
- 59% of school performance is below the national average.¹⁷
- High numbers of residents with no qualifications and a lack of high-level skills: the WM requires a further 184,867 people qualified to level 4 to match the national average.¹⁸
- High unemployment & low-paid jobs: 1 in 4 are below the real living wage.¹⁹
- Insufficient skills and low employment account for 54% of the output gap.²⁰

Rationale

Areas of high deprivation, low employment, low wages and poor development reflect the West Midlands as having an unbalanced and unequal economy. The labour market is persistently challenged by skills shortages – a long-running problem - particularly within major sectors that demand technical skills like manufacturing and construction. Upcoming threats such as Brexit could exacerbate these issues.

Key LIS Interventions

In line with the commitments set out in the *West Midlands Regional Skills Plan*²¹

Prepare young people for future life and work through such activity as creating a West Midlands Career Learning Hub and delivering the Mayor's Mentors programme.

Create regional networks of specialist, technical education and training to drive up skills, for example by seeking full backing for two Institute's of Technology, creating employer-led taskforces and through the AEB.

Accelerate the take up of good quality apprenticeships across the region by maximising Levy investment, directing funding to SMEs and within STEM subjects, and providing a brokerage service to employers.

Deliver inclusive growth by giving more people the skills to get and sustain good jobs and careers. We will tackle low employment through programmes like the Employment Support Pilot and Thrive to Work Project.

Grow collaboration between partners to support achieving even more collectively.

'People' Foundation: Flow Diagram Sources

Reference number	Source & Key Dates	Link/Info
1	West Midlands LIS overall document (2019)	Available on request: Casestudies provided re. MTC's Advanced Manufacturing Apprenticeship Centre and Construction Gateway. See the below for more details if required: https://the-amtc.co.uk/training/ https://www.goconstruct.org/globalassets/3.-construction-today/3.2-whats-new-in-construction/3.2.2-major-projects/3.2.2.1-wmca/a5-4pp-for-employers.pdf https://www.nchsr.ac.uk/
2	Regional Institute of Technology Bids (Dudley and Birmingham) – referenced in the overall WM LIS document and the West Midlands Regional Skills Plan.	The WMCA is seeking full Government backing for two Institutes of Technology (IOTs). Dudley IoT will redevelop land to provide teaching facilities for higher level skills programmes, and the Greater Birmingham and Solihull IoT focuses on advanced manufacturing and Industry 4.0 through greater collaboration of Further and Higher Education. https://www.gov.uk/government/publications/institutes-of-technology-competition - Both bids were successful in stage 1 of the Government's IoT competition.
3	City-Redi, BPS Birmingham, and Black Country Consortium sector deep dive: "AN INVESTIGATION INTO THE FOUNDATIONS OF PRODUCTIVITY FOR BUSINESS, PROFESSIONAL AND FINANCIAL SERVICES IN WEST MIDLANDS COMBINED AUTHORITY AREA PRODUCTIVITY & SKILLS COMMISSION – SECTOR SPECIFIC ANALYSIS" (June 2018) Greater Birmingham Life Sciences Commission: The Silk Report (2015)	Undertaken as part of the West Midlands Productivity and Skills Commission, this paper provides detailed insight on the services sector in the region. https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf https://gbslep.co.uk/wp-content/uploads/2017/06/Greater-Birmingham-Life-Sciences-Commission_TheSilkReport_Web.pdf
4	ONS mid-year population estimates (2017)	Downloaded via NOMIS web tool: https://www.nomisweb.co.uk/
5	ONS Annual Population Survey (APS) (2017)	Downloaded via NOMIS web tool: https://www.nomisweb.co.uk/ The Annual Population Survey datasets from the Office of National Statistics were updated on 17 April 2018 with new figures for the Jan 2017 – Dec 2017 survey period.
6	ONS Claimant count by sex and age	Downloaded via NOMIS web tool: https://www.nomisweb.co.uk/
7	ONS Annual Population Survey (APS) (2017)	Downloaded via NOMIS web tool: https://www.nomisweb.co.uk/ - based on 2012 – 2017 period.
8	ONS Annual Population Survey (APS) (2017)	Downloaded via NOMIS web tool: https://www.nomisweb.co.uk/ : 'No Qualifications' fell from 329,800 in 2016 to 289,300 in 2017. This equates to 40,500 fewer people with no qualifications or -12.3 per cent compared to the national average of -2.2 per cent
9	Department for Education: NEET and participation: local authority figures (2018)	NEETs in the West Midlands 7 MET area has decreased from 7.8% in 2016 to 7.1% in 2017. This is still above the England average of 2%. https://www.gov.uk/government/publications/neet-and-participation-local-authority-figures
10	Anecdotal evidence available from various places, including emerging WM LIS sector action plans – e.g. metals/materials, automotive, aerospace, rail.	Available once published.
11	Department for Education: Employer Skills Survey 2017 Brexit impact discussed in 'Skills' foundation report produced for the WMCA Productivity & Skills Commission (2018)	https://www.gov.uk/government/collections/uk-employer-skills-survey-2017 https://www.wmca.org.uk/media/2231/skills.pdf
12	CITB/WMCA: 'Construction skills gap analysis for the West Midlands Combined Authority area' (2018)	https://www.wmca.org.uk/media/2235/construction-skills-gap-analysis.pdf
13	Anecdotal evidence available from various places, including emerging WM LIS sector action plans – e.g. metals/materials, automotive, aerospace, rail.	Available once published.
14	Black Country Economic Intelligence Unit: 'West Midlands Annual Economic Review 2017'	https://www.wmca.org.uk/media/1713/wmca-economic-review.pdf - p. 31
15	Black Country Economic Intelligence Unit: 'West Midlands Annual Economic Review 2018'	The West Midlands (7MET) has a significant healthy life expectancy gap for men – 59.6 years compared to an England average of 63.3, and women – 60.3 years compared to the England average of 63.9. https://www.wmca.org.uk/media/2435/state-of-the-region-2018.pdf - p.16
16	West Midlands Regional Skills Plan (2018)	"Too many of our young people are not getting the start in life that the need – with many already lagging behind the national average in terms of expected levels of development by the age of 5. This is particularly acute for children from deprived backgrounds where 50% are not achieving a good level of development at age 5 (compared to 34% nationally)." https://www.wmca.org.uk/media/2267/regional-skills-plan.pdf - p.11
17	Department for Education: School Performance Tables (2018)	https://www.gov.uk/government/collections/statistics-performance-tables In 2016/17 there were 90 Schools in the 7 MET WMCA (41.5%) rated above the national average, while 127 were deemed below (58.5%).
18	ONS Annual Population Survey (APS) (2017)	Downloaded via NOMIS web tool: https://www.nomisweb.co.uk/ - based on 2012 – 2017 period.
19	West Midlands Regional Skills Plan (2018)	https://www.wmca.org.uk/media/2267/regional-skills-plan.pdf
20	Black Country Economic Intelligence Unit Analysis of ONS GVA per head data (2017 latest data)	Included within overall WM LIS document – available on request.
21	See reference 16 above	

Further Reading

- **WMCA Mental Health Commission Report/Action Plan: 'Thrive West Midlands':** <https://www.wmca.org.uk/media/1420/wmca-mental-health-commission-thrive-full-doc.pdf>
- **WMCA Leadership Commission:** https://www.wmca.org.uk/media/2218/leadership-diversity-in-the-west-midlands_002.pdf
- **Construction skills gap analysis for the West Midlands Combined Authority area:** <https://www.wmca.org.uk/media/2235/construction-skills-gap-analysis.pdf>
- **Skills:** <https://www.wmca.org.uk/media/2231/skills.pdf>
- **WMCA Regional Skills Plan:** <https://www.wmca.org.uk/media/2274/regional-skills-plan.pdf>

Foundation 3 - Infrastructure



Infrastructure – Context

The technology behind the way people and goods move is going to change more in the next 50 years than at any point since the internal combustion engine was invented. This will change how the physical and digital infrastructure environment supports our economy. Infrastructure is a driver and an enabler of economic growth, productivity and inclusivity when it is planned and designed right – we will maximise the opportunities this brings.

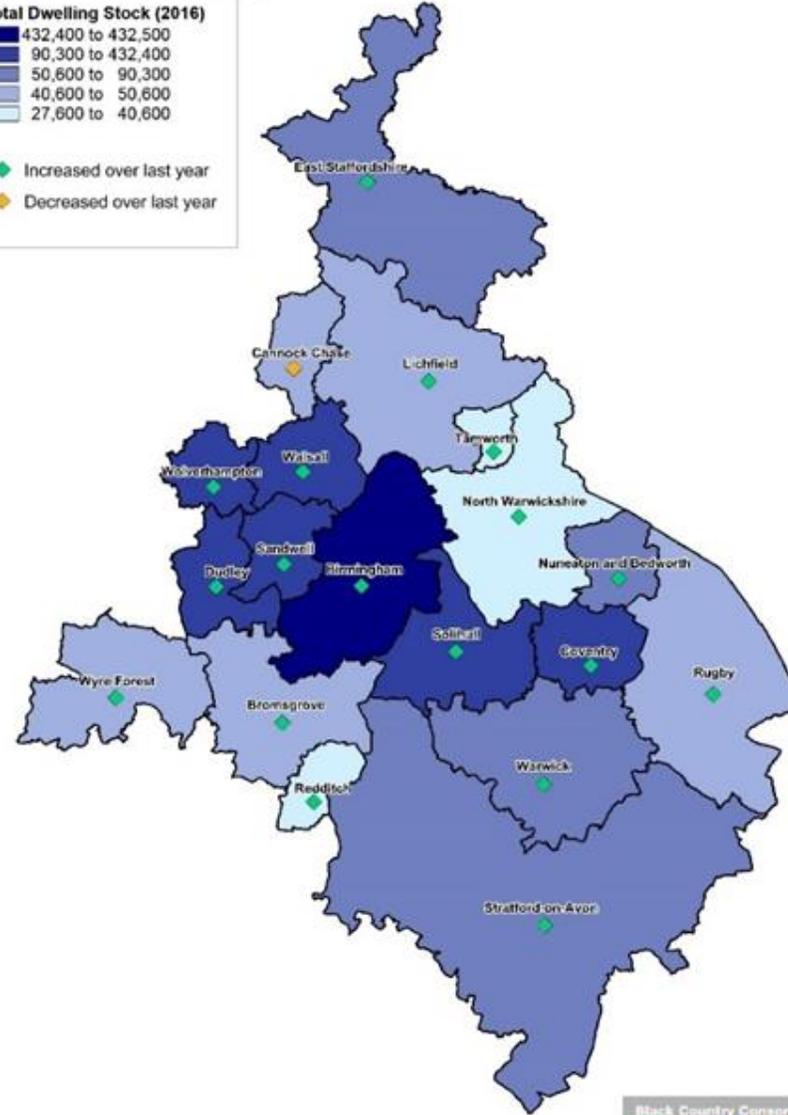
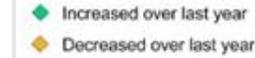
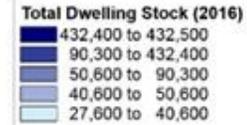
The pace of investment is set to rise; WM will see £3.8bn spent per year for at least 5 years on new construction projects

- £10bn investment opportunities in sites identified in Investment prospectus
- 9 new sub-urban rail stations and over 31km of new track will provide 20,000 new seats
- Commitment to deliver 215,000 new homes by 2031, with £350m funding to support skills development, land remediation, and preparations for the Commonwealth Games
- HS2 – £4.4bn HS2 Growth Strategy - Curzon Masterplan, 20 transport schemes to 'plug-in' the new HS2 stations to local transport networks
- Metro extension – East-West Metro with Metro light rail extensions to Dudley/Brierley Hill and through East Birmingham to North Solihull and the HS2 Interchange station
- Commonwealth Games 2022 – Athletes Village, investments to Alexander Stadium and facilities across the city
- City of Culture 2021 – City of Culture will unlock investments across the city in arts, culture, visitor economy etc.

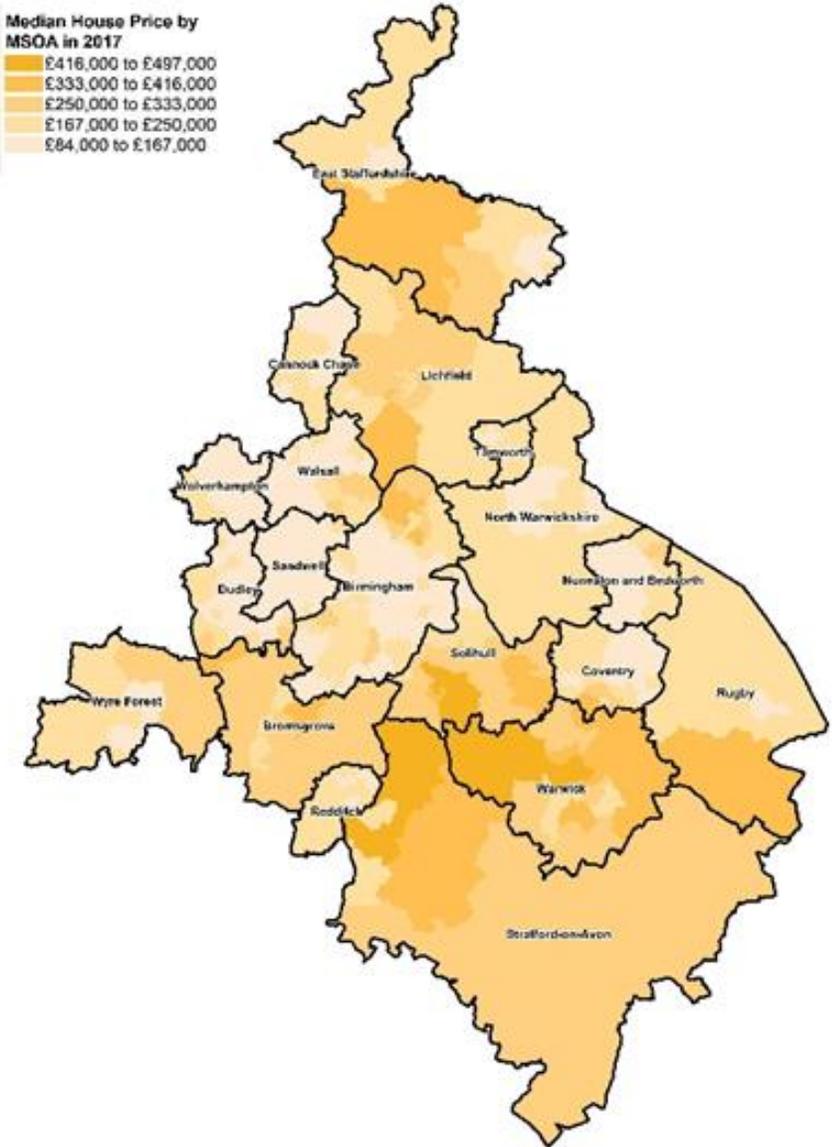
Housing

- There are currently (2016) **1.7 million homes in the WMCA area.**
- There were **11,500** net new homes in 2016-2017 compared to the previous year.
- The housing deal between the WMCA and Government will deliver **215,000 additional homes by 2031.** These additional dwellings are required to meet the demand created by a continued rise in population.

TOTAL DWELLING STOCK



MEDIAN HOUSE PRICE



West Midlands
Combined Authority

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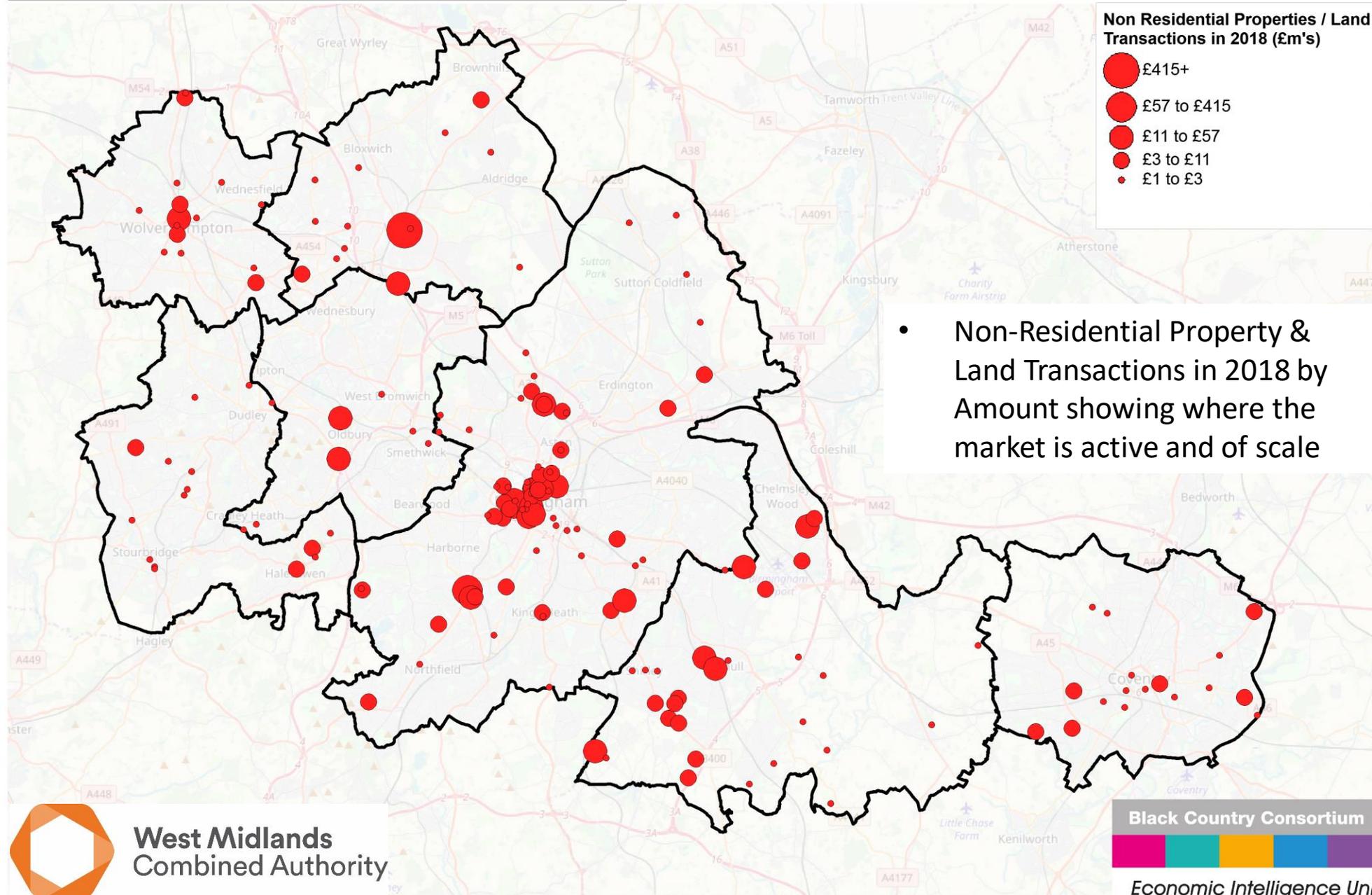


Housing

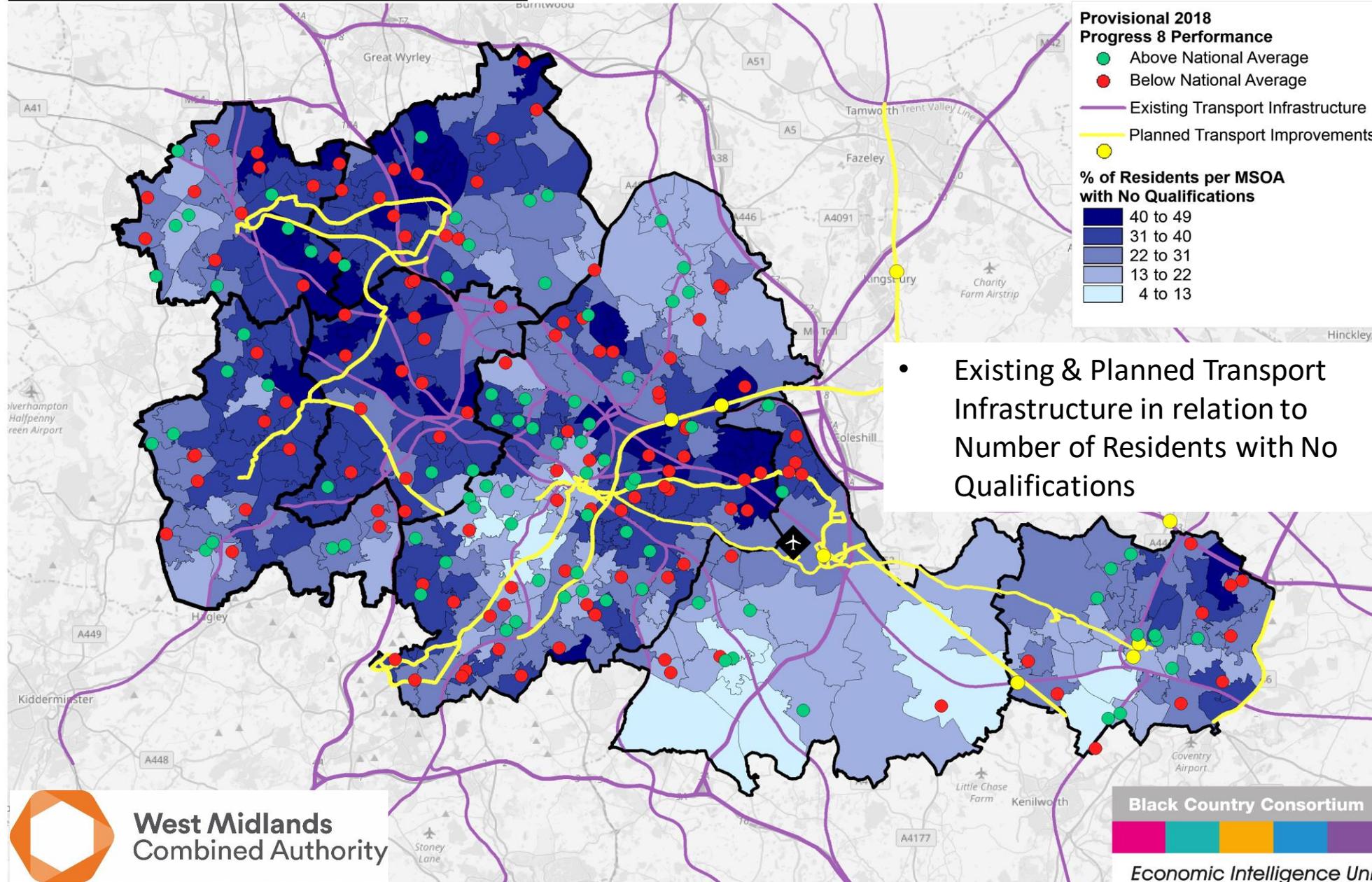
- A long-running objective of the WMCA is to expand the construction and renewal of housing stock
- Our population is expected to increase by over 400,000 by 2038
- There's a **need to accelerate housing delivery in places to support economic growth and new supply needs to meet the full spectrum of housing need.**
- In order to attract the right skills to the region that will successfully meet the grand challenges, our housing mix must be right.
- Changes in affordability and **a lack of social housing risks holding back growth and impacting our communities;** most WMCA areas are in the top fifth of house price increases nationally and the median increase of 6% is more than double the national average. Inclusive growth is dependant on sufficient and appropriate housing supply.
- Through the WM LIS **we will deliver an ambitious housing programme and ensure availability of strategic employment land.**
- This will be complemented by our **commitment to explore opportunities to accelerate the use of data and innovative process and products in the construction industry** – enhancing process innovation via modern methods of construction, BIM and modular build. There will be cross-sector links with advanced manufacturing here too.
- Additional work around **brownfield land development and innovation**, particularly at the new National Institute in Wolverhampton, will support and complement this.
- **Realising the impact innovation in construction can not only have on sector productivity and performance, but on the quality of housing, communities and in general the offer of the region is an important priority going forward.**



PROPERTY & LAND TRANSACTIONS IN 2018

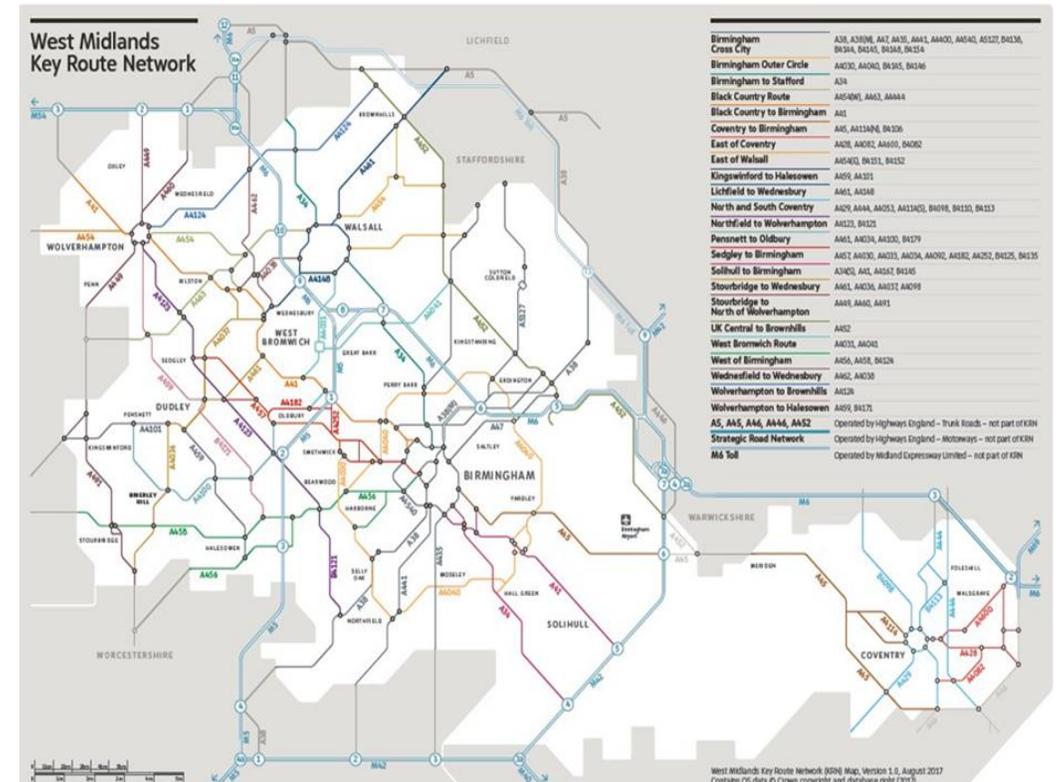


CONNECTING THE LABOUR MARKET



Transport

- The West Midlands is a well-connected region: 90% of the UK's population live no more than a four-hour drive away from the region and we're served by one of the UK's fastest growing airports (13 million passengers a year to 143 destinations).
- The map below shows the **West Midlands Key Route Network**; a network of key local highways across the West Midlands essential for the following main purposes: Serving the main strategic demand flows of people, goods and services; Serving large traffic volumes; and providing connections to the national strategic road network.
- However, there's an **overreliance on the road network** (and reductions in tram and bus use) which results in poor air quality and costly congestion. Together these externalities reduce both productivity and the health of our region, reducing the chances of delivering inclusive growth.
- Utilising our innovation strengths within transport and mobility, the WM LIS is clear in our ambition to **lead the way in the smart, low carbon movement of people and goods**. This will help continue to build the connections that people need for the future.
- **A new national open data institute specialising in CAV data will help with the region's transition to a society of clean, connected mobility**, though its critical that action like this is in partnership with the automotive sector and its supply chains.



