



Transport for
West Midlands

Skills Academy

Transport Skills Insight Report

AUTUMN 2022



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1. Foreword

Planning for our future is a crucial part of how we reimagine the West Midlands and how we equip our population with the skills required to deliver the infrastructure that supports the social and economic activities so essential to all our lives.

The West Midlands is currently experiencing a period of unprecedented investment across the transport network – road, rail and bus. This investment is anticipated to create close to 60,000 new job opportunities by 2035.

This work by the National Skills Academy for Rail has provided a substantial insight to inform the establishment of the Transport for West Midlands (TfWM) Transport Skills Academy. It sets out clearly the challenges we are facing relating to skills in transport but also highlights the opportunities for the region, particularly our young people.

We know our transport workforce in the West Midlands is made up of 41,783 workers across rail, road and bus. This figure represents 10% of the overall UK rail, road and bus workforce. When considering the age profile of our workers we know there is a mean average of the combined workforce of 45, with 35% over the age of 50. We have a high volume of workforce coming up to retirement which will impact on our ability to transfer knowledge and skills as well as filling these roles with future talent.

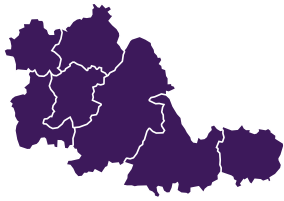
The West Midlands is comprised of people from diverse backgrounds and cultures. Within our transport sector 14.5% of the workforce are from non-white backgrounds, and only 19% of the workforce are female. These are two of the challenges we face in making the sector more accessible to all when seeking for employment and career opportunities. We can only achieve this if we make roles in the sector more visible and find ways to improve our careers information.

This report also provides a huge opportunity for our region with a potential social value added of £1.7bn from the creation of new jobs. We must seize the opportunity and support local people into local employment to create the full economic value the sector will bring over the next decade.

Anne Shaw
Executive Director
Transport for West Midlands



2. Executive Summary



Nearly **60,000 job opportunities** will be created in the West Midlands region between 2023 and 2035.

Investment Proportions 2023 - 2035



Area	Percentage
Operations	34%
Track	17%
Civils & Structures	15%
Signalling & Telecoms	14%
Traction & Rolling Stock	6%
Electrification & Plant	5%
Business Management	4%
Property, Stations & Depots	3%
Systems Engineering	2%

There is potential to generate over **£640m** in economic value and over **£1.7bn** in social value from these job opportunities.



Gender Ratio

81% Males

19% Females



Opportunities in the **Digital Space** in the next ten years for roles such as

- Software Designers & Engineers
- Digital Specialists
- Technology Analysts
- Cyber Security Engineers
- Systems Architects

Increase in the number of **skilled employees** in these disciplines:

- Manager & Directors
- Engineers
- Testers
- Project Managers



15% identify as non-white

The **16-20 age group** in the West Midlands comprises **just 0.7% of the workforce**. And with 35% of the workforce over the age of 50, opportunities are there for younger people to move into the sector.





The West Midlands is experiencing unprecedented levels of investment which in turn means there will be many opportunities for the local residents through the creation of many new jobs.

In the transport sector, close to 60,000 new opportunities will be created between now and 2035, across the rail, road and bus sectors. The modelling used demonstrates there is strong evidence that increasing volumes of people will be required to deliver against the planned investment. Some people will need skills sets which are different to those which currently exist and some will need skill sets which are yet to be developed. The data presents a snapshot of the types of digital and data roles which will be created by the investment. Additional roles in cybersecurity, systems engineering, software development & testing and data science, will be created, albeit at lower levels.

Furthermore, the green agenda will create many opportunities for jobs as bus fleets change from diesel to become a combination of electric and hydrogen fuelled services. The exact numbers are not yet confirmed, but the opportunities are clear in order to meet the local and Government targets, with an accelerated ambition following successful bids for Government grants for decarbonisation projects. Evidence from additional research suggests that the UK bus fleets will be the largest in Europe by 2024, increasing by 180% from current numbers.

As a result, both drivers and maintenance employees will be required in addition to the numbers already working in this part of the transport sector. The skills required will differ in part from those in existence as new forms of transport fuel are introduced.

From the current workforce profile, there are some key target groups which are under-represented within the transport sector. Work needs to be undertaken to positively promote the sector to:

- Women (especially those between 16-25 and those from non-White backgrounds)
- Young people aged under 30
- People from non-white backgrounds
- Those working in lower skilled occupations

By taking advantage of the opportunities presented, the rewards for the West Midlands are high. For example, from the creation of these jobs, a conservative estimate of over £640 million will be generated for the local economy, with even more gained through a change of approach with the opportunity to produce over £1.7bn in social value for the region.

These figures do not currently include the opportunities generated from the new and additional roles in the bus mode.

A risk can be an opportunity and where some would see the older working population in the region as risk for loss of skills and knowledge from the sector, it presents an opportunity to grow more young passionate people whilst making the change from traditional skill sets to increasingly digitally

driven skill sets. This will however need to be carefully managed to ensure there is a smooth transition in developing the required skills, before they disappear through retirement. Programmes such as mentoring will allow for knowledge transfer in both directions and may encourage older workers to remain in their relevant sectors longer than they may have otherwise done.

There is the opportunity to look at progression routes for all backgrounds and break down any traditional barriers which would have historically excluded specific groups from pursuing a career in transport. For example, those from Asian backgrounds traditional follow routes into medicine. Challenging the ‘academic’ versus ‘vocational’ pathway will also present different options for young people considering their options post compulsory education. The breadth and depth of Apprenticeship choices provide the balance of work experience whilst learning ‘on-the-job’ and the number of Apprenticeship courses available are continuing to increase.

To address the potential shortfall, TfWM might like to consider developing its strategy to ‘grow its own’ and the idea of a Transport Skills Academy for the region would seem viable based upon the modelled demand generated in this analysis.





3. Introduction

The West Midlands finds itself in a unique position where the levels of transport infrastructure investment are unprecedented, and coupled with a growing population, there is an increased demand for a skilled workforce.

One of the core issues, which is also replicated nationally, is the attractiveness of the transport sector for young people who are just starting out on their career path. The West Midlands has experienced an overall decline of 1.9% in its population of 16–29-year-olds, (although this masks an increase in the actual number of 16-18 year-olds), whilst at the same time seeing a 3% increase in the proportion of over 55's.

One potential solution is to encourage people to come to work in the West Midlands from neighbouring regions, whilst increasing the opportunities for older workers to develop and exploit the transferable skills these possess from both work and life experiences. However, the economic benefits from migratory workers will not be recognised in the West Midlands, unless people are encouraged to both work and live in the region.

With high levels of planned investment across the region it is necessary to identify what the future skills demand across transport is for the West Midlands. All the available investment

information has been reviewed and pulled together a profile for the three modes to generate this future demand profile.

This analysis uses the National Skills Academy for Rail's Skills Intelligence Model to evaluate the current workforce in the rail, road, and bus sectors. The data has been supplemented by the Office for National Statistics (ONS) information where necessary. Subsequently, skills gaps have been identified and the size of the challenge is significant for the region to support the delivery of all the proposed projects in the coming decade.

Scenarios to fill these gaps have been explored and imply that the workforce will need to be recruited beyond that which currently exists. This includes looking at the availability of those people who are currently economically inactive alongside the use of Apprenticeships to develop skills sets. The information generated here will support the business case for a Transport Skills Academy for the region to support, grow and nurture potential talent to fulfil future delivery.

There is strong evidence, that large volumes of people will be required and some will need skills sets which are different to those that currently exist, and some will need skill sets which are yet to be developed and recognised. Both challenges could be addressed through the development of a Transport Skills Academy.

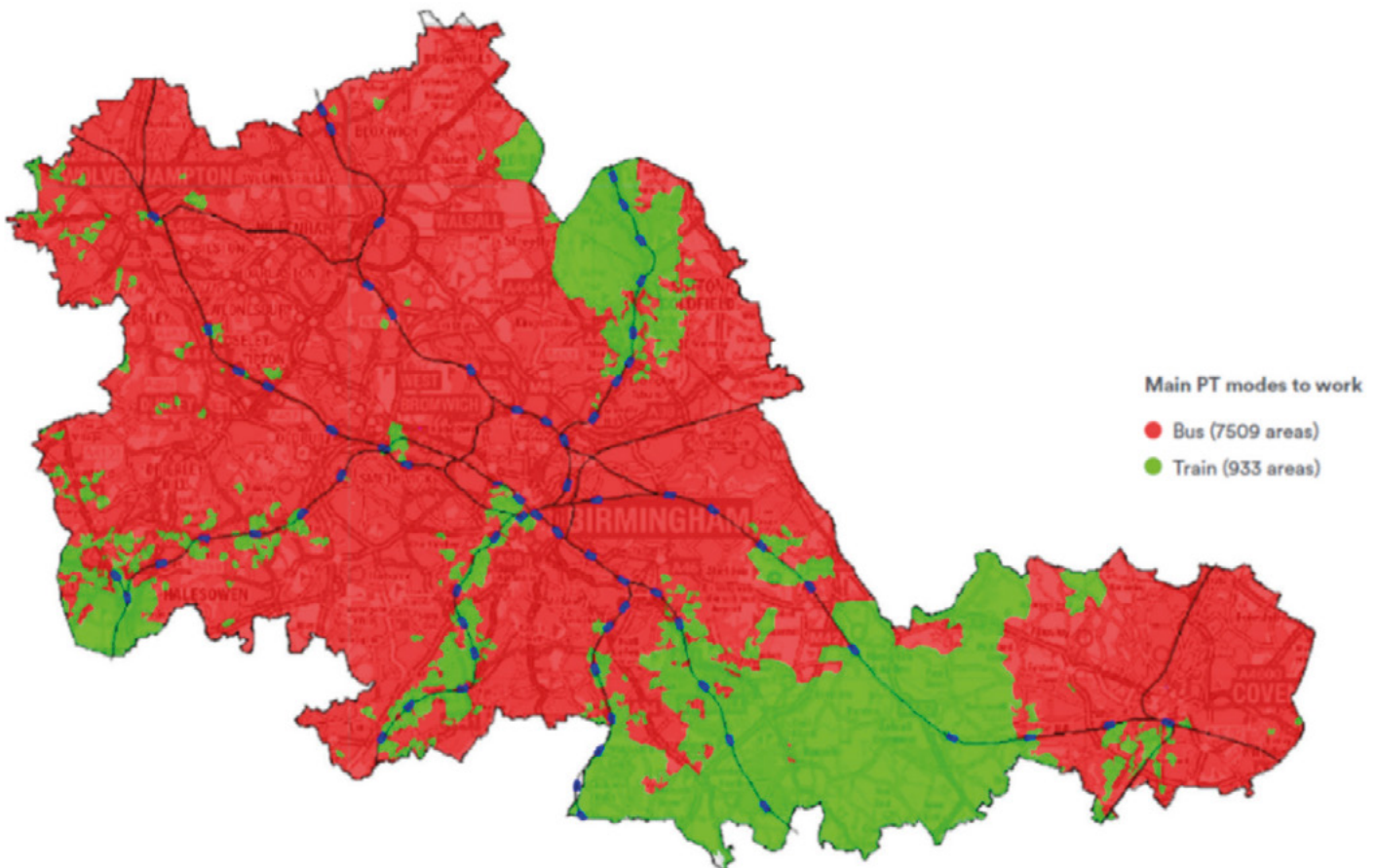
3.1. Transport Network Coverage

Buses have the widest network coverage over the region, covering an area eight times greater than Rail, and as such, 4 out of every 5 journeys in the West Midlands uses a bus. The West Midlands is cited by the DfT as an area where bus use has been stabilised by a series of corridor and route enhancement schemes, including:

- 2.5km of bus lanes on the B425 Lode Lane, Solihull, was an investment of £4.5m and delivered a 11% boost to patronage.
- £800k of route enhancements on Harborne Road delivered a 4% rise in patronage.
- Half-price travel for under-18s and low-fare zones for all, including cutting the price of a DaySaver ticket by 25%, bringing an extra 4,000 journeys a day.

These are excellent achievements that bump the national trends of decline and demonstrate the model being used in the West Midlands is an example of good practice, which other regions could learn from.

N.B. throughout this report that all figures are courtesy of the National Skill’s Academy for Rail’s Skills Intelligence Teams’ analysis through the Skills Intelligence Model (SIM) or via comprehensive analytical modelling, unless stated otherwise.



Source: Transport for West Midlands Strategic Vision for Bus

4. Opportunities

From the analysis undertaken, several target groups have been identified across transport, where there is clear underrepresentation.

These are:

- Women (especially those between 16-25 and those from non-White backgrounds)
- Young people aged under 30
- People from non-white backgrounds
- Those working in lower skilled occupations

Changing the approach in recruitment and targeting people within these identified categories will add to the diversity of workers in the transport sector.



