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INDUSTRIAL STRATEGY

Greater Manchester Local Industrial Strategy

June 2019



GREATER MANCHESTER
DOING THINGS DIFFERENTLY

NORTHERN POWERHOUSE
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Foreword

"We can see only a short distance ahead but we can see plenty that needs to be done". - Alan Turing, Manchester, 1950.

Alan Turing's words have as much relevance today as they did then. Written in Manchester when he was pioneering work that led to the modern computing revolution, he inspired technologies across the world which are transforming the way we live our lives as workers, citizens and consumers. We do not know all the ways in which our economy and society will be impacted by these global forces, but we have a clear picture of what needs to be done to ensure that the UK and Greater Manchester are best placed to take advantage of the opportunities they create.

Our modern Industrial Strategy sets out how the UK will respond to these economic and technological changes, as well as other global forces such as an ageing society and the need to transition to clean growth, while raising productivity and earnings. Local Industrial Strategies are an essential part of our plan, allowing communities to take control of their own economic futures and ensuring that the UK takes advantage of local opportunities and the drive and ambition of people across the country.

Greater Manchester has a proud history of innovation, from the world's first passenger railway, to the world's first stored program electronic computer, to the Nobel Prize winning isolation of graphene in our own time. Greater Manchester's economic leadership has gone hand in hand with social progress: the Chartists, the Trade Union movement, the co-operative movement, and women's suffrage were all born in the city-region. England's first civic university, the University of Manchester, was established in the city-region and the area is now home to four universities that play a leading role in social and economic progress.

This pioneering and progressive spirit is demonstrated today in the Greater Manchester Local Industrial Strategy. The strategy capitalises on Greater Manchester's biggest opportunities, where it can be a 21st century global pioneer at the centre of the Fourth Industrial Revolution – including in health innovation, advanced materials, and digital and creative industries. It aims to capitalise on the local ambition to be carbon neutral by 2038, to drive improvements to environmental quality while also stimulating innovation and new industries.

And it seeks to raise productivity and pay in the foundational sectors of the economy - including in large sectors such as retail, hospitality and tourism, and social care.

Crucially, the strategy builds on Greater Manchester's best asset - its people - to continue to drive social progress. It sets out a plan for communities across the cities and towns of Greater Manchester to thrive and prosper, with good jobs being created across the city-region backed up by the infrastructure, skills and networks needed to raise productivity and earnings. It aims to ensure that everyone is supported to reach their full potential, that people have hope and optimism for the future, and that the modern economy leaves nobody behind.

This focus on frontier and foundational sectors – and the connections between them – will support the creation of a highly productive, more inclusive and prosperous city-region for all residents. It also means that the strategy will deliver more than the sum of its parts. Health innovation will create new products and services Greater Manchester can export around the world, while simultaneously improving the health of the city-region's population. Carbon neutrality by 2038 will improve the environment across the city-region, boosting quality of life for residents.

And digital transformation has the potential to create better quality, future-facing jobs in all sectors of the economy.

Led by a partnership including the Greater Manchester Mayor, the Greater Manchester Combined Authority, the Greater Manchester Local Enterprise Partnership, and national government, the Greater Manchester Local Industrial Strategy builds on over 30 years of public and private sector collaboration in the city-region. The strategy's development was a genuinely collaborative effort with stakeholders, drawing on expertise and advice from a wide range of organisations including Greater Manchester's businesses and social enterprises, local authorities, universities and colleges, trade unions and community and voluntary organisations, as well as national organisations, and government departments and agencies. It is based on a robust evidence base produced by leading experts through the Greater Manchester Independent Prosperity Review, which built on the 2016 Science and Innovation Audit. It demonstrates the successes of devolution to the city-region over the past decade, and charts a course for how this partnership will continue to develop into the future.

Greater Manchester does things differently. Plenty needs to be done and we are committed to work together to do it.



Rt Hon Greg Clark MP
Secretary of State for Business, Energy and Industrial Strategy



Mike Blackburn OBE
Chair of Greater Manchester Local Enterprise Partnership



Rt Hon Andy Burnham
Mayor of Greater Manchester and Chair, Greater Manchester Combined Authority



Professor Dame Nancy Rothwell
FRS, FMedSci, President and Vice-Chancellor of the University of Manchester



Sir Richard Leese
Leader of Manchester City Council and Deputy Mayor, Greater Manchester Combined Authority



Juergen Maier CBE
Chief Executive of Siemens plc

Executive Summary

Greater Manchester's ambitious Local Industrial Strategy is designed to deliver an economy fit for the future, with prosperous communities across the city-region and radically increased productivity and earning power.

This Local Industrial Strategy represents a strong partnership between local leaders and government, setting out an ambitious plan to achieve the aspirations of the national Industrial Strategy and to continue to contribute to Greater Manchester's prosperity.

The strategy is based on the robust evidence provided by the 2019 Independent Prosperity Review, and the 2016 Science and Innovation Audit.

It has been developed from the ground up with local and national stakeholders, including business and social enterprises, trade unions, universities and colleges, and community and voluntary organisations.

Greater Manchester fit for the 21st century

Greater Manchester's success is central to the government's vision of a prosperous Northern Powerhouse.

The city-region's economy is robust, diverse and growing. With over 124,000 businesses, it is already a great place to live and work for many. Employment growth has been strong for a decade and there are reasons for optimism for the future: a growing skills base, significant rises in business start-ups, and major infrastructure investments are planned. Innovative forms of cooperation between Greater Manchester's private and public sector mean it continues to be an example of effective leadership for the Northern Powerhouse, the UK, and the world.

Greater Manchester is building on a decade of strong investment in businesses, infrastructure, and in new forms of government. Since 2009, a Combined Authority has been formed, a Mayor elected, and six devolution deals signed, giving the city-region greater influence over billions of pounds of spending. Working with government, Greater Manchester has developed the UK's largest and most successful light-rail system, invested in institutions that provide an unrivalled critical mass of graphene and 2D materials research and commercialisation expertise, and

successfully supported the long-term unemployed back into work through the nationally acclaimed Working Well programme. This Local Industrial Strategy maintains the momentum.

The Independent Prosperity Review identified that there are barriers to be overcome to improve economic performance.

These include population health, education and skills, infrastructure, innovation and leadership and management. The Greater Manchester Local Industrial Strategy will tackle these barriers, while also responding to global changes affecting us all including climate change, technological change and the Fourth Industrial Revolution, and an ageing society.

Working to agree this Local Industrial Strategy

This Local Industrial Strategy sets out how Greater Manchester will forge its future.

As well as setting out a number of specific actions, it also sets out Greater Manchester's long-term aspirations and the specific outcomes local partners are aiming to achieve. These will help guide future action and evaluate progress. These locally led and ambitious outcomes are the product of extensive consultation with local leaders, business and civil society. They are also underpinned by the work of the Independent Prosperity Review.

Where appropriate, this Local Industrial Strategy will inform how local leaders will capitalise on the city-region's unique assets and opportunities over the long-term by aiming to:

- set Greater Manchester up to be a global leader on health and care innovation - creating new industries and jobs, improving population health and extending healthy life expectancy;
- position Greater Manchester as a world-leading city-region for innovative firms to experiment with, develop and adopt advanced materials in manufacturing;
- build on Greater Manchester's position as a leading European digital city-region; enable the digitalisation of all sectors; and capitalise on the links between digital and creative industries that feed internationally significant clusters in broadcasting, content creation and media, and maximise growing assets in cyber security;
- achieve carbon neutral living in Greater Manchester by 2038, by launching the UK's first city-region Clean Growth mission.