Transport

- Only 41% of residents are able to access three or more centres by public transport within 45 minutes in the peak morning traffic – some **34 percentage points lower than the WMCA ambition of 75%**.
- This is in the context of increasing demand: **1.2m additional journeys every day will need to be accommodated by 2035** (in addition to the 8m daily journeys already accommodated by our transport system).
- An improvement in **access to high quality employment areas and to local services and facilities for all residents is imperative to increase productivity and standards of living**. In general infrastructure contributes to the WMCA's weaker than average productivity, but some areas within the region are worse affected than others (see next slide) in terms of connectedness.
- The WMCA has approved a 2026 Delivery Plan for Transport and the LIS re-iterates the key transport requirements regionally. This particularly relates to **building a fully integrated and seamless, multi-modal transport system across the whole region, investing £3.4bn over the next decade in trams, roads and rail**.
- HS2 is an enormous opportunity for the region, it will open access to key international markets and drive new areas of regeneration, housing and business growth across the West Midlands. **The region's HS2 growth strategy will leverage benefits delivered by HS2 to drive local growth on a nationally significant scale**. This will be particularly important for sectors such as rail, construction and foundation industries like metals & materials; our LIS commits to **dedicated support to ensure West Midlands businesses, including from these sectors, benefit from HS2 opportunities**.

Infrastructure Sector Example: Automotive

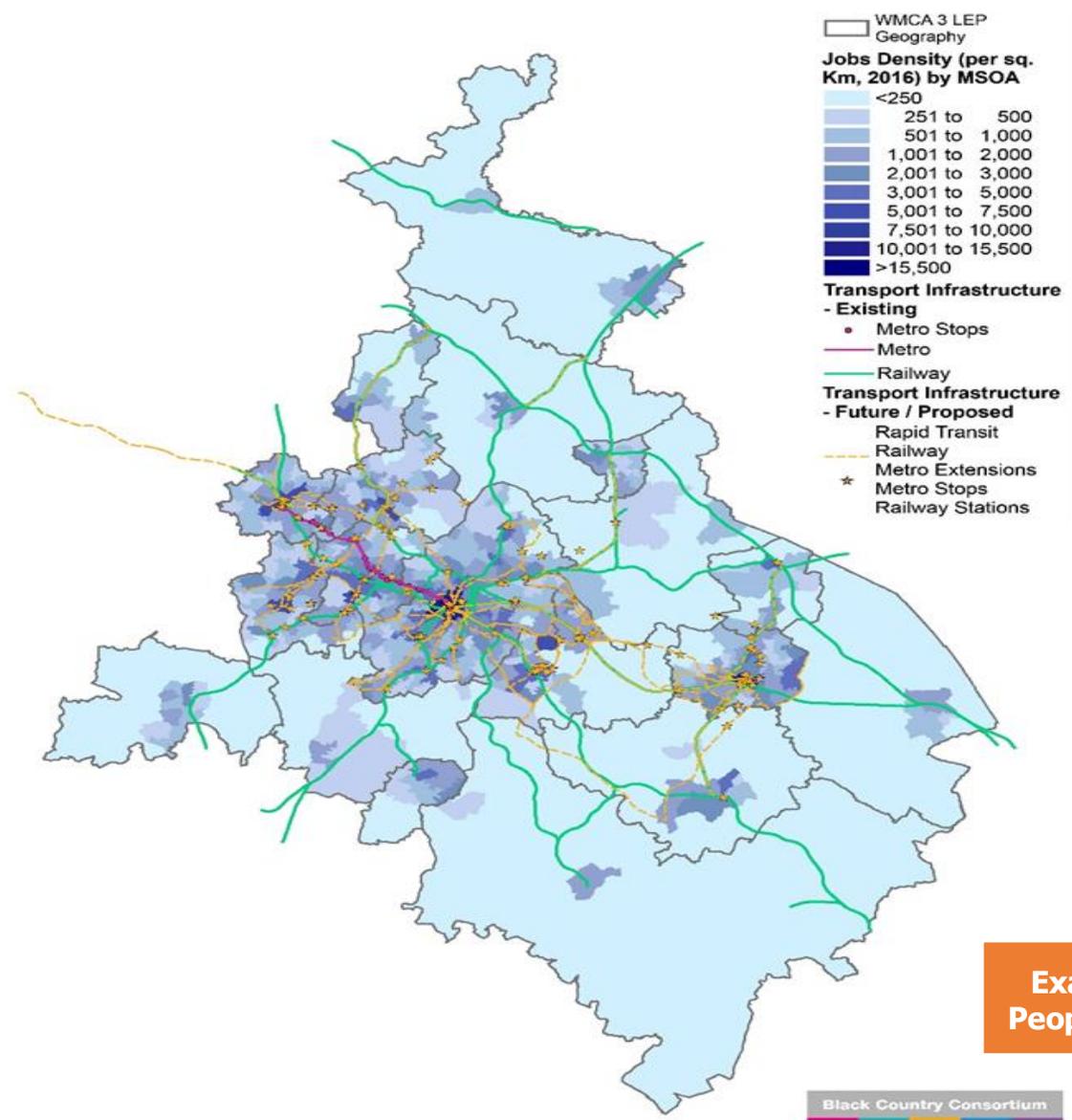


Connected Autonomous Vehicles

The LIS-led action of a new national open data institute specialising in CAV data will help the West Midlands meet the future mobility grand challenge, providing more efficient connectivity for our communities and businesses. This action will build on the region's specific strength in the automotive sector and particularly CAV technology, evidenced by:

- Major centres of CAV R&D at HORIBA-MIRA and WMG, University of Warwick. Potential for CAV application in agriculture with Harper Adams.
- WMCA area home to the UK's two main CAV vehicle manufacturers, Westfield and RDM
- Meridian is a £100 million initiative through UK Government to develop a coordinated national platform of CAV testing infrastructure, from London along the M40 corridor to Coventry, Meridian is based at University of Warwick
- 4 Major CAV trials here: UK CITIE, UK Autodrive, UK Central CAV Testbed and TIC-IT
- JLR and Waymo partnership to trial 20,000 driverless Jaguar i-Pace
- MIRA Technology Park is a 2msqft R&D campus, supplemented by the new 92 acre Southern Manufacturing Site (SMS). MIT spinout companies among those setting up there.
- New National Automotive Innovation Campus at the University of Warwick is Europe's largest auto R&D facility, and will drive new technologies
- SMART Mobility plan of WMCA, Midlands Connect and 5G digital infrastructure among opportunities for region with CAV
- Opportunities for links to Silicon Spa, Silicon Canal, Innovation Birmingham and AR/VR/ Simulation

Transport – Regional Variations



Example map showing Connectivity of People to Businesses, Jobs and Markets

Digital Infrastructure

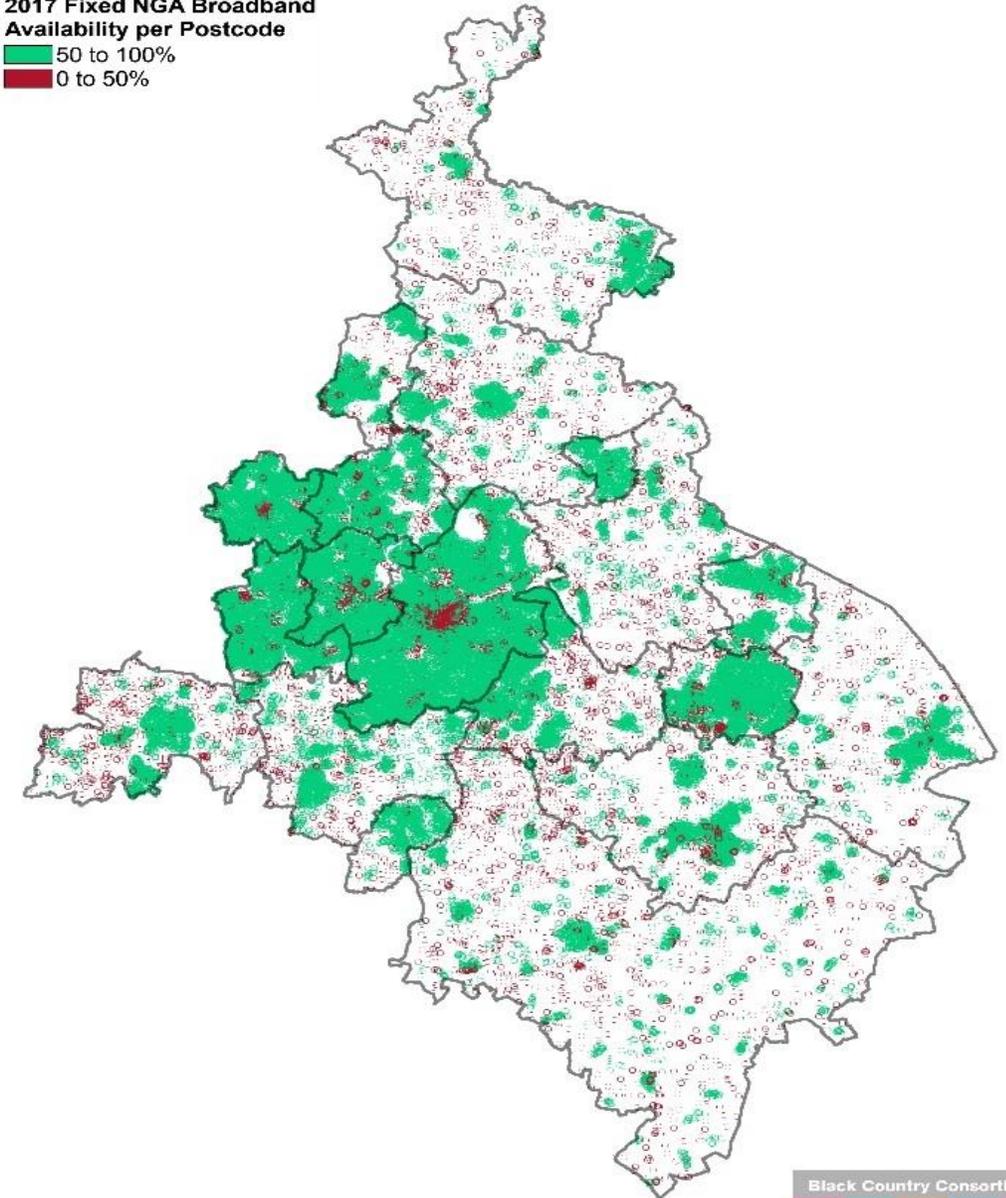
- Significant and reliable digital infrastructure is increasingly important for business and society, particularly given the data-driven ambitions within the LIS and rising customer expectations across sectors.
- **Delivering on data-driven healthcare, a productive global professional services sector and the provision of connected mobility of goods and people will all require a robust and fast connection.**
- **95.6% of premises in the WMCA have access to superfast broadband, compared to the UK average of 91%.**
- The map on the right shows the superfast broadband enabled postcodes (that have at least 50% of premises enabled) within the WMCA – it displays the **clear disparity between our rural and urban communities. The best-connected users may experience over 10 times the speed of the worst-connected.**
- Through the Government backed Urban Connected Communities pilot, the West Midlands aims to be the **first 5G ready region. We will be the first place in the country to trial new 5G applications and services at scale.** Benefiting people's lives through participation in new digital tech and transformed public services – e.g.. through **“Connected Ambulances”** can drive inclusive growth as long as the positive change reaches all communities. A region-wide collaboration of partners will be required to ensure 5G has a significant impact on the productivity of business and the lives of our communities.



BROADBAND

2017 Fixed NGA Broadband Availability per Postcode

50 to 100%
0 to 50%



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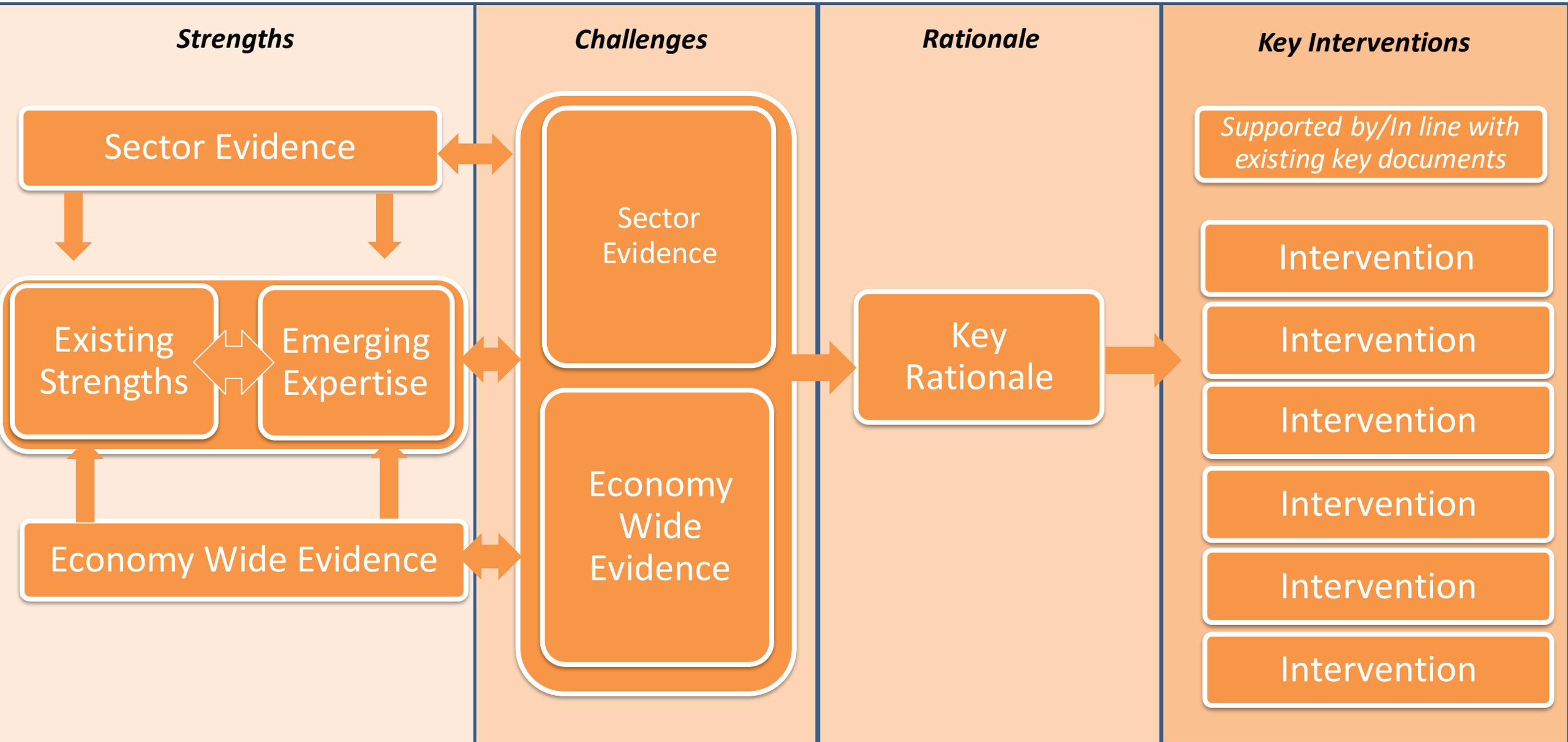
Energy & Environment

- The West Midlands has a strong history of leadership in energy, we are currently **ranked second out of 9 Combined Authorities' for overall sustainability.**
- The global need to address the challenges of climate change provides responsibility for localities to rethink how the environment integrates with society and is creating new 'clean' markets.
- Currently the West Midlands has **25 days of poor air quality per year. This is improving but reduction to just 1 breached day a year by 2030 is an important WMCA target.** Similarly, we need to act in order to **reduce our carbon emissions by a further 5,756 ktCO2 by 2030.**
- The WM LIS commits to **embedding a natural capital approach in our investment strategies** and more specific action around **greening transport routes and improving air quality.**
- Furthermore, **high energy costs** in our region impair business competitiveness (medium-sized West Midlands manufacturers pay between 4% and 13% higher than the national average) and consumer welfare (our region has some of the highest incidence of fuel poverty in the UK).
- **Energy Innovation Zones** will allow locally managed energy infrastructure planning and investment that suits regional needs. When fully implemented they will **improve the competitiveness and productivity of our key industry sectors** (like metals/materials and automotive) as well as providing us the opportunity to **reduce fuel poverty.**
- **Four initial EIZs have been proposed for the West Midlands: UK Central Hub**, covering five sites clustered around Birmingham International Station; **South Coventry**, covering Whitley, Baginton and a wide area around Coventry airport; **Birmingham City Centre**, including Tyseley Energy Park; and **the Black Country**, specifically covering the i54 and Phoenix 10 Enterprise Zones, including Jaguar Land Rover's plant and business park.
- Achieving the above and **embedding policy that considers the environment at every stage** will ensure the West Midlands can meet the clean growth grand challenge, deliver clean, connected mobility and be a region **renowned for the improvements we make to our natural environment that can contribute to delivering inclusive growth.**

Summary Story: Infrastructure

- Transport, digital, housing and environmental infrastructure are **key drivers and enablers of economic growth, productivity and inclusivity when it is planned and designed right.**
- The West Midlands region has strong foundations in place to improve its infrastructure: **commitment to building 215,000 homes by 2030, a transport delivery plan including HS2, and the 5G opportunity.**
- These key investments will contribute massively to reversing the infrastructure challenges that currently constrain the productivity and prosperity of our region: **the need for more housing stock that can meet demand with supply; a transport system that is over reliant on the road network, creating destructive congestion and thus poor connectivity; variations in broadband coverage; and poor air quality and restrictive energy infrastructure.**
- More needs to be done to catalyze meaningful change. The WMCA will, through our LIS, invest across all infrastructure themes in order to improve connectedness, health and wellbeing and the competitiveness of our firms. This will require applying innovative new ideas, utilizing our skills base and working closely with partners including the private sector and transport delivery providers.
- **We will deliver an ambitious housing programme underpinned by innovation and ensure availability of strategic employment land**, allowing people across the region to live in attractive places and have better access to jobs.
- **Investing £3.4bn over the next decade in building a fully integrated and seamless, multi-modal transport system** across the whole region is crucial for the West Midlands to become a **clean and connected region, and to complement HS2 activity.**
- Digital infrastructure, particularly **capitalising on the unique 5G opportunity**, and environmental considerations such as **embedding a natural capital approach** and **realising the potential of our Energy Innovation Zones** will provide the complementary infrastructure for the region to fulfil its **key ambitions including clean, connected mobility, and sector activity enhanced by data.**

West Midlands LIS: Evidence to Intervention Framework – by Foundation of Productivity



West Midlands LIS: Evidence to Intervention Framework – ‘Infrastructure’ Foundation

Strengths

- The West Midlands is a major location for logistics and the movement of goods, providing access to market for our key sectors like manufacturing and warehousing/distribution.¹
- Well-placed to capitalise on infrastructure of the future due to leading sector specialisms – energy partnerships and battery manufacturing for electric vehicles, digital rail, major CAV centres trials and manufacturing supply chains.²
- Emerging momentum in the construction sector, supported by key assets like the National Institute for Brownfield Land.³

Central, well-connected region with strong foundations in place to improve infrastructure: housebuilding commitment, transport delivery including HS2, 5G opportunity.

- Opportunities from HS2 and other major commitments.
- Devolution opens up investment opportunities.
- Potentially leading region for smart mobility (CAV, EVs etc), underpinned by data-driven infrastructure (e.g. 5G).⁸

- Extremely well-connected region: 90% of the UK’s population live no more than a four-hour drive away.⁴
- Regional commitment to building 215,000 homes by 2030 will help meet the demand required by a continued rise in population.⁵
- The West Midlands will be the first place in the country to trial new 5G applications and services at scale, providing a competitive advantage across key modes of infrastructure.⁶
- Strong history of leadership on leadership and currently ranked 2nd out of nine CA’s for overall sustainability.⁷

Challenges

- High energy costs (up to 13% more than national average) impair the business competitiveness of many of our manufacturers.⁹
- Sufficient infrastructure is required to support the success of innovation and productivity in key sectors (e.g. 5G/broadband for BPFs, power supply for electric vehicles, 5G for CAV inception).¹⁰
- Housing costs are increasing faster than local salaries¹¹; exacerbated by a lack of affordable housing¹²; there’s a need to develop construction skills and capability to deliver good housing at scale.
- An overreliance on road network¹³, results in poor air quality (25 days a year)¹⁴ and costly congestion.
- Only 41% of residents are able to access three or more centres by public transport within 45 mins.¹⁵
- An improvement in access to high quality employment areas and to local services and facilities for all residents is imperative to increase inclusive growth.
- “The shortfall of land for employment space is at least as pressing as the shortage of land for new homes.”¹⁶
- Carbon emissions need to fall by 5,756 ktCO2 by 2030.¹⁷
- Robust and reliable digital infrastructure will be required to deliver on strategic opportunities.

Rationale

The West Midlands has multiple infrastructure challenges – congestion, unbalanced connectivity, housing need, high energy prices, poor quality air and a lack of employment land – that constrain its productivity potential, stifle access to opportunities, and entrench the region’s inequalities. Providing greater connectivity – physical, digital and environmental – for businesses and society, is crucial to capitalising on strategic opportunities and driving boosting inclusive growth.

Key LIS Interventions

In line with commitments set out by the *West Midlands Transport Strategy*, the *West Midlands Housing Package* and the *Urban Connected Communities Project*.¹⁸

Deliver £3.4bn of investment over the next ten years in transport, building a fully integrated and seamless multi-modal transport system.

Implement the £4.4bn HS2 Growth Strategy, connecting all communities of the region to HS2 and maximising on supply chain opportunities.

£50m investment to create the UK’s first multi-city 5G testbed.

Increase the rate of housing delivery by implementing the £350m housing plan, working with the industry to accelerate the use of advanced methods of construction

Implement a strategic programme of employment land development, utilising £350m investment in land remediation through the National Brownfield Institute

'Infrastructure' Foundation: Flow Diagram Sources

Reference number	Source & Key Dates	Link/Info
1	West Midlands Growth Company, 'Make Your Mark' (2017). Also, ONS Location quotient data (2017) shows that, at 1.7, for Postal and Couriers, WMCA (7MET) has the highest location quotient of all UK NUTS2 areas for this sector activity.	Available on request Data available to download from here
2	<ul style="list-style-type: none"> Energy partnerships: Energy Capital, Regional Energy Commission etc. Battery Manufacturing & EVs: WM LIS sector evidence slides –automotive section. Digital rail: WM LIS sector action plan, in collaboration with Birmingham Centre for Railway Research & Education (to be released 2019) CAV: WMCA LIS automotive sector action plan (to be published 2019) Led by CWLEP – available on request. WM LIS sector evidence slides also provide insight on this. 	<ul style="list-style-type: none"> https://www.energycapital.org.uk/ Slides available here Also, see https://www.birmingham.ac.uk/research/activity/railway/index.aspx Slides available here
3	WM LIS construction sector action plan (to be published 2019).	This provides detail of emerging construction sector momentum in the region. Underpinned by housing/infrastructure commitments, private sector investment and growing academic/research/education cluster in the industry – e.g. National Brownfield Institute (https://www.wlv.ac.uk/about-us/news-and-events/latest-news/2018/may-2018/new-national-centre-to-support-brownfield-redevelopment-announced.php) – that will be a crucial asset for tackling land availability shortages. The Institute will be a part of Wolverhampton's developing Springfield Campus which is being transformed into Europe's largest specialist construction and built environment campus.
4	West Midlands Freight Strategy (2015)	https://www.tfwm.org.uk/media/1207/west-midlands-freight-strategy.pdf - p.8
5	Government/WMCA agreement and commitment through the Second Devolution Deal (2017)	Outline of housing package
6	Government (DCMS) commitment in September 2018 to make the West Midlands the UK's first large-scale 5G testbed	https://www.gov.uk/government/news/west-midlands-to-become-uks-first-large-scale-5g-testbed
7	Sustainability West Midlands: 'Combined Authority Sustainability Benchmarking, Technical Report – analysis of strategies 2018'	https://www.sustainabilitywestmidlands.org.uk/wp-content/uploads/WMCA-Sustainability-Benchmarking-Report-Sep-2018-Final.pdf - page 4
8	See previous references to smart mobility and 5G opportunities	
9	Black Country LEP: 'Energy as an Enabler: Linkages Between Local Energy Strategy, Productivity and Growth (2018)	Report download and all required information available here: https://www.blackcountrylep.co.uk/regional-growth/energy-as-an-enabler/
10	<ul style="list-style-type: none"> For BPFS/innovation point: City-Redi, BPS Birmingham, and Black Country Consortium sector deep dive: "AN INVESTIGATION INTO THE FOUNDATIONS OF PRODUCTIVITY FOR BUSINESS, PROFESSIONAL AND FINANCIAL SERVICES IN WEST MIDLANDS COMBINED AUTHORITY AREA PRODUCTIVITY & SKILLS COMMISSION – SECTOR SPECIFIC ANALYSIS" (June 2018) For power supply/EVs point: Black Country LEP: 'Energy as an Enabler: Linkages Between Local Energy Strategy, Productivity and Growth (2018) 	<ul style="list-style-type: none"> Undertaken as part of the West Midlands Productivity and Skills Commission, this paper provides detailed insight on the services sector in the region. https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf Report download and all required information available here: https://www.blackcountrylep.co.uk/regional-growth/energy-as-an-enabler/
11	ONS Housing affordability in England and Wales (2017)	Information and data downloaded available here . For example it shows that, within the WMCA, the ratio of median house price to median gross annual residence-based earnings has increased from 4.68 in 2007 to 6.86 in 2017 – an increase of 49%.
12	MHCLG: Table 1011C: Additional Affordable Housing Supply; detailed breakdown by Local Authority, Completions	https://www.gov.uk/government/statistical-data-sets/live-tables-on-affordable-housing-supply - The total number of additional affordable dwellings in 2016-2017 in the WMCA was 2,870 dwellings; an increase of 390 dwellings from the previous year. Despite the increase, this is lower than in 2014-15
13	Transport for West Midlands data – cited in the West Midlands State of the Region 2018.	Full report and executive summary available to download: https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/wmca-state-of-the-region/ - 67% of journeys in the region are by car (a 3% increase from 2013); the WMCA's target is to reduce this to 45%. Also see evidence within the WMCA's transport strategy: 'Movement for Growth': https://www.tfwm.org.uk/media/1099/movement-for-growth.pdf and 'Infrastructure' – the foundation report written for the WMCA Productivity and Skills Commission: https://www.wmca.org.uk/media/2230/infrastructure.pdf
14	Sustainability West Midlands data – cited in the West Midlands State of the Region 2018	Full report and executive summary available to download: https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/wmca-state-of-the-region/ - The WMCA has 25 days of poor air quality a year (rated by 4 or higher on the Daily Air Quality Index). This has improved in the last year but the WMCA target is to reduce this to just 1 day a year by 2030.
15	Transport for West Midlands data – cited in the West Midlands State of the Region 2018	Full report and executive summary available to download: https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/wmca-state-of-the-region/
16	West Midlands Land Commission (2017)	https://www.wmca.org.uk/media/1412/wmlc-final-report.pdf - p.29
17	Sustainability West Midlands data – cited in the West Midlands State of the Region 2018	Full report and executive summary available to download: https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/wmca-state-of-the-region/ - The WMCA has 25 days of poor air quality a year (rated by 4 or higher on the Daily Air Quality Index). This has improved in the last year but the WMCA target is to reduce this to just 1 day a year by 2030.
18	See references 5,6 and 15 above.	