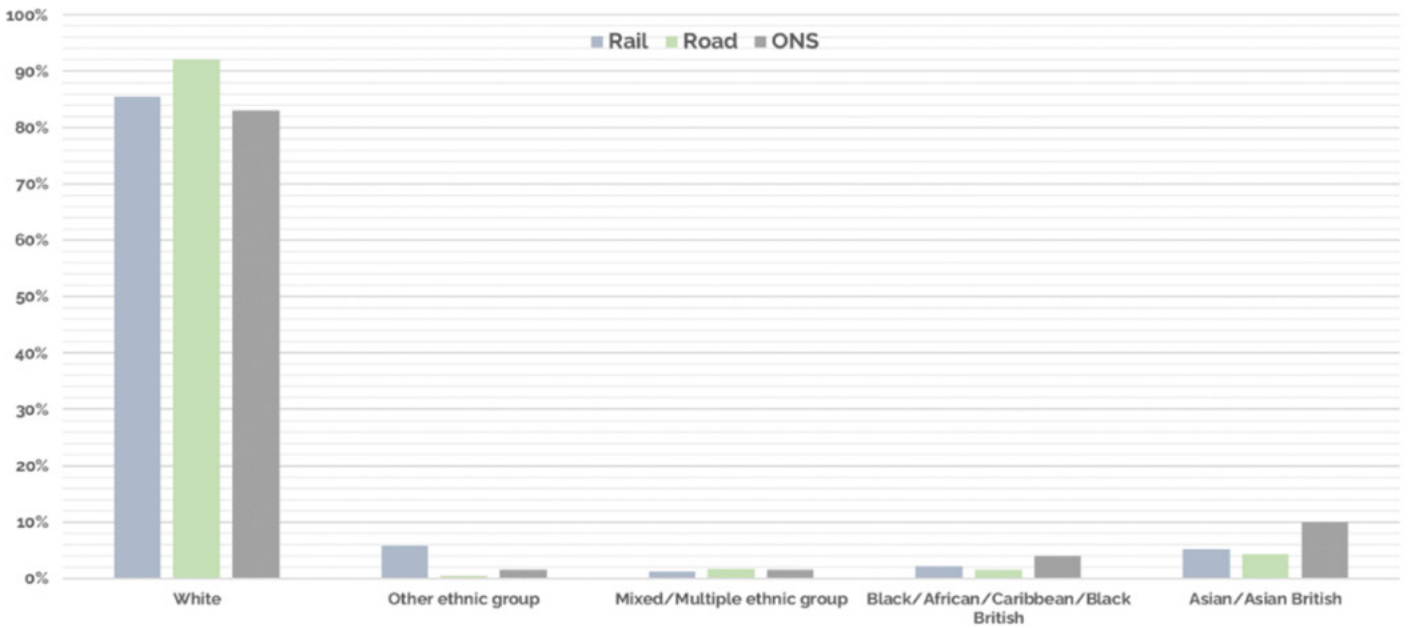
Gender Ratio

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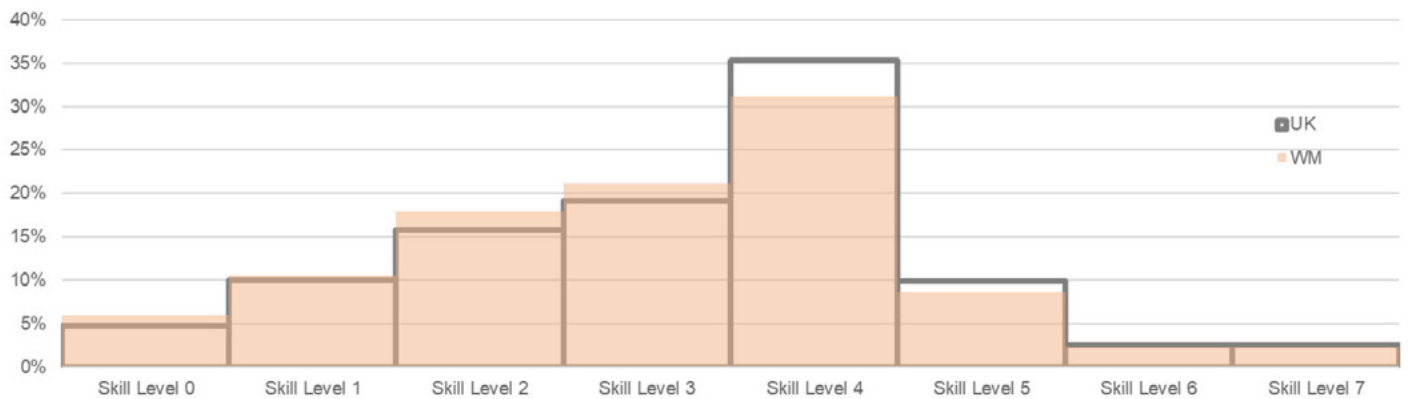
Age of population	Percentage
Under 30 years	12%
Over 50 years	31%

This graph compares the ethnicity data of the West Midlands rail & road workforce to the ONS benchmarks for the region. It suggests that the rail & road workforces have lower proportions of non-White workers. However, one ethnic group where the proportion is higher than the ONS is those for 'other ethnic groups' for rail. Unfortunately, no ethnicity data was available for the bus workforce.

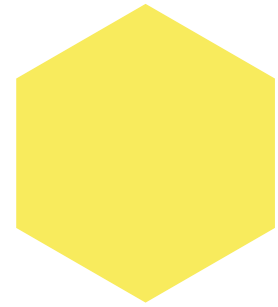


Upskilling those currently in lower skilled occupations would help the region align more closely with the national picture of skill levels. The chart illustrates higher proportions of people with level two and three skills and lower level four skills when compared with the national picture. A programme to deliver this would support the Levelling-Up agenda, with the West Midlands taking decisive action to improve the opportunities for its residents.

West Midlands Labour Market Skill Level Profile - compared with the rest of the UK



The West Midlands Combined Authority Local Skills Report (April 2021) highlight similar statistics where the West Midlands has the highest proportion of the working age population with no qualifications across all UK regions. In addition, the Working Futures report identified over 55% of all jobs will require L4 and higher skills by 2027. Some of the vacancies across the transport sector indicated later in this report support this finding.



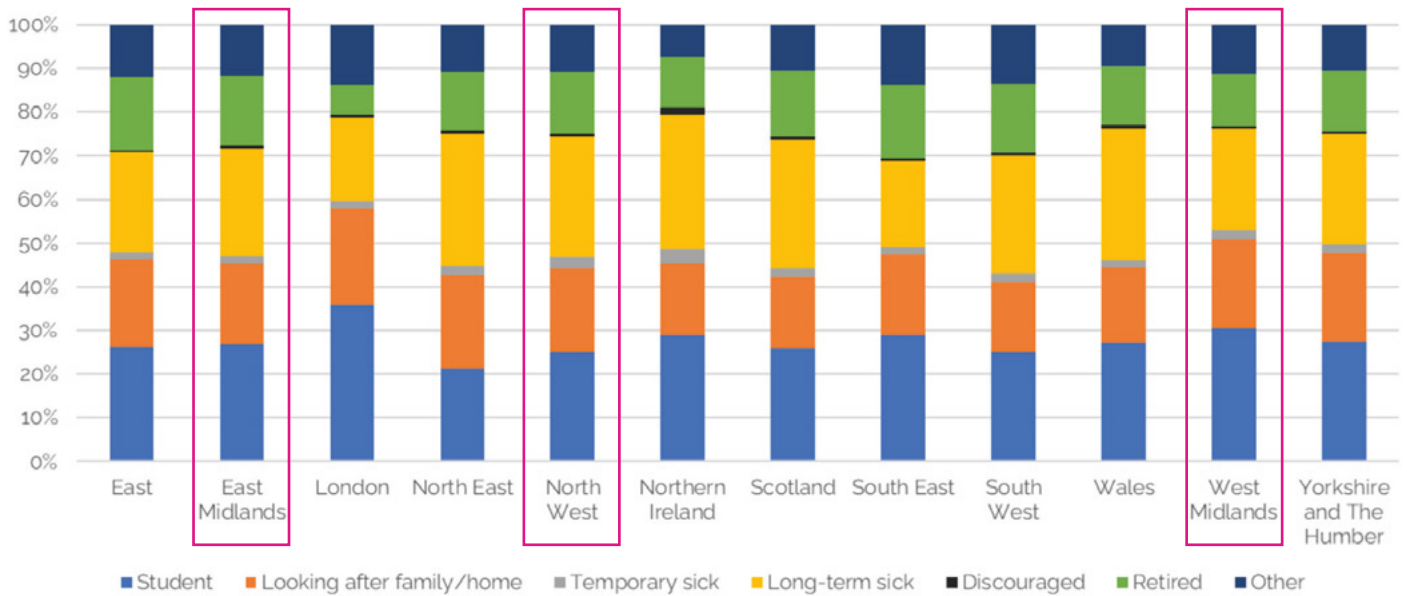
4.1. Labour Market

Unemployment in the West Midlands and its neighbouring regions is above that of the UK overall, with the West Midlands figure being notably higher than in 2015.

There is not sufficient workforce capacity within the sector due to the demands created by other major rail investment projects in the region at the same time. The projected levels of investment will create jobs in the West Midlands and may initially support employment from residents in neighbouring regions.

Over the last 5 years those classed as economically inactive (long term sick, retired, disabled, students etc..) has averaged 2.78 million in the West Midlands.

If an intervention such as training or reskilling were to be given to this group thus allowing them to participate in the labour market, this would generate higher socio-economic benefits. If employments levels return to those similar to pre-Covid, then the risk of a tightening in the labour market means it will be critical to explore alternate sources of labour supply.



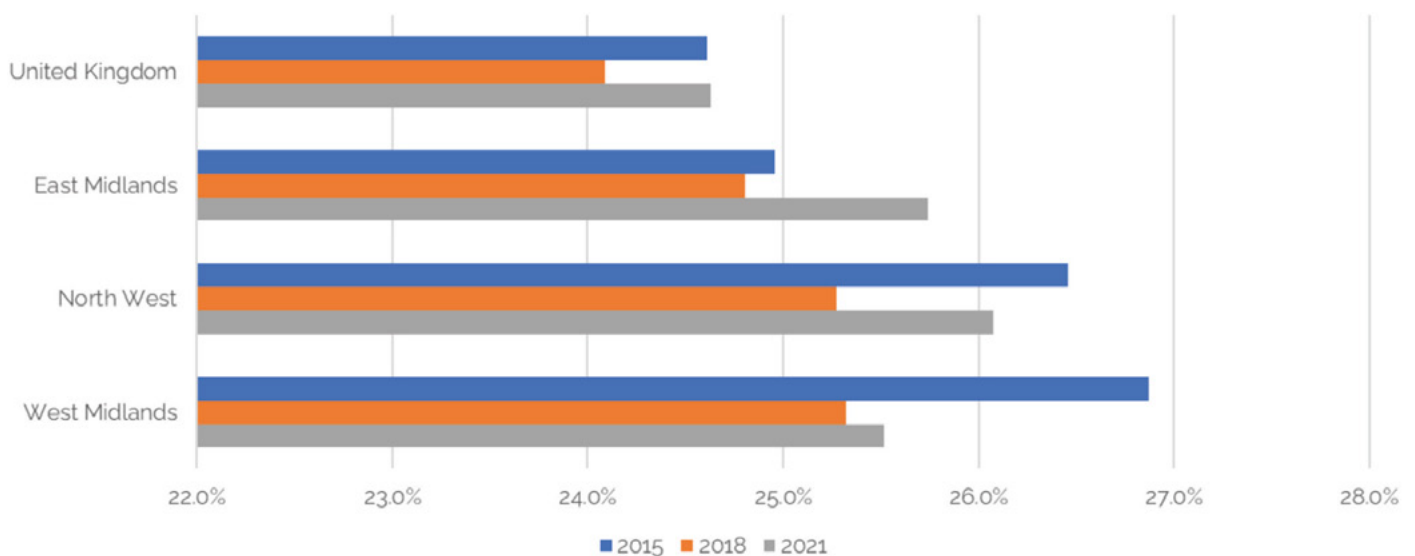
The graph above illustrates the proportion of people who are economically inactive by reason. This is an untapped labour market where potentially up to 15% of new employees could be recruited, targeting those have reasons such as ‘Other’ and ‘Discouraged’. People who are classified as refugees or ex-offenders are included in the category most relevant to their employment status.

Changes in employment indicate higher job growth in the West Midlands (6.74%) at 2.5% more than the East Midlands (4.22%).

This reflects the increase in capital investment activity and work opportunities presented by projects such HS2 and the preparation of Birmingham as host city of the Commonwealth Games in the summer of 2022.

Unemployment levels show an increase across all regions between 2018 and 2021, likely resulting from the pandemic, however these levels are lower than 2015. The West Midlands has a lower proportion of unemployed people compared to its neighbouring regions, but it remains higher than the national figure.

Unemployment rate - Comparison over time



The Midlands regions have seen an increase in both the number of Project Managers and Engineering professionals between 2016 and 2021, according to ONS data. This is really encouraging, demonstrating both of these neighbouring regions are offering attractive opportunities in these types of roles. More obvious is the investment in the West Midlands region resulting from the successful bid for the Commonwealth Games which take place in the summer this year. In slight contrast, the North West has seen a slight decline in the number of project managers, however the growth in Engineering professionals in the region has been more than double that of each of the Midlands regions.

What isn't clear, is the number of people who commute between the regions for employment, especially if higher skills are required for specific roles and these are not available locally.

The construction sector also carries a partially transient workforce, with some workers moving from scheme to scheme and only working in the region for a set period. This can limit the opportunities available to those in the local region, but again is a solution if the required skills are not available in the locality. From the forecast, the West Midlands can identify the types of skills which will be required and when, allowing a plan to be embedded to support the upskilling or reskilling of those living in the region, hence preparing the pipeline of skills.