In addition to the specific shared commitments agreed with government, this Local Industrial Strategy also details how Greater Manchester will work with a variety of local, national and international actors to deliver the strategy's ambitions.

Key to the success of the Local Industrial Strategy will be strengthening the city-region's foundations of productivity and ensuring that growth benefits all people and places:

- **Ideas:** Greater Manchester partners will continue to work with UK Research and Innovation (UKRI) to maximise investments in innovation assets in the conurbation, increasing the take-up and impact of funding to drive applied R&D to meet the strategic needs of the Greater Manchester economy.
- **People:** working in partnership to explore areas to connect national and local policies for the post-16 skills and work system in the city-region.
- **Infrastructure:** government will join the Greater Manchester Strategic Infrastructure Board. Greater Manchester will explore options for sustainable, long-term local investment into infrastructure to sit alongside devolved funding streams.
- **Business environment:** strengthening Greater Manchester programmes that support businesses to improve productivity. The leadership and management programmes provided by Greater Manchester partners will be complemented by a new Greater Manchester Good Employment Charter and plan for the 'foundational economy', to improve productivity, wages and job quality in all sectors.
- **Places:** a thriving and productive economy in all parts of Greater Manchester will be supported by addressing barriers to participating in employment and accessing opportunities across the city-region, and by Greater Manchester continuing to redesign public services around its model of unified public services.

Seizing opportunities for the future

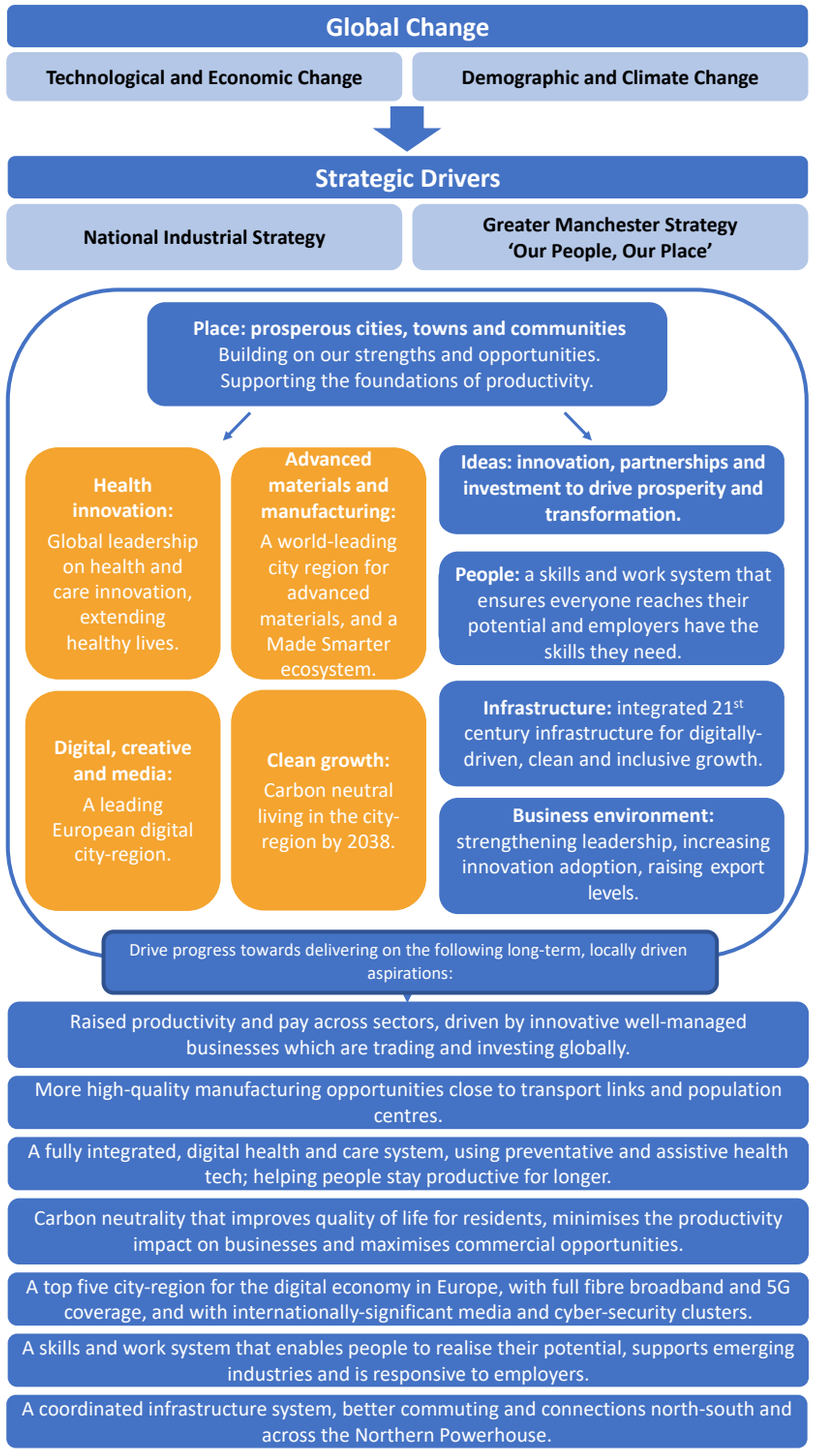
Health Innovation

The interactions between poor physical and mental health and economic growth stand out in Greater Manchester and, like all UK cities and regions, Greater Manchester's population base is ageing. By 2036, Greater Manchester will see a 75 per cent increase in the proportion of the population who are 75 and over compared to 2011.

The city-region has recognised research capabilities in health innovation and one of the largest life sciences clusters outside south east England.

Working with government, health and social care devolution has given the city-region greater control over £6bn of health and care budgets. This gives an ability for Greater Manchester to drive innovation in the health and care system to improve population health, while also creating new industries and new jobs. This makes improving the health of the local population Greater Manchester's biggest opportunity, as well as its biggest challenge.

Overview of the Greater Manchester Local Industrial Strategy



The Greater Manchester Local Industrial Strategy takes the city-region's ambitions further. It sets the ambition for Greater Manchester to be a global leader on health and care innovation, not only creating new industries and jobs, but also improving population health and extending healthy life expectancy. Greater Manchester aims to lead Britain and the world in the roll-out of new health and care technologies, and transforming health and care systems.

The Industrial Strategy's Ageing Society Grand Challenge recognises the opportunity posed by an ageing population. As the UK's first World Health Organisation Age Friendly city-region, Greater Manchester has already taken charge of capitalising on this opportunity.

This Local Industrial Strategy announces the establishment of an Innovation Partnership on Healthy Ageing, with a board comprising of representatives from Greater Manchester, the private sector and government agencies and departments. Greater Manchester will also work to identify a home for a prospective International Centre for Healthy Ageing to drive real-world testing and commercialisation of health, care and wellbeing innovations that support healthy ageing.

Advanced Materials and Manufacturing

Greater Manchester is the home of graphene and other revolutionary 2D and advanced materials. The successful commercialisation, adoption and diffusion of these materials will support an industrial renaissance in the UK and help address all four Grand Challenges. Greater Manchester has a complementary advanced manufacturing base with strengths in materials and textiles, chemicals, and food and drink, amongst others, which provides the industrial capacity to commercialise these new materials. The city-region's manufacturing industry, which employs 110,000 people and generates £8bn of economic output each year, is being transformed by the Fourth Industrial Revolution, which is driving productivity improvements through the adoption of digital technologies, artificial intelligence and efficiency improvements.

Through this Local Industrial Strategy, Greater Manchester will combine these strengths to make the city-region one of the world's leading regions for innovative firms to experiment with, develop and adopt advanced materials.