Further Reading

- **West Midlands Land Commission (WMLC) Report:**
<https://www.wmca.org.uk/media/1412/wmlc-final-report.pdf>
- **Infrastructure and Productivity: A Review:**
<https://www.wmca.org.uk/media/2230/infrastructure.pdf>
- **Energy as an Enabler: Linkages Between Local Energy Strategy, Productivity and Growth:**
<https://www.blackcountrylep.co.uk/upload/files/NewFolder/Energy%20as%20an%20Enabler%20report%20Final.pdf>
- **Powering West Midlands Growth: A Regional Approach to Clean Energy Innovation:**
<https://www.energycapital.org.uk/wp-content/uploads/2018/03/powering-west-midlands-growth-regional-energy-policy-commission-report-2018.pdf>
- **West Midlands Freight Strategy:** <https://www.tfwm.org.uk/media/1207/west-midlands-freight-strategy.pdf>
- **Movement for Growth: The West Midlands Strategic Transport Plan:**
https://www.wmca.org.uk/media/1372/2016-06-01-mfg-full-document_wmca.pdf



Foundation 4 – Business Environment:



Context

Whilst our business base is growing, challenges and opportunities exist where we can boost business growth and productivity. The Productivity & Skills Commission helps identify where we should focus efforts.

Driving growth across the region will require a focus on firm-level factors, including the mindset and growth orientation of individual business leaders/entrepreneurs, which include such things as differences in access to, and effective use of, technologies, in private sector investment rates, and in management and entrepreneurial capacity.

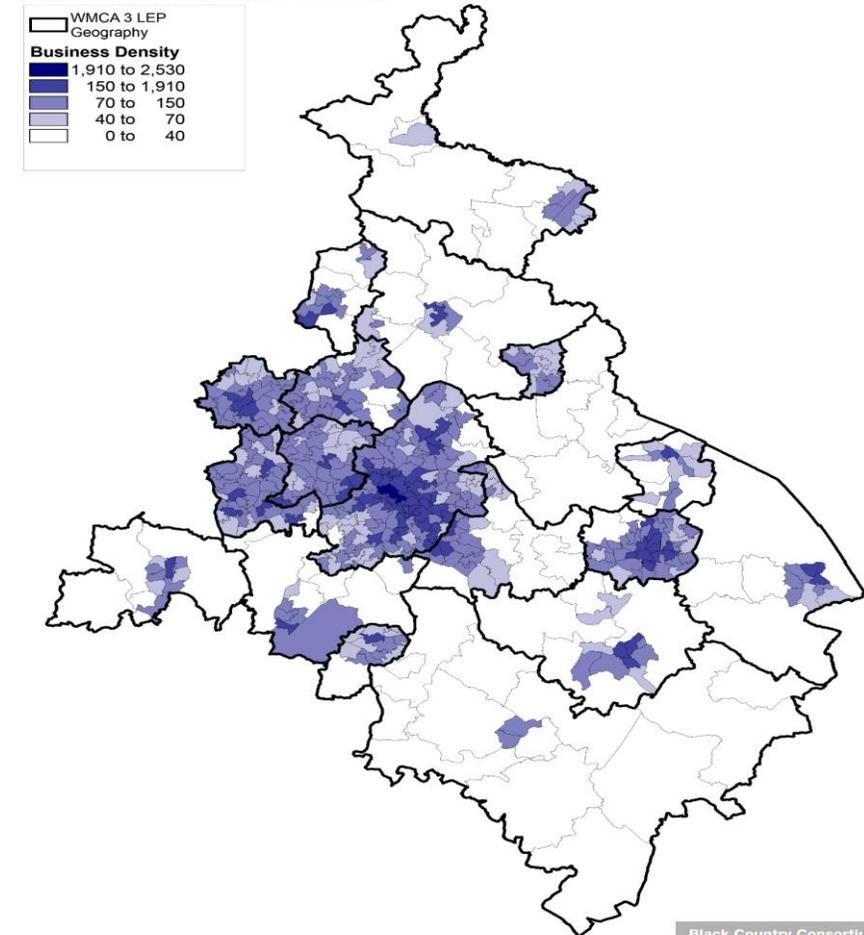
An infrastructure of business support services currently exists within the WMCA area which can help to deliver productivity and growth. This includes three Growth Hubs, which can support a large number of businesses on the specific factors which can help them to grow. There is also a range of intensive support available for those businesses seeking to grow (e.g. small business support programmes).



Business Stock

- The WMCA has **159,355 active enterprises**, half of which are in GBSLEP and a quarter in the BPFs sector. Other sectors with 10% or more of total WMCA businesses are retail (16%), advanced manufacturing & engineering (12%), construction (11%), and digital & creative (10%).
- These in part reflect the **distinctive WM strengths identified in the LIS**: mobility, healthcare, professional services and creative.
- The number of enterprises has increased by **13,945 on the previous year, 9.6% growth compared to 6.1% national average**. From **2013-2016 the business base has increased by 20.8% compared to 15.7% in the UK**.
- Spatially, growth since 2013 has been **driven by GBSLEP in particular** (25% growth), especially in Bromsgrove (58%) and Birmingham (32%).
- **All LEAs have grown faster than the UK**, with Rugby (26%), Sandwell (25%), Wolverhampton (23%) and Coventry (22%) among the fastest local authority areas.

WMCA BUSINESS DENSITY

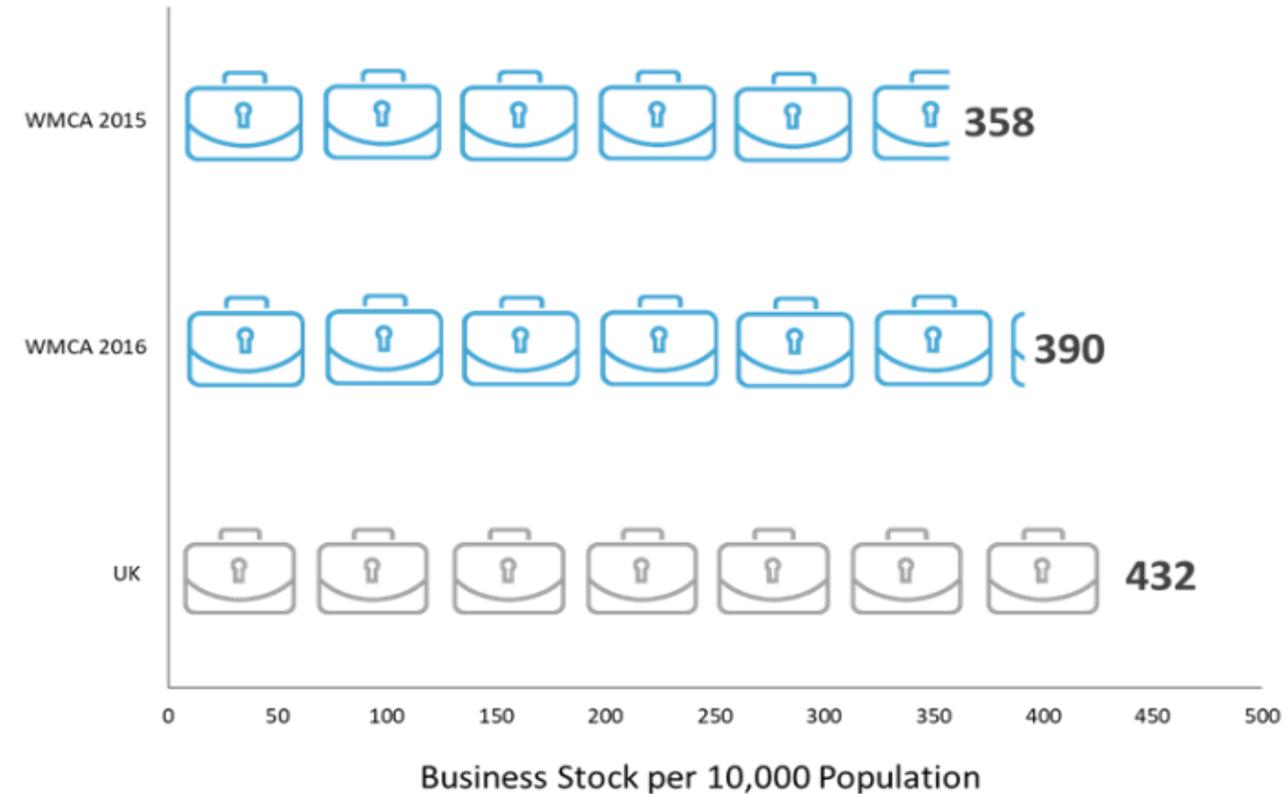


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Black Country Consortium
Economic Intelligence Unit

Business Stock

- There are 390 enterprises per 10,000 population compared to 432 across the UK. This confirms that whilst our stock grown in recent years, **the region is still lacking in the number of businesses.**
- **The WMCA needs to increase its business stock by 17,133 (13,263 in the Black Country) in order to reach the national average and to reduce the £6.9bn contribution that economic dynamism has on our £16.9bn output gap.**
- With 446 businesses per 10,000 population, CWLEP is above the UK average. BCLEP (319 per 10,000) and GBSLEP (406) are lower than the average.

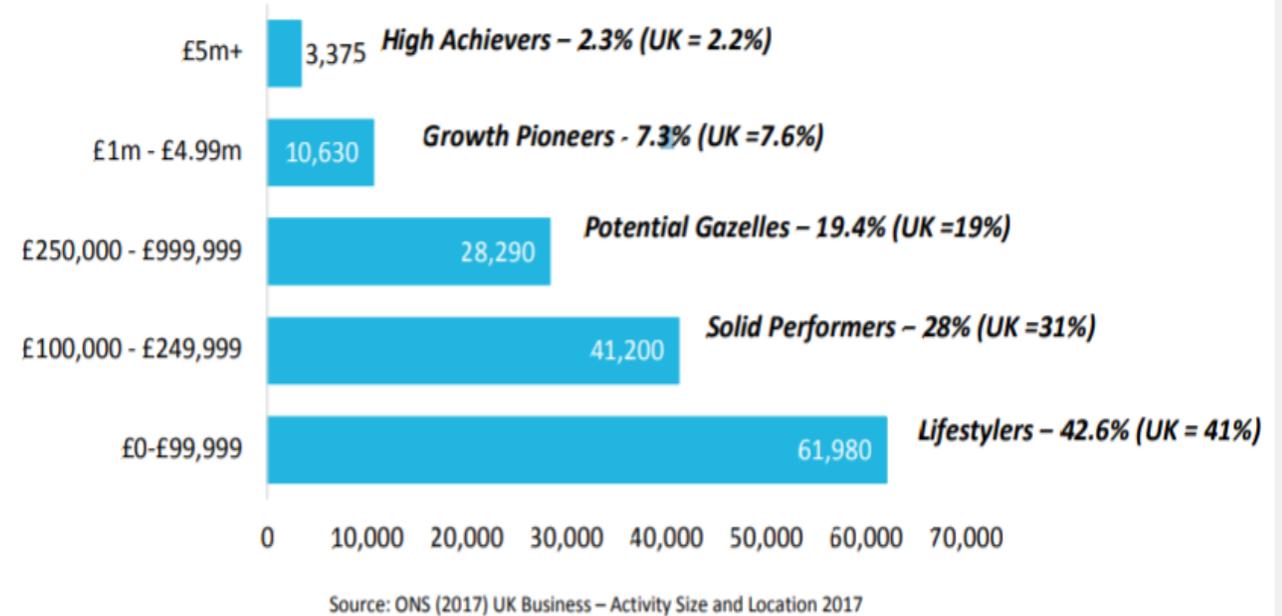




Business Size

- **Over 99% of enterprises are SMEs**, employing 0-249 people. 129,305 of these are micro businesses with up to 9 employees.
- This leaves 605 companies that are “large” – employing 250 or more people.
- This reflects the West Midlands economy as being **driven by small and medium firms. A lack of OEMs in the region**, however - particularly in key manufacturing sectors – may stifle innovation, exports and productivity.
- LIS ambitions include building up the WMCA as a world-leading region in the development of **future mobility, professional services and data-driven healthcare**. Attracting larger companies in these sectors (e.g. like HSBC) to setup here will be an important part of success, combined with growing our indigenous firms.
- Headline actions in the LIS – including **significant local and national connectivity improvements, investment in high quality employment sites and support for digital innovation - aim to lure large companies to the region so that the structure of our economy is more balanced.**

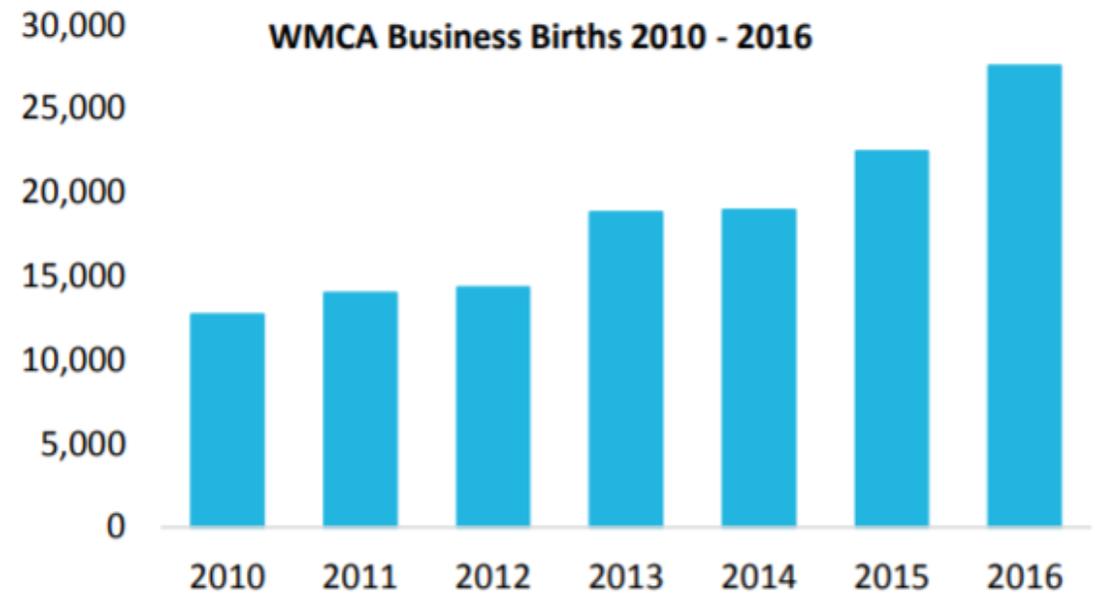
WMCA Business Base by Turnover Band 2016



- Additionally, an **expansion of scale-up support** will ensure that high potential companies don't miss out on support, and there will be sector specific activity such as **business-to-business support for manufacturing supply chain**, helping them to capitalise on opportunities such as clean, connected mobility.

Business Births

- **27,550 new businesses were started across the WMCA in 2016.** This is 46.5% more business births than in 2013 compared to 19.6% across the UK.
- The number of business births equates to **67 businesses per 10,000 population compared to 63 per 10,000 population for the UK.** The region is therefore making strong progress on improving its business stock through a thriving start-up community.
- There are differences within the region though – GBSLEP exceeds the national average at 80 business births per 10,000 population, with CWLEP (61) and BCLEP (50) below it.
- **1,526 more business births are needed in the Black Country to meet the UK average; 157 more business births are needed in CWLEP.**

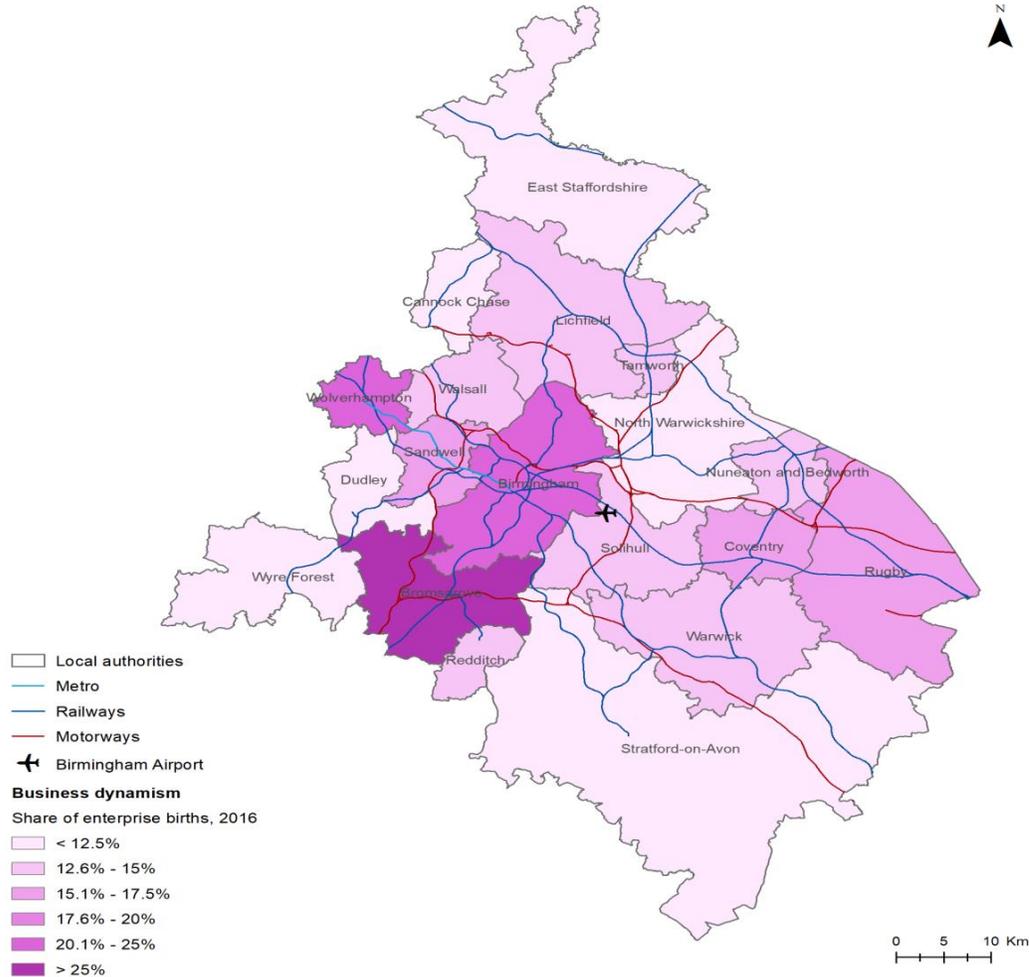


Source: ONS Business Demography, UK: 2017

- A range of LIS actions will respond to this need in our less dynamic areas – namely **tackling access to finance, focused support around key events** such as the Commonwealth Games and more sector-specific activity including a **business-led Creative Innovation & Talent Hub for the creative industries.**

Regional Variations

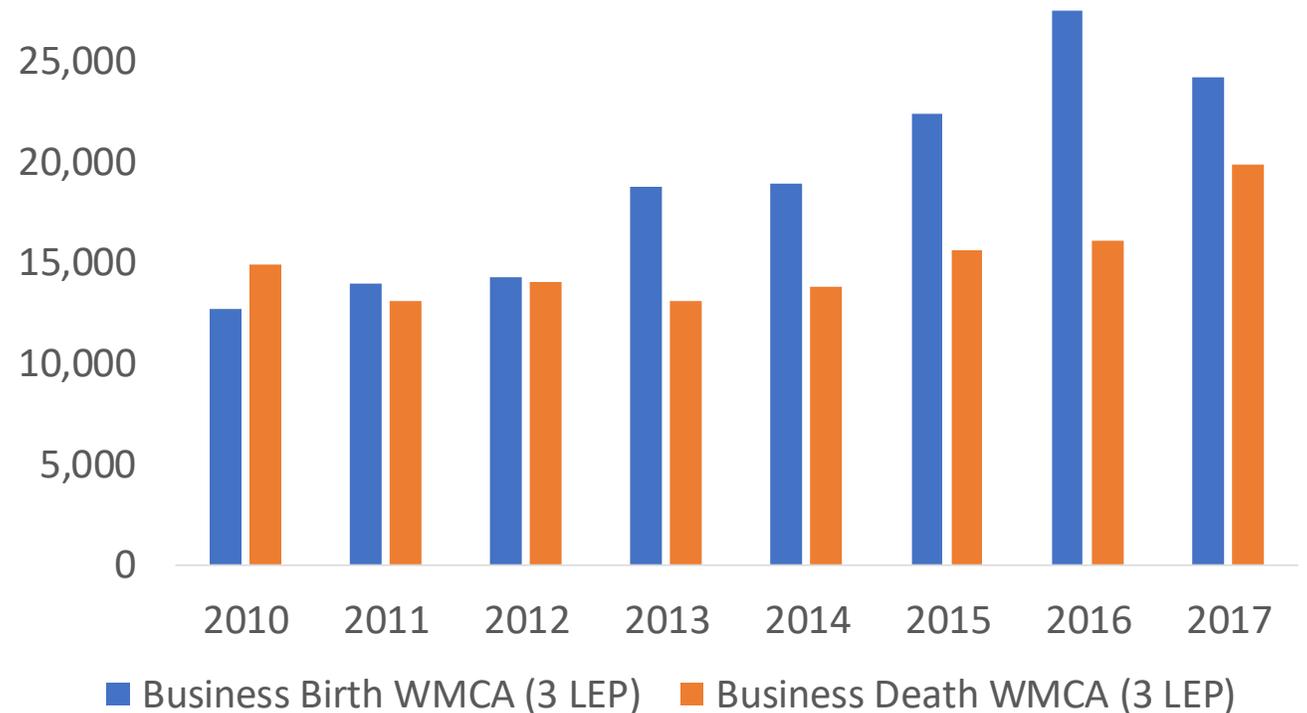
Example map showing business dynamism, as measured by share of business births



Business Births and Deaths

- Newly released data suggests the WMCA area recorded a total of 24,225 business births in 2017, an **11% decrease from 2016**, and the **first decrease for a number of years**.
- The WMCA's number of business births per 10,000 population has dropped to **58** in 2017. To reach the national average, the **WMCA now needs an additional 1,042 business births**.
- However, there's still been a **greater number of business births than business deaths every year since 2011**.
- The **death rate is below the national average** – 48 per 10,000, population compared to 58 for the national average.

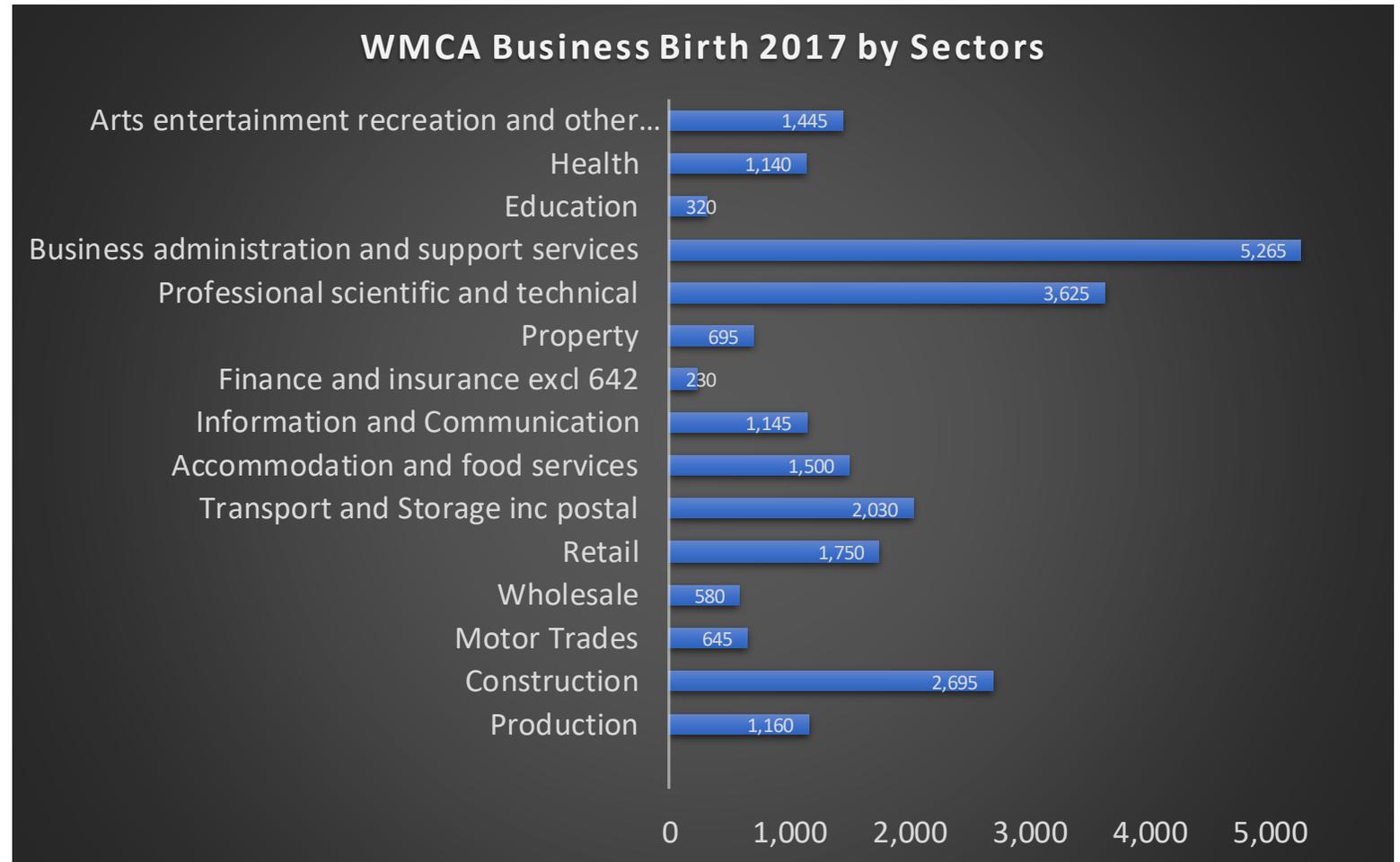
WMCA Business Births/Deaths



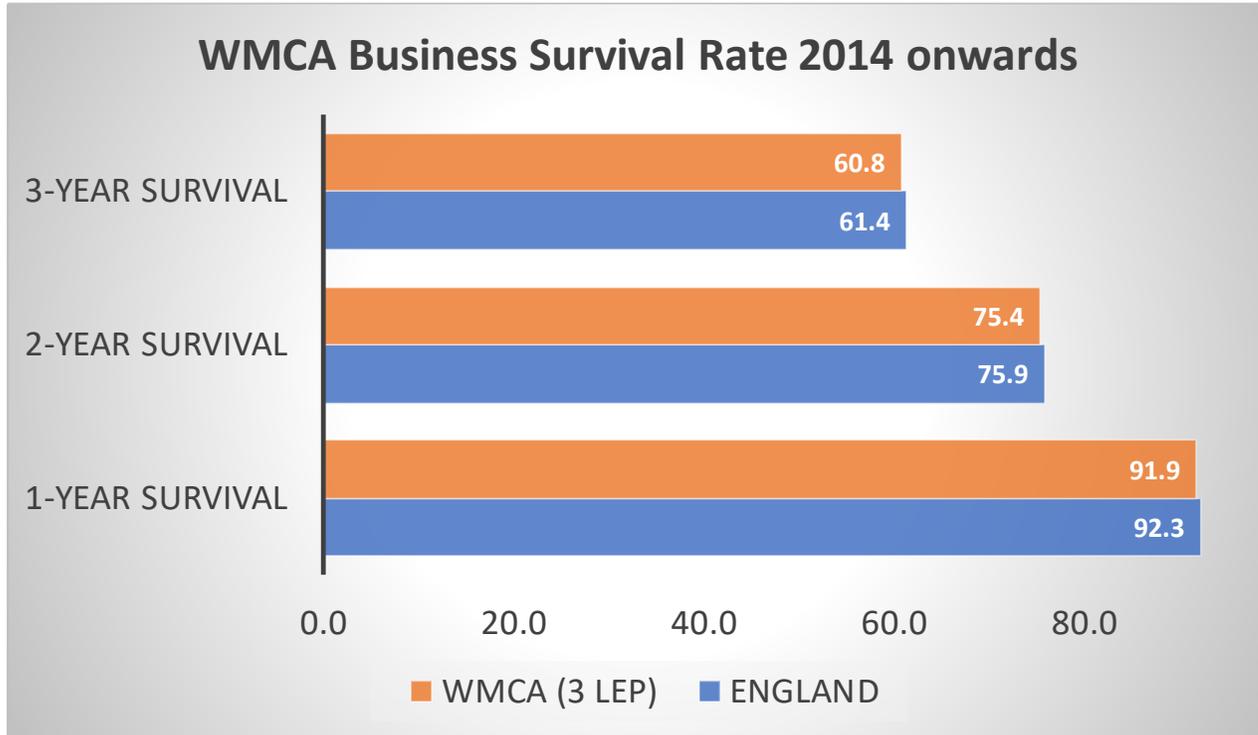
Source: ONS Business Demography (2018)

Business Births by Sector

- The **Business Admin and Support sector** recorded the highest number of **business births in 2017**; a total of 5,265 which accounted for 21.7% of the total business births.
- The **Professional, Scientific sector** recorded **3,625 business births**; accounting a for 15% of the total business birth in 2017.
- **Construction and transport** were other sectors which had comparable large numbers of business births.