The Local Skills report outlines key priorities in the Construction, Business & Professional Services and Automotive & Advanced Manufacturing sector, with a cross cutting theme of digital skills at all levels. The evidence shared through this report support these areas as a key focus for development and urgency.



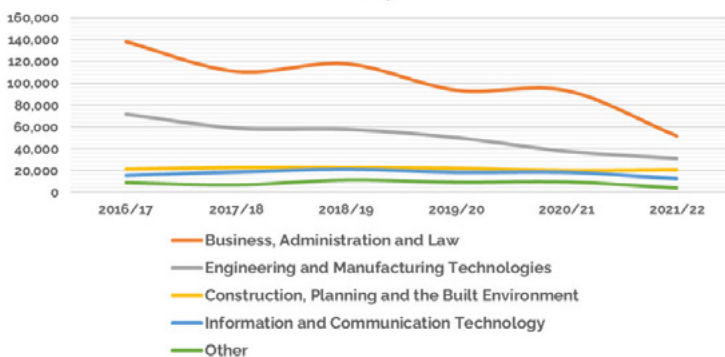
4.2 Education

The West Midlands registered 11% of all Apprenticeship start numbers for the academic year 21-22, which demonstrates the commitment of businesses to combining employment with training.

However, nationally there has been a decline in the number of people starting on Apprenticeship programmes, with Business and Administration experiencing the greatest decline. Given the pandemic influence over the last couple of years, this is no great surprise, but it is now important to begin rebuilding business confidence and developing the pipeline of future skills. It is necessary to reverse the impact of the pandemic as soon as possible by providing opportunities for the local communities in the region.

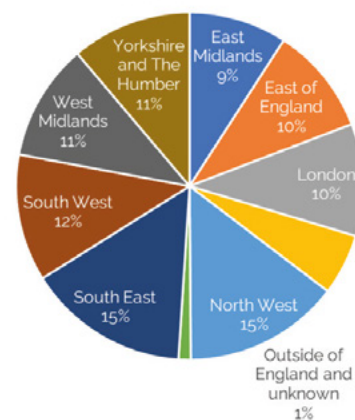
There is a lasting legacy from the pandemic where unfortunately, jobs were lost in the lower skilled sectors as the country was forced into a 'shut down' for a period of time. To promote a strong recovery, there needs to be encouragement of people with transferable skills into higher skilled occupations. Combining this approach with campaigns focused on the target groups and the untapped market of those who are economically inactive, there is an opportunity to use all forms of skills education to improve the choices of the West Midlands workforce. This should include Apprenticeships, Traineeships, T-Levels and the more traditional academic routes as well as access to professional qualifications through the appropriate bodies.

National Data for Apprenticeship Starts per Subject Route over Time - Transport Relevant Apprenticeship Courses Only



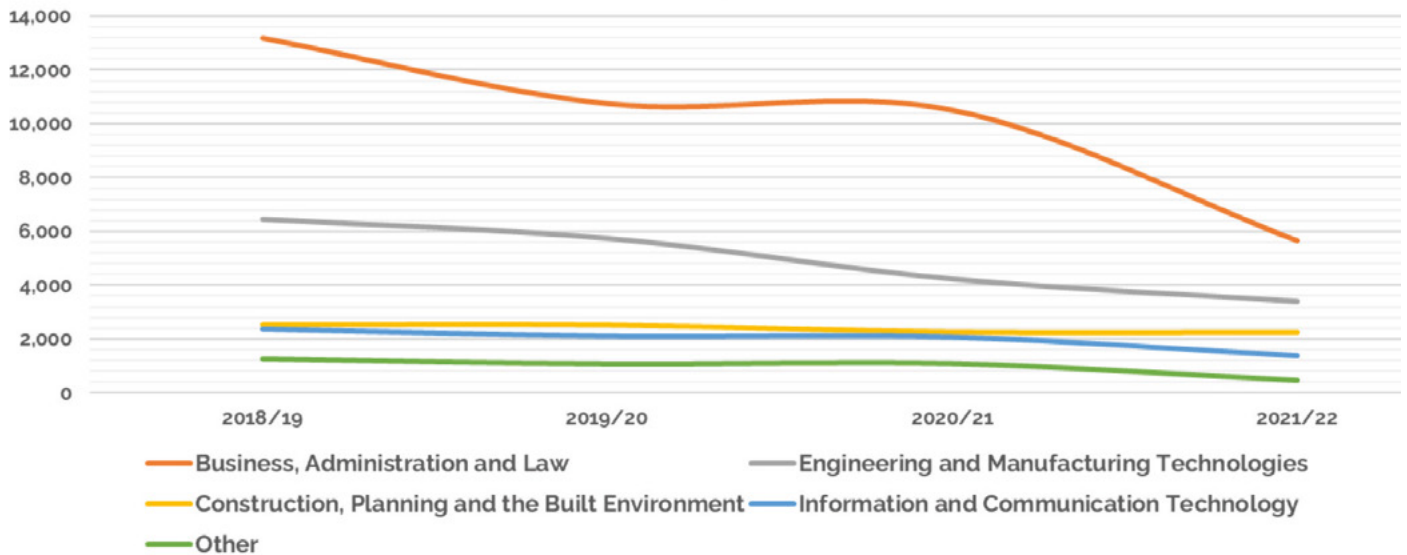
Source: Government

Regional Proportions of All Apprenticeship Starts for 2021/22



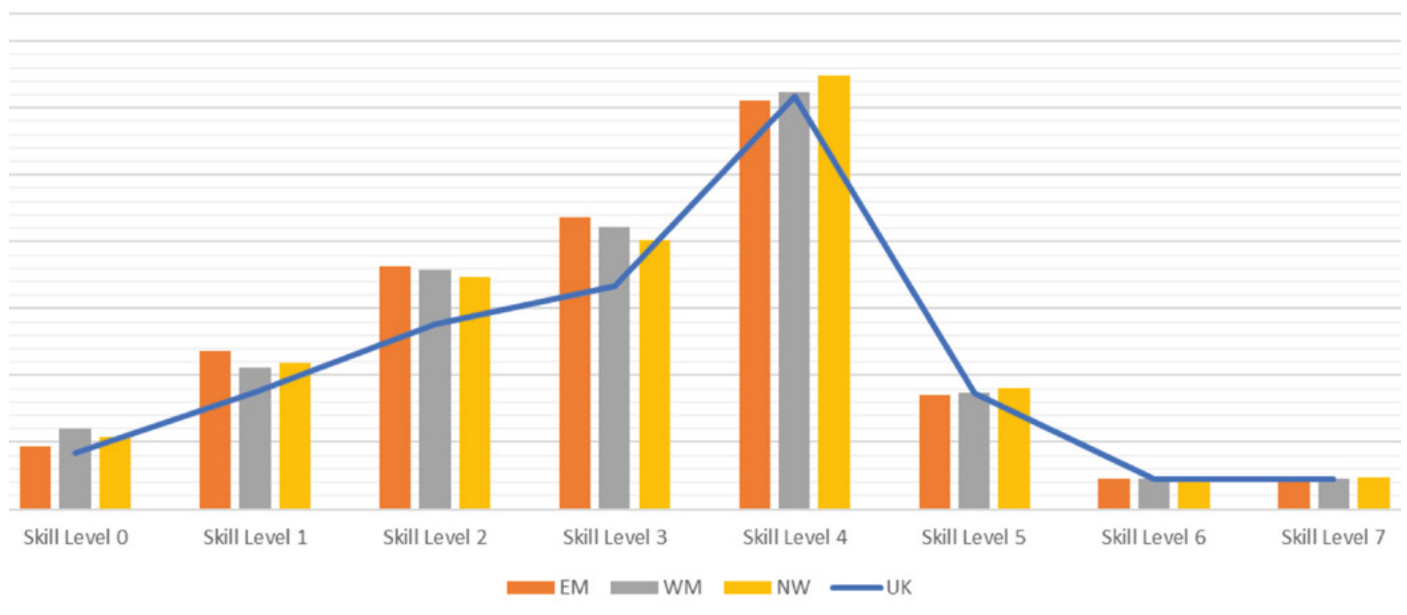
Source: Government statistical datasets and data libraries on apprenticeship and traineeship data (2022)

Apprenticeship Starts per Subject Route over Time in the West Midlands - Transport Relevant Apprenticeship Courses Only



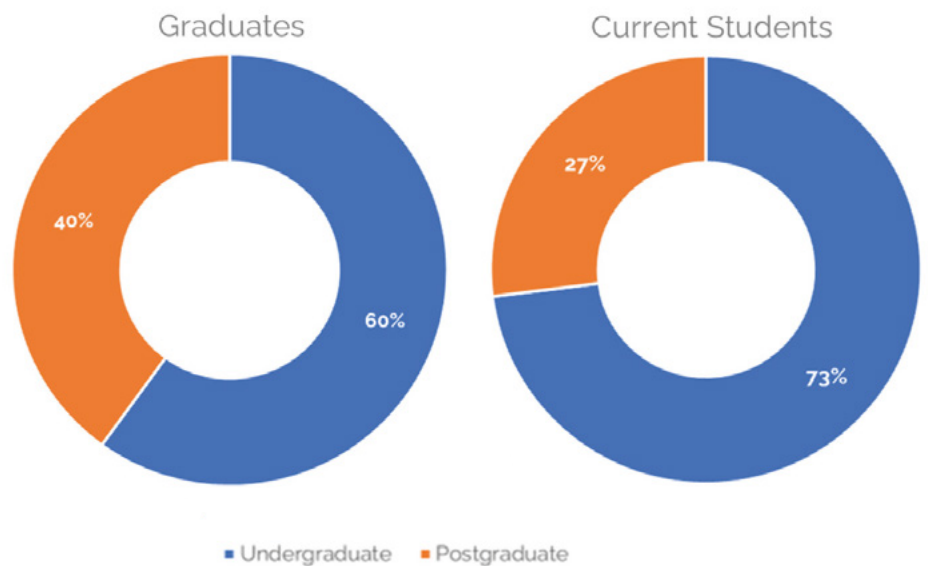
There is a significantly lower proportion of people with qualifications equivalent to skill level 4 (Higher National Certificate equivalent) across the three regions compared with the rest of the UK. The number with level 5 qualifications (Higher National Diploma equivalent) is also lower, meaning to upskill for specific roles in the short term will be a challenge, so a longer-term approach will be necessary.

There is the opportunity to provide an upskilling/retraining programme for those workers at skill levels 2 and 3, to enable these individuals to take advantage of the higher skill level role opportunities. Programmes such as the skills bootcamps will have an impact, however as yet there is not enough data to measure the influence these may have had.

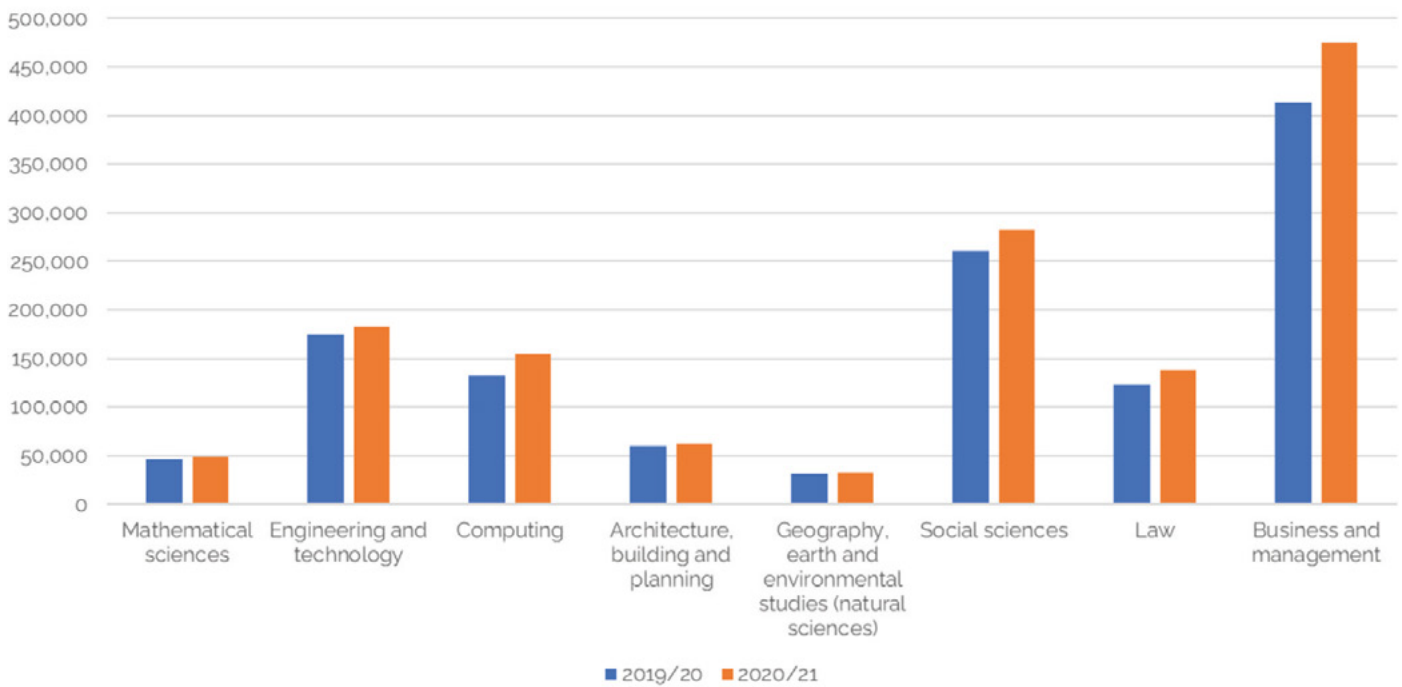


Conversely, from a Higher Education perspective, there has been an increase in the number of students studying qualifications which would enable them to take up a transport related role post-graduation.