To drive progress towards achieving this priority, Greater Manchester will develop world-class sites and premises across the city-region, including the University of Manchester work to establish 'Graphene City' in the centre, and the ambitions of Greater Manchester partners for an 'Advanced Materials City' in north east Greater Manchester.

Greater Manchester will establish a new Graphene, Advanced Materials and Manufacturing Alliance to develop the city-region's advanced materials and manufacturing strategy,

with government on its board.

The city-region will build on the ongoing Made Smarter pilot to create an ecosystem that supports next generation manufacturing capabilities.

Digital, Creative and Media

Greater Manchester has the largest digital and creative sectors outside the south east, with the potential to create internationally significant clusters in broadcasting, content creation and media and cyber security, alongside new sub-sectors like e-commerce where the city-region has the potential to lead industries of the future. The explosion of the data and digital economy over the past decade is enabling growth across the economy, and has the potential to transform public services to support improved productivity. At the same time, cross-cutting digital strengths will accelerate the use of productivity-enhancing digital technologies and big data in all sectors to meet the Artificial Intelligence and Data Grand Challenge.

Through this Local Industrial Strategy Greater Manchester aims to build on its position as a leading European digital city region, to maximise growing assets in cyber security and capitalise on the links between digital, creative and other industries in the city-region that feed innovation in broadcasting, content creation and media, as well as in e-commerce, fintech and other new technologies. Greater Manchester will take a Made Smarter approach to all industries, supporting firms to adopt new digital and creative techniques and enabling the digitalisation of all sectors.

Greater Manchester will also continue to support the growth of creative and media clusters in the centre and throughout the city-region.

Greater Manchester and government have already invested in the city-region's digital infrastructure, creative and media infrastructure and committed to a new cyber security Centre of Excellence in the city-region that will create hundreds of high-skilled jobs. Greater Manchester's £3m Digital Skills Pilot, agreed at the 2018 Budget, will see the city-region and government work together to boost digital skills. Local partners will also initiate a review of local data, to identify and address barriers to making this openly available for re-use. Greater Manchester will lead a biennial international event to showcase to the world the best of the city-region's digital and creative talent, with support from government officials.

Clean Growth Grand Challenge

The transition to a carbon neutral economy is a global challenge and central to the Clean Growth Grand Challenge, which aims to ensure future growth does not come at the expense of the planet. Greater Manchester's ambition to achieve carbon neutral living in the city-region by 2038 provides a significant opportunity to deliver substantial carbon reductions, environmental and health benefits to residents, whilst also creating new green industries and jobs capitalising on Greater Manchester's research assets and large low carbon goods and services sector. This already includes 2,500 companies and employs over 45,000 people.

While significant progress has been made in improving the city-region's environment, Greater Manchester will face challenges including rapidly increasing the energy efficiency of buildings, decarbonising heating and cooling, significantly upscaling local renewable energy generation and decarbonising transport. To drive progress, Greater Manchester has already developed a 5-year Environment Plan that sets out actions to reduce carbon across all sectors of society, and is working towards a coordinated Clean Air Plan, to address poor air quality – the largest environmental risk to public health in the city-region.

Through this Local Industrial Strategy Greater Manchester is launching the UK's first city-region Clean Growth Mission to achieve carbon neutral living in Greater Manchester by 2038. Greater Manchester's 5-Year Environment Plan points to the opportunities around innovations that:

- improve the environment;
- increase the energy efficiency of homes and buildings;
- adopt new models of local renewable energy generation; and
- accelerate the implementation of energy and material efficiency measures by businesses.

Government welcomes Greater Manchester's local mission, which will support the delivery of the government's Clean Growth Grand Challenge.

Strengthening the foundations of productivity

Ideas

Innovation – the development and deployment of new ideas – is embedded throughout this Local Industrial Strategy: in health and care innovation and the development and commercialisation of advanced materials, in meeting the Clean Growth Grand Challenge and in digital and creativity. However, there are gaps in the commercialisation ecosystem and Greater Manchester's research and development spending is lower than comparable city-regions.

Increasing innovation by firms and across the public sector will be crucial to meet the Industrial Strategy target of 2.4 per cent of GDP being invested in R&D by 2027, and 3 per cent in the longer term.

Greater Manchester has already been working to reinforce the region's innovation system, by building collaboration through Knowledge Transfer Partnerships and Impact Accelerator Accounts, and coordinating activity through the Greater Manchester Innovation Board.

Greater Manchester and government will continue to maximise the impact of investments in innovation assets in the conurbation, increasing the take-up and impact of research and innovation funding in Greater Manchester and embedding connections between universities, businesses and public bodies.

Greater Manchester will also work to incentivise private sector investment in research and development. To address gaps in the innovation funding landscape, Greater Manchester will review the city-region's venture capital funding landscape in partnership with the City of London, assessing the case for an Early Stage Investment seed funding programme drawing on local funding and targeted at private investments. To exploit opportunities from latent Intellectual Property (IP) held by large UK firms and research organisations, Greater Manchester will launch a pilot programme to develop a cooperative Intellectual Property Bank to make IP available to smaller firms.

People

The city-region has made huge strides over the past decade to improve the skills base and reduce the proportion of the population without any qualifications or out of work due to ill health. However, poor health and deficits in certain types of skills and talent is restricting economic growth, and the fragmentation in the education and training system presents barriers to further progress.

Greater Manchester's ambition is to deliver ambitious improvements in skills and employment for the 2.8 million people living in the city-region. Central to this is developing a responsive city-region skills system that enables all people to achieve their full potential and provides the skills businesses need for the future.

To achieve this ambition, Greater Manchester is rolling out a new delivery model for early years based around integrated public services at neighbourhood level. Combined Authority plans to pilot free bus travel for 16-18 year olds; the interactions with employers enabled by the Bridge GM programme; the new UCAS-style careers platform; and Curriculum for Life will help all of the city-region's young people become work and life ready. Government is already working differently in the city-region through the Employment and Skills Advisory Panel and the devolution of the Adult Education Budget. Government and Greater Manchester are working together to deliver new initiatives including the Oldham Opportunity Area, Digital Skills Pilot, Self-Employment Pilot, Future Workforce Fund, National Retraining Scheme and to test new approaches to employability support.

To ensure the skills and employment system supports everyone in the conurbation, government and Greater Manchester have agreed to work together to explore opportunities to connect national and local post-16 skills and work policies in the city-region to deliver a more effective offer.

The Partnership will report within nine months; early areas for closer cooperation could include:

- ensuring greater businesses engagement in the whole system from careers to in-work progression;
- supporting institutions with their efforts to raise quality and therefore help more young people to benefit from good or outstanding learning;
- identifying what more can be done at a national and local level to support those in work on low pay to progress in work;
- supporting employers to retain older workers and those with health problems; and
- supporting more high quality apprenticeship opportunities with SMEs, securing employer commitments to provide high-quality T Level industry placements, and boosting employer investment in retraining.

Infrastructure

Greater Manchester has successfully delivered significant infrastructure improvements and investment in the past ten years. The city-region now aims to upgrade, integrate and future-proof its infrastructure, to create a 21st century city-region with extreme digital connectivity, clean and inclusive growth and – through work with others – improved access to national and global markets.

Government is already working in partnership with Greater Manchester to improve transport system performance through implementation of Greater Manchester's devolution deals, greater local influence over rail services and stations, bus reform, trialling tram-trains and regulatory reform. In line with our national Future of Mobility Grand Challenge, Greater Manchester and government will also develop a programme of transport innovation to explore digital mobility solutions. This complements existing partnership working to improve digital infrastructure in the city-region, to meet national targets of nationwide full fibre coverage by 2033 and roll-out of 5G technologies for most people by 2027.