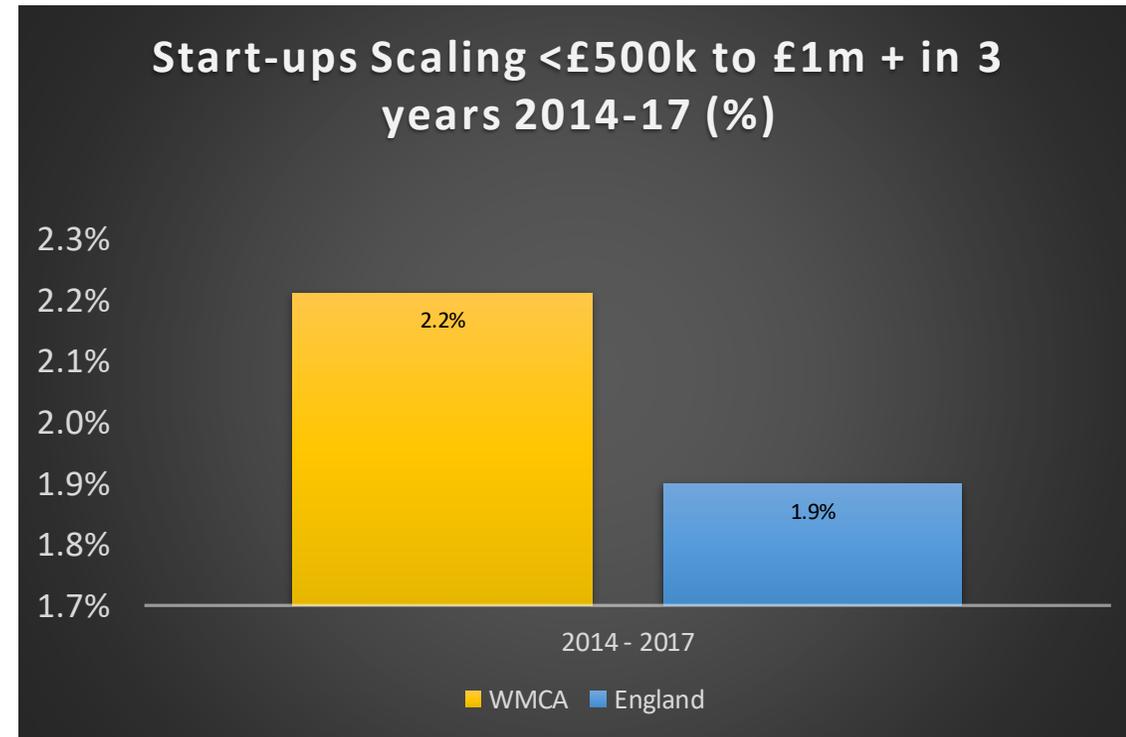
Business Survival & Scale-Up



A total of **91.9% of WMCA businesses born in 2014 survived through the first year**; lower than the national average of 92.3%. After 3 years the survival rates for WMCA businesses that started in 2014 was also **slightly lower than the national average** – 60.8% compared to 61.4% nationally.



Source: ONS Business Demography 2018



The WMCA has a **slightly better scale-up record than the England average when it comes to firms moving from £500k turnover to £1m+** (see above graph). However, for higher volume turnovers, e.g. from £1-2m to £3m+, the region is below the national average (6.9% compared to 7.5%).

Source: ONS Business Structure Database (BSD)

High Growth Businesses

- In 2017, a total of **710 business were classified as high growth business** in the WMCA; with a 0.7% increase from 2016. When compared to England in terms of growth rate (England = -3.1%), the WMCA performs better
- Among the LEPs within the WMCA, **Birmingham and Solihull LEP had the highest growth rate of 2.8% in 2017** and Coventry & Warwickshire LEP had the lowest growth rate of -2.7%.
- To reach the national average for high growth enterprises, the **WMCA needs an additional 149 high growth business**; this is progress from 2016 when it was 180.

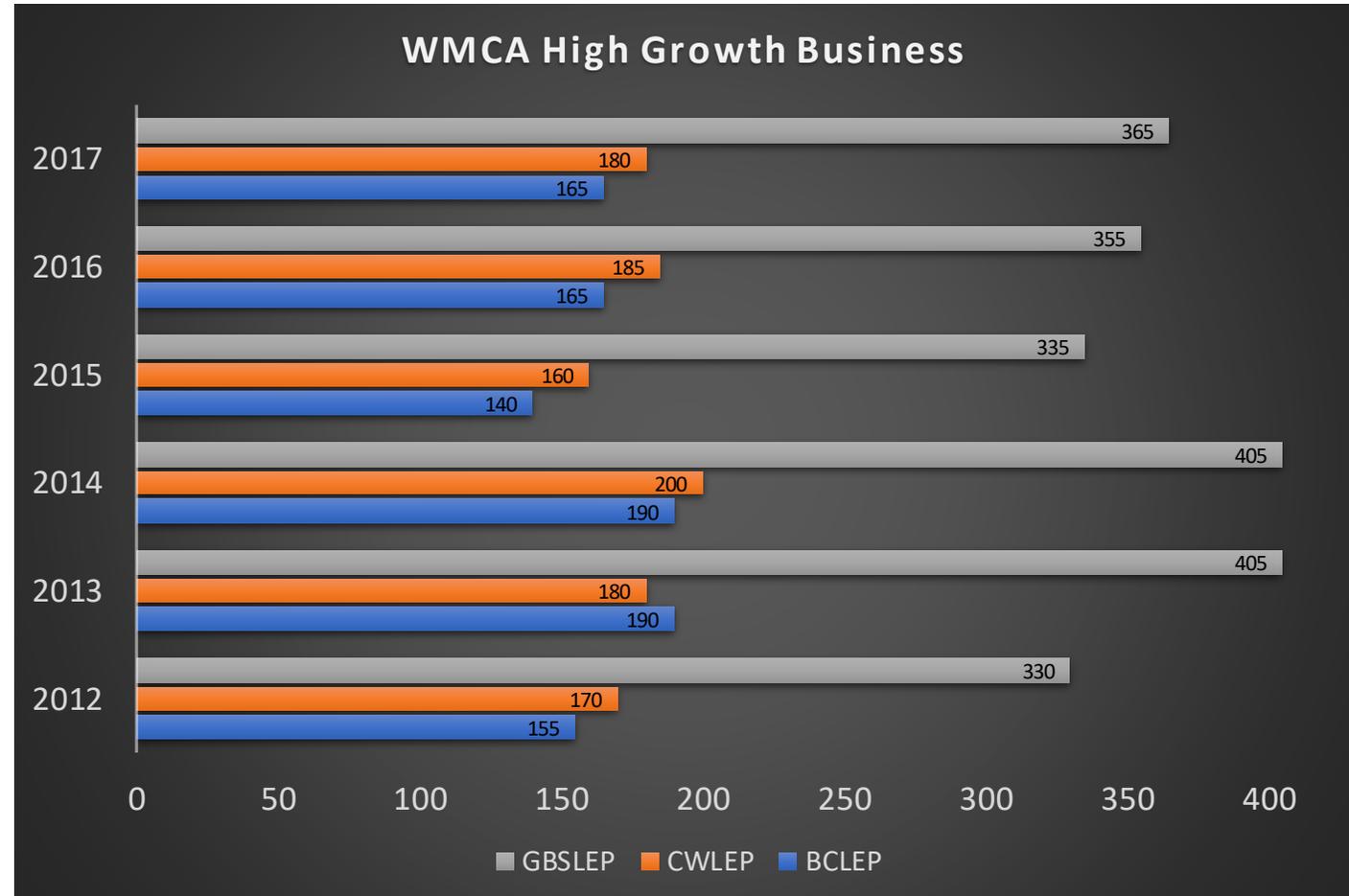
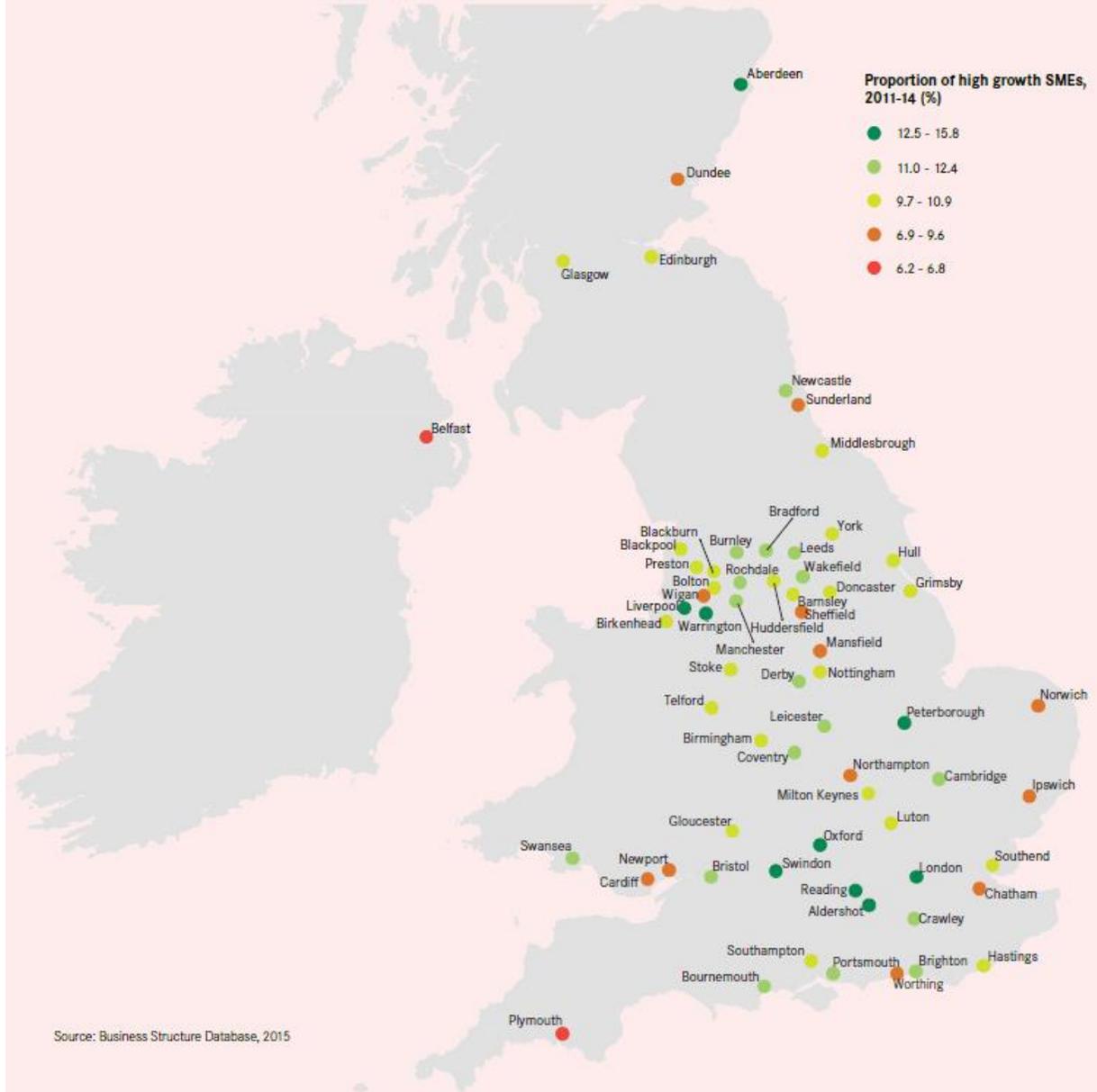


Figure 12:
Proportion of high growth SMEs, 2011-14

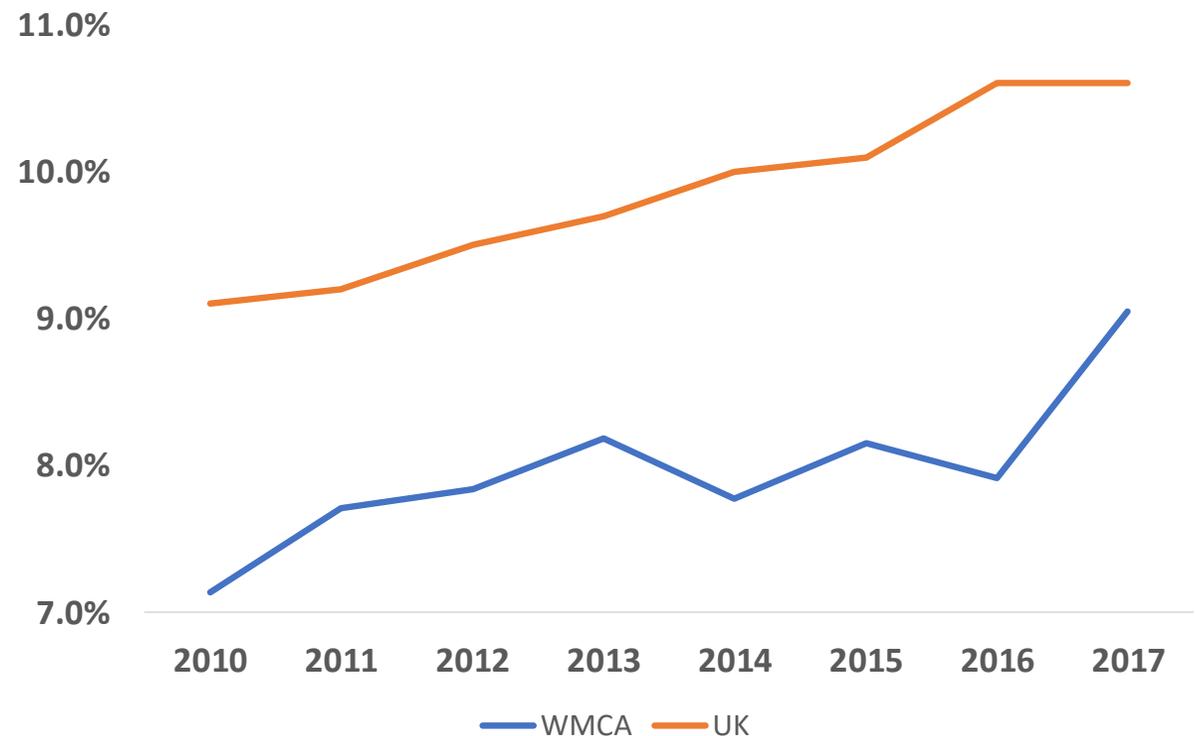


Source: Business Structure Database, 2015

Self Employment

- In 2017, **9%** (230,500 people) of the WMCA population aged 16 – 64 were self employed compared to 10.6% nationally.
- The WMCA experienced **an increase of 29,700 people** (+1.1 percentage points from 7.9%) becoming self employed between 2016 - 2017, while nationally the self employment rate stabilised at 10.6%.

% Aged 16 - 64 that are Self Employed in the WMCA (3 LEP) and UK



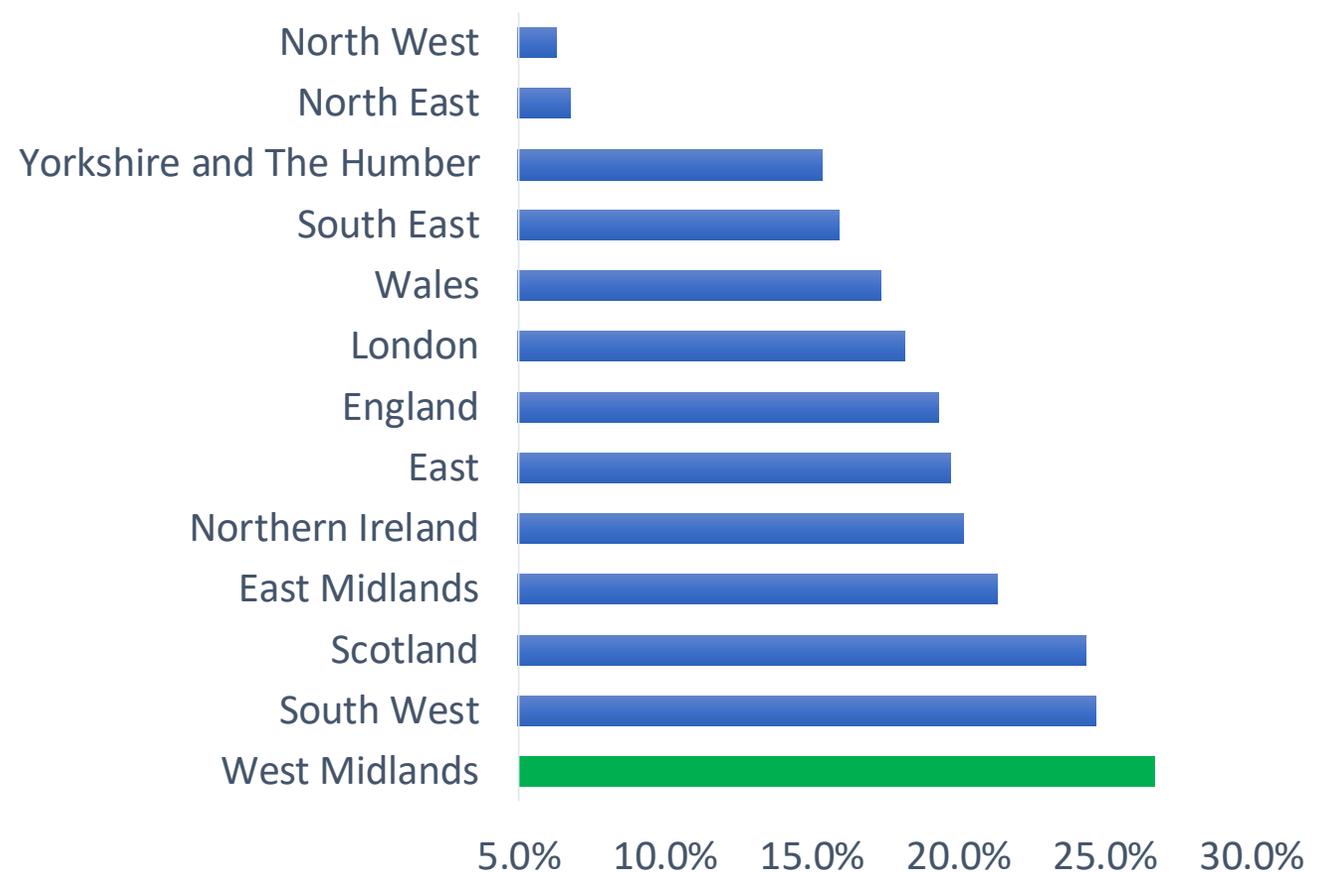
Source: Annual Population Survey



Exports

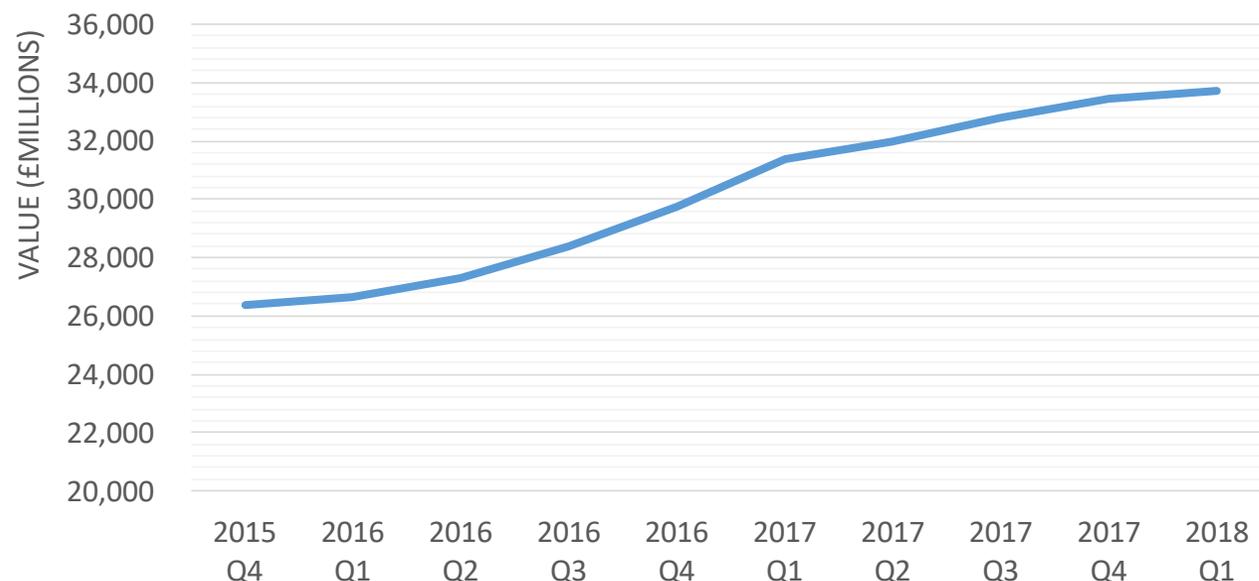
- However, the West Midlands is the **fastest growing UK region for goods exports (27% growth between 2015 and 2017) and is the export capital of the UK**: outside of London & the SE it exports the most by value (over £33bn in 2017).
- Exploiting this trade excellence through the LIS' **increased internationalisation action** will grow our companies and boost their innovation, productivity and employment capacity. Realising positive change in these areas can help to **boost regional firm productivity in the region**, contributing to a **reduction in the output gap**.

% Export Growth by Region (2015-2017)



Exports Continued

West Midlands Region Export Growth since 2015 Q4



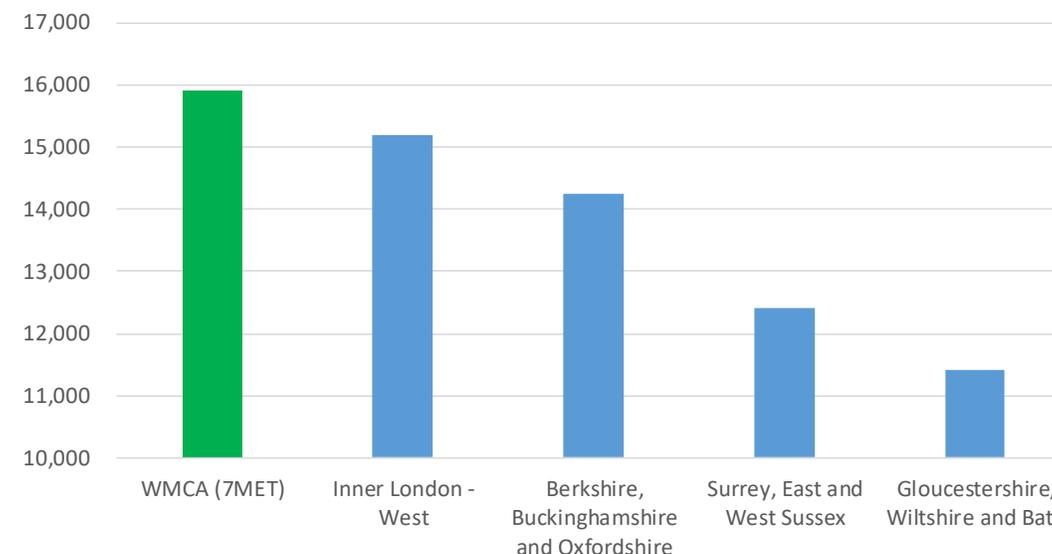
- The above graph displays the stable and significant growth experienced by the West Midlands region in recent years. **Exports have grown from a value of £26.6bn to almost £34bn in 9 quarters.**

Source: HMRC UK Regional Trade in Goods Statistics (2018)



West Midlands
Combined Authority

Top 5 NUTS2 Regions for Exports (£m) (2016)

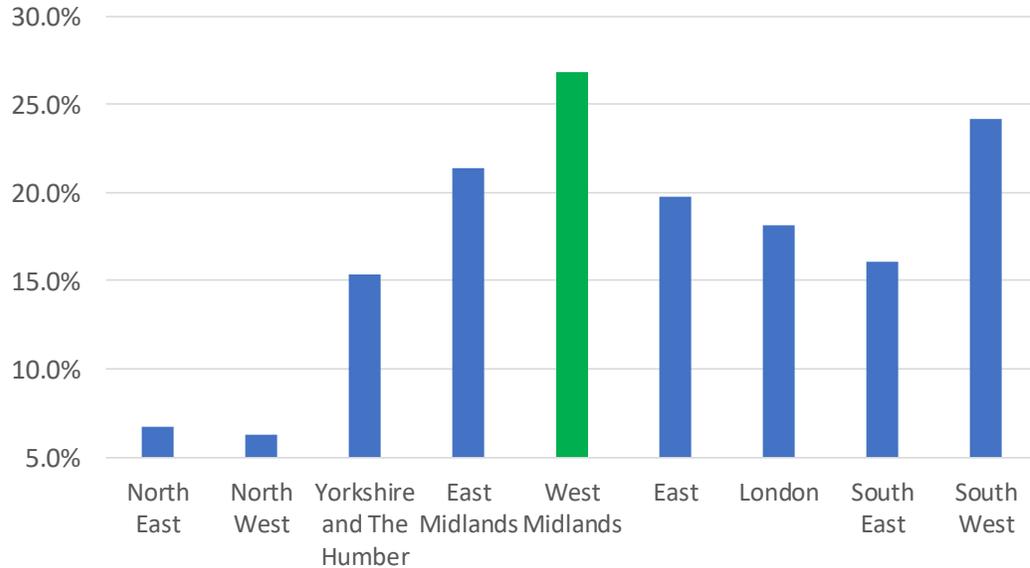


- The latest available data (2016) shows that the 7MET WMCA area alone makes up 55% the value of the WM region's exports. The WMCA 3-LEP area will make up even more of this given that areas of Worcestershire, Warwickshire and Staffordshire feature within this.
- The same data shows that the WMCA 7MET's **£16bn worth of exports is the highest of all NUTS2 regions in the UK**, confirming out distinct expertise in trading internationally.