This is encouraging data especially as the under 30 age group are under-represented in the transport sector. The next challenge is to enable those with the relevant subject knowledge and skills to understand the broad breadth of opportunities across the transport sector.



Source: Government statistical datasets and data libraries on apprenticeship and traineeship data (2022)



Interestingly, the number of Apprenticeships starts in Business and Administration have seen a decline, whilst those studying this discipline at university have increased.

There have been modest increases in the numbers studying Engineering, Computing and Architectural courses between the academic year 19-20 and 20-21.

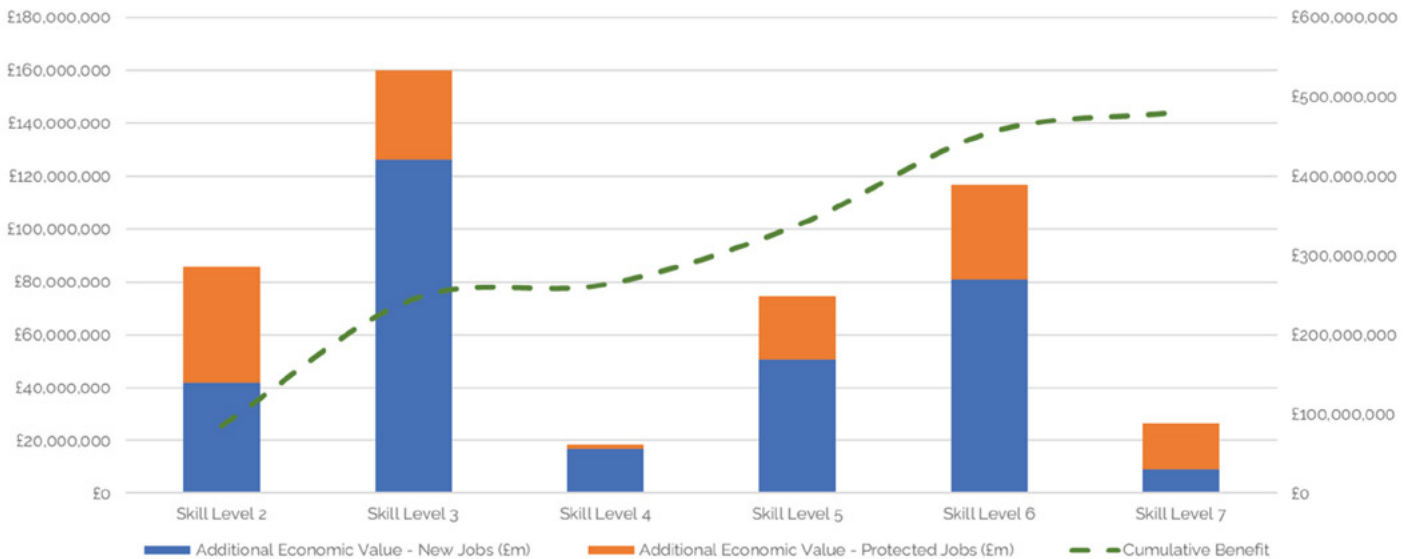
Sector specific schemes support the broadening of horizons such as NSAR’s Routes into Rail website (www.routesintorail.org), targeted at the 14-19 age group. The objective is to demonstrate the variety of occupations available and to highlight the different possible routes to obtaining a job. A joined up approach creating a one-stop-shop for transport careers in the West Midlands would be incredibly beneficial.

4.3 Economic & Social Value of Jobs Created

When new transport schemes are planned, there is always the potential to create new job opportunities. The schemes forecast for the West Midlands region are no different and it is vital to capture the benefits which may be derived from the progression of such schemes, particularly when they involve the spending of public finances. The benefits generated (conservative estimates) from the proposed projects in the region imply:

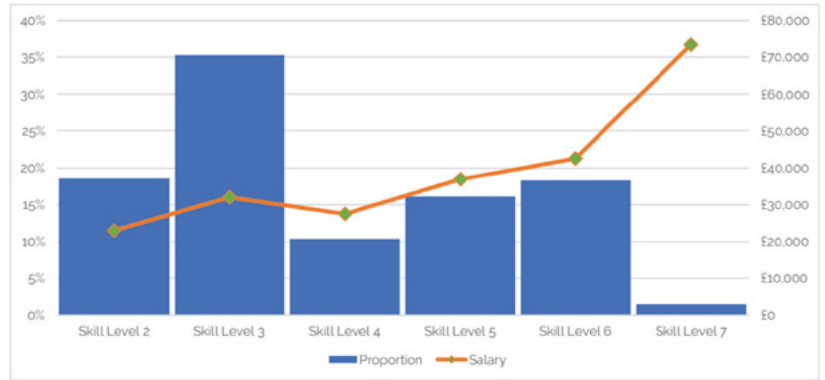
- Over 59,000 job year opportunities will be created
- Approximately £640m of economic value generated from rail and road
- The majority of the roles created are at skill level 3, 5 and 6
- The peak year (2028) in rail alone could generate economic value in the region of £70m and social value in the region of £221m

The volume of level 3 roles will provide the opportunity for engaging school leavers who do not want to pursue a traditional university route as new entrants to the sector. The increasing number of skill level 5 and 6 roles mean there will need to be a clear plan for upskilling as well as making the opportunities clear for graduates. There is a further opportunity to attract those who may be looking for a return to the workforce as well as those who are currently unemployed. This portfolio of investment demonstrates a wide variety of roles available and at different levels to capture the broad range of diverse skills which could be available in the West Midlands.



Approx Number of Roles

Skill Level	Rail	Road	Bus
Skill Level 2	7,900	1,883	1,130
Skill Level 3	19,300	514	1,004
Skill Level 4	2,500	1,712	1,883
Skill Level 5	6,00	2,740	753
Skill Level 6	8,200	2,541	1,004
Skill Level 7	600	171	126



It has not been possible to apply the same process to calculating the benefits generated from the additional roles in the bus sector, however given the age profile of bus drivers across the region, there are likely to be opportunities to entice and encourage new recruits in the coming years. The West Midlands has the one of the most efficient bus networks across the UK and in order to maintain this, there needs to be efforts put into recruitment and retention of the next generation of drivers for this mode of transport across the region.

Job opportunities in the bus workforce over the next 10-15 years will predominantly emerge

through the retirement of drivers, initially aged 50 and over. In addition, given the net-zero agenda, there will be openings within the bus sector, specifically involvement with the new generation bus fleet. Any remaining diesel engines are replaced with either electric or hydrogen fuelled engines. To maintain safe operation of the fleet, technicians and engineers will need to be skilled in dealing with the upkeep of a different type of engine. It is particularly prevalent that training in this area commences at an increased rate sooner rather than later to ensure the bus decarbonise target is met. Diesel sales will end by 2032 at the latest, with the UK wide target of zero emissions target being achieved by 2050.



5. The Skills Landscape Future View (Gaps)

When identifying skills gaps, it is important to consider each mode separately, as an overview can potentially mask specific shortages, however, some of role terminology remains consistent.

The gap analysis for rail nationally, demonstrates a significant shortage of workers in the Capital Projects work type and across several rail disciplines, notably Electrification & Plant, as well as Civils & Structures and Signalling & Telecomms.

The peak gap nationally is in 2026 where nearly 25,000 additional workers will be required. If these skill gaps are not addressed there is a potential for economic loss to the region, alongside possible project delays and worst-case scenario, the risk of parts of the project being cancelled.

In the West Midlands, this differs slightly, as although there is a significant shortage of workers in the Capital Projects work type; across a few rail disciplines, the shortages are evident in Track and Signalling & Telecomms. The peak gap is in 2028 where nearly 7,500 additional workers will be required.

This is predominantly driven by the demands of HS2 where the West Midlands region is in a prime position to deliver the people with the right skills.

The gap analysis for the road workforce nationally shows a surplus of workers, but this is based upon the lack of a visible Capital Projects pipeline post 2025. When Road Investment Strategy (RIS) 3 is published, it will be possible to update these figures. Until that point, there is currently a deficit of workers in the West Midlands, specifically in Maintenance. Early indications from the RIS 3 plans, it can be assumed that there will be capital investment in the region beyond 2025, implying this shortage will continue. Nationally, for bus this equates to 59% of the current Bus and Coach



Some projects for consideration in RIS3 include:

Project	Region	Status
M6 Junction 15 Potteries Southern Access	The Midlands	RIS3 Pipeline
A483 Pant Llanymynech bypass	The Midlands	RIS3 Pipeline
M1 North Leicestershire extra capacity	The Midlands	RIS3 Pipeline
M1 Leicester Western Access	The Midlands	RIS3 Pipeline
A5 Hinkley to Tamworth	The Midlands	RIS3 Pipeline

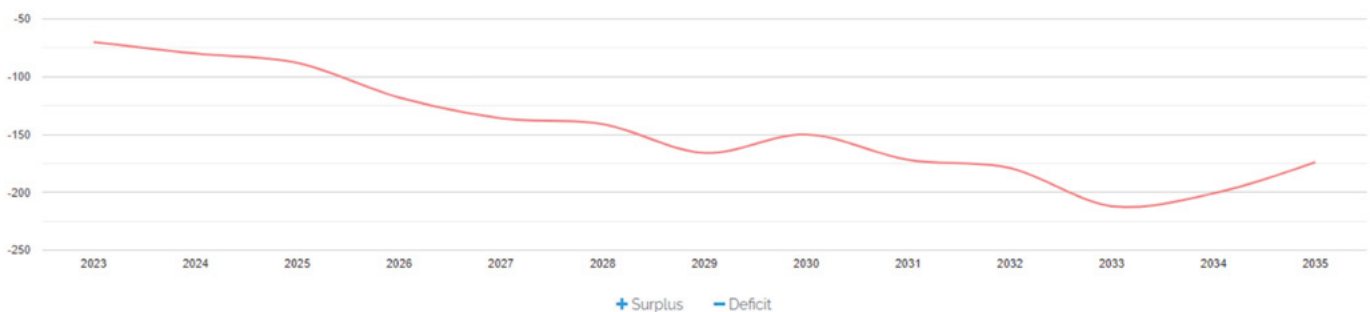
The gap analysis for the Maintenance work type indicates up to 4,500 additional people are required in the immediate short term. This figure tails off to approximately 1,000 by 2026, however when there is clearer plan this figure is likely to increase once more. In the asset type of Operations, there is a continuing and growing deficit, albeit not to the same levels as required in infrastructure, these gaps will need to be filled, and a Transport academy would certainly be one option for addressing the future demands. The gap analysis for the Operations asset type indicates the deficit continues well into the next decade.

There is a cost to not filling the potential shortages which have been modelled in this report. Looking at the number of roles identified, there could be an economic cost in the region of £1.9bn. The initial impact would be for the West Midlands, as these shortages

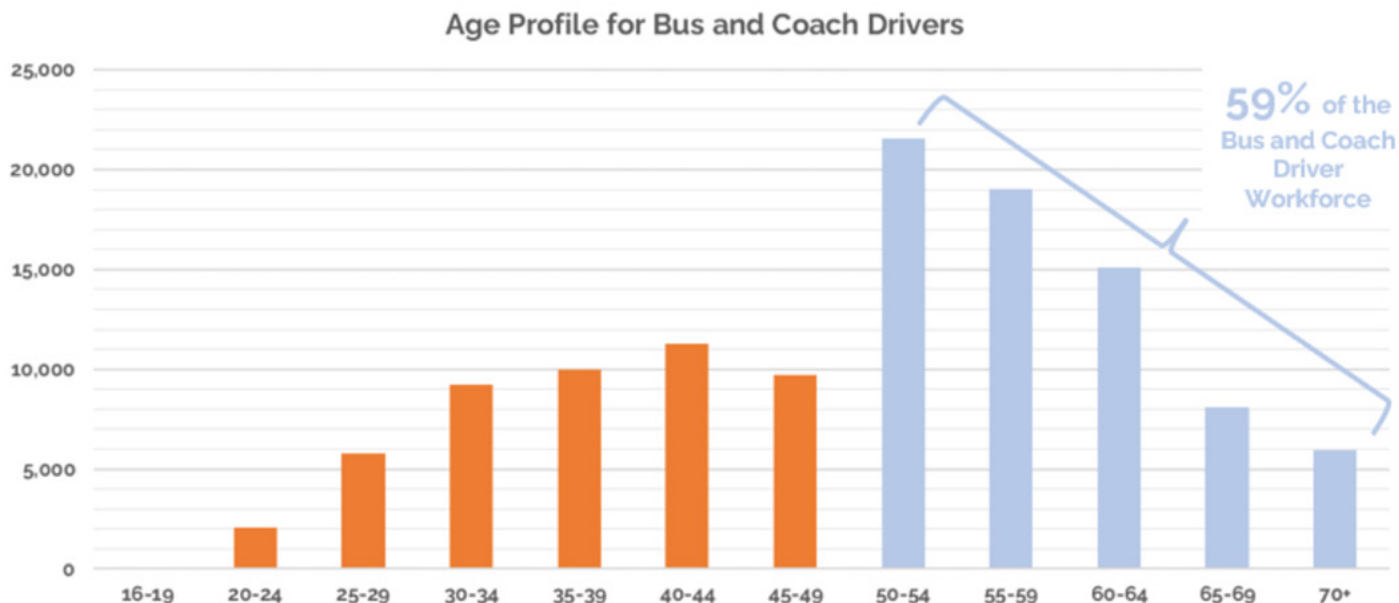
would impact on the scheme timelines and therefore the additional benefits generated by the completion of the projects could be delayed indefinitely.