Greater Manchester's £312.5m allocation from the Transforming Cities Fund has also supported developments to Metrolink and the 'Bee Network' (the city-region's transformative cycling and walking infrastructure plan). To continue addressing congestion and increase productivity in the short term, Greater Manchester will implement the next stage of the city-region's 2040 Transport Strategy and continue to expand the Bee network to encourage increased walking and cycling. The city-region will also work to deliver growth cases for High Speed 2 and (via Transport for the North) Northern Powerhouse Rail.

This Local Industrial Strategy announces that government will join the Greater Manchester Strategic Infrastructure Board, overseeing implementation of national and local plans and providing operational expertise to improve the performance of the city-region's infrastructure, including transport, energy, housing and digital.

To underpin the strategic and integrated approach to infrastructure the city-region has embedded, Greater Manchester will review its institutions, structures and processes to ensure continued success in delivery relating to infrastructure, and also explore options for achieving sustainable, long-term local investment to meet the ambitions set out in the draft Greater Manchester Spatial Framework.

Business Environment

Greater Manchester's economy is diverse and there is a sophisticated mix of industries and supply chains in the city-region creating huge opportunities for business growth and diversification. Frontier firms in every sector are exporting, innovating and growing investment in the city-region, but a 'long tail' of low-productivity firms exists in Greater Manchester as elsewhere, and the city-region underperforms on exports and innovation adoption.

Through the Greater Manchester Local Industrial Strategy, activity will be coordinated to radically improve the productivity of businesses across all sectors by strengthening their leadership and management capacity, increasing innovation adoption and raising levels of export and investment. This includes programmes being delivered by the Business Growth Hub; the local Good Employment Charter designed by Greater Manchester partners; and a plan to increase the productivity of big sectors in the 'foundational economy'. Together, they will improve skills utilisation, wages and job quality and management standards across the business base. A new Greater Manchester Social Enterprise Strategy will set out how the sector can support the implementation of this industrial strategy and promote good jobs in the sector.

Greater Manchester and government have worked in partnership to encourage local investment, demonstrated through the mature and extensive business support offer in the city-region and an increased local presence of the British Business Bank and the Department for International Trade, supporting work including the £400m Northern Powerhouse Investment Fund.

The Growth Hub and Greater Manchester partners will better coordinate existing business support programmes for increasing innovation and productivity, to enable more local businesses to access them, and provide more targeted support including one-to-one advice, mentoring and peer-to-peer programmes. Greater Manchester will also launch a Global Prosperity Partnerships Model to promote high value trade, technology exchange, and scale up high-growth companies to compete globally. These will be promoted by the Department for International Trade.

Places

Greater Manchester has many strengths: from the dynamic city centre, to the creative cluster around the Quays and the concentration of research excellence on the Oxford Road Corridor, to the industrial hubs in Trafford Park, Wigan, Rochdale and Bolton, and vibrant town centres across the city-region.

The Local Industrial Strategy recognises the city-region's local variation, and aims to bring prosperity to all of Greater Manchester's communities, in line with the recommendations of the Independent Prosperity Review. Each of Greater Manchester's local authorities will develop a borough-level response to the Greater Manchester Local Industrial Strategy, to identify key opportunities and barriers in each locality and ensure coordinated implementation.

The city-region will also take an integrated place-based approach to bringing forward strategic regeneration proposals in town centres and strategic sites, which integrate investment in land remediation, housing transport and other infrastructure to create sustainable employment locations. Mayoral Development Corporations will be used where appropriate to drive strategic regeneration, and Greater Manchester will continue pubic service reform.

Government will work in partnership with the city-region to deliver place-based policies that improve productivity and prosperity, including through national initiatives such as the Future High Street Fund and the Stronger Towns Fund to support and fund local areas' plans to make high streets and town centres fit for the future. Government will continue working with Greater Manchester partners to deliver the Transforming Cities Fund in ways that support the Local Industrial Strategy, and maximise the long term impact of the new UK Shared Prosperity Fund.

Introduction

Greater Manchester is known globally for its heritage and its pioneering and progressive culture, which reflects the distinctive personality of the city-region, its towns, rural communities and its people.

A rich history, including the establishment of the modern cooperative movement, and strong cultural and sporting assets give Greater Manchester a globally recognised brand that speaks of innovation, creativity and social progress. Its scientific and industrial inventions, social movements, art and design, music and sport continue to create impact throughout the world.

Greater Manchester's 2.8 million residents live in ten local authority areas: Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan. The city-region is located at the heart of the UK, with easy access to all of its constituent nations, and is only a short distance from other major cities such as Leeds and Liverpool. Manchester Airport is the UK's third largest, with international connections to over 200 countries, over 50 of which are long-haul. The strategic location, strength, and growth potential of Greater Manchester puts it in an ideal place to act as one of the core drivers of the Northern Powerhouse.

The city-region has an institutional capacity, culture of collaborative and partnership working, and delivery track-record that makes it an example to other areas in the UK. Over the past ten years, devolution has become a reality with the election of a city-region Mayor, formation of a Combined Authority, and local strategic accountability for key services such as health and social care and transport. With support and funding from the UK government, Greater Manchester has developed the UK's largest light-rail system; invested in institutions to provide a critical mass of advanced materials expertise; and successfully supported long term unemployed residents into work through the Working Well programme. This strategy capitalises on the capacity, powers and resources that have been granted to the city-region.

The Greater Manchester Local Industrial Strategy charts the next phase of the city-region's social and economic leadership and sets out a bold vision for the future.

It is focused and ambitious, building on the existing strengths in the local economy and those areas where the city-region has the potential to excel in the future. It also recognises the challenges faced and actions required to overcome them. One of these challenges is to raise productivity across all parts of the economy by improving the quality of jobs, adopting new technologies and designing new business models, including in the foundational economy.

The aim of this strategy is to boost productivity and prosperity by setting a course for capitalising on the biggest opportunities, but at its centre is a plan for building on Greater Manchester's best asset: its people. It aims to ensure all of Greater Manchester's people thrive and prosper, that everyone is supported to reach their full potential, that young people have hope and optimism for the future, and that nobody is left behind. It is also a plan for the environment, to ensure that Greater Manchester becomes carbon neutral in ways that drive local innovation, and improves quality of life and health to benefit Greater Manchester's residents.

The strategy has been built from the ground up with local and national stakeholders, including business and social enterprise, trade unions, universities and colleges, local authorities, government departments and agencies, and community and voluntary organisations.

This included a formal six-week consultation in Autumn 2018 when over 20 events were held, attended by 500 stakeholders, which resulted in more than 120 written responses.

The Greater Manchester Local Industrial Strategy represents a true partnership between Greater Manchester and government. It will support coordinated action around a coherent vision and agreed common set of outcomes. It sets clear priorities to capitalise on the research and industrial strengths of the city-region, and to strengthen the foundations of the economy in line with the policy framework set out in the national Industrial Strategy. Both government and Greater Manchester are committed to delivering this strategy over the long term. It will continue to inform the strategic use of local funding streams and, where relevant, spending and decisions at the national level.

Greater Manchester's Industrial Strategy

This strategy is agreed by government and the leaders of Greater Manchester. It is underpinned by a shared understanding of the place and its people, and is designed to enable the city-region to go further and faster towards its ambitions than ever before, while meeting key national objectives.

The Greater Manchester Local Industrial Strategy builds on the findings of the Greater Manchester Independent Prosperity Review and its detailed analysis of the local economy and the social and environmental challenges that must be overcome.