Source: HMRC (2016) Regional Trade in Goods dis-aggregated by smaller geographical areas statistics

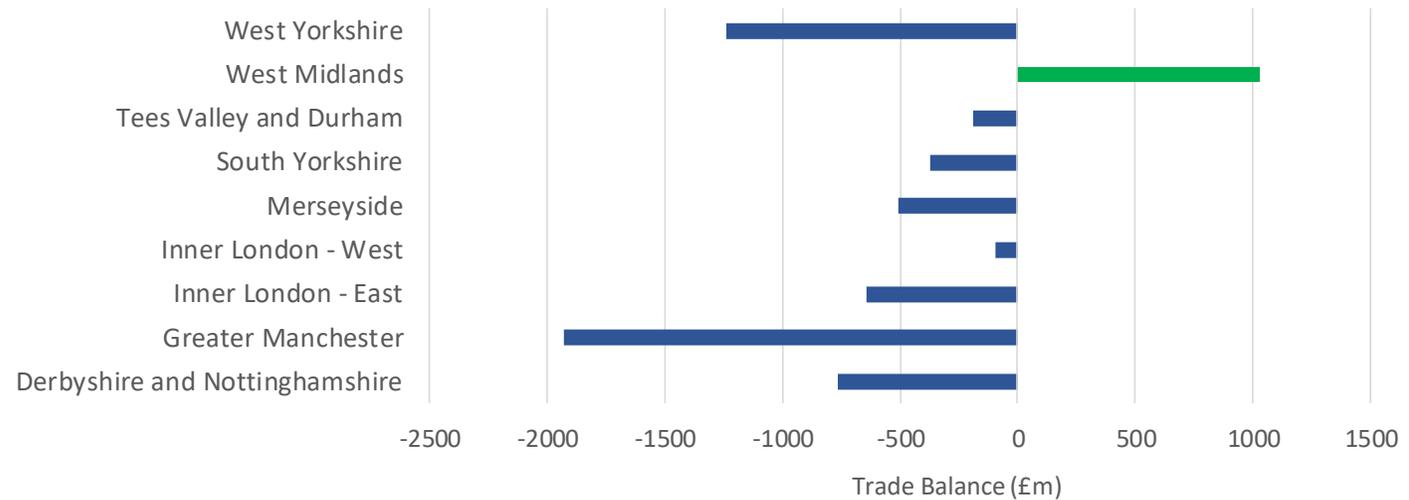
Exports Continued

Exports Growth in English Regions (2015-2017)



- West Midlands accounts for the **greatest share of UK exports of all regions outside London & the South East**, making up 10% of the total at a value of almost **£35 billion per year**.

Trade Balance with China (2017) Selected English NUTS2 Areas



- WM 7MET has a huge **trade surplus with China of £1.02bn** (£2.7bn exports and £1.6bn imports) - the largest surplus with China of all English NUTS2 regions.
- The WM also has the **largest trade surplus with the USA than all UK NUTS2 areas (£2.7bn)** - £3.6bn exports and £900m imports.

Productivity by Sector (2016)

GVA per employee varies significantly across sectors in the WMCA, with an overall figure of **£42,897**. This is below the national average of **£47,783**.

This **productivity gap is reflected across all broad sectors** apart from Low Carbon & Environmental Technologies (+£16,085). The region's manufacturing strength is displayed through its only marginal productivity difference with the UK average in this sector (£-423). Sectors with the highest productivity gap between the WMCA & the UK are BPFS (-£15,418), Digital and Creative (-£7,157) and Logistics & Transport (-£6,643).

There's a need to raise regional productivity across all sectors – some more than others. The policy response to lower than average productivity will be different across industries; for example **in construction the LIS will ensure we explore opportunities to accelerate the use of modern methods of construction, and in life sciences, an innovative public and private partnership will drive the next phase of cluster development.** The latter will allow the region to directly deliver on its data driven healthcare ambition.

Broad Sector	GVA ²	GVA per Employee	Difference with UK	GVA per Employee 5 year growth	Jobs ³
Advanced Manufacturing and Engineering	£12,247	£58,036	-£423	9.5%	211,034
Business, Professional and Financial Services (BPFS)	£24,706	£60,212	-£15,418	-2.6%	410,322
Construction (Building Technologies)	£7,206	£37,320	-£2,954	1.4%	193,081
Cultural Economy including Sports	£3,667	£21,997	-£463	0.7%	166,705
Digital and Creative	£4,764	£65,151	-£7,157	7.5%	73,128
Life Sciences & Healthcare	£6,451	£27,429	-£1,280	2.3%	235,206
Logistics & Transportation	£4,881	£36,763	-£6,643	-8.0%	132,763
Low Carbon and Environmental Technologies	£3,359	£134,638	£16,085	-9.2%	24,949
Public Sector inc. Education	£9,641	£36,796	-£2,042	-1.4%	262,007
Retail	£10,495	£31,934	-£5,695	6.8%	328,640
Total	£87,417	£42,897	-£4,885	2.0%	2,037,835

¹ Full sector definition included in the appendix – this differs slightly to that of the sector definition used in the West Midlands Local Industrial Strategy consultation document which explains any differential figures.

² 2016 figures (2013 prices)

³ 2016 figures





Business Environment Sector Example: BPFS

- BPFS companies are broadly split into **2 types, regional arms of multinationals and 'local' large players** with national significance.
- **High cost of entry** means this sector is predominately long established firms who can trace their heritage back hundreds of years and have grown through M&A activity
- A large number of them however have those *roots in the region*, however these roots may have shifted and as national role has grown HQs move to London
- **No consistent 'specialisation'**, rather this is the only place outside London with a **'full service' offer**, although there is some evidence that that *services match local specialisation* and the local client base ie advanced manufacturing advice and guidance, exporting etc.
- The reasons for firms being in the region are largely related to **geography, and being central yet close to London and accessibility to market. Labour availability is important**, however labour costs are deemed less of a draw as wages are broadly similar everywhere and in fact the heating of the market and labour shortages are showing early signs of wage inflation. History is also a driver for being here, either HQ was or is here, they purchased a company in the region, or the regional lead has a personal relationship with the region.
- The sector is **suffering from significant changes to the structure of employment, traditional 'partner careers' are no longer of interest to younger employees;** who favour work life balance and flexibility.
- The regional sector's **lack of innovative capability and lack of business environment structures to absorb capacity provide the need for additional support for digital innovation within firms and new approaches in the supply chain.** These actions would encourage new products and services in the sector.



Raising Productivity within Firms

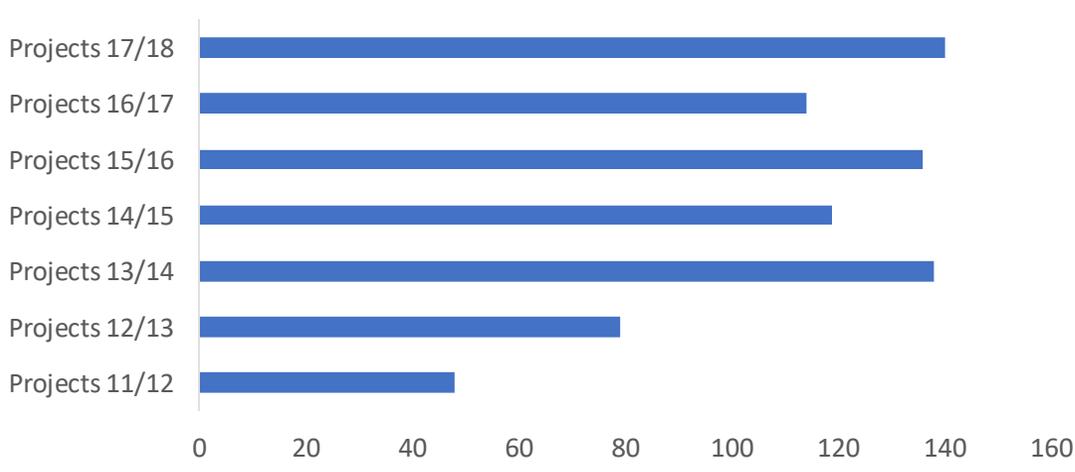
- One way to improve productivity is to have lots of firms make (small) improvements in the way that they are run. For these firms most of the effort needs to be on low cost ways of getting new technologies/practices into firms – new to the firm innovation - or on increasing their capacity to use them effectively. Our **Productivity Factory programme in the LIS will increase efficiencies in supply chain companies through a programme of intensive and specialist support.** Supplemented by a commitment to deliver **dedicated, segmented business support**, this programme will particularly help firms in manufacturing sub-sectors like automotive, aerospace and metals/materials in meeting the future mobility ambition.
- Through this **significant mobilisation of the existing resource base, partners (industry bodies and the public sector)** can better support SMEs companies in enhancing productivity. The positive effect of this will be improved productivity across sectors and therefore the economy as a whole, allowing companies greater space for further investment in people and equipment.
- The key objective of these LIS actions is to **raise firm-level productivity that directly improves the productivity region as a whole, eventually reducing the output gap and raising living standards.**



Foreign Direct Investment (FDI)

- The WMCA has received **775 Foreign Direct Investment (FDI) projects**. This has led to the **creation of nearly 46,000 new jobs from 2011/12 to 2017/18**. The number of FDI projects in the WMCA area has more than doubled from 49 in 2011/12 to 140 in 2017/18. This far exceeds the average growth rate for the whole of the UK which grew by 47.4% in the same period

Total Number of FDI Projects



US automotive aftermarket supplier **Tenneco** has invested in its facility in Tyseley, Birmingham with an additional **75,000 sq. ft** expansion supplying products such as shock absorbers and emission control components.

United Arab Emirates-owned **Travelodge Group** opened a new hotel in West Bromwich creating up to **50** jobs.

Danish **Flying Tiger Group** opened a new store in Wolverhampton creating **15** jobs.

O&M Movianto Europe, part of US-based Owens & Minor Inc, has expanded into a new facility in Kidderminster distributing pharmaceutical products.

Advanced, the US-owned computer software company based in the Mailbox, Birmingham has expanded further since its opening in 2015 as it looks to recruit an additional **100** jobs.

Irish food processing machinery specialist **Marel GB** has opening a new UK HQ in Birmingham Business Park.



Holland and Barrett are expanding their UKHQ in Nuneaton adding **48,000 sq ft** creating up to **350** new jobs.

750 new jobs from India owned **Jaguar Land Rover** for its new engine development facility in Whitley, Coventry. Jaguar Land Rover has also expanded its plant in Castle Bromwich employing **263** new staff.

US retail giant **Amazon** is expanding further and opening a distribution facility in Coventry that will create **1,650** new jobs.

US call centre operator **Sitel** is looking to recruit **800** new employees at its existing and new sites in Coventry.

Chinese Automotive R&D company **Changan** has expanded into Birmingham Business Park transferring **100** staff from the East Midlands and recruiting **90** additional employees.

Spanish-owned **AC Hotels** has opened a new hotel at the Mailbox, Birmingham.



FDI continued

- Whilst there's growth across the three LEP areas, recent FDI success us has been driven predominantly by CWLEP & GBSLEP – these two LEPs made up 92% of WMCA FDI projects in 2017/18. **There's a need to grow the number of FDI projects in the Black Country to ensure a rebalancing of the makeup of the regional economy.**
- To attract FDI, we need a **region-wide internationalisation strategy, including improving our availability of land (e.g. infrastructure) and the talent pool locally (people/skills).** This would attract more companies to all parts of the West Midlands, many of which will be large and more productive than many of our indigenous business base. The arrival of these firms would provide a boost to our productivity across sectors and importantly would contribute positively to closing out output gap with the UK average. The **WM LIS commits to increasing internationalisation by continuing to leverage national resources and the Midlands Engine brand.** Sector-level approaches will also be important going forward, and this **is already apparent in BPFS – in response to the need to further attract FDI, additional inward investment marketing is a key action within this sector's action plan.**
- **There are very few firms in the WMCA region which can be categorised as 'high-growth' or 'scaling' and this needs to be reversed through a combination of FDI & indigenous growth approaches. A below average number of 'high-growth' firms in the local economy correlates with significantly lower levels of productivity. Tackling this will require policy responses beyond just that of business environment.**

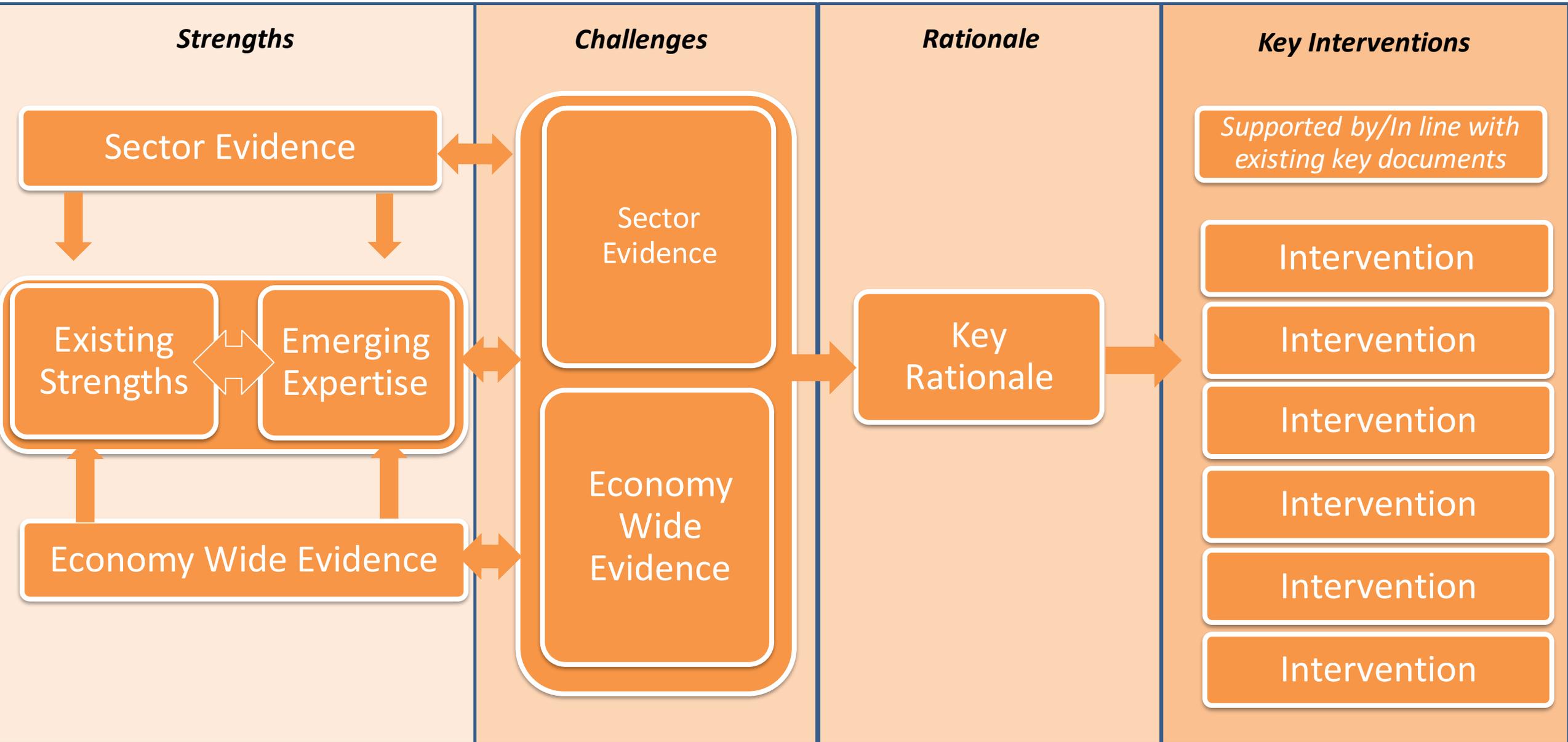


Summary Story: Business Environment

- Diverse and growing business environment with lower than average productivity across sectors, contributing to **£16.9bn output gap**.
- Low business stock affecting business dynamism and productivity. The **WMCA needs to increase its business stock by 17,133 in order to reach the national average**.
- The region's good overall performance on business births is reducing the business stock gap, but this is centred on Birmingham - there's a need to rebalance the success across the whole region.
- Business structure is built around SMEs – there's **very few OEMs and high-growth firms** which affects overall productivity. LIS actions aim to reverse this through economy-wide action and sector-specific support.
- Fast-growing export economy can be further **exploited through meeting of grand challenges and utilising competitive strengths**, such as global professional services.
- All sectors require a rise in productivity, partly achieved through an **improved offer for the long-tail of productivity SMEs – growing our indigenous business base through such programmes as the Productivity Factory**.
- **Developing our FDI offer** can also contribute hugely through the arrival of large, productive firms across sectors and moving into all parts of the WMCA. This will require a **broad internationalisation approach including the improvement of skills & infrastructure and the availability of land – outlined in the LIS**.



West Midlands LIS: Evidence to Intervention Framework – by Foundation of Productivity



West Midlands LIS: Evidence to Intervention Framework – ‘Business Environment’ Foundation

Strengths

- Heritage and continuing strength of the region in bringing creativity to the design of products and processes in key manufacturing sectors, from components to assembled goods.
- A distinctive network of supply chain firms operating across a range of sectors, including automotive, aerospace and medical tech.¹
- Culture creativity recognised by Coventry’s UK City of Culture award and our tourism and sport offer through the Commonwealth Games.
- The only ‘full service’ offering outside of London for financial and professional services.²

Diverse and growing business environment which is exploiting global opportunities within traditional sectors and exploring possibilities in new innovative markets.

- Maximising the business impact of unique events and investments (CG, HS2)
- Established base of firms able to exploit ‘grand challenge’ markets in key sectors.
- Capitalising on global shift in economic power to the East.

- Between 2015 and 2016, the number of businesses increased by 9.6% compared to 6.1% growth nationally.³
- Recent increases in business births has reduced the long-term business stock gap.⁴
- We are the fastest growing UK region for goods exports and experienced 27% growth between 2015 and 2017, and the WM 7MET has a huge trade surplus with China (£1.02bn) and USA (£2.7bn).⁵
- The number of FDI projects in the WMCA area has more than doubled from 49 in 2011/12 to 140 in 2017/18.⁶
- The number of high growth firms has increased in the West Midlands whilst contracting nationally.⁷

Challenges

- The region’s productivity gap is reflected across all but one of our key sectors (Low Carbon & Environmental).⁸
- Sectors with the highest productivity gap between the WMCA & the UK are BPFS (-£15,418), Digital and Creative (-£7,157) and Logistics & Transport (-£6,643).⁹
- The lack of OEMs in some key sectors creates structural imbalance.¹⁰
- Firms continue to report issues with finance from both the supply and demand side.¹¹
- There are provision gaps in the current business support environment.¹²

- The WMCA needs to increase its business stock by 17,133 in order to reach the national average.¹³
- To reach the national average, the WMCA needs an additional 1,042 business births.¹⁴
- Very few firms in the WMCA region can be categorised as ‘high-growth’ or ‘scaling’.¹⁵
- Spatial imbalances exist across key measures – e.g. only 5% of inward investment jobs are in the Black Country, high growth firms are largely concentrated in Birmingham.¹⁶
- Business dynamism contributes £6.9bn to the West Midlands’ output gap.¹⁷

Rationale

The West Midlands has inferior business stock, high growth firms and business dynamism than the national average – contributing to lower productivity across most sectors. Accelerated support to reverse this requires a spatial focus to reduce geographical inequalities within our business environment, as well as building on global success on FDI and our thriving export economy.

Key LIS Interventions

In line with commitments set out by the *West Midlands Productivity & Skills Commission*.¹⁸

Develop a virtual Productivity Factory, using expert industry benchmarking and coaching, and masterclasses to improve efficiencies in supply chain SMEs.

Investment with DCMS and Aston University in SME growth and support programmes, with creative industry specific pathways.

Launch a fund for new industry co-investment to provide wrap-around support for businesses looking to grow into new sectors and markets.

Increase internationalisation by leveraging national resources and the Midlands Engine brand

Establish a business-led Creative Innovation & Talent Hub to discover, develop and showcase new creative content and diverse talent

Use the opportunity of the Commonwealth Games and City of Culture to provide targeted support to through the visitor economy

'Business Environment' Foundation: Flow Diagram Sources

Reference number	Source & Key Dates	Link/Info
1	West Midlands LIS overall document and supporting sector action plans.	Available on request, these documents provide greater evidence on the depth and breadth of West Midlands supply chains.
2	City-Redi, BPS Birmingham, and Black Country Consortium sector deep dive: "AN INVESTIGATION INTO THE FOUNDATIONS OF PRODUCTIVITY FOR BUSINESS, PROFESSIONAL AND FINANCIAL SERVICES IN WEST MIDLANDS COMBINED AUTHORITY AREA PRODUCTIVITY & SKILLS COMMISSION – SECTOR SPECIFIC ANALYSIS" (June 2018)	Undertaken as part of the West Midlands Productivity and Skills Commission, this paper provides detailed insight on the services sector in the region. https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf
3	ONS Business Demography (2017): Table 3.1a and 3.1b	All data available here - note that a later version of this was released in November 2018. Full analysis of this dataset will be carried out in due course in order to update the WM LIS evidence base.
4	ONS Business Demography (2017)	All data available here :27,550 new businesses were started across the WMCA in 2016. This is 46.5% more business births than in 2013 compared to 19.6% across the UK
5	HMRC UK Regional Trade Statistics (2017)	https://www.uktradeinfo.com/statistics/rts/pages/default.aspx Outside of London & the SE the West Midlands exports the most by value (over £33bn in 2017). Furthermore, HMRC's Regional Trade in Goods dis-aggregated by smaller geographical areas statistics 2017 (https://www.gov.uk/government/statistics/regional-trade-in-goods-statistics-dis-aggregated-by-smaller-geographical-areas-2017) shows that WMCA 7MET's £17.8bn worth of exports is the highest of all NUTS2 regions in the UK.
6	West Midlands Growth Company	The WMCA has received 775 Foreign Direct Investment (FDI) projects. This has led to the creation of nearly 46,000 new jobs from 2011/12 to 2017/18. The number of FDI projects in the WMCA area has more than doubled from 49 in 2011/12 to 140 in 2017/18. This far exceeds the average growth rate for the whole of the UK which grew by 47.4% in the same period. Available in the WM LIS Foundations of Productivity Evidence base
7	ONS Business Demography (2018)	In 2017, a total of 710 business were classified as high growth business in the WMCA; with a 0.7% increase from 2016. When compared to England in terms of growth rate (England = -3.1%), the WMCA performs better.
8	Black Country Economic Intelligence Unit (EIU) analysis of WMCA Oxford Economic Model, as presented in the WMCA Productivity and Skills Commission final report (2015 data)	https://www.wmca.org.uk/media/2407/ps-commission-final-report.pdf :p.29 of this displays GVA per employee in the WMCA and UK by the WMCA's transformational sectors. This shows that only Energy & Environmental Technologies has a higher productivity than the UK average.
9	Black Country Economic Intelligence Unit (EIU) analysis of WMCA Oxford Economic Model, as presented in the WMCA Productivity and Skills Commission final report (2015 data)	https://www.wmca.org.uk/media/2407/ps-commission-final-report.pdf shows the full breakdown of GVA per employee by sector.
10	<ul style="list-style-type: none"> ONS UK Business Activity, Size and Location 2017 WM LIS sector action plans draw out this business structure: e.g. aerospace and metals/materials. 	<ul style="list-style-type: none"> Data downloadable from here: Over 99% of enterprises are SMEs To be published in 2019, available on request.
11	West Midlands LIS overall document and supporting sector action plans.	Available on request
12	West Midlands LIS sector action plans – e.g. metals and materials, automotive, aerospace.	To be published in 2019, available on request. These identify the lack of sector specialist, hands-on business support.
13	ONS Business Demography (2017)	All data available here .
14	ONS Business Demography (2018)	All data available here
15	'Business Environment in the WMCA Region': Foundation of Productivity Report carried out for the WMCA Productivity and Skills Commission	https://www.wmca.org.uk/media/2233/business-environment.pdf See page 4 and supporting data throughout the report.
16	<ul style="list-style-type: none"> FDI data: West Midlands Growth Company High growth firms data: ONS Business Demography 2018 	<ul style="list-style-type: none"> Available in the WM LIS Foundations of Productivity Evidence base All data available here – in 2017 365 of the WMCA's high growth firms were located in GBSLEP. 180 were in CWLEP and 165 in BCLEP. To reach the national average for high growth enterprises, the WMCA needs an additional 149 high growth business;
17	Black Country Economic Intelligence Unit Analysis of ONS GVA per head data (2017 latest data)	<ul style="list-style-type: none"> Included within overall WM LIS document – available on request.
18	See reference 8 above	

Further Reading

- **Business Environment in the WMCA Region:**
<https://www.wmca.org.uk/media/2233/business-environment.pdf>
- **West Midlands Productivity & Skills Commission:**
<https://www.wmca.org.uk/what-we-do/productivity-skills-commission/>
- **Business Enterprise and Performance:**
<https://www.centreforcities.org/wp-content/uploads/2015/10/Small-Business-Outlook-2015.pdf>

Foundation 5 – Places



Positioning Place

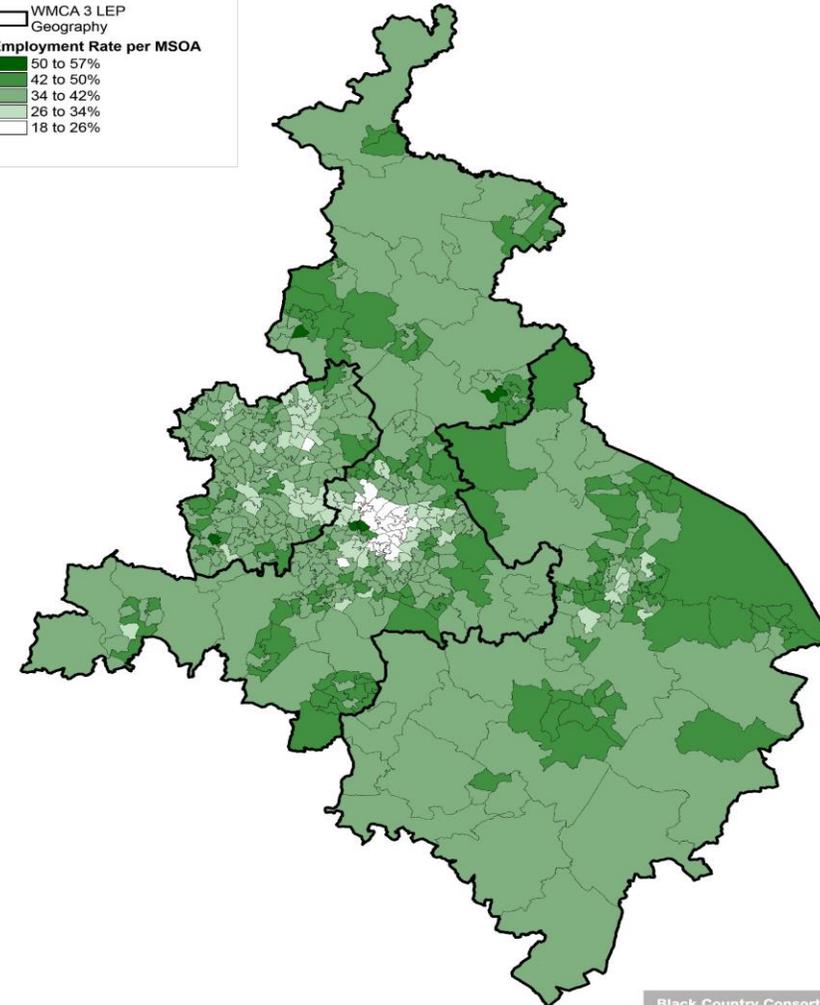
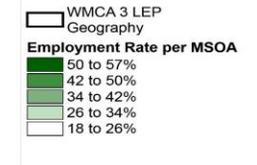
- As a place-based strategy unique to the West Midlands, **place is a cross-cutting and ubiquitous theme** across the LIS.
- It's therefore unnecessary to provide a section dedicated section to the importance of “places” to our industrial strategy.
- However, the next few slides will draw out some of the key regional variations that exist within key themes/foundations (some of which are displayed above). The **WM LIS aims to realise positive changes to business and people from across the West Midlands, not just our already prosperous areas**. Our society has **spatial imbalances with regards to connectivity, skills, and business dynamism, and these partly explain the productivity disparity between some of our towns and local authorities**.
- An underpinning objective of the West Midlands LIS is **to reverse inequalities and work together to make growth inclusive, ensuring that all of our communities benefit**.