Retirement of workers will have an impact on the future workforce numbers where for the Rail workforce in the West Midlands could potentially lose 24% of its workforce by 2030 when applying a retirement age of 62, equating to approximately 3,800 employees. This proportion is 13% for a scenario where the typical retirement age is 67 (2,000 employees). These values are even higher for the Road workforce, which could see a loss of almost a third of the workforce by 2030 at retiree age 62, accounting for approximately 4,800 employees, or 16% of the workforce at the older age scenario of 67 (2,500 employees).

Gap Analysis By Year

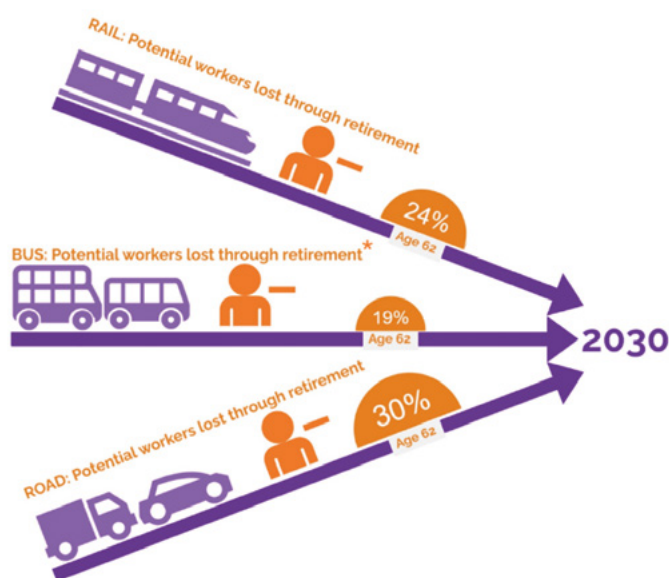


Driver workforce with a potential for almost 70,000 jobs nationally.



This can be further segregated into immediate, medium and long-term opportunities, with immediate reflecting those workers already at a retirement age of 65+, equating to 14,000 opportunities. Medium term opportunities relate to those Drivers aged 55-64, equal to 29% of the current workforce, whilst longer-term opportunities will be a consequence of those workers in the modal age band of 50-54 eventually retiring, so 185 of the current workforce. however, there is no maximum age limit for drivers who pass an over 65 medical.

Bus age data is available for the national picture and by age band only. To determine those aged ≥62, the proportion of workers aged 62, 63 and 64 in the 60-64 age categories for the equivalent Transport modes was applied to the 60-64 Bus Driver age category from the ONS Annual Population Survey data. This was then added to those in the 65 and over categories to give an approximate number of workers aged ≥62 in the National bus workforce.



6. West Midlands Investment

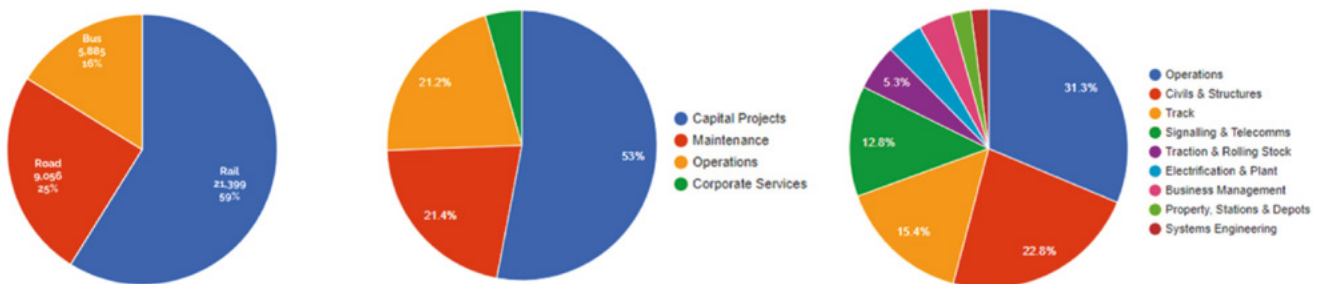
TfWM as an organisation hold responsibility for 25% of the total funds provided through Government sources. The values of nationwide Transport investment from 2022-2035 and the proportions of which are attributed to each mode are shown. All investment values in this section are displayed in £m.

The graphics show the planned investment across all Transport modes in the West Midlands from 2022 to 2035. Over half of investment can be attributed to Capital Projects, with almost even distributions of investment in the Operations and Maintenance work type.

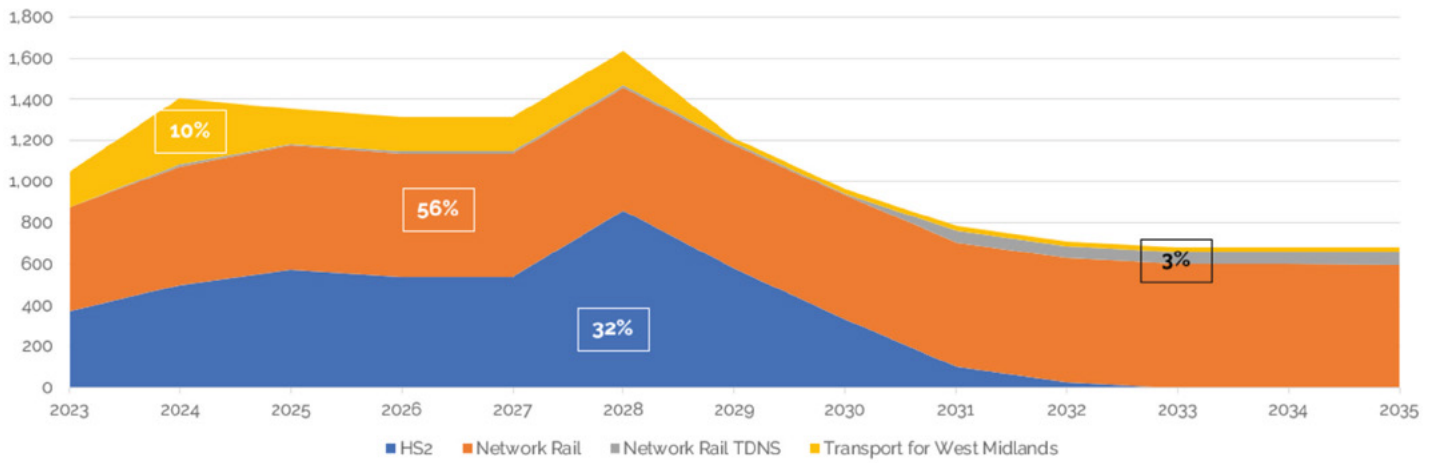
Just over 30% of investment will be in assets related to Operations, followed by 23% in Civils & Structures and 15% in Track. Over this timeframe, an average of £2.6bn a year will be spent on Transport in the West Midlands.

From a road perspective the authority is accountable for £2.25 billion and £1.25 billion from the bus investment. This provides ample opportunity for the investment to make a real difference to the community, with creation of jobs and opportunities for re-skilling and up-skilling realised.

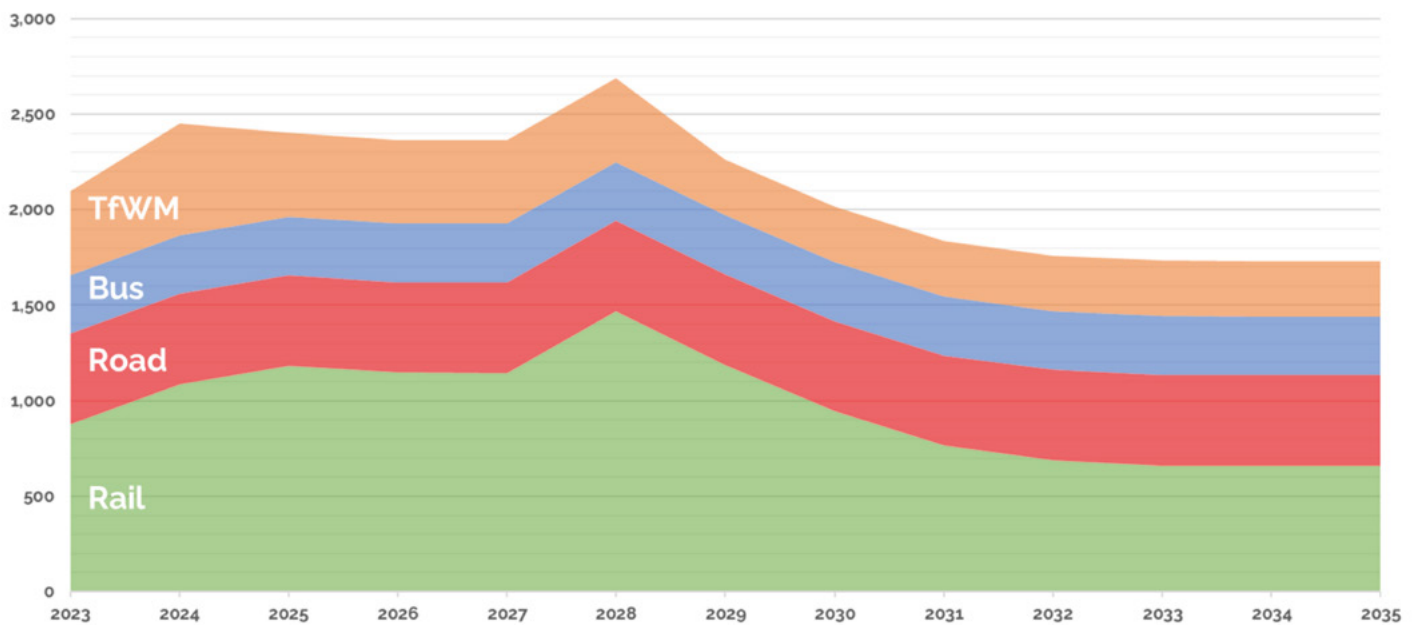
TfWM have accountability for 10% of total of allocated funds for rail. This is illustrated against the other stakeholders investing in rail in the region. Taking a more in depth look at Rail investment only in the West Midlands reveals planned investment from 2022-35 totalling just over £21 billion, peaking in 2028 and averaging around £1.5 billion annually. Over a quarter of the investment will be in the Track asset type. High Speed 2 accounts for 32% of the total value across the timeframe illustrated.



Source: NSAR's Skills Intelligence Model workforce data (2022)



The 25% TfWM accountability is illustrated against the proportions allocated to each transport modes. The investment in rail dominates the profile, but as can be seen from the rail breakdown, these funds are predominantly Network Rail and HS2.



Road investment from 2022 to 2035 in the West Midlands totals just over £9 billion, averaging around £647 million annually. The investment is predominantly in Maintenance, with approximately two thirds of the planned investment coming from this work type. Over three quarters of the investment will be in the Civils & Structures asset type.

Bus investment in the West Midlands between 2023-2035 equates to just over £5 billion, with an average of £403 million annually. Almost 80% of this investment can be attributed to Operations-type work and just over one fifth will be in Capital Projects.



7. The Skills Landscape

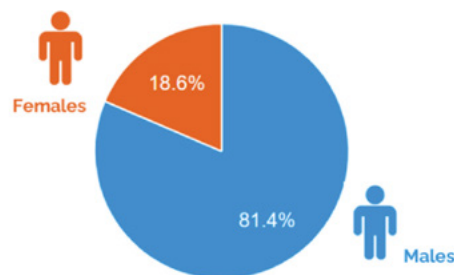
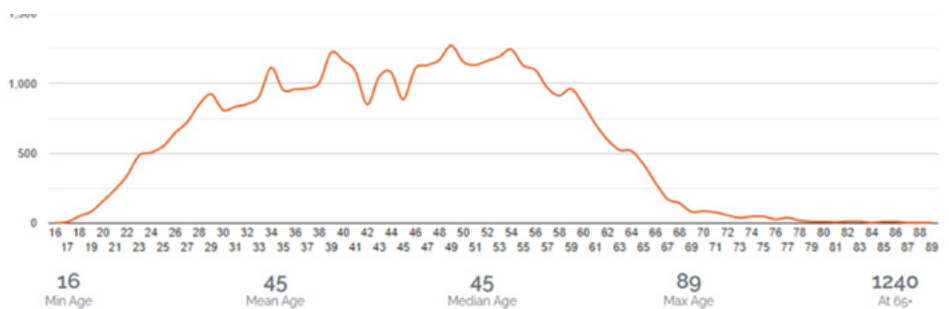
Current View

The West Midlands accounts for 10% of the total UK Transport workforce.

Demographic analysis shows female-workers comprise 19%, whilst the mean and median age of personnel is 45. The Bus sector has, by far, the most gender imbalanced workforce with just one in ten workers identifying as female. Rail fares better with 18%, whilst almost one in a quarter Road workers are female. Overall, this shows how gender imbalance is a Transport-wide problem. Bus workers also tend to be older than other Transport modes, with a mean of fifty-two compared to 45 for Road and 44 for Rail.