The Greater Manchester Local Industrial Strategy will not work in isolation. It complements other national and local strategies including the national Industrial Strategy and the Greater Manchester Strategy 'Our People, Our Place'. Our People, Our Place sets a clear objective to make Greater Manchester one of the best places in the world to grow up, get on in life and grow old – where there is:

- a good start in life for everyone, with children starting school ready to learn;
- excellent opportunities for young people, who are equipped for life;
- a thriving, productive, carbon neutral economy, providing good employment and opportunities to progress and develop for all;
- world-class connectivity – digitally and through an integrated transport network – within all parts of Greater Manchester;
- safe, decent and affordable housing in stronger and safer communities;
- a high quality cultural and leisure offer for everyone in a green city-region;
- better health, and quality care and support for people to live fulfilling and healthy lives; and
- an age-friendly city-region and safer and stronger communities.

Successful implementation of the Greater Manchester Local Industrial Strategy will depend on national approaches to the Grand Challenges and wider policy, but also a number of plans being developed locally to shape the future of the city-region for generations to come. These include the draft Greater Manchester Spatial Framework, the Infrastructure Framework, the 2040 Transport Delivery Plan, the White Paper on Unified Public Services for the People of Greater Manchester, the Health and Social Care Prospectus, and the 5-Year Environment Plan.

The modern Industrial Strategy sets out government's ambition to create an economy that boosts productivity and earning power throughout the UK.

To achieve this ambition, it identifies actions around five foundations of productivity – Ideas, People, Infrastructure, Business Environment and Places – which are the essential attributes of every successful economy. It also identifies opportunities grouped under four Grand Challenges – Artificial Intelligence and Data, the Ageing Society, Future of Mobility, and Clean Growth – where the UK has the potential to be at the forefront of industries of the future. The Greater Manchester Local Industrial Strategy takes an approach that builds on local strengths and develops a city-region specific approach to tackling the foundations of productivity and capitalising on the Grand Challenges.

Shared priorities between local leaders, government, and local stakeholders

This Local Industrial Strategy has identified opportunities to capitalise on the city-region's industrial and research strengths, and the ambitions and leadership of its institutions, to harness opportunities from all four Grand Challenges and create industries of the future:

- In health innovation, Greater Manchester has internationally recognised research capabilities, one of the largest life sciences clusters outside the South East, and a devolved health and care system. But the city-region also has worse health outcomes than other UK regions, such as the South East, and the barriers that poor health creates to work and progression in work are an important explanation for slow overall growth in the last decade. These factors combined create the opportunity for the city-region to be a global leader on health and care innovation and commercialisation, while also improving the health of the population, extending healthy, independent life expectancy to take advantage of the longevity dividend and address the Ageing Society Grand Challenge, whilst also reducing inequalities and increasing productivity.
- In advanced materials and manufacturing, Greater Manchester is the home of graphene and other revolutionary 2D materials which have the potential to provide new ways of addressing all four Grand Challenges. Greater Manchester's complementary advanced manufacturing base, which is being transformed by the Fourth Industrial Revolution, provides the industrial capacity to commercialise these new technologies and create a world-leading cluster in advanced materials.

- Greater Manchester has the largest digital and creative cluster outside the South East, with the potential to create international significant clusters in broadcasting, content creation and media, and cyber security. The establishment of a Government Communications Headquarters (GCHQ) hub in the city-region will anchor the growth of an internationally important cyber and digital security cluster in Greater Manchester. At the same time, cross-cutting digital strengths offer the potential to increase the use of productivity-enhancing digital technologies, artificial intelligence and big data in all sectors to meet the AI and Data Grand Challenge whilst also driving health innovation and clean growth.
- The transition to a carbon neutral economy is a global challenge and central to the Clean Growth Grand Challenge. Greater Manchester's city-region mission for carbon neutral living by 2038 is a significant opportunity to deliver environmental and health benefits to residents, while also creating new green industries and jobs capitalising on Greater Manchester's research assets and large low carbon goods and services sector. These already include 2,500 companies, employing over 45,000 people. This will be delivered through a series of Greater Manchester-led mission-orientated projects.

By focusing on these four areas this strategy will pioneer emerging sectors.

As these new industries grow and flourish, they will create significant global competence and additional value in the economy of Greater Manchester and for the UK.

The consultation process and evidence developed also stressed the importance of the foundations of productivity. The foundations will enable growth in areas of strength and opportunity, and support productivity improvements across all sectors to benefit all parts of Greater Manchester. For Greater Manchester this will mean:

- leading industrial, social and economic transformation through innovation and the spread of ideas throughout the city-region;
- designing a skills and work system that ensures all people reach their potential and employers have the skills to deliver the Industrial Strategy;
- developing a single infrastructure plan – and identifying opportunities to fund that plan - to put in place the integrated 21st century infrastructure needed for digital driven, clean and inclusive growth; and
- transforming the productivity of businesses and all forms of enterprise by strengthening leadership and management, increasing innovation adoption, digital transformation, and raising levels of exports. The Greater Manchester Good Employment Charter will engage Greater Manchester's employers, improving productivity, wages and job quality in all sectors.

Greater Manchester will also create the optimum conditions for social enterprises and cooperatives to thrive.

- supporting all places in Greater Manchester to realise their full potential by ensuring that the conditions are in place for investment and jobs growth across the city-region; and equipping people – through improvements in skills and transport accessibility – to access jobs across the conurbation.

These proposals amount to more than the sum of their parts. For example:

- By capitalising on health innovation assets Greater Manchester will improve the health of the local population, enabling residents to fully participate in the economy, progress in their careers and age well. By providing the health and social care workforce with the skills to fulfil the new roles, the skills system will enable the increased adoption of new health and care technologies, processes and services. Improving the health of the people in Greater Manchester will also improve the productivity of the city-region's businesses and economy.
- The focus on advanced materials and manufacturing in this strategy will tackle some of the key strategic challenges the city-region and UK face, developing new technologies and designing products and services such as energy storage to support carbon neutrality, or new medical devices to support older people to stay in their homes for longer.
- To be successful in this, the city-region's innovation ecosystem should: facilitate business adoption and commercialisation of the cutting-edge innovations developed in universities and innovation, research and technology organisations; provide the technical skills industry needs, and employment opportunities across the city-region; and be supported by the right infrastructure for large-scale productivity improvements.
- Likewise, an integrated approach to digital infrastructure and improving the availability of digital skills will underpin the city-region's growing digital industries and the wider digitalisation of the whole economy. Greater Manchester's digital capabilities intersect with the city-region's dynamic creative and cultural industries, as well as its leading financial professional services sector. Harnessing these capabilities will again improve the productivity of businesses across the city-region and increase inclusivity.
- The carbon neutral clean growth mission is, by its very nature, cross sectoral and it will shape all actions in this strategy.

Collectively, these priorities create a clear place-based Industrial Strategy for the future of Greater Manchester's economy.

Understanding the Greater Manchester Economy: the Independent Prosperity Review

The success of devolution in Greater Manchester has been built on a strong evidence base – particularly through the 2009 Manchester Independent Economic Review[1].

The Greater Manchester Local Industrial Strategy continues this approach. It is built on the robust assessment of the city-region's economy, and what needs to be done to improve productivity and drive prosperity that was assembled through the Greater Manchester Independent Prosperity Review ('the Prosperity Review')[2].

Key findings

Opportunities: Greater Manchester has become one of the most economically diverse city-regions in the UK, and contains a sophisticated mix of industries and supply chains. Within this complex economy, the city-region has internationally recognised research strengths and complementary industrial specialisms in health innovation and advanced materials, as also identified in the 2016 Science and Innovation Audit[3]. These are supported by other high productivity sectors that, if not nationally unique, remain important strengths. These include manufacturing, digital and creative industries, and professional services.