Employment Rate

- The **WMCA's employment rate is 71.0%**. The gap has closed but this remains lower than the overall UK rate of 74.7%.
- Across the 19 local authorities, North Warwickshire has the highest employment rate (85.4%), and, overall, **12 local authorities have a higher employment rate than the UK** which is 74.7%.
- As the map shows, at the MSOA geographic level there is large differences within our region. **In some Birmingham MSOA's the employment rate is below 20%**, whereas in other areas, particular more rural settlements, the employment rate is greater than 50%.
- Action to ensure communities in these areas have access to jobs and are not left behind, such as the **Employment Support Pilot**, will be crucial going forward.

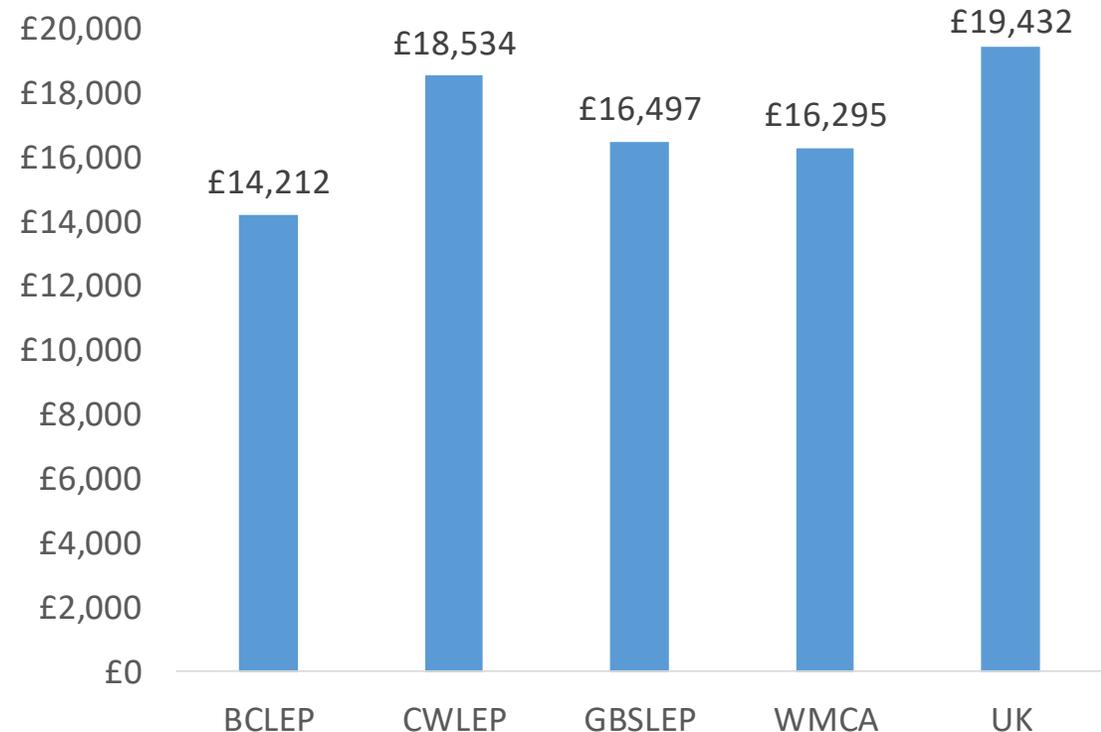


EMPLOYMENT RATE



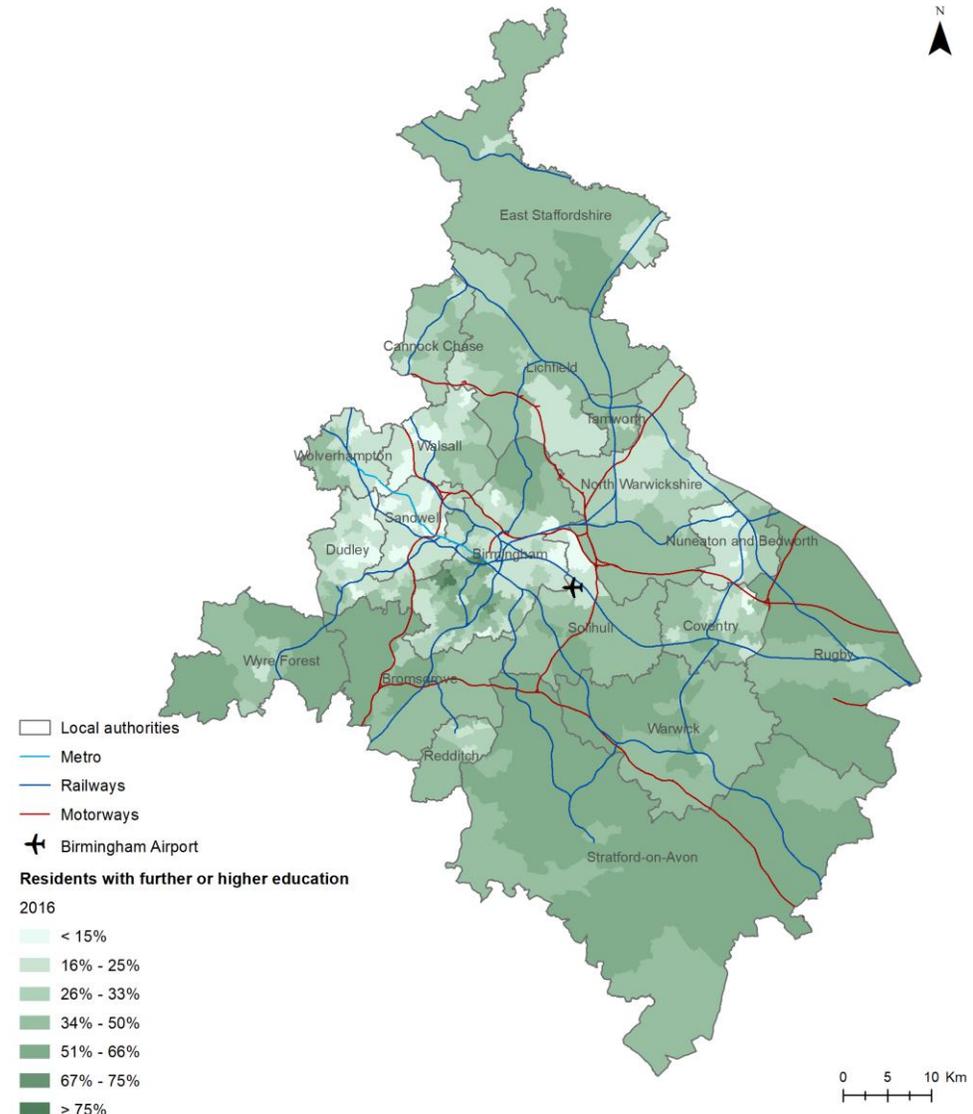
Gross Disposable Household Income (GDHI) per Person

- **Gross Disposal Household Income (GDHI) per person in 2016 was £16,295** and has grown by 8.6% since 2013. The UK GDHI per person is £19,430 and has increased by 8.5%. GDHI per person needs to increase by £3,137 in the WMCA to be in line with the UK.
- There are spatial differences within our region, with the Black Country being considerably below the UK average - £14,212 compared to £19,432.
- Whilst all three LEP areas remain below the UK average, they're all at different stages of need when it comes to living standards. **Taking a place-based approach by integrating investment in specific sites and growth corridors will allow us to prioritise on key areas of need.**



Qualifications & Earnings

- Whilst its an issue across the region, there are **considerable gaps across our localities when it comes to qualification levels.**
- This is demonstrated by the map across – which shows the % of residents with further or higher education. Areas of Birmingham and the **Black Country clearly have a less-educated workforce, which impacts on jobs prospects and ultimately the productivity of these localities. A low skills base is constraining the economy.**
- **15.6% of people in the Black Country have no qualifications, almost double the national rate of 8%.**
- Areas of weak qualifications ultimately lead to **low earnings and poorer standards of living.** This is reflected in that the median full time weekly wage for Black Country residents is **£479 (the lowest of any LEP), compared to £533 in GBS LEP and £556 in Coventry and Warwickshire.**



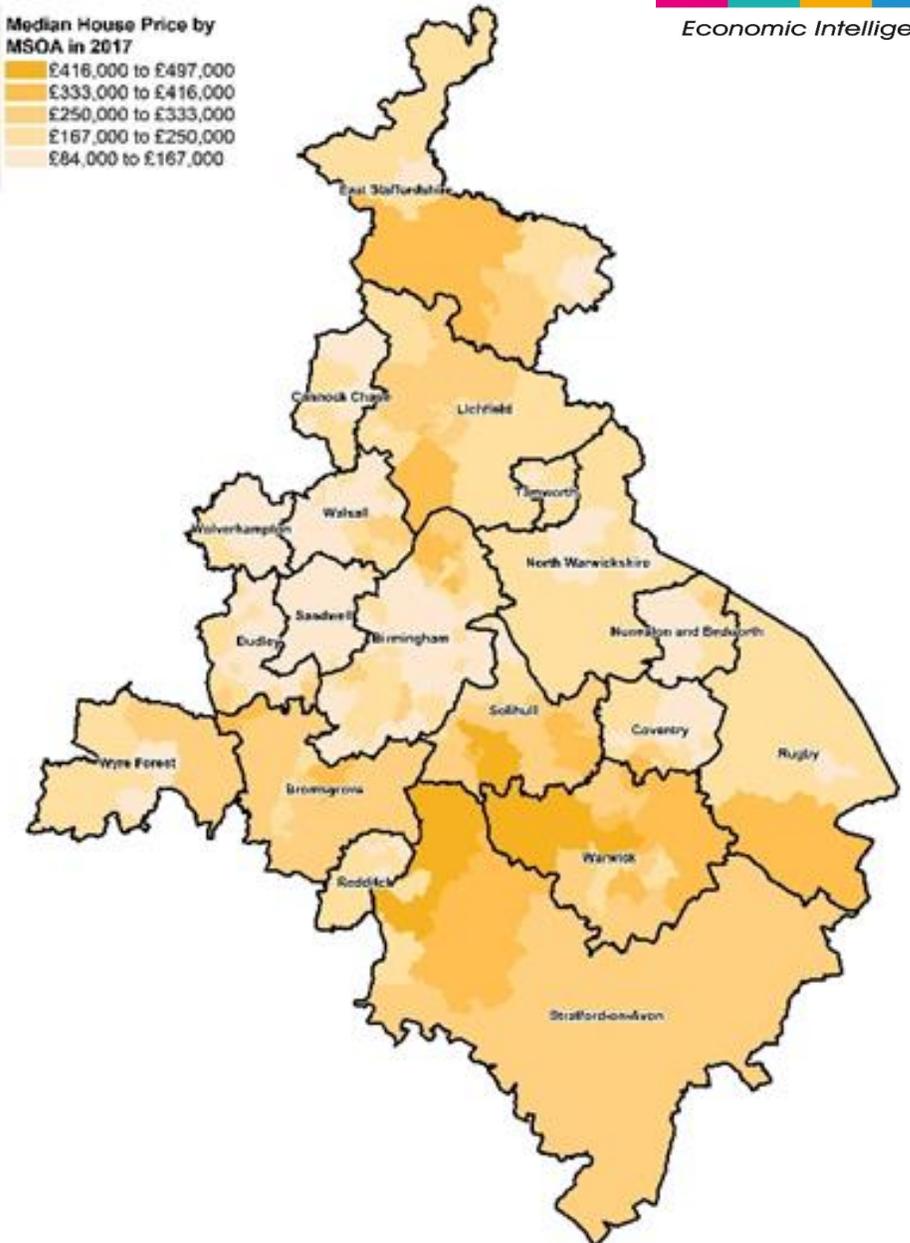
Housing

- Our population is expected to increase by over 400,000 by 2038
- There's a **need to accelerate housing delivery in places to support economic growth and new supply needs to meet the full spectrum of housing need.**
- Different areas within the West Midlands have separate housing needs (see the map across), and this requires our **housing mix to be appropriate enough that it serves all of our communities.**
- Achieving the right housing infrastructure that will attract people to the region and ensure all live in healthy, good places to live, will be driven by our LIS commitment to deliver an ambitious housing programme.
- In particular the WMCA will **work to re-set the housing contract as an economic good and the end to end approach to house building with a firm commitment to deliver a broader choice of tenures and styles.** This will incorporate modern methods of construction, **utilising our innovative construction sector to build a range homes for our communities and deliver West Midlands housing targets.**

MEDIAN HOUSE PRICE

Median House Price by
MSOA in 2017

£416,000 to £497,000
£333,000 to £416,000
£250,000 to £333,000
£167,000 to £250,000
£84,000 to £167,000

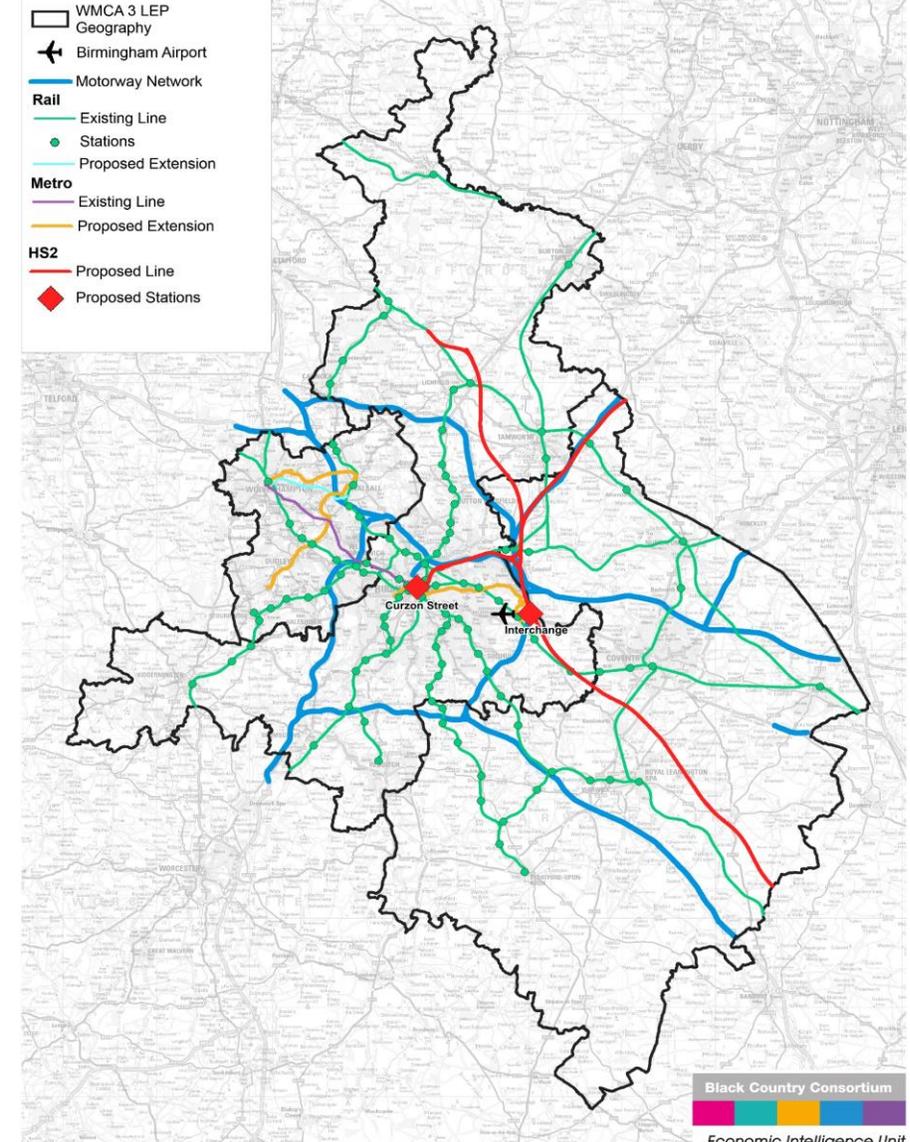


Connectivity

- Transport infrastructure is too concentrated in certain areas of our region.
- **Only 41% of residents are able to access three or more centres by public transport within 45 minutes in the peak morning traffic.**
- **This limits job opportunities for those in less connected localities,** as displayed in the map.
- Living too far from strategic centres and employment opportunities **can leave communities isolated.** The LIS commitment to ensure every part of the **West Midlands is close to the rest of the world** aims to reverse this challenge.
- HS2 will deliver some of the connectivity improvements required (see map across) but it's important that further transport investment is committed to across the region.

Connectivity After HS2

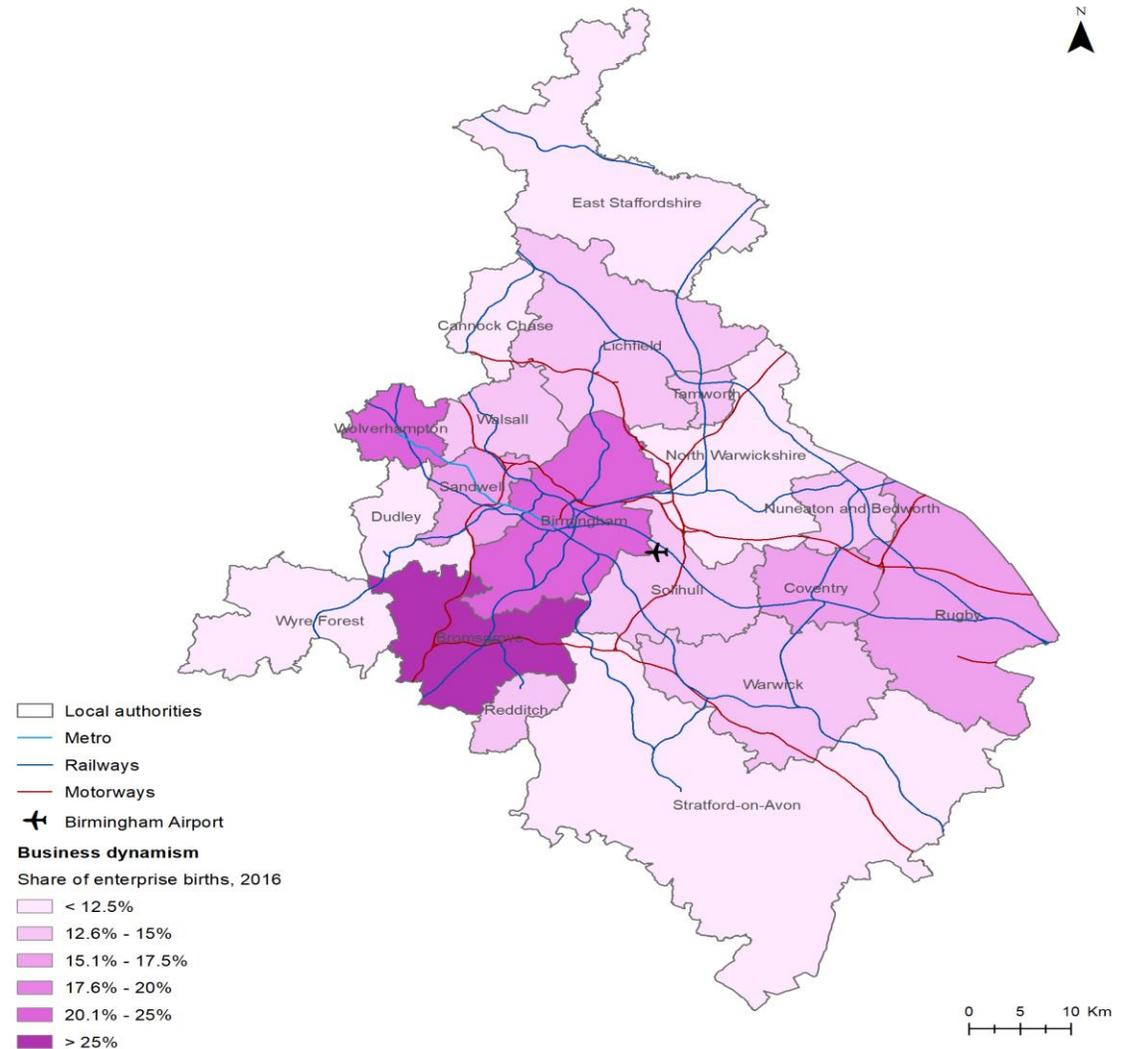
HIGH SPEED 2 CONNECTIVITY



Business Stock & Size

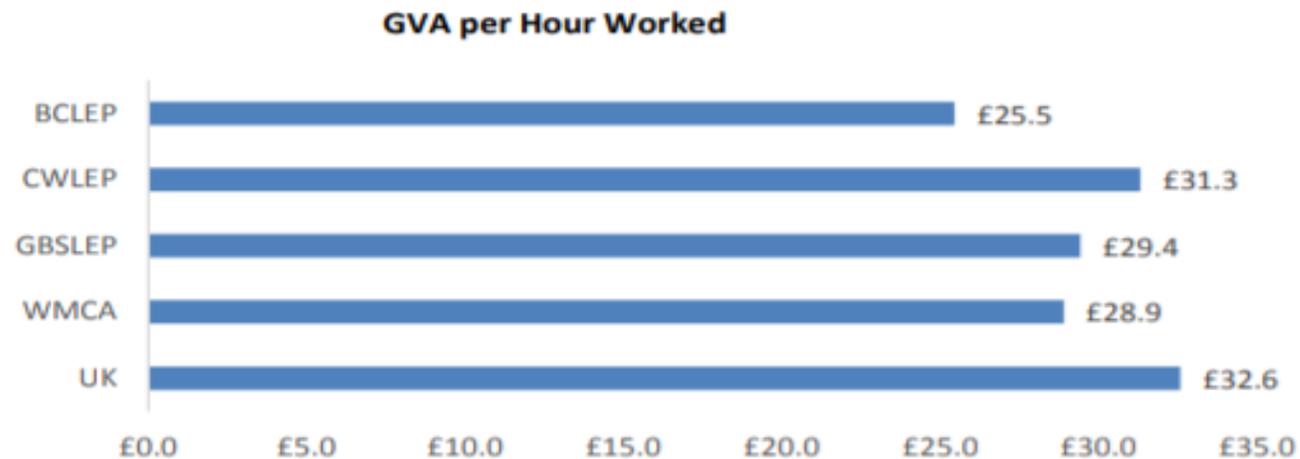
- The WMCA needs to increase its business stock by **17,133** in order to reach the national average.
- This increase needs to largely occur in the **Black Country**-requiring an increase of **13,263** - demonstrating spatial differences in business density.
- Additionally, there are key differences within the region when it comes to **business births** (see map) – GBSLEP exceeds the national average at 80 businesses per 10,000 population, with CWLEP (61) and BCLEP (50) below it.
- **1,526 more business births are needed in the Black Country to meet the UK average; 157 more business births are needed in CWLEP.**
- **Tackling access to finance, scale-up and innovation in particular geographic areas** will be important to rebalancing the economy and reducing our overall output gap.

Example map showing business dynamism, as measured by share of business births



Productivity

- GVA per hour has increased by more than double the rate of the UK over the past year and is **currently £28.90 per hour worked**.
- The **WMCA GVA per hour needs to increase by £3.70 to reach the UK level**.
- The **productivity gap varies across LEPs and local authorities** though. As shown below, the **Black Country's GVA per hour of £26.60 is much lower than that of the UK average, and considerably lower than other WMCA LEPs**.



Source: ONS Subregional Productivity, 2018

- Rebalancing productivity across all parts of our region is necessary to ensure **a truly place-based strategy that delivers widespread inclusive growth**. The actions and commitments outlined in the West Midlands LIS, across the key foundations of ideas, people, infrastructure and business environment, will together help to implement this successfully.
- **Ultimately the LIS aims to deliver our overall vision to drive economic growth in a way that enables a healthier, happier, better connected and more prosperous population.**



Summary Story: Place

- Place is a cross-cutting and ubiquitous theme across the West Midlands LIS, but **key regional variations can be identified and considered within policy-making.**
- Our society has **spatial imbalances with regards to connectivity, skills, and business dynamism**, and these partly explain the productivity disparity between some of our towns and local authorities.
- **Birmingham and the Black Country remain behind the rest of the region when it comes to unemployment, qualifications and earnings** – these explain their productivity gap between the national average.
- However, these areas are **better connected by public transport and the road network and tend to have higher business stock than rural areas of Warwickshire, Staffordshire and Worcestershire.**
- **WMCA GVA per hour needs to increase by £3.70 to reach the UK level.** The reason for this productivity gap is complex and different depending on which parts of the region you are discussing.
- **Rebalancing productivity across all parts of our region is necessary to ensure a truly place-based strategy that delivers widespread inclusive growth.** The actions and commitments outlined in the West Midlands LIS, across the key foundations of ideas, people, infrastructure and business environment, will together help to implement this successfully.
- The LIS aims to deliver our overall vision to drive economic growth in a way that **enables a healthier, happier, better connected and more prosperous population in the West Midlands.**



Further Reading

- **West Midlands Functional Economic Market Area Study (FEMA):** <https://democracy.stratford.gov.uk/documents/s34932/WestMidlandsFEMAStudy26June2015.pdf>
- **Inward Investment and Productivity:** <https://www.wmca.org.uk/media/2232/inward-investment-productivity-across-sectors.pdf>
- **Developing Effective Local Industrial Strategies:** http://www.whatworksgrowth.org/public/files/18-06-21_Designing_Effective_Local_Industrial_Strategies.pdf

Grand Challenges Evidence



Grand Challenges Evidence

Background & Approach



Industrial Strategy 'Grand Challenges'



Artificial Intelligence

- Industry in its own right and a key enabler across sectors (e.g. in HV Manufacturing) and other GCs
- Can create good quality jobs & drive up productivity
- Full factory automation and data analysis can make factories up to 50% more efficient, and WM has very high proportion of HVM
- Gov investing over £75m on AI



Clean Growth

- Maximising locally the global shift to cleaner growth
- Industries to be transformed; automotive, construction and aerospace supply chains in WM need to adapt
- Benefits on wider society – accelerate decline in carbon emissions
- £220m Clean Air Fund will be open to LAs, with £400m on Charging Infrastructure



Future Mobility

- On the cusp of a profound change in how we move people, goods and services
- Driven by engineering innovation, much of which taking place in the WM
- Opportunity to reduce congestion across the region & thus improve productivity
- Local supply chains need to be fit for mobility shifts
- WM central to this - recent award of £31m to create testing infrastructure for CAV



Ageing Society

- Healthcare is an economic driver as well as a cost to society
- Harnessing the power of innovation to meet the needs of ageing society
- Ageing populations will create new demands for technologies, products and services
- Growing use of technology and data to improve healthcare
- Strong health/life sciences assets in WM, but also significant health challenges such as obesity and diabetes

Grand Challenges: background

Background: The 4 Grand Challenges are societal opportunities which will enable the UK to take advantage of current transformations and succeed in future industries:

- Artificial Intelligence & Data
- Clean growth
- Future of mobility
- Ageing society

Government expect industry, academics and the public sector to work together on this.