Selected Workforce: 41783
Total Workforce: 412755



Source: NSAR's Skills Intelligence Model workforce data (2022)

	Rail	Road	Bus
Number of employees	15,942	15,841	10,000
Female proportion	18.0%	24.0%	10.9%
Mean age	44	45	50
Median age	44	45	52
Modal age group	46-50	51-55	50-54
Modal work type	Capital projects	Capital projects	Operations
Modal asset type	Operations	Civils & structures	Operations

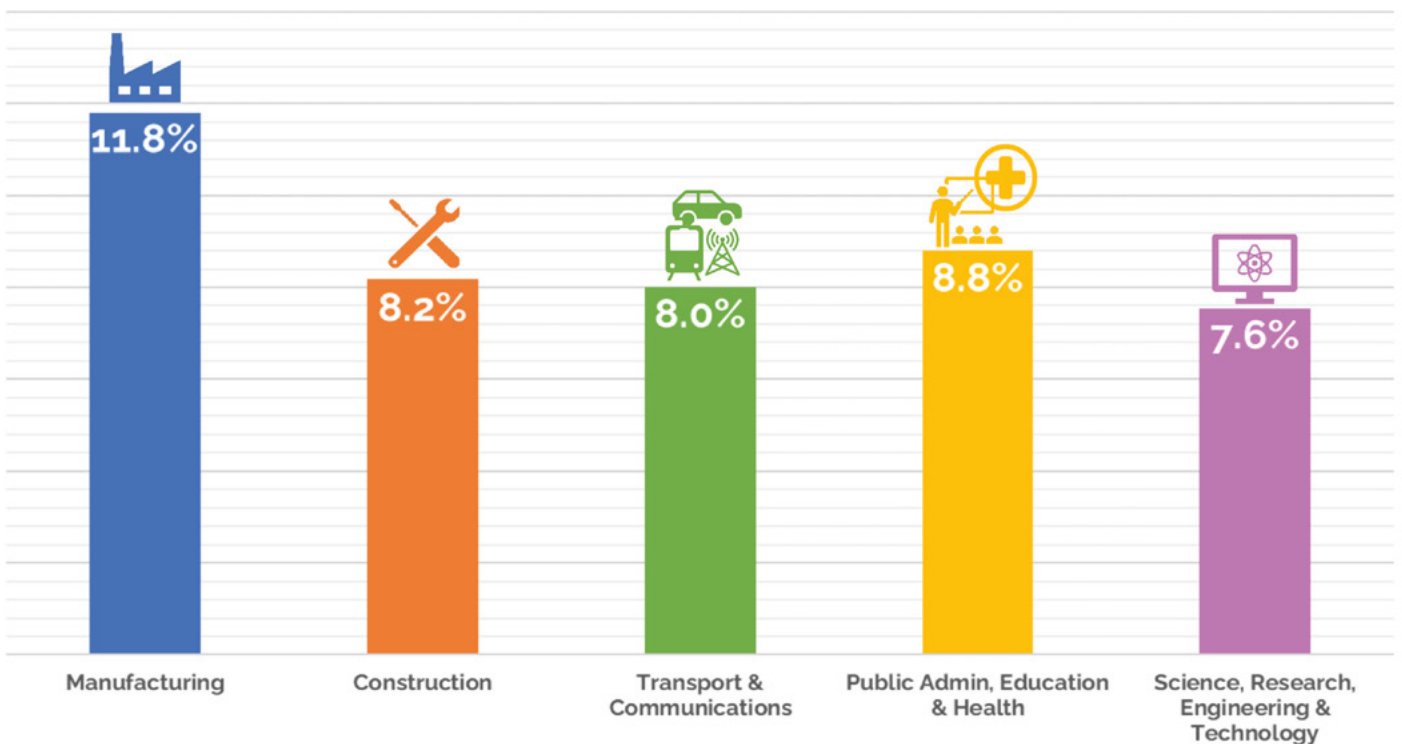
From ONS Data, there are currently 1,400 Road workers in the West Midlands region. This is a 41% decrease on the numbers ONS published for 2019. Across the UK this decrease is 18%, so the change across the West Midlands is significant. For Road Transport Drivers, ONS data shows a decrease of 5% for the West Midlands region compared to 2019. Nationally, this figure is 14%.

Across all the regions of the UK, the West Midlands has the third highest proportion of workers in Manufacturing, behind only the North West (11.9%) and the South East (12.9%). This is what the regional is traditionally known

for. It is also above average for their proportion of workers in Public Admin, Education & Health. The numbers in Construction and Transport & Communications are in line with the average regional proportions. Most of the Science, Research, Engineering & Technology workers are concentrated in London and the South East, with the West Midlands hosting less than 8% of this workforce.

According to the skills forecasting evidence, the three lowest proportions of SIC code workers are the three key areas for growth in the West Midlands region. These areas were identified as priority sectors in the Local skills plan.

West Midlands Proportion of National workers per SIC Code



8. What does this mean for the West Midlands?

With the number of job opportunities being created across the West Midlands from both Rail and Road projects, alongside the major investment in buses, now would seem like an ideal opportunity for the region to support the growth and development of its own talent. Key roles such as, Technician, Operative, Project Manager and Engineers (including, Civil, Electrical, Mechanical and Design) are where immediate shortages are evident across the three transport modes. They can all be linked to appropriate Apprenticeships standards, which would lay the foundation for the development of a Transport Skills Academy (TSA) for the region.

Without some form of intervention, there is a high risk of project delay and overrun, and spiralling budgets partially linked to wage inflation, which is already being experienced

in some core roles in the rail sector. Potential opportunities will also attract those in the neighbouring regions, especially if the compensation packages are attractive.

This would have the knock-on effect of local people missing out; however, the worst-case scenario is projects get cancelled due to appropriate skill sets not being available in the locations where they are needed.

The table here represents a snapshot of the types of digital and data roles which will be created as a result of the investment. Other roles in cybersecurity, systems engineering, software development and testing and data science, will be created, but at lower levels. The full table can be found in the accompanying slide deck.

Job Role	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Software Designer	200	340	340	370	430	540	420	320	220	170	160	160
Software Engineer	90	170	160	170	200	250	190	140	90	60	50	50
Digital Specialist	90	170	160	160	190	250	180	130	80	60	50	50
Technology Analyst	60	100	100	110	130	160	130	100	70	50	50	50
Head of Digital	40	90	80	80	100	130	90	70	40	30	30	30
Cyber Security Engineer	20	40	40	40	50	60	40	30	20	10	10	10
Systems Architect	20	40	40	40	50	60	40	30	20	10	10	10

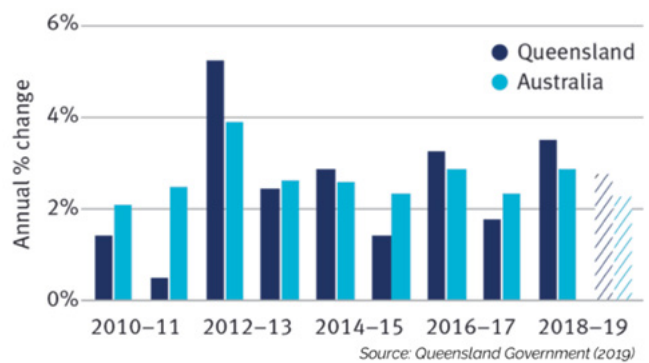
A further source of opportunity for the West Midlands will be in Birmingham hosting the Commonwealth Games this year. An investment of £778million has been invested in the Games with the aim of this being a catalyst for change around the region. Optimism can be drawn from previous regions that have hosted the Games; for example, in 2018, the Gold Coast saw an uplift of £1billion to its economy following their Games.

A strong team of organisations collaborated to maximise resource and investment to bring countless opportunities and provide lasting benefits to Birmingham and the whole of the West Midlands. As a result of the hosting the Commonwealth Games, several key transport infrastructure improvements have been accelerated, including:

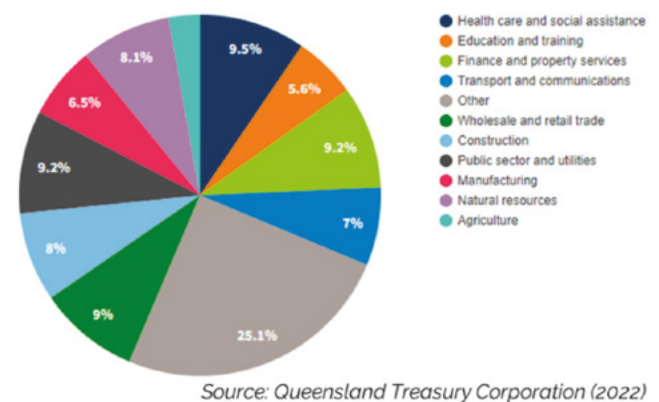
- Cycling improvements, such as a cycle hire Scheme all over Birmingham
- The West Midlands Metro Westside extension in Birmingham City Centre as well as Rail station upgrades around the region include Perry Barr, Birmingham University and Coventry
- The new “Sprint” bus routes providing quicker journey times, improving reliability, and reducing congestion to key venues, such as the Alexandra Stadium and the NEC
- Road improvement Schemes which will improve vehicle and pedestrian access
- A new transport coordination centre, as well as a new Police event control centre, which will be vital towards improving transport and safety throughout the region and will be used by all four police forces alongside CCTV Improvements in key areas. This will create a safer region for everybody during and after the Games.

These improvements demonstrate the impact a major investment can have on an entire region. Following the Commonwealth Games in 2018,

the Gold Coast saw an uplift of £1 billion to its economy. This chart below shows the annual percentage economic growth change in Queensland. What can be seen is a 2016-17 economic growth of just below 2%, which then rose to just below 4% for 2018-19 in the year of the Commonwealth Games. Hence giving the mentioned economic uplift to the economy more context. The second chart below shows the economic outputs per sector for Queensland for 2020/21. The Transport & Communications sector contributes 7% to total economic outputs in Queensland.



Queensland's economic output by sector



If the Birmingham Commonwealth Games can have a similar economic impact to that of the Gold Coast, then the residents of the West Midlands will have a real legacy to build upon.

The development of a Transport Skills Academy could be the first step to capitalising on the investment which has been made and ensuring the region as the skilled people it needs to further enhance the connectivity in and around the West Midlands.

8.1 Current Vacancies

Looking at the current vacancies (source: Adzuna) throughout the region across Transport there are approximately 6,000 roles available. Around 1,500 of these are rail related roles, with just under 3,000 are vacancies in the road sector.

Some of the common vacancy roles are:

- Warehouse Operative
- Production Operative
- Class 1 Driver
- Support Worker
- Transport Administrator
- HGV Class 1 Driver
- Transport Planner
- Labourer

Rail specific vacancies include:

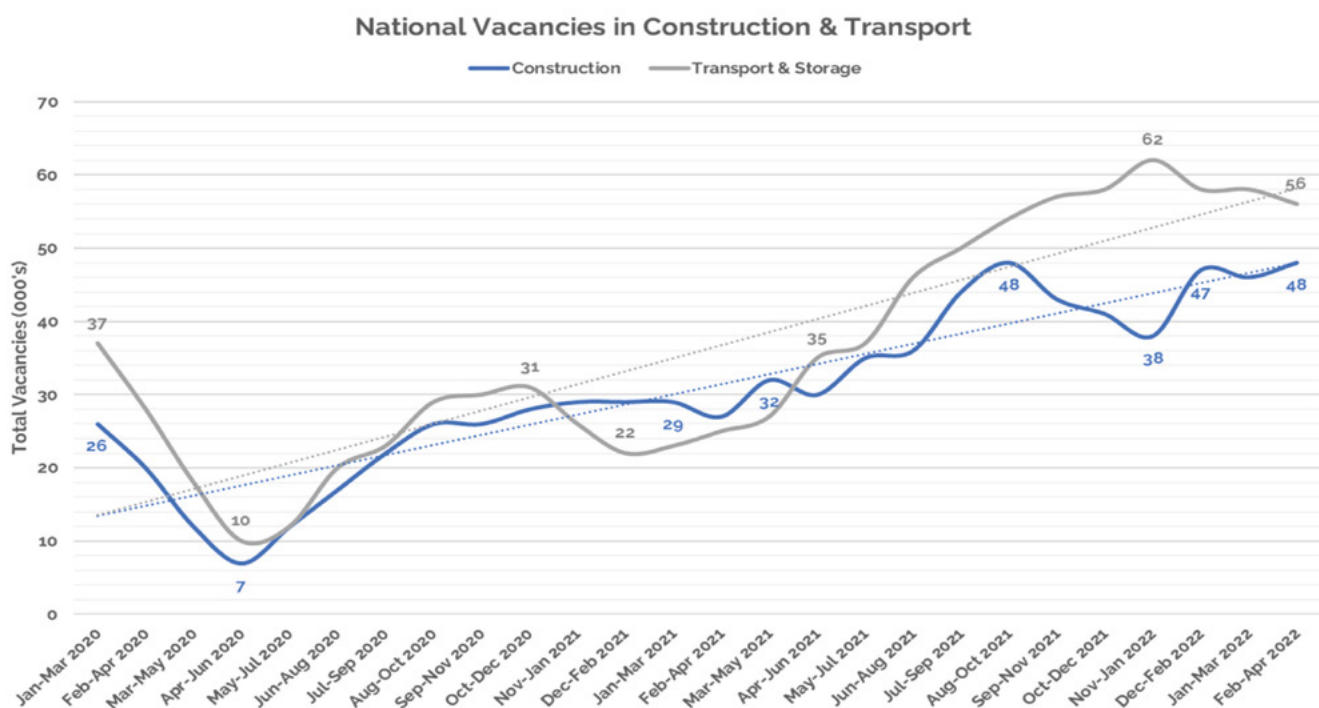
- Rail specific vacancies include:
- Senior Quantity Surveyor
- Site Engineer
- Project Manager
- Telecoms Engineer
- Labourer
- Quantity Surveyor

- Agent
- Commercial Manager
- Senior Planner

Road specific vacancies include:

- Trainee Driving Instructor
- HGV Driver (Class 1 and 2)
- Mechanic
- Support Worker
- Sales Team Member
- Customer Delivery Driver
- Vehicle Technician

The graph indicates, the number of national vacancies in the Construction and Transport sectors has fluctuated greatly over the last two years, with COVID evidently impacting the number of vacancies on offer. Year-on-year, from Jan 2020 to Jan 21, there was an overall increase in Construction vacancies by 12%, whilst for Transport, over the same period, a net loss in vacancies of 38% is observed. However, over the selected timeframe, both Construction and Transport have seen an increase in the number of vacancies by 85% and 51% respectively.