The Prosperity Review recommended the Greater Manchester Local Industrial Strategy focuses on the potential for these sectors to create new, highly productive activity at the frontier of innovation.

The Prosperity Review highlighted that the transition to a carbon neutral economy is a global challenge, but Greater Manchester's leadership and ambitions have the potential to drive mission-based innovation to attract investment into new green industries and bring direct benefits to residents from quality of life improvements, such as better air quality and housing, as well as easy access to enhanced green spaces and urban planting. A mission-based approach will harness creativity from across the economy including that of the digital sector alongside education and training, to drive innovation that interacts with all citizens and businesses across the city-region.

The Greater Manchester Independent Prosperity Review

The Prosperity Review was established to undertake a detailed and rigorous assessment of the current state and future potential of Greater Manchester's economy. Ten years on from the path-breaking Manchester Independent Economic Review, it provides a fresh understanding of what needs to be done to improve productivity and drive prosperity across the city-region. Independent of local and national government, the Prosperity Review was led by a panel of six experts:

- Professor Diane Coyle (Chair): Bennett Professor of Public Policy, University of Cambridge.
- Stephanie Flanders: Head of Bloomberg Economics.
- Professor Ed Glaeser: Fred and Eleanor Glimp Professor of Economics, Harvard University.
- Professor Mariana Mazzucato: Professor of Economics of Innovation and Public Value and Director of the University College London Institute for Innovation and Public Purpose.
- Professor Henry Overman: Professor of Economic Geography, London School of Economics, and Director of the What Works Centre for Local Economic Growth.
- Darra Singh: Government and Public Sector Lead at Ernst and Young.

The Panel commissioned new cutting-edge analysis of key economic issues, including productivity and pay, supply chains and international trade, innovation ecosystems and sources of global competitiveness, education and skills, and infrastructure.

The Prosperity Review confirmed Greater Manchester's broad and relatively deep base of innovation, and the findings of the 2016 Science and Innovation Audit, produced jointly by Greater Manchester, Cheshire East and government. There are four universities with main campuses in the city-region (University of Manchester, Manchester Metropolitan University, University of Salford and University of Bolton) with over 96,000 students.

The four universities together generated almost 20,000 first-degree graduates and graduate retention rates, already strong, are rising. The city-region has globally significant and recognised concentrations of research excellence in graphene and other advanced materials and in life sciences and health innovation.

Innovation and research strengths are also present in data sciences and analytics and other aspects relating to digital technologies and applications, and in energy and industrial biotechnology. The city-region's research and innovation assets and capabilities in these areas offer scope for future international excellence.

Economic challenges: While Greater Manchester has made great strides over the past few decades to become an increasingly integrated and modern city-region, there is still significant potential to raise productivity and fulfil its potential as the UK's second growth pole. High productivity firms exist in all sectors; the challenge is to move more companies up the productivity curve in both high-skill and innovative frontier sectors, as well as in the 'long tail' of low productivity businesses in the city-region, and to deliver inclusive growth across the region.

In recent years the balance of employment has shifted towards lower productivity sectors and activities, and the share of low productivity sectors in Greater Manchester (those with lower than £30,000 GVA[4] per worker at 2013 prices) increased from 38 per cent of the economy in 2005 to 42 per cent in 2015. Retail, social care, hospitality and tourism account for the bulk of low paying jobs, in what is often called the 'foundational' economy.

At the same time, average resident earnings (taking account of inflation) have fallen and the average worker earns 81p an hour less in real terms than they did in 2006.

There have also been significant disparities in the economic performance experience across the city-region. Between 1996 and 2016, total GVA grew by 83 per cent in Manchester, 54 per cent in Salford and 52 per cent in Trafford. Comparable figures for Rochdale and Tameside were 24 per cent and 8 per cent, respectively. While the disparity in GVA performance is stark, inequality on some measures has improved across the city-region: the number of neighbourhoods that are among the 10 per cent most deprived nationally has declined from 396 in 2004 to 348 in 2015. Nevertheless, social and spatial disparities contribute to the productivity challenge and tackling their causes is fundamental to the success of this Industrial Strategy.

Greater Manchester's economy in context

In the decade prior to the 2008/09 recession, Greater Manchester's economy experienced strong growth. Between 1998 and 2008 real GVA grew by 2.6 per cent per annum, broadly in line with the UK's overall average (2.7 per cent). Over the same period, real productivity grew by 1.6 per cent per annum, the same as the UK. Population decline in the city-region, which had been more or less continuous since the 1970s, started to reverse in the run-up to and turn of the millennium; a period where employment growth was also strong.

Employment growth remained strong after the financial crisis. Between 2010 and 2016 117,000 net jobs were created, a 1.4 per cent growth per annum, almost in line with the national average (1.6 per cent per annum). But the overall rate of economic growth has slowed significantly, falling to 1.5 per cent per annum between 2010 and 2016, significantly lower than the national average (2.1 per cent per annum). Real productivity growth fell to just under 0.1 per cent per annum in the city-region compared to 0.5 per cent per annum in the UK.

More recent data suggests that Greater Manchester's performance is improving, with continued strong employment growth and sharp improvements in business start-up rates. Greater Manchester is now one of the best performing city-regions outside London for business births, at 115 births per year per 10,000 working age population compared to 85 on average for core cities.

Health challenges: The interactions between poor physical and mental health and growth stand out dramatically in Greater Manchester. The city-region continues to have worse health outcomes than other UK regions and the barriers that poor health creates to work and progression in work is an important explanation for slow overall growth in the last decade. The Prosperity Review subsequently argued that human capital should be at the heart of industrial and economic strategy in the city-region.

At the same time, the devolved structures integrating health and care in Greater Manchester provide a nationally unique opportunity to find new ways to improve the health of local residents, and link health interventions with local skills provision and other services to improve progression in work and address long-term unemployment among older age groups and people with multiple or complex needs.

Greater Manchester's scientific strengths in life sciences and health innovation also create an ability to combine progress at the productivity and innovation frontier with direct health benefits for the whole of the city-region's population.

Skills and education challenges: The Prosperity Review highlights the fundamental link between skill levels and productivity. Greater Manchester has seen significant improvements in its workforce qualification profile over the last decade, but the city-region's skills profile still lags behind national benchmarks. The Prosperity Review identified many strengths in Greater Manchester's education and skills system, but concluded that it remains fragmented and is delivering less than the sum of its parts. At the moment, too many young people are learning in institutions that are not good or outstanding, and too many people lack the functional and technical skills that employers need and that are the foundations of being able to progress in work. As well as continuing efforts to improve the supply of skills, the Prosperity Review also found that productivity is being significantly limited by low demand for skilled labour and poor skills utilisation by businesses and in the public sector. The Prosperity Review recommended taking an integrated approach, like Greater Manchester and government are already applying in health and social care, to create a single education, skills and work system for the city-region.

Infrastructure challenges: The city-region's infrastructure is not currently serving the needs of the economy well. A long term, integrated approach to infrastructure planning and funding is needed to put in place the 21st century infrastructure needed for sustainable growth and to integrate the different parts of the city-region more effectively. The Prosperity Review found that parts of Greater Manchester with lower productivity, pay and living standards need infrastructure that supports both access to jobs in the centre of the city-region and improved local job opportunities. That requires an integrated transport system providing affordable, clean and versatile access to employment, education and other economic and social opportunities located across the city-region. This also requires integration between planning for transport infrastructure, homes and jobs, and other critical utilities such as digital, water, flood risk management, energy (heat and power) and green space. The Prosperity Review supported the National Infrastructure Assessment's recommendation that an integrated strategy for infrastructure needs to be backed up with stable, substantial devolved funding.