The West Midlands approach needs to identify what the distinctive focus areas of the Grand Challenges are for the region – how do we use these to:

- start discussion with government
- leverage what we are already doing
- unlock our potential

and what is 'characteristic' about our approach.

Grand Challenges: approach

Principles: Holistic approach (not just technology), citizen-focused, open/collaborative, inclusive

Catalysis: the approach to the grand challenges should build on key assets, investments and strengths:

- Major planned investments (HS2 and local transport infrastructure etc)
- Major planned activities (City of Culture, Commonwealth Games)
- Regional geography and strengths: central location etc.
- Regional strengths: design and manufacturing, local value chains etc

Two-stage process:

1. 36 Face-to-face discussion with 41 regional thought leaders to identify the distinctive regional focus to the Grand Challenges.

Outcome: a short list of 'opportunity spaces' (not solutions) where we can unlock regional potential.

2. Engagement with regional and national bodies to align with policy/funding and explore the details of projects.

Outcomes: strategic 'hooks' for university proposals, regional location of testbeds, funding?

Grand Challenges Evidence

Detailed Evidence & Initial Findings



Ageing society: trends and challenges

- Healthcare is an economic driver as well as a cost to society. Similarly, work (or contribution to society) is increasingly seen as beneficial to health. Public Health England see the challenge as ‘productive, healthy ageing’.
- In healthcare terms, the focus is on years of ill-health at any age not just at the end of life. Interventions in early life (eg active living, improved diet) will reduce years of poor health later – but late interventions can also be very important.
- For older people, the three main health challenges are:
 - Isolation – the drive towards independent living can mean the early warnings are missed and people end up requiring acute care.
 - Muscular-skeletal
 - Lifestyle/activity – behaviours are hardest to change but could be supported by technology.
- Early intervention is key in providing cost-effective healthcare. This requires a system (not silo) approach to healthcare - understanding the integration of primary and acute care but there are system issues (eg hospitals are incentivized on visits) .
- There is a trend towards personalised healthcare (and self-care) but also integrated care – how do we really engage with citizens?

Ageing society: regional background

- WM has a diverse population (66 ethnic sub-groups) which is more stable than London – this is our USP in terms of becoming a testbed for research and industry.
- WM is also a recognised data leader at acute, primary and public healthcare (with further connections to criminal justice data etc). University Hospital Birmingham has 1.2 million patients – all have electronic records. Birmingham Health Partners are one of 4 Health Data Research Centres.
- The region's population is young. This may allow different approaches to technology (particularly digital technology/self-care) but risks a generational divide on the use of digital technology.
- The West Midlands has significant health challenges (obesity, diet, diabetes) which are not restricted to older patients but will have significant impact in later life.
- The impacts of an ageing population on mobility (around 25% of daytime travel is health-related) and productivity (5-10% of work days lost are due to lower back pain) are significant.
- Regional industrial strengths (Life Sciences sector) are in data, diagnostics and devices. Birmingham is the largest centre for Clinical Trialling in Europe but drug development is in the Golden Triangle.

Ageing society: 'opportunity spaces'

1. Health Data
2. Frailty/isolation.
3. Ageing mobility
4. Ageing workforce

Clean growth: trends and challenges

- **Nationally:** 24% of UK emissions are from transport, 13% from homes and 21% from power (UK Clean Growth Strategy). Heating in buildings creates around 32% of emissions.
- **West Midlands:** transport accounts for around 40-50% of energy use (mainly petrol and diesel private vehicles).
- Electric Vehicles will take off in the next few years as battery costs fall and range improves – there are fundamental questions on how these are charged and used.
- Batteries will address many of the short-medium term energy storage issues in transport and housing. In the longer-term, there will be need to improve the energy density of storage – either through improving battery technology or through other storage technologies such as hydrogen.
- Housing is a significant opportunity. It is currently a collection of trades rather than a manufacturing value chain. Improving building processes (tolerances etc) would improve air-tightness.

Clean Growth: regional background

- There are significant innovation strengths in the WM (UK Battery Industrialisation Centre, Energy Research Accelerator etc). These are providing routes to commercialization of energy technologies. The Energy Innovation Zones (under Energy Capital) will facilitate place-based approaches to energy innovation and infrastructure in constrained zones.
- The West Midlands is geographically central – it is a key transport hub for road and rail. Electric vehicles travelling across the UK are likely to charge in the region. At the same time, the region has the lowest number of EV charging points per head. EV infrastructure is a barrier to clean transport but most interventions are either organizational or through existing routes (funding/infrastructure).
- Air quality is a major concern across the region. Clean Air Zones will be established in Birmingham and Coventry and are probably the most significant political driver for clean growth. While public transport seen as a solution, New Street Station (the busiest station outside London with 170,000 passengers a day) fails air quality limits.
- Housing (and associated infrastructure) is a huge regional opportunity - these will create opportunities to improve housing stock and to reduce fuel poverty.
- There is regional expertise in circular economy, industrial synergy, waste as a value stream.
- We need to join 'place' with technology to create new value chains.

Clean Growth: 'opportunity spaces'

1. Housing
2. Value from waste.

Future of Mobility: trends and challenges

Broadly, there are 4 major trends:

1. **Connected** – data management – leading towards an understanding of where people are and where they need to be. This in turn will lead to a trend for inter-modal transport.
 2. **Autonomous** – technology/software to enable increased autonomy is moving fast; there are further challenges and associated services around regulation, insurance, user acceptance and cyber-security. In rail, autonomous condition monitoring and new communications control systems will allow conveying of trains with benefits for rail capacity.
 3. **Low carbon** – generally a trend to electrification in road and rail but hydrogen could be a solution where electrification of rail infrastructure is too costly.
 4. **Services** – there are opportunities to improve the passenger experience through connectivity. In automotive, autonomy leads to new business models around ownership (eg Mobility as a Service).
- Currently, there is a separation between private and public transport. It may be better to see the distinction between inter-city transport and within-city transport - the role of cities themselves is critical to the transport system (goods and people).
 - Mobility will see more change in the next 10 years than the last 100. There is a question over the purpose of travel – what will we do while we travel?

Future of Mobility: regional background

- The West Midlands is the centre of UK transport innovation. This includes significant R&D facilities, industrial capacity and transport demonstration expertise ranging from smart motorway management to CAV testbeds and from hydrogen rail and very light rail to fuel cell vehicles.
- The region will benefit from investment in HS2 and from significant investment in connecting HS2 to local transport infrastructure. In terms of the Grand Challenges, the inter-connections between local transport and HS2 is key.
- In the West Midlands, car ownership is high and use of public transport is low. We have a young population who should be open to new modes of transport.
- The region's air quality is poor – Clean Air Zones in city centres will put pressure on transport systems. Transport of goods (as well as people) is critical – how will we make the 'last mile' delivery low carbon?
- Travel in the region is perceived as problematic – there are felt to be issues around time lost in delays with knock-ons for unproductive travel, supply chain deliveries (and the region's logistics strengths), missed hospital appointments and increased stress and pollution.
- What is the fundamental question here? Do we know why people travel?

Future of Mobility: 'opportunity spaces'

1. End-to-end customer journey.
2. 'Productive' travel.
3. 'Last mile' deliveries in a clean air zone.
4. The future of mobility in a smart city.



AI & Data: trends and challenges

- Both AI and data can be seen as enablers for the other Grand Challenges.
- There is an expectation that data analytics will benefit significantly in the next few years from:
 1. Faster connectivity (eg 5G)
 2. Greater computing power (potentially connecting computers into a local cloud)
 3. Privacy, trust and the frameworks/protocols for sharing of information and dataThe first 2 are fundamental but will be irrelevant unless we also have a way of managing all data (personal, vehicles, maps, infrastructure).
- Cryptography and cyber-security are key issues. There are regional research groups in these areas – also groups working with encrypted data. Longer-term, new materials and Quantum Technologies could revolutionize security.
- Automation/robots were not widely seen as a concern – technology is still unlikely to replace humans in all but repetitive tasks, freeing people for higher value activities.

AI & Data: regional background

- Data is a recognized enabler in the WM S&I Audits – it is hard to show we currently have the lead companies in data technology but we have a base for development and an opportunity around citizen-led innovation and services.
- Data sets are starting to grow around transport (eg TfWM and Swift card data), healthcare and energy. New infrastructure will also generate huge amounts of new data and there could be further data sets around personal devices and Internet of Things (IoT).
- Imaging is a key machine learning strength in the region. There are applications in healthcare (diagnosis) and vehicles.

AI & Data: 'opportunity spaces'

1. Visitor services around the Commonwealth Games (and/or City of Culture).
2. Digital supply chains

West Midlands ‘opportunity spaces’

- 1. Health Data.** There is a unique opportunity in the West Midlands to create an environment for new industries in healthcare based on the richness of the population data and the integration of service provision to better articulate the challenges and opportunities.
The technology both for closed data sets (clinical data) and open, anonymised data (data analytics) is developing – there is a need for vision/leadership in setting priorities and a need to engage with citizens (and through communities).
This could be the basis for modelling the cost-effectiveness of interventions.
- 2. Creative technologies in addressing isolation.** This is both a community and a technology space. Coventry’s City of Culture has a focus of wellbeing and community which may be an opportunity to look at digital and creative approaches to engaging with older people. Coventry is a recognised ‘living lab’ and the City of Culture could support testbed activity.
- 3. Visitor services around the Commonwealth Games (and/or City of Culture).** The Commonwealth Games gives the region an opportunity to showcase itself. International visitors will require transport, security, wayfinding and ticketing services. There will be opportunities to connect them to retail and visitor economies. The City of Culture has looked at the possibility of a data commons – this would require early contracting with various service providers.

West Midlands 'opportunity spaces' (2)

1. **End-to-end customer journey.** The development of local infrastructure and new stations around HS2 gives a challenge and an opportunity – how do local travellers connect with HS2? The trend towards inter-modal travel will require innovation in process and customer services – through-booking, understanding passenger movement, information systems, re-routing etc. There should be TfWM interest in a test bed and increasing levels of Swift passenger data.
2. **Housing.** The 215,000 new homes planned in the next decade are a huge opportunity for clean growth and for building West Midlands construction. Design (and specifications and regulation) will greatly influence the way these support healthy living, ageing population, community engagement, urban spaces and infrastructure.
3. **'Last mile' deliveries in a clean air zone.** Clean air zones will affect movement of goods and people. What are the clean alternatives to diesel vans? How will this affect the 'platform' economy?
4. **Ageing workforce.** There are two broad issues: how do we enable workers to continue working (this covers a wide range of issues including reducing days off work, technologies to support ageing workforce, flexibility for carers etc) and how could older people become a regional asset (mentoring, supporting enterprise, timesharing etc)
5. **Value from waste.** The region has strong supply chains – how we build those to generate further value through clean growth (circular economy, industrial synergies, biowaste etc).

West Midlands 'opportunity spaces' (3)

- 1. Productive travel.** The West Midlands has severe congestion which is affecting productivity, health (air quality and stress) and restricting clean growth of key logistics supply chains. The construction of HS2 will add to this in the short term. What data/system solutions may there be to optimise travel within the region?
- 2. Ageing mobility.** Dual challenge: firstly improving the access to healthcare for older people (and visitors) and secondly smoothing the hospital process and the transport and parking issues near major hospitals. Mobility starts within the home but could include autonomous pods for older people.
- 3. Visioning the future of mobility.** The city is the context for future mobility. CAV will happen but there is no clear vision on what cities want from it or what the implications may be. The key challenge is around better integration of passengers and goods. We need to understand why people travel (and 'trip-chains' of different destinations) and how to create a transport system with an understanding of affordability, experience and productivity. How may we avoid travel as well as speed it?
- 4. Digital supply chains?** There are significant changes in the application of AI and digital technologies to supply chains (Industry 4.0, robots, digital twinning, digital design). How will new technologies (eg Virtual Reality, Immersive Technologies) create new products, services, experiences and support advanced manufacturing?

Grand Challenges Evidence

Place Evidence to Support the Grand Challenges and Strategic Opportunities



Place and Population Evidence

- Population: 2.9m (WM Met County) - ONS
- Set to grow by 440,000 by 2035¹
- Diversity: Most ethnically diverse population outside London - 30% of population are non-white²
- Youth: 34% of WM residents are aged 0-24 – the highest of all English met areas²
- 90% of UK population and businesses are within 4 hours road journey from the WM³
- New Street Station is the busiest station outside London with 43.7m passengers in 2018⁴
- International connections: 12.9m passengers through Birmingham Airport in 2018⁵

¹ Movement for Growth: The West Midlands Strategic Transport Plan

² Introduction to TfWM and Transport & Innovation in the West Midlands, Mike Waters, Jan 2019

³ West Midlands Freight Strategy, December 2016

⁴ Office of Road and Rail <https://orr.gov.uk/statistics/published-stats/station-usage-estimates>

⁵ Civil Aviation Authority



Mobility - People

- In 2016, there were 261m bus journeys, 53.8m rail journeys and 7.2m metro journeys in the region¹
- 82% of car journeys have a single occupant²
- 62% of people are currently dissatisfied with congestion levels³
- 29% of 17-20 year olds and 63% 21-29 year olds held drivers licences in 2014 – **down** from 48% and 63% in 1994⁴
- 27m journeys were made on Swift card in 2016/7 – the largest smart card travel system outside London¹



¹ Introduction to TfWM and Transport & Innovation in the West Midlands, Mike Waters, Jan 2019

² WMCA State of the Region 2018

³ Congestion Management Plan (Transport for West Midlands)

⁴ Movement for Growth: The West Midlands Strategic Transport Plan

Health – Healthcare System

- Overall, WM has some of the worst health outcomes in the country and some wide inequalities. If our health were the same as the UK average, the region would have:
 - 615,440 fewer working days lost (£65m savings)
 - 21,000 fewer people on employment support allowance (increasing GVA by £839m)
 - 36,000 more people economically active (potential GVA increase of £1.44bn)¹
- 70,000 people cannot work due to mental health problems and it is estimated to cost the WMCA £12.6bn in mental ill health²
- 1,473 deaths annually related to air quality³
- WMCA Wellbeing Board with responsibility for setting the strategic vision for the WM health and social care economy.
- Integrated digital systems are in place across all 17 NHS Trusts in the wider West Midlands (WM AHSN geography).
- There are 3 NHS Global Digital Exemplars in the region: in Acute Care (UHB), Mental Health (Birmingham and Solihull Mental Health NHS Foundation Trust) and Ambulance Services (West Midlands Ambulance Service NHS Foundation Trust)



¹ WM Life Course Summary

² WMCA State of the Region 2018

³ Congestion Management Plan (Transport for West Midlands)

Health - People

- Deloitte describe data as the new healthcare currency, with the biggest obstacles to data analytics in healthcare being seen as the ability to get the data and the culture of sharing information ¹. West Midlands is a recognised data leader across a range of health and criminal justice organisations including 1.2m electronic patient records at UHB alone ².
- The West Midlands has a diverse but remarkably stable community with the second highest proportion (after London) of Asian (14.3%) and Black (9.8%) ethnic groups³. This population health data, linked with other large data sets and family histories gives the region a strong position for innovative healthcare interventions and evaluation.
- Birmingham is Europe's youngest major city – nearly 40% of the population are under 25 and the city has England's highest birth rate⁴. The WM is well placed through its young population to adopt digital healthcare and new health technology.
- The impacts of an ageing population on mobility (around 25% of daytime travel is health-related) and productivity (5-10% of work days lost are due to lower back pain) are significant²
- Across the UK, 3.6m older people live alone (2m aged 75+); the health impacts of loneliness are estimated to be equivalent to 15 cigarettes a day⁵
- At 65, people in the WM can expect to live for a further 18.4 years (men) and 20.9 years (women) ⁶
- DWP estimate that each additional year of work beyond 65 raises GDP by 1%. In parts of the WM, chronic health conditions are preventing people working beyond their 50s⁷.
- The diversity of our population provides the large data sets required for machine learning and the youth of the region will support new ways of gathering data and delivering digital interventions.

¹ Digital Health in the UK: an industry study for the Office of Life Sciences (Deloitte)

² Discussion with Tony Davis, Commercial Director WMAHSN

³ ONS Census data

⁴ Birmingham Health Partners

⁵ Age UK <https://www.ageuk.org.uk/information-advice/health-wellbeing/loneliness/>

⁶ WM Life Course Summary

⁷ Discussion with Jane Moore, WMCA Director of Prevention and Wellbeing



Investments (Examples)

- £4.4bn HS2 investment including 2 stations within the region and 20 transport schemes to connect HS2 to local networks
- 9 new sub-urban rail stations and over 31km of new track will provide 20,000 new seats. 3 lines will be reopened
- 30+ km extension to the Metro system, including East-West Metro with light rail extensions to Dudley/Brierley Hill and through East Birmingham to North Solihull and the HS2 Interchange station
- 5G
- Office for Data Analytics
- Health Data Research UK (one of 6 in the UK and the only one with NHS as a partner)



Grand Challenges Evidence

Agreed Strategic Testbeds & Opportunity Spaces



West Midlands Final Strategic Testbeds

Health data testbed environment

The West Midlands will be the leading region for using our citizen's data to improve their health

- WM diverse population - their data creates a unique opportunity to create an environment for new products and services related to healthcare.
- Large data sets an opportunity for data analytics, AI diagnosis and could be the basis for modelling the cost-effectiveness of interventions.

Smart urban mobility testbed

The West Midlands will lead the UK in the smart, low carbon movement of people and goods

The West Midlands is the recognised centre of transport innovation in the UK. The region is starting on a period of huge transport changes through HS2 and local infrastructure, Clean Air Zones and the Commonwealth Games.

Challenges include:

1. Productive travel (services to minimise journey times/disruption and support productivity during travel)
2. Distributed factory (movement of goods to support low carbon and timely local delivery)
3. Travel for older people and the mobility impaired (innovations to ensure all citizens can travel)
4. End-to-end customer Journey (intermodal mobility linked to HS2, housing and to skills/jobs)

These will be underpinned by travel data and intelligence.

Energy Capital

The West Midlands will lead the UK in the development of local energy infrastructure and markets

WM devolved governance framework for energy infrastructure and markets to maximise economic opportunities for industry, support the creation of new markets and address citizen inclusion by reducing fuel poverty. This is based around Energy Innovation Zones.



West Midlands Final 'Opportunity Spaces'

1. **Creative technologies in addressing isolation.** The region's strengths in gaming and creativity could provide approaches to engaging and connecting older people and gather health data from older people.

Opportunity: Use the City of Culture as an opportunity to engage gaming companies with older citizens.

2. **Visitor services around the Commonwealth Games.**

International visitors will require transport, security, wayfinding and ticketing services. There will be opportunities to connect them to retail and visitor economies.

Opportunity: Use the Commonwealth to demonstrate the scale up of digital services and smart city applications.

3. **Housing.** The 215,000 new homes planned in the next decade are a huge opportunity for clean growth, and sustainable construction, can influence how these support healthy living, ageing population, digital community engagement, urban spaces and infrastructure. **Opportunity: Use the development of new homes and communities to drive innovative solutions.**

4. **Ageing workforce.** Two broad issues: enabling workers to continue working and supporting older people to become a regional asset.

Opportunity: target innovation directly towards enabling the WM workforce to increase productivity.

5. **Value chains around waste.** Opportunities to generate further value around clean growth (circular economy, industrial synergies, biowaste etc) and to maximise the regional value of changing value chains in the region's key industries (eg recycling and second life of EV batteries etc).

Opportunity: create the environment for the West Midlands to maximize value from its future supply chains.





Sectors



Sector Evidence Base

- A comprehensive review of our sectors is available via:
<https://www.blackcountrylep.co.uk/about-us/west-midlands-combined-authority/local-industrial-strategy-evidence-base>
- A suite of sector actions plans which brings together the evidence by foundation in relation to our sectors have been produced/are in production.

Competitive Advantages and Evidence Flow



Competitive Advantages

The evidence shows that the West Midlands has particularly distinctive strengths and opportunities in four major fields:

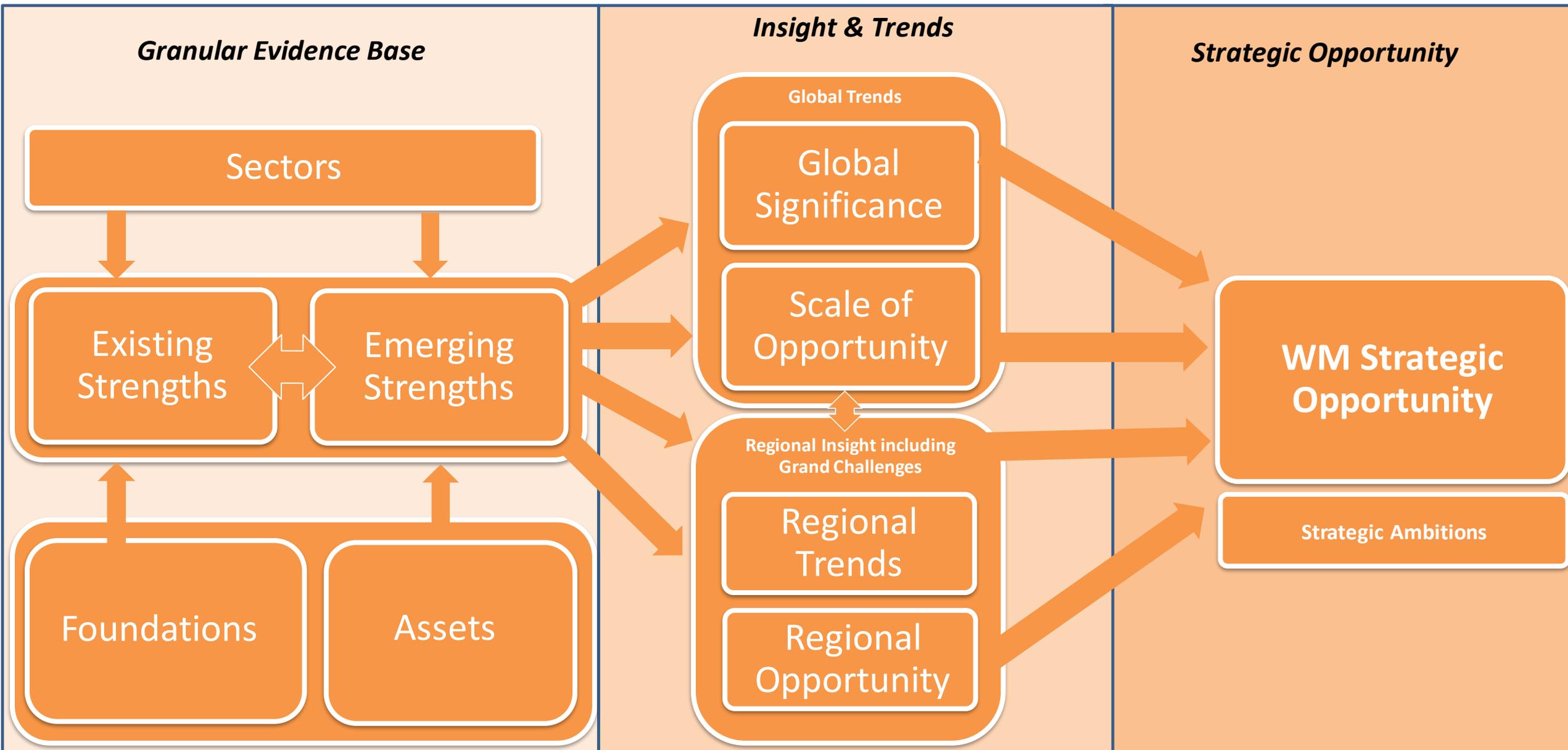
- Mobility and transport innovation,
- Health care diagnostics, devices and testing, driven by data and AI
- Global professional services, driven by the largest full-service cluster outside London
- A globally-significant creative sector, with particular strengths in new content platforms, software and gaming

Innovation actions, and their relationship with actions across other key themes (infrastructure, skills and business environment) will be crucial in ensuring that these competitive advantages are built upon to enable the WMCA to be world-leading in these fields. For example:

- Our **mobility and transport innovation strength** is driven by the region being the home of electric vehicles, connected and autonomous vehicles and battery manufacture in the UK, supported by a dense and diverse network of supply chains. Actions to enhance this strength, particularly important for the automotive sector, will include **developing a West Midlands Future Mobility Zone and developing capabilities to use large volumes of real-time data**. This activity will be especially crucial for the West Midlands to successfully meet the future mobility grand challenge.
- Particularly clustered in Birmingham, the West Midlands is the centre of translational medicine, one of the few locations that can provide the full cycle of activity required including in testing, devices and diagnostics. Strengthening this through the LIS will include **working with the national Centre for Data Ethics and Innovation on how to improve the use of data and AI between businesses/sectors and exploring new citizen engagement strategies to further build active resident involvement**. This will be driven by our extensive life sciences sector and contribute to the region meeting the ageing society grand challenge.

In the slides below we demonstrate the “flow” from our robust evidence base to the selection of the four strategic opportunities.

West Midlands LIS: Evidence to Strategic Opportunity Framework



Smart Mobility: Evidence to Opportunity

Granular Evidence Base

Sectors

- The home of UK automotive: the West Midlands produces 1/3 of all cars manufactured.¹
- We have the second highest employment location quotient for automotive in UK (4.5).²
- There are 70,000 transport manufacturing jobs in the WMCA, e.g. in auto, aero & rail.³
- More than 20% of automotive parts manufacturing firms in the UK are in our region.⁴
- Major aerospace clusters, such as within electro-mechanical systems (Moog & UTC).⁵
- Most railway supply GVA of CA's and distinct future potential (digital rail, light rail).⁶

Strong competitive advantage in mobility-based sectors- automotive, aerospace and rail- supported by world-class innovation assets and a deep, diverse base of both OEMs and foundation industry firms and supply chains (metals and materials).¹¹

- New nationally significant research assets (UKBIC, APC).¹²
- Leading the way on 5G.
- At the forefront of EV and CAV – including 5 testbeds.¹³
- Responsive and proactive transport sectors.¹⁴
- Mobility opps around 2022 CWG.

Foundations

Ideas: UK centre for transport R&D and innovation with 30 major R&D sites & 37 live future mobility projects. Unparalleled range of world-class innovation assets.⁷

Infrastructure: £50m investment to make the West Midlands the UK's first 5G-ready region⁸, integrated multi modal system linked to HS2.