Source: ONS Vacancy Survey (2022)

9. National Overview

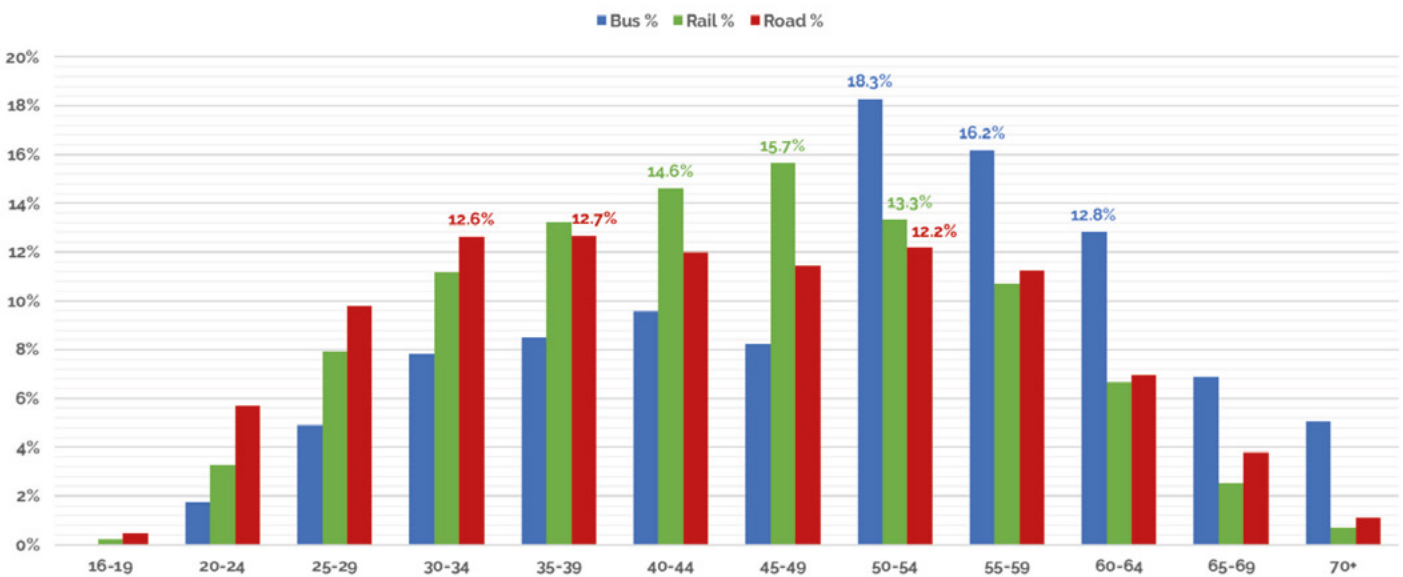
This section reviews the wider demographics giving the national view of the transport sector.

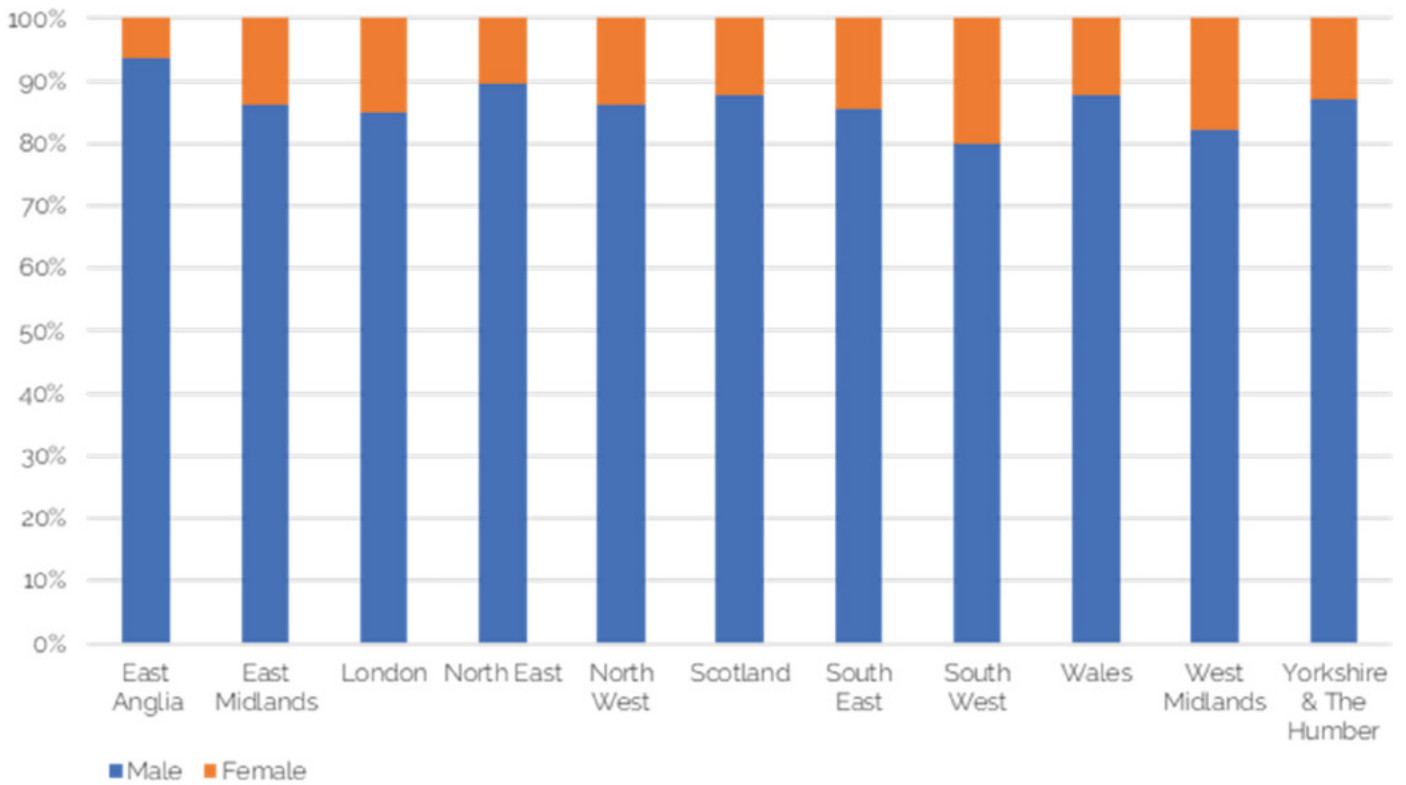
9.1 National Comparators

The Bus mode shows the oldest age profile, with almost half of all workers between the ages of 50-64. Rail has almost 45% of workers between the ages of 40-54, compared to 36% for Road. The ageing workforce should be a concern for the West Midlands as with 35% of the workforce over the age of 50, there is the potential for knowledge loss as older workers choose to retire.

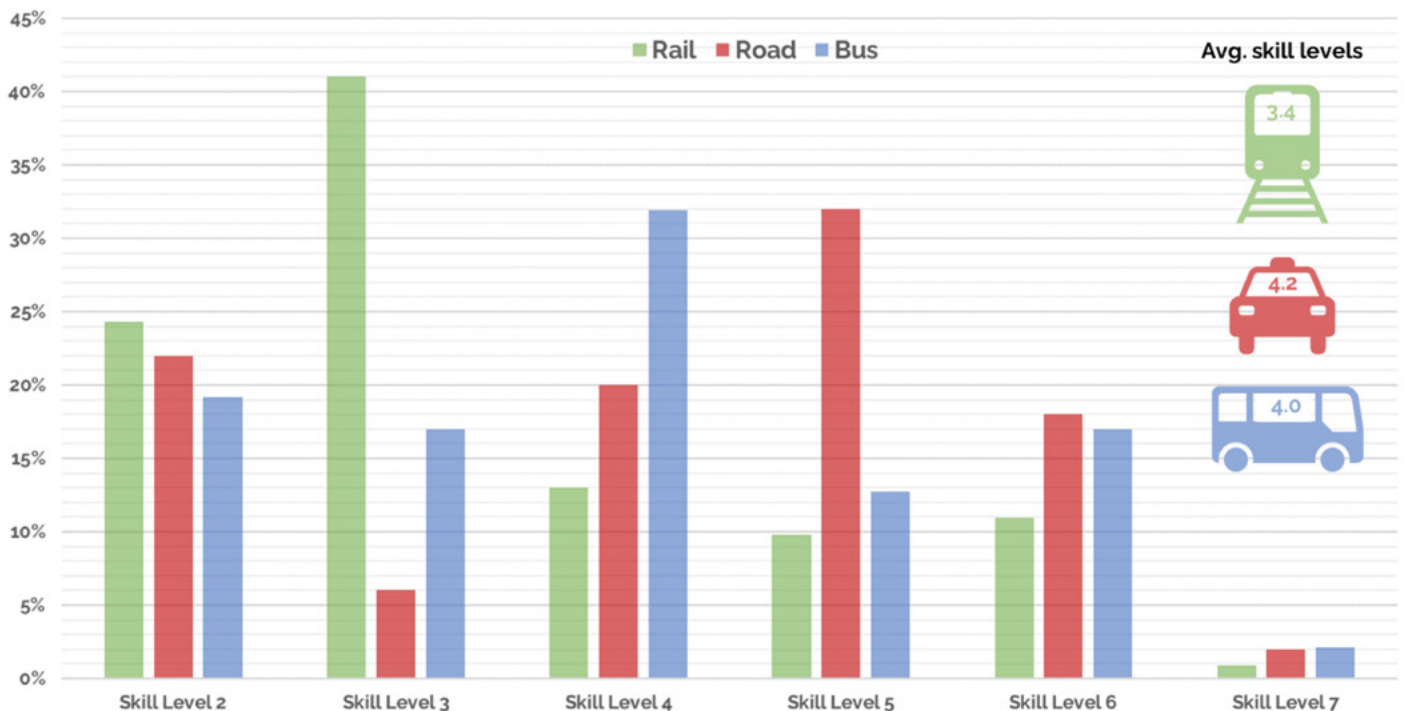
From a gender diversity perspective, the workforce in the West Midlands has a slightly higher proportion of female workers with 18% compared to 16% nationwide. The South West has the largest proportion of females in their Rail workforce, with around 20% of employees. By contrast, the region with the lowest proportion of female employees is East Anglia, with around 10%.

National Age Profile Comparisons for the Transport Sectors



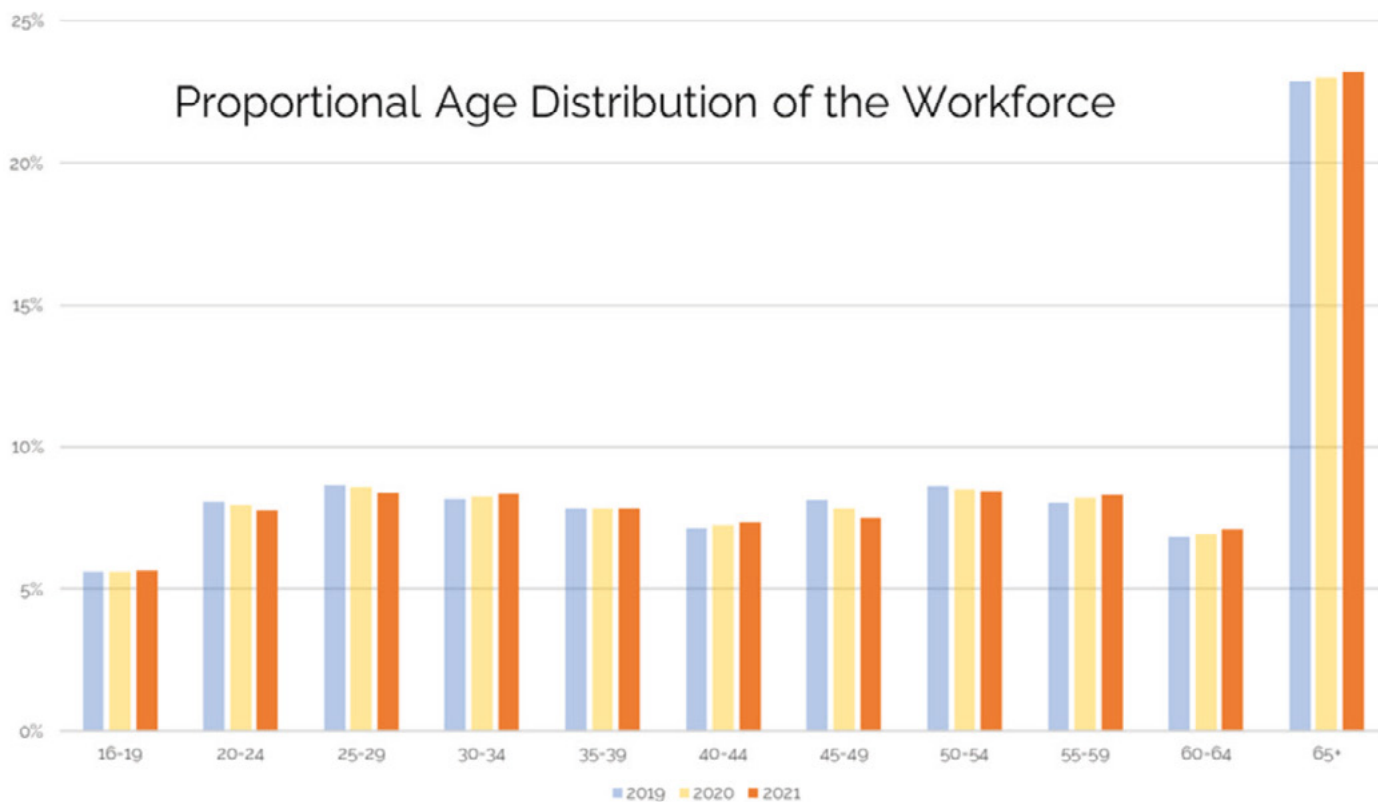


The average skills level across each transport mode, illustrates road is highest at 4.2, with rail lowest at 3.4. There is large volume of employees working as train drivers or technicians which are skill level 3 which accounts for the average level and is illustrated in the graph.



The data here shows a change of just over 6% less people in the workforce between the ages of 20 and 30. Interestingly, approximately 9% are no longer available in the age bracket of 45-55. Reasons linked to Brexit have already been intimated, but there are also suggestions that a wider impact from the pandemic is that workers in these age categories now want a different lifestyle or have had to leave work for other reasons.

Age	Proportional Change 2019-2021 UK	Proportional Change 2019-2021 West Midlands
16-19	0.9%	1.4%
20-24	-3.5%	-3.5%
25-29	-2.9%	-2.6%
30-34	1.1%	2.9%
35-39	0.1%	0.5%
40-44	3.6%	3.5%
45-49	-5.7%	-7.2%
50-54	-1.9%	-1.4%
55-59	3.2%	3.7%
60-64	5.1%	4.6%
65+	2.7%	2.0%



Given the increasing demands and levels of investment in the West Midlands, there are potentially skills here which could be harnessed for maximum returns with a carefully targeted plan.

Roles where there has been significant change in the West Midlands regions for female members of the workforce

SOC Code	SOC Code Description	Proportional Change 2017-2020
1161	Managers and directors in transport and distribution	-85.7%
3539	Business and related associate professionals n.e.c.	-77%
2135	IT business analysts, architects and systems designers	-52.9%
912	Elementary Construction Occupations	-45.5%
5	Skilled trades occupations	-43.8%
1122	Production managers and directors in construction	-42.9%
814	Construction Operatives	-38.5%
8139	Assemblers and routine operatives n.e.c.	-31.6%

ONS data indicates some specific roles held by female members of the workforce have been adversely impacted by the pandemic, with the suggestion that those in higher level positions suffered most. To prevent fall-out of this type it is important to ensure females at levels and stages of their careers are supported to enable progression.

Getting more females into the sector is a start and then a programme of support to enable them to excel and achieve would ensure parity is high on the agenda at board level.

The proportional change of EU Nationals is evident across most UK regions, with the West Midlands seeing close to a 3% in the availability of non-British employees across all sectors of the workforce.

2016-21

Region	Percent
UK	-2.7%
East	-3.7%
East Midlands	2.7%
London	-7.1%
North East	-2.4%
North West	4.3%
Northern Ireland	-8.3%
Scotland	13.3%
South East	1.2%
South West	-10.0%
Wales	-1.9%
West Midlands	-2.7%
Yorkshire & The Humber	-5.9%

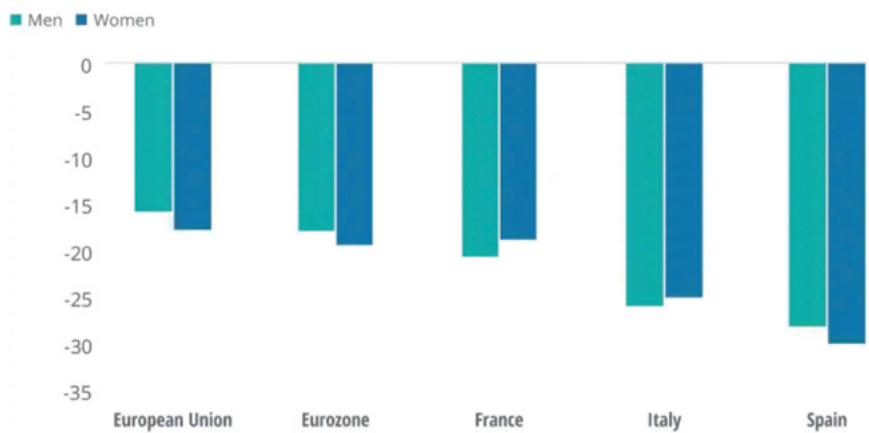
9.2 The Impact of other factors

Further research shows that female members of the workforce have been most negatively influenced by COVID, with insights from Deloitte and Eurostat showing, in the initial stages of the pandemic, hours worked by women fell more than that of men in the Eurozone with a 19.4% drop for females compared to 17.9% for men (see below).

For the UK, male unemployment rose more steeply during the pandemic, as shown in the chart below (Figure courtesy of Health Data Research Innovation gateway), possibly due to women being significantly more likely to be employed in public sector roles (particularly health, education and local government) which were largely protected against redundancies or saw increases in employment (particularly health).

Hours worked by women fell more than that of men in the Eurozone in Q4 2019–Q2 2020

Change in total hours worked between Q4 2019 and Q2 2020 (%)



Note: The data shows hours worked by those in the age group 20–64 years.
Sources: Eurostat; Deloitte economic analysis.

Deloitte Insights | deloitte.com/insights

Figure 1: Men’s unemployment rose most steeply
Unemployment rate UK population, 2019/20/21

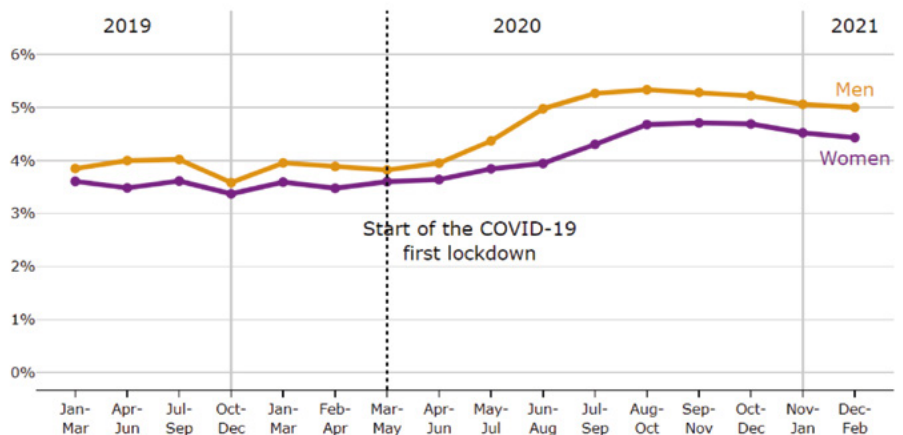


Figure courtesy of Health Data Research Innovation Gateway

The Mayor of the West Midlands has also stated at a West Midlands All Party Parliamentary Group (APPG) meeting in late 2021 that he believes the West Midlands was the most affected region in the UK by the pandemic.

Although the impact of COVID-19 has presented many challenges for the Transport sector, and specifically Bus operators, it has presented an opportunity in the fact that it has meant greater co-operation between LTAs and bus operators and a more transparent approach to the costs and revenues of running bus services. The DfT want to build on this close working to drive further recovery of the bus sector, as they aspire to get overall bus patronage back to pre-COVID-19 levels, then exceed it. Emergency state support of £1bn was put in place to ensure many bus services survived.





10. Summary

There are key points from the work undertaken here, which apply to all three sectors of transport in scope. To separate them out by mode may lose the impact which is required to drive forward further change for the region.

- The analysis shows there is a shortage of people with the right skills in the West Midlands region to undertake the proposed projects between 2023 and 2035.
- Rail specific projects such as HS2, the Midlands Rail Hub and Digital Signalling along the West Coast Mainline exaggerates that shortage during the selected timeframe.
- The modelling indicates approximately 60,000 roles will be created during the period 2023 and 2035. At peak in 2028 for Rail, this demand is approximately 6,800, however the demand is far more urgent in Road, with an additional 4,300 people needed next year. The demand for roles in the bus mode will be determined by the speed of retirees and the programme of roll-out of a fully decarbonised bus fleet.
- The modelling has calculated that a proportion of jobs are protected or moved from other sectors with the remaining proportion being new and originating from those who are unemployed or deemed to be economically inactive. Drawing on this pool of people will increase both the economic and social value generated by the proposed projects in the region.
- The demographics of the region highlight a need to improve diversity using a three-pronged approach: females, non-white representation and people aged under 30.
- Roles at Skill Levels 3, 5 and 6 demonstrate the highest demand.
- From the analysis of projects over the course of the timeframe, the West Midlands region could generate an additional £640m (2019/20 prices) in economic value resulting from jobs created through the project, although this is a conservative estimate with actual results likely to be higher if the right skills sets are in the right place.
- To address the potential shortfall, TfWM should develop its strategy to ‘grow its own’ and the idea of a Transport Skills Academy for the region would seem viable based upon the modelled demand generated in this analysis.





11. Appendices

11.1 Assumptions in the Modelling

It is important to note that post CP6 and RIS 2, unless known, all operations, maintenance and corporate services monies have been assumed to continue at the same rate throughout the time frame and classified as secured funding.

In the baseline, rail capital projects have been continued at a steady-state rate, using a four-year average from where values are known.

Capital projects for the specific modelling scenarios, have all been classified as 'unsecured' from a funding perspective, unless where known. The difference between secured and unsecured is; an investment has 'secured' status when it has been given the go-ahead and confirmation of funding available, where an 'unsecured' status relates to a project which is still awaiting final approval. No operational running costs have been applied to these projects after completion, unless known.

Wage inflation, technology changes, productivity and efficiency savings have not been modelled in this exercise.

Retirement is assumed to be at age 65, with no other attrition considered at this point in the modelling. The SIM assumes no person will be working after the age of 65 in the future forecast. Scenarios have been developed to consider the impact on retirees at 62 for this study.

11.2 Gaps by role across transport

The most prevalent roles with shortages across all modes of transport between 2023 and 2035 are illustrated here.

There is common terminology across the three modes for consistency.

Job Role	Skill level	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Technician	3	-1,145	-1,830	-1,547	-1,544	-1,877	-2,432	-1,810	-1,285	-757	-535	-443	-440	-438
Operative	2	-1,391	-1,369	-780	-789	-956	-1,237	-932	-676	-424	-311	-272	-268	-262
Project Manager	5	-1,659	-1,288	-499	-517	-618	-789	-606	-460	-318	-248	-230	-225	-217
Engineer	6	-388	-724	-712	-724	-853	-1,064	-799	-580	-358	-265	-227	-226	-226
Supervisor	3	-149	-282	-258	-256	-312	-405	-301	-212	-122	-85	-69	-69	-69
Assistant Project Manager	4	-109	-207	-189	-188	-229	-297	-220	-155	-90	-63	-51	-51	-51
Assistant Manager	4	-877	-487	-18	-24	-27	-28	-33	-30	-34	-36	-42	-40	-35
Head of Function	6	-790	-439	-16	-21	-24	-25	-30	-27	-31	-32	-38	-36	-31
Project Control Manager	5	-56	-91	-92	-94	-108	-129	-101	-78	-55	-45	-41	-41	-41
Senior Project manger	6	-32	-71	-64	-66	-79	-105	-77	-59	-39	-28	-23	-23	-23
Project Management Supervisor	3	-36	-65	-64	-66	-77	-94	-72	-53	-35	-27	-24	-24	-24
Director	7	-31	-60	-55	-55	-67	-86	-64	-46	-27	-19	-15	-15	-15
Operator	3	-28	-54	-49	-49	-59	-77	-57	-40	-23	-16	-13	-13	-13
Junior Engineer	4	-20	-40	-37	-38	-46	-60	-44	-30	-16	-10	-8	-8	-8
Tester	6	-20	-29	-30	-30	-34	-39	-31	-24	-16	-14	-13	-13	-13



Transport for
West Midlands

Skills Academy

tfwm.org.uk/skillsacademy