Increasing productivity, innovation and competitiveness: A key route for improving the quality of jobs in all parts of Greater Manchester will be to identify new industrial opportunities based on what different areas are currently good at and, crucially, where they have potential to move up the value chain.

Pioneering work by the University of Cambridge explored the idea of economic complexity (the number of industries in which a particular local authority has a comparative advantage), providing a powerful new way to identify future growth prospects and options to shape the trajectory of local economies. The analysis clearly demonstrates that, at a UK and Greater Manchester level, the level of economic complexity of a district is correlated with earnings per capita and a significant predictor of future earnings growth. The analysis, based on the current industry profile and skills mix in a local authority, identifies possibilities to diversify into new specialisms and increase the level of complexity in a locality. It demonstrates that there are opportunities for new, higher productivity industries in all districts in the city-region (see Figure 2).

Figure 2. Geographical distribution of economic complexity across the UK

Local authorities with a score above 1 are 'competitive' or have 'revealed comparative advantage' in a particular industry or mix of industries.



The Prosperity Review highlights that management and leadership skills within businesses are critical to capitalising on future potential and comparative strength. Improving management quality encourages demand for, and better utilisation of, highly skilled employees and improves business processes, both of which contribute to productivity improvements. The Prosperity Review argued that the city-region's network of business advice services and the developing Good Employment Charter should be aligned with national programmes and focused on critical factors for raising skills utilisation and productivity (particularly by improving leadership and management in firms).

Equally important is a business environment where all firms are enabled to innovate, including firms in the 'long tail' and foundational sectors. The Prosperity Review considered two foundational economy sectors in detail - retail and social care - which are major employers but have concentrations of low pay and low productivity jobs. Findings indicate there are opportunities to transform these sectors and move them up the productivity frontier through digitalisation and innovation, and to explore the productivity of social and cooperative forms of enterprise. The city-region already has emerging strengths in e-commerce and the use of technology in retail.

Similarly, there are opportunities in health and care for in-work progression through the integration of NHS and social care services and new technology-led innovations for care at home. As new digital technologies become ever more pervasive, foundational sectors may find themselves at the frontier of technology and innovation, creating opportunities for first-movers.

Coordination: The Panel conclude that, although investment in assets is required, most of their recommendations rely on ensuring the right powers are devolved to the city-region, and improved governance and coordination – both locally and between local and national government. Better coordination would make the economy function more effectively as a system, and lead to more effective use of existing resources by achieving a more productive balance between national and local decision-making about expenditure.

Building on Greater Manchester's strengths and opportunities



Health Innovation: global leadership on improving population health and tackling the Ageing Society Grand Challenge

Greater Manchester aims to lead the UK and the world in the roll-out of innovative new health and care solutions improving local population health.

The national Ageing Society Grand Challenge aims to secure five extra, healthy, independent years of life by 2035, with reduced health inequalities.

In order to maximise the local contribution to this national mission, Greater Manchester will focus on adopting innovations that support healthy ageing.

Good health will drive Greater Manchester forward

Greater Manchester's population is growing and getting older. The Prosperity Review confirmed that the forecast 13 per cent growth in the local population by 2040 only includes a five per cent increase in the working age population, compared to 50 per cent growth for over-65s and 100 per cent growth for over-85s. The national Industrial Strategy includes an ambition for people to enjoy 'five extra healthy, independent years of life by 2035'; to narrow health inequalities between the richest and poorest; and (via the Ageing Society Grand Challenge) to position the UK as an international leader in health, care and ageing innovation. However, the UK faces major challenges to improving population health and capitalising on the opportunities created by demographic change, including the need for significant innovation to transform the health and social care system.

In deprived areas, increasing healthy life expectancy is even more of a challenge. This challenge will be reflected in parts of Greater Manchester, as healthy life expectancy varies significantly across the conurbation. For example, Tameside and Manchester are two of the seven local authority areas with the worst levels of healthy life expectancy in the UK[5]. Poor population health (compared to the UK average) is also a very significant barrier to economic growth and productivity. Levels of worklessness for people with physical and mental health conditions in Greater Manchester remain well above national averages, and have risen among people over 50, despite falling amongst the city-region's population overall. Poor health is also a major contributor to low in-work productivity.

A global opportunity

Greater Manchester has a unique opportunity to use its research and industry strengths in health and care innovation to improve local population health, lead health and care system transformation and create nationally significant economic opportunities.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

- Continue using devolved health and social care arrangements to act as a test-bed for large scale clinical and med-tech trials, accelerating the pace of application of new technologies to manage and treat diseases, linked to core strengths in genomics, precision health, data analytics, and real world environment clinical trials, improving residents' health and developing new export orientated products and services.
- Lead the transformation of health and care systems to respond to the needs of an ageing population by establishing a Greater Manchester-government Innovation Partnership around the Ageing Society Grand Challenge, and the implementation of the NHS Long Term Plan.
- Through the Greater Manchester Ageing Hub, link the Greater Manchester health and care innovation pipeline to global economic opportunities around healthy ageing, and accelerate the pace of health and care system transformation by identifying a home for a prospective International Centre for Action on Healthy Ageing.
- Capitalise on the broader economic and innovation potential of demographic change by creating a city-region test-bed to trial close-to-market goods and services for older people, testing new opportunities and linking them to Greater Manchester's business, export and skills base.

The specific actions identified in this chapter will contribute to, and complement, the delivery of these aspirations.

The devolution of health budgets and powers creates an unprecedented opportunity to accelerate innovation adoption across the health and social care system, capitalising on the Greater Manchester Health and Social Care Partnership which brings together partners including 10 local authorities, 10 clinical commissioning groups, 12 NHS trusts and foundation trusts, and NHS England with a collective spend of £6bn per annum. Health improvement is consequently one of Greater Manchester's greatest opportunities and one of its most significant challenges.

The model introduced by Health Innovation Manchester provides an integrated academic health science and innovation system that is linked



to the demand for innovation in the city-region's health and care system, ensuring a pipeline between supply and demand to drive new ideas, products and services. All of Greater Manchester's NHS trusts, clinical commissioning groups and councils are part of the Health Innovation Manchester network-embedding a city-region approach to innovation priorities and need that is accelerating R&D, clinical trials, real world testing and the adoption of innovations with a stable and diverse population of almost three million. This gives Greater Manchester the tools to bring specialisms in fields like precision medicine, genomics, health informatics and real world clinical trials to bear on clearly defined health and care priorities while driving new technology industries that can be scaled up and the technology exported. Greater Manchester has already attracted major new investment into the city-region by providing the certainty industry partners need to develop new medicines, technologies, products and services.

Greater Manchester will continue to use its devolved health and social care arrangements, excellence in health research and thriving life sciences and digital industries to act as a test-bed for large-scale clinical and medical technology trials, accelerating the pace of application of new technologies to manage and treat physical and mental health problems, and integrate health and social care through digitalisation. This will drive innovation linked to the city-region's core strengths in genomics, precision health, data analytics, and real world environment clinical trials, benefitting Greater Manchester residents' health and creating new businesses, technology industries and inward investment.

Health and Care Innovation Assets

Greater Manchester has one of the largest life sciences clusters and centres of excellence in health research outside south east England. This includes excellence in precision medicine, health informatics, and bringing clinical research excellence and innovation into practice. The thriving sector includes companies specialising in med-tech, molecular diagnostics, biomarker industrialisation, bioinformatics and pharmaceutical manufacturing. Academic-industrial partnerships are accelerating clinical-industrial collaboration and attracting major companies and platform providers. The major biomarker discovery campus developing around the recent investment from Qiagen will embed links between digital, precision care and economic development. These industries are supported by an excellent digital, bio-technology and innovation service sector and specialised business support, incubation and post-incubation facilities through science parks, business schools and enterprise centres.

This is complemented by cross-overs with a deep local understanding of the power of digital technologies to transform traditional approaches to maintaining health and treating ill-health. Strengths in data (including big data), analytics, data science, computer science, artificial intelligence, and imaging are leading to innovation in disease prevention, diagnosis, treatment and in non-clinical care. One example is the NorthWest EHealth Salford Lung Study, an internationally recognised exemplar for clinical trials. Salford Royal is one of 16 NHS acute Global Digital Exemplars, and is one of the most mature digital health trusts in the UK. The Connected Health Cities project led by the Farr Institute demonstrates the power of data to change care delivery models and develop digital tools valued by patients and professionals.

Health and Care Innovation Assets (continued)

This type of innovation is supported by the digital infrastructure provided by the shared Greater Manchester care record (part of the Local Health and Care Record Exemplar programme): a single data exchange platform; emerging digital innovation hub; digital accelerator programme; and the legacy of shared data assets created by Connected Health Cities and CityVerve.

The city-region also has internationally leading strengths in ageing research, including the Manchester Institute for Collaborative Research on Ageing (MICRA) which contains over 300 researchers, international experts, and 60+ research projects and programmes spanning humanities, biology, medicine and health, and science and engineering.

Following the Science and Innovation Audit, there have been further developments in the health innovation ecosystem, including activity to develop The Pankhurst Centre: a hub for translational research to link clinical research with materials science, informatics, social sciences and computer science to address major health problems, and generate new start-ups and high-growth clusters.

These assets include cross-sectoral partnerships. One example is the Manchester Institute of Health and Performance - a partnership between City Football Group, Sport England and Manchester City Council, which aims to advance sports medicine and science to improve the health of the community.

One of the best places in the world to grow up, get on and get old

The World Health Organisation has designated Greater Manchester the UK's first Age Friendly city-region. Greater Manchester is already deploying innovative programmes to prevent ill-health in middle and older age and keep people in work, active, and encourage healthier consumer habits. Programmes like Living Well at Home will reduce the need for long-term residential care and improve care outcomes using the transformational potential of new assisted-living technologies. These technologies also offer routes to transforming social care careers. The Greater Manchester Ageing Hub coordinates activity across the city-region's universities, public services, transport, community and voluntary organisations, and business, and through a formal partnership with the national Centre for Ageing Better. This includes ongoing work to realise the economic opportunities of ageing, in collaboration with the International Longevity Centre, and identifying how to design transport infrastructure and services that support living well in later life. Greater Manchester's Ageing Strategy sets an ambition to become a global centre of excellence for ageing, pioneering research, technology and new ideas. The city-region is a European Innovation Partnership on Active and Healthy Ageing "Reference Site", denoting its inspirational ecosystem and the creative and workable solutions being developed in the area.

World-class ageing research centres in the city-region include the University of Manchester Institute for Collaborative Research on Ageing (MICRA), Health Innovation Manchester, the Dermapharmacology Unit Partnership between University of Manchester and Salford Royal, the Manchester Biomedical Research Centre, and the new Older People and Frailty Unit. Government has access to the innovation and learning coming from Greater Manchester through the National Institute for Health Research (NIHR)-funded 'Older People and Frailty' and 'Health Care Systems and Commissioning' Policy Research Units based in the city-region.

Greater Manchester will continue to capitalise on its scientific, research and digital assets, integrated health and care innovation system, and strong track-record of successful partnership working with government to transform the capacity of places to respond to the needs of an ageing population, increase economic growth and productivity, and build the social and economic foundations for ageing in place.

To spearhead the transformation of health and care systems in response to the needs of an ageing population, Greater Manchester will establish an Innovation Partnership around the Ageing Society Grand Challenge, with government sitting on its board. This partnership will develop a credible and robust innovation pipeline that adds value to the existing health and ageing research and innovation asserts in the city-region.

This pipeline should also meet the ambitions of the NHS Long Term Plan, including those around digitally enabled care, and local transformation priorities. The partnership will also develop practice development programmes in coordination with the Accelerated Access Collaborative, provide industry engagement, accelerate R&D, and support innovation adoption and diffusion. The partnership will also have a specific focus on how innovation can improve the productivity of the social care sector. The partnership's board will comprise of representatives from Greater Manchester (including the Health and Social Care Partnership, Health Innovation Manchester and the Greater Manchester Ageing Hub) and government (including BEIS, DHSC, the Office for Life Sciences, and UK Research and Innovation (UKRI)) to link national and local priorities. It will invite the National Innovation Centre for Ageing to attend to ensure the Innovation Partnership complements leading work elsewhere in the country.

A home for health innovation and healthy ageing

To link Greater Manchester's health and care innovation pipeline to global opportunities around healthy ageing, Greater Manchester will identify a home for a prospective International Centre for Action on Healthy Ageing (ICAHA), to complement the National Innovation Centre for Ageing in Newcastle.

Taken forward locally, the ICAHA will have a primary goal to drive real world testing and commercialisation of health, care and wellbeing innovations that support healthy ageing.

The Centre will:

- drive innovation that improves population health, increasing wellness by preventing premature frailty and changing behaviour to reduce the number of people over 50 out of work due to ill-health;
- focus on innovation that supports people to live well at home, reducing the need for long-term residential care and transforming social care careers through new models of care and treatment outside clinical settings. This will capitalise on the transformational potential of new assisted-living technologies and develop careers in care with progression through education and apprenticeships, enabling people to keep well and live independently in their own homes and communities; and
- work with the National Innovation Centre for Ageing to coordinate programmes that accelerate the commercialisation of ageing products and services nationally and internationally, and enhance the UK's position as a global thought leader and place to do business for healthy ageing. ICAHA will include a focus on parts of Greater Manchester that experience some of the most significant health inequalities in the UK, such as Rochdale, Oldham, Tameside, north Manchester and Wigan.

The Innovation Partnership and ICAHA will complement the wider work already underway to focus on the social and economic opportunities created by demographic change. Greater Manchester is exploring options to create a city-region test-bed to trial and diffuse close-to-market goods and services for older people. Independent work is underway, reporting in summer 2019, to define this opportunity. The test-bed will work in partnership with other centres of expertise across the Northern Powerhouse to trial new neighbourhood-scale approaches to ageing, test new goods and services targeted at the over-50s, and promote independent living including in fields such as smart devices, housing and transport. Greater Manchester will put calls out to industry for ideas and solutions to health and care challenges in areas including digital health, housing, care, and assisted living. The test-bed will include programmes for SMEs and the social economy, to drive the new business models and social innovations that are needed to design and adopt new products and services.

Advanced materials and manufacturing: building tomorrow's technologies and industry today

Greater Manchester will aim to be a world-leading region for innovative firms to experiment with, develop and adopt advanced materials and Made Smarter technologies in manufacturing, facilitating the design of new products and processes. It will support other national centres to build the UK's leadership in tomorrow's technologies.

Pioneering 2D materials

Greater Manchester is the home of graphene – an international icon of UK innovation first isolated in Manchester in 2004. Graphene, alongside many other new two dimensional (2D) materials being developed, has the potential to disrupt all industries and provide new ways of addressing the Grand Challenges facing the UK. Applications range from new battery technologies that will radically improve energy storage, to resilient and lightweight materials that will reduce emissions from the transportation system, cleaning water and spent fuels, and delivering new medical devices and materials that will improve quality of life into older age. The potential applications are almost limitless, providing an opportunity to cement Greater