Business Environment: 20 major vehicle manufacturing sites supported by a wealth of innovative tier 1,2,3 supply chain firms.⁹

Place: Booming public transport offer, with the busiest rail station outside of London¹⁰, and utilising new modes to move people & goods.

Assets

Innovation/Research: Horiba MIRA, Warwick Manufacturing Group, Manufacturing Technology Centre, National Transport Design Centre, UK Battery Industrialisation Centre, Advanced Propulsion Centre, Centre for Rail way Research & Education, Very Light Rail Innovation Centre.

Infrastructure: HS2, National College of High Speed Rail, CAV testbeds, 5G testbeds.

Private Sector: JLR, BMW, Aston Martin, Geely, robust supply chains.

Other: Commonwealth Games, Coventry City of Culture.

Insight & Trends¹⁵

Global Trends

- Transport could change more in the next 10 years than it has in the last 100, with the move towards connected, autonomous, low-carbon and servitization.
- Industry 4.0 will have a profound effect on manufacturing value chains.
- CAV will catalyse mobility as a service (MaaS) and poor air quality is driving the demand for EVs.
- Urban population growth requires a faster and more efficient movement of people.

- CAV opportunity is worth £50-£100bn to the UK economy.¹⁶
- A £1 GVA increase in automotive industry is worth £2.2 GVA to the UK economy.¹⁷

Regional Insight including Grand Challenges

- West Midlands transport infrastructure is receiving high investment through devolution and HS2 links.
- Critical strength of transport innovation and developing CAV testbeds position the West Midlands as the best place to develop mobility testbeds.
- Creating new markets & services in the movement of people and goods can boost connectivity for citizens.

- *Productive travel:* services to minimise disruption to support productivity during travel.
- *Distributed factory:* the movement of goods to support low carbon and timely delivery.
- *Travel for older/mobility impaired people.*
- *End-to-end customer journey* (inter-modal mobility) benefitting the region's citizens.

Strategic Opportunity

Smart Mobility: The West Midlands as the centre of transport innovation in the UK

International centre for development of future modes of transport, nurturing faster, cleaner modes of transport to the benefit of West Midlands citizens.

Large-scale battery manufacture utilising factories of the future and building necessary EV charging infrastructure

Integrated transport system connected through 5G and utilised for optimised citizen connectivity and major events.

Capitalising on the HS2 opportunity

Well-managed transition to EV, CAV, future flight and digital and light rail throughout supply chains

Smart Mobility: Sources

Reference number	Source & Key Dates	Link/Info
1	WMCA LIS automotive sector action plan (to be published 2019)	Led by CWLEP – a vailable on request.
2	ONS - Location quotient data and industrial specialisation for NUTS 2 areas (2017); BCEIU analysis.	Analysis based on the WMCA 7MET area (NUTS2 region), using this dataset
3	WMCA Oxford Economic Model – BCEIU analysis (2015 actual figures) and BRES (2016).	Transport manufacturing refers to SIC codes 28-30 which include rail, aerospace and automotive manufacturing.
4	IBIS World: Industry Report C29.300 Motor Vehicle Parts & Accessories Manufacturing in the UK (December 2017)	Based on business location by NUTS1 region for SIC 29.3 Manufacture of parts and accessories for motor vehicles. Data is for West Midlands region (NUTS1). Report available on request.
5	'Mobilising the Midlands Aerospace Cluster' – Midlands Aerospace Alliance	https://www.midlandsaerospace.org.uk/documents/Mobilising%20the%20Midlands%20Aerpace%20Cluster%20-%20White%20Paper.pdf – p.11 demonstrates evidence that confirms the West Midlands; strengths in specific clusters of aerospace, including electro-mechanical systems.
6	'The Economic Impact of Rail 2018' – Oxford Economics	https://www.oxfordeconomics.com/recent-releases/06ec32db-6550-44ed-ac64-6502b9530867
7	WMCA LIS automotive sector action plan (to be published 2019)	Led by CWLEP – a vailable on request.
8	Government (DCMS) commitment in September 2018 to make the West Midlands the UK's first large-scale 5G testbed	https://www.gov.uk/government/news/west-midlands-to-become-uks-first-large-scale-5g-testbed
9	WMCA LIS automotive sector action plan (to be published 2019)	Led by CWLEP – a vailable on request.
10	Transport for West Midlands data (2017-2018 data)	Birmingham New Street had 43,741,712 entries/exits in the 2017-2018 financial year, making it the busiest rail station outside of London. Also: The West Midlands was the only region in the UK which saw an increase in bus patronage in the last calendar year, increasing from 253,536,491 in December 2017 to 260,133,204 in December 2018. Annualised rail patronage has also seen an uptick from 54,021,184 to 58,022,580. Metro patronage increased from 7,056,551 to 7,132,479. Also, Swift card uptake has been strong, with total card numbers in circulation increasing from 92472 to 113658 in the same time period.
11	<ul style="list-style-type: none"> Automotive strength: all of above sources Aerospace strength: WM LIS sector action plan, in collaboration with Midlands Aerospace Alliance (to be released 2019) Rail strength: WM LIS sector action plan, in collaboration with Birmingham Centre for Railway Research & Education (to be released 2019) Foundation industries strength: WM LIS metals & materials sector action plan, in collaboration with UK Metals Council (to be released 2019) Key innovation assets: WM Science and Innovation Audit (2017) – “next generation transport” identified as a market strength 	<ul style="list-style-type: none"> All sector action plans available on request West Midlands SIA: https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf Further evidence of rail strength: https://www.oxfordeconomics.com/recent-releases/06ec32db-6550-44ed-ac64-6502b9530867
12	<ul style="list-style-type: none"> WMCA LIS automotive sector action plan (to be published 2019) 	<ul style="list-style-type: none"> UKBIC refers to the UK Battery Industrialisation Centre, a £80m asset that will develop the processes to transition the UK to become a world leader in design, development and manufacture of batteries. It will be located in CWLEP: see https://www.ukbic.co.uk/ Also located in CWLEP, APC refers to the Advanced Propulsion Centre, including its National Showcase (opening 2019) - the first permanent exhibition space dedicated to exploring the opportunities available in the UK for the development of low carbon propulsion innovation. See https://www.apcuk.co.uk/national-propulsion-showcase/
13	WMCA LIS automotive sector action plan (to be published 2019)	Led by CWLEP – a vailable on request.
14	<ul style="list-style-type: none"> WMCA LIS automotive sector action plan (to be published 2019) Rail strength: WM LIS sector action plan, in collaboration with Birmingham Centre for Railway Research & Education (to be released 2019) 	<ul style="list-style-type: none"> Led by CWLEP – a vailable on request. There is evidence that the West Midlands is a leading player when it comes to the development of future rail technologies, including digital rail and light rail.
15	Grand Challenges evidence WM LIS evidence – Large parts of this 'Insight and Trends' section is based on qualitative evidence gathered on the Grand Challenges. A robust approach was taken, utilising face-to-face discussions with 41 regional thought leaders to identify key trends, opportunities and potential disruptions in the four Grand Challenge areas.	<ul style="list-style-type: none"> A summary of the WM LIS grand challenges evidence is available within the full evidence pack – see https://www.blackcountrylep.co.uk/upload/files/Industrial%20Strategy/WM%20LIS%20Foundations%20Evidence%20Pack%20December%2018%20Draft%20Final.pdf – and full evidence available if required.
16	West Midlands LIS overall document and supporting sector action plans.	Available on request
17	West Midlands LIS overall document and supporting sector action plans.	Available on request

Data-driven Health and Life Sciences: Evidence to Opportunity

Granular Evidence Base

Sectors

- Critical mass of complementary high quality clinical and research assets.¹
- Leading national clinical trials and experimental medicine facilities.²
- Supplemented by 400 innovative life sciences firms employing around 11,000 people – e.g. Salts, Kimal, Binding Site, AAH, Alliance and Smith & Nephew.³
- Specific sub-sector specialisms within genomics, diagnostics, clinical trials, healthcare data and informatics.⁴
- Rewarding cross-over opportunities with thriving creative and digital sectors.

A comparatively strong life sciences & healthcare cluster, underpinned by world-class academic & research facilities, a robust set of firms, and a uniquely diverse & stable patient data offering.

- Birmingham's developing Life Sciences Campus.¹⁰
- Exploiting the region's unique patient data and trials capability.
- Harnessing our manufacturing, creative & digital strengths.¹¹
- Extending strategic partnerships.

Foundations

Ideas: Academic centres of excellence (e.g. QE site); largest clinical trials base outside Oxford⁵; strong innovation ecosystem.⁶

People: Strong supply of graduate talent with three major medical schools⁷; access to large, integrated patient datasets for a diverse and stable population.

Infrastructure: Over £150m investment in Birmingham's healthcare campus.⁸

Place: The West Midlands has 66 ethnic sub-groups and University Hospital Birmingham has 1.2m patients, all with electronic records.⁹

Assets

Innovation/Research: Institute for Translational Medicine, Birmingham Health Partners, Queen Elizabeth Hospital site, BioHub, Life Sciences Park development, West Midlands Genomic Medicine Centre, Health Data Research UK site.

Other: West Midlands population, Serendip Digital Health Incubator.

Medical Schools: Birmingham, Aston, Warwick.

Insight & Trends¹²

Global Trends

- Healthcare is an economic and societal opportunity.
- Global ageing population provides the need for us to harness the power of innovation to meet new demands across the world.
- More personalised healthcare requires an understanding of personalised lifestyles, which will be underpinned by data analytics.
- Effective use of health data is now fundamental.

- Global healthcare spending is projected to reach \$8.7 trillion by 2020 – up from \$7trillion in 2015.¹³
- Pharma is forecast to be worth \$1.06 trillion worldwide by 2022, and Medtech over \$500bn.¹⁴
- Around 25% of daytime travel is health-related and 5-10% of work days lost are due to lower back pain.

Regional Insight including Grand Challenges

- The West Midlands has 66 ethnic sub-groups, our USP for becoming a key health testbed.
- The region has a leading position in electronic patient data, with one of four MRC Health Data Research Centres.
- Birmingham is the largest clinical trialling basis in Europe.

- Unique opportunity to create a *health data testbed environment*, harnessing citizen data to improve health.
- *Creative approaches to addressing isolation* in older people, e.g. through gaming technology.
- Targeting innovation to keep people working and ensuring older people are productive assets for the region.

Strategic Opportunity

Data-Driven Health and Life Sciences

The West Midlands as a global centre for innovation, translation and real-world evaluation of new diagnostics, devices and healthcare technologies.

Utilising AI, big data, and digital capabilities and trialling services with local people. using our citizen's data to improve their health.

Developing positive health outcomes for the region's communities and creating a more inclusive economy.

Complementing existing UK clusters such as Silicon Fen

New medical process and pathways, including increasing provision of services

Data-driven Health and Life Sciences: Sources

Reference number	Source & Key Dates	Link/Info
1	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf - 'Technologies for Better Health' identified as a market strength
2	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf - 'Technologies for Better Health' identified as a market strength
3	Office for Life Sciences: Bioscience and health technology database: annual report 2017	https://www.gov.uk/government/publications/bioscience-and-health-technology-database-annual-report-2017
4	West Midlands LIS overall document	Available on request
5	West Midlands Growth Company: Greater Birmingham Life Sciences – Making it Happen (2015)	https://issuu.com/businessbirmingham/docs/711337_mb_zones_bro_life_sciences_w/3
6	West Midlands Science and Innovation Audit (2017)	https://www.wmca.org.uk/media/1682/west-midlands-sia-final-for-publication-21617.pdf - 'Technologies for Better Health' identified as a market strength
7	West Midlands Science and Innovation Audit (2017)	Warwick, Aston and Birmingham are the three medical schools.
8	West Midlands LIS overall document	Available on request
9	West Midlands LIS Grand Challenges Evidence (see reference 12)	
10	Online detail available	https://www.birmingham.ac.uk/university/building/life-sciences-park.aspx
11	WM LIS Creative sector action plan; metals/materials, aerospace, rail and automotive sector action plans	Available on request – led by CWLEP and BCLEP
12	Grand Challenges evidence WM LIS evidence – Large parts of this 'National and Global Trends' section is based on qualitative evidence gathered on the Grand Challenges. A robust approach was taken, utilising face-to-face discussions with 41 regional thought leaders to identify key trends, opportunities and potential disruptions in the four Grand Challenge areas.	<ul style="list-style-type: none"> A summary of the WM LIS grand challenges evidence is available within the full evidence pack – see https://www.blackcountrylep.co.uk/upload/files/Industrial%20Strategy/WM%20LIS%20Foundations%20Evidence%20Pack%20December%2018%20Draft%20Final.pdf – and full evidence available if required.
13	Deloitte: 2018 Global Life Sciences Outlook	https://www2.deloitte.com/global/en/pages/life-sciences-and-healthcare/articles/global-life-sciences-sector-outlook.html
14	Deloitte: 2018 Global Life Sciences Outlook	https://www2.deloitte.com/global/en/pages/life-sciences-and-healthcare/articles/global-life-sciences-sector-outlook.html
	Also See the Greater Birmingham Life Sciences Commission: The Silk Report – which backs up many of the above evidence/claims.	https://gbslep.co.uk/wp-content/uploads/2017/06/Greater-Birmingham-Life-Sciences-Commission_TheSilkReport_Web.pdf

Services: Evidence to Opportunity

Granular Evidence Base

Sectors

- Business, Professional & Financial Services (BPFS) is the WMCA's largest sector – contributing £24bn and 400k jobs.¹
- We are the only UK place with a 'full service offering' outside London in BPFS, with particular strength in finance, law, insurance and accountancy.²
- Most nationally significant firms have a full-service team operating locally³
- Readily available, cutting-edge, and affordable office space, centred in Birmingham.⁴
- Innovative use of service skills is increasingly important for scale-up growth across key sectors and value chains, including within SMEs

The UK's only 'full service' BPFS offering outside of London, supported by a strong talent pool, excellent access and global client base, reflected by an increasingly growing set of major players across all key sub-sectors (HSBC, PWC etc).⁷

- Opportunities arising from local and national infrastructure investments.⁸
- West Midlands is well-placed to take advantage of key technological opportunities – automation, cyber security, machine learning and FinTech – e.g. through 5G testbeds.

Foundations

People: Technical and professional high-level occupations that are well-paid – unique profile in the UK; good availability and retention of skilled talent; more business students than anywhere outside London.⁵

Infrastructure: Crucial for access to talent and business, an already well-connected region will be further boosted by HS2 and Birmingham Airport expansion.⁶

Place: The West Midlands is a prime area to locate – high investor interest and global client base.

Assets

Business Schools: Warwick, Birmingham Aston, Coventry, Wolverhampton

Other Educational: University of Law, Professional Services Academy at Birmingham Metropolitan College

Sector Groups: ICAEW in Warwick, BPS Birmingham

Private Sector: HSBC, PWC, Barclays, Deutsche Bank, Deloitte, KPMG, RBS, EY, Lloyds, BDO, Santander

Insight & Trends

Global Trends

- Global trend towards services; the innovative use of business, finance and professional service skills is increasingly important for the long-term growth and success of firms in all sectors across the world.⁹
- New technology is driving more demanding customers and employees.¹⁰
- Technology will change the ways businesses deliver products, and open access to new competition from entrants.¹¹

Regional Insight including Grand Challenges

- Value through services is increasingly important, and the UK has a largely service-based economy.
- Government is providing funding to enhance innovation in the sector, such as through 'Next Generation Services'.¹²
- Further 'servitization' of key industries is a key opportunity, particularly for the West Midlands' diverse and highly-skilled offer.

- Implementing the BPFS sector's "vision" would result in the UK economy being £43bn bigger by 2025, with 23% growth in the West Midlands region.¹³

- Total BPFS GVA in the WMCA has the potential to double between 2015-2030, with employment having 31% potential growth.¹⁴

West Midlands Strategic Opportunity

Modern services and business, professional and financial services

Harnessing next generation services, incorporating technology advances in AI, Automation, Cyber Security and Machine Learning

Opening opportunities to communities that may not otherwise see the sector as accessible

Enabling effect of modern services will be central to growth in all sectors and throughout value chains

Developing and fostering innovative partnerships and links between firms and educational institutions

Services: Sources

Reference number	Source & Key Dates	Link/Info
1	WMCA Oxford Economic Model – BCEIU analysis (2015 actual figures) and BRES (2016).	SIC code definition displayed in sector evidence slides
2	City-Redi, BPS Birmingham, and Black Country Consortium sector deep dive: “AN INVESTIGATION INTO THE FOUNDATIONS OF PRODUCTIVITY FOR BUSINESS, PROFESSIONAL AND FINANCIAL SERVICES IN WEST MIDLANDS COMBINED AUTHORITY AREA PRODUCTIVITY & SKILLS COMMISSION – SECTOR SPECIFIC ANALYSIS” (June 2018)	Undertaken as part of the West Midlands Productivity and Skills Commission, this paper provides detailed insight on the services sector in the region. https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf
3	City-Redi/BPS Birmingham/Black Country Consortium sector deep-dive (June 2018)	https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf
4	City-Redi/BPS Birmingham/Black Country Consortium sector deep-dive (June 2018)	https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf
5	City-Redi/BPS Birmingham/Black Country Consortium sector deep-dive (June 2018)	https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf
6	<ul style="list-style-type: none"> HS2: Wide-ranging evidence on the impact on the region: e.g. Midlands HS2 Growth Strategy (2015), WMCA links. Birmingham Airport expansion: Draft expansion plan released by the airport in November 2018, outlining proposals to invest £500 million over the next 15 years to raise its capacity to 18mppa by 2033. 	<ul style="list-style-type: none"> HS2: Midlands HS2 Growth Strategy: https://gbslep.co.uk/wp-content/uploads/2017/06/HS2-GS-FINAL.pdf ; WMCA website: https://www.wmca.org.uk/what-we-do/hs2/ Birmingham Airport expansion: for further info see https://www.bhxmasterplan.co.uk/full-master-plan/
7	<ul style="list-style-type: none"> HSBC UK’s new headquarters in Birmingham is now officially occupied (November 2018), with around 2,500 employees now working from the new building: https://www.about.hsbc.co.uk/news-and-media/new-green-hsbc-uk-birmingham-hq-opens-its-doors PwC announced the re-location in 2017. As well as relocating its existing 1,400-strong Birmingham team from Cornwall Court in Summer 2019, the additional space has the potential to accommodate an additional 1,000 people as PwC grows across the Midlands. https://www.pwc.co.uk/who-we-are/regional-sites/midlands/press-releases/pwc-goes-for-growth-at-paradise.html 	<ul style="list-style-type: none"> The headquarters of the personal and business arm of HSBC bank has relocated from London to Birmingham: https://www.about.hsbc.co.uk/hsbc-uk/history-timeline Professional services firm PwC has confirmed that it will take the whole of the commercial office space at One Chamberlain Square Birmingham: https://www.pwc.co.uk/who-we-are/regional-sites/midlands/press-releases/pwc-goes-for-growth-at-paradise.html
8	West Midlands Growth Company/IBM PLI sector research (2017)	Available within WM LIS sector evidence slide pack
9	<ul style="list-style-type: none"> The CityUK: ‘A vision for a transformed, world-leading industry: UK-based financial and related professional services’ (2017) UKTI: The Midlands Engine Midlands Financial Centre of Excellence (2016) Deloitte sector research (Ongoing) 	<ul style="list-style-type: none"> https://www.thecityuk.com/assets/2017/Reports-PDF/6770942b5f/A-vision-for-a-transformed-world-leading-industry.pdf UKTI: Midlands Engine Midlands Financial Centre of Excellence https://www2.deloitte.com/uk/en/industries/financial-services.html
10	The CityUK: ‘A vision for a transformed, world-leading industry: UK-based financial and related professional services’ (2017)	https://www.thecityuk.com/assets/2017/Reports-PDF/6770942b5f/A-vision-for-a-transformed-world-leading-industry.pdf
11	The CityUK: ‘A vision for a transformed, world-leading industry: UK-based financial and related professional services’ (2017)	https://www.thecityuk.com/assets/2017/Reports-PDF/6770942b5f/A-vision-for-a-transformed-world-leading-industry.pdf
12	Government releases and commitments (e.g. Next Generation Services Funding call through ISCF).	https://www.gov.uk/government/news/next-generation-services-new-fund-for-industry-and-research
13	The CityUK: ‘A vision for a transformed, world-leading industry: UK-based financial and related professional services’ (2017)	https://www.thecityuk.com/assets/2017/Reports-PDF/6770942b5f/A-vision-for-a-transformed-world-leading-industry.pdf
14	City-Redi/BPS Birmingham/Black Country Consortium sector deep-dive (June 2018)	https://www.wmca.org.uk/media/2406/business-professional-financial-services.pdf

Creative Content, Techniques and Technologies: Evidence to Opportunity

Granular Evidence Base

Sectors

- The region's core creative industries contributes 50,000 jobs, and we have key strengths in next generation content, gaming and design.¹
- Nationally significant and unique creative clusters, e.g. Silicon Spa & Jewellery Quarter.²
- Our creativity is a catalyst of cross-sectoral innovation across all industries – e.g. utilising VR and AR to develop prototypes and testing of new vehicles.³
- The distributed factory of the future will be constructed by designers, data analysis and visualisation specialists and involve the rapid design of virtual & physical components.⁴

Unique clusters of creative activity, underpinned by a distinctively young and diverse population, supportive assets and the ability to transfer creative skills across the economy alongside digital capabilities to enable cross-sector innovations.

- Exclusive creative-led growth opportunity through Commonwealth Games and City of Culture.¹⁰
- Birmingham recognised as a 'Creative Challenger'.¹¹
- To complement, WM has a growing digital sector, supported by 5G testbed.¹²

Foundations

People: Young, diverse and digital population is a great enabler of new and innovative content, experiences & services⁵; creative skills and jobs are cross-sector: 40,000 further creative jobs in non-creative industries.⁶

Infrastructure: 5G Test Bed give's first-mover advantages to region.⁷

Ideas: Effective creative collaborations, e.g. STEAMHOUSE, the Serious Games Institute, and Creative Black Country.⁸

Business Environment: There are 9,975 Creative enterprises in the WMCA (second to GM of CA's).⁹

Assets

University Centres: STEAMhouse, Serious Games Institute, National Institute of Coding, Centre of Disruptive Media

Clusters: Digbeth Creative Quarter (inc. Custard Factory), 'Silicon Spa', Jewellery Quarter, Dudley Castle Quarter, Royal Shakespeare Company, Birmingham Royal Ballet

Other: Coventry City of Culture, Commonwealth Games, Media Campus NEC, BBC Academy

Insight & Trends

Global Trends

- Growing global demand for British creative content, including services like design and advertising as well as culture and entertainment.¹³
- Worldwide shift towards data-driven, personalised, services is driving the need for innovative design and skills.
- 'Golden age' for high-end drama production.¹⁴
- Industry 4.0 is driving demand for creative and digital skills and activity in an ever greater range of markets.

Regional Insight including Grand Challenges

- Creative industries increasingly recognised as a crucial enabler to UK growth, reflected in early sector deal agreement – government investment of more than £150 million across the lifecycle of creative businesses.¹⁵
- The West Midlands is well-positioned to take advantage of key sector trends like the digital disruption of consumption and production.¹⁶

- The Bazalgette Review forecast that a successful creative sector deal could enable UK creative businesses by 2023 to: reach £150bn GVA increase exports by 50% and provide 600,000 new creative jobs.¹⁷
- The WMCA targets adding £7bn GVA, 29,000 jobs and 18,000 NVQ4+'s in region's the creative and digital sector by 2030.¹⁷

West Midlands Strategic Opportunity

Creative content, techniques and technologies

Creative and digitally led approaches to resident and visitor services, driven by Commonwealth Games & City of Culture

Utilising the region's young and diverse population

Harnessing creative skills to enable progress and innovation in wider sectors (e.g. VR in construction & automotive)

Innovation and engagement with 'audiences of the future'

Servitization of economy and digitisation of services

Creative Content, Techniques and Technologies: Sources

Reference number	Source & Key Dates	Link/Info
1	GBSLEP Creative Economy Mapping Study (BOP/GBSLEP) (2017)	https://gbslep.co.uk/wp-content/uploads/2017/12/Creative-Economy-Mapping-GBSLEP-Dec17-full-report.pdf Sector SIC definition available in report
2	<ul style="list-style-type: none"> GBSLEP Creative Economy Mapping Study (BOP/GBSLEP) (2017) WM LIS Creative sector action plan consultation document (2018) 	<ul style="list-style-type: none"> https://gbslep.co.uk/wp-content/uploads/2017/12/Creative-Economy-Mapping-GBSLEP-Dec17-full-report.pdf https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
3	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
4	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
5	Multiple sources available that reflect the West Midlands as having one of the youngest & diverse populations in the UK. E.g. WMCA Regional Skills Plan (2018), WMCA Leadership Commission (2018). Raw data available via ONS (Annual Population Survey, Labour Force Survey).	<ul style="list-style-type: none"> West Midlands Regional Skills Plan: https://www.wmca.org.uk/media/2267/regional-skills-plan.pdf West Midlands Leadership Commission: https://www.wmca.org.uk/media/2218/leadership-diversity-in-the-west-midlands_002.pdf
6	GBSLEP Creative Economy Mapping Study (BOP/GBSLEP) (2017)	https://gbslep.co.uk/wp-content/uploads/2017/12/Creative-Economy-Mapping-GBSLEP-Dec17-full-report.pdf Extrapolated using cross-regional data.
7	Government (DCMS) commitment in September 2018 to make the West Midlands the UK's first large-scale 5G testbed	https://www.gov.uk/government/news/west-midlands-to-become-uks-first-large-scale-5g-testbed
8	<ul style="list-style-type: none"> STEAMhouse: Birmingham-based centre aimed at encouraging the collaboration of the arts, science, technology, engineering and maths (STEAM) sectors. Serious Games Institute: Leading edge applied research based at Coventry University supporting of a wide range of serious gaming and virtual world technologies, spanning the three key areas of health, education, and environment. Creative Black Country: CBC is a campaign which aims to make the most of creative talent in the Black Country. They work with local people to discover, explore and grow an exciting and meaningful programme of arts activity in the Black Country. 	<ul style="list-style-type: none"> https://www.bcu.ac.uk/business/steam/steamhouse http://www.magellanproject.eu/partners/58-serious-game-institute.html https://www.creativeblackcountry.co.uk/
9	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
10	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
11	Nesta: Creative Nation Report (2018)	https://media.nesta.org.uk/documents/creative_nation-2018.pdf
12	Birmingham City University/Regional Observatory: Tech & Digital Deep Dive Report (West Midlands) (2017)	http://s3-eu-west-1.amazonaws.com/digitalbirmingham/resources/Tech-Digital-Deep-Dive-Report-West-Midlands.pdf
13	UK Government: Creative Industries sector deal (2018)	https://www.gov.uk/government/publications/creative-industries-sector-deal
14	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
15	UK Government: Creative Industries sector deal (2018)	https://www.gov.uk/government/publications/creative-industries-sector-deal
16	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP
17	UK Government: Creative Industries sector deal (2018)	https://www.gov.uk/government/publications/creative-industries-sector-deal
18	WM LIS Creative sector action plan consultation document (2018)	https://gbslep.co.uk/wp-content/uploads/2018/10/West-Midlands-Creative-Industries-Local-Industrial-Strategy.pdf - Led by GBSLEP

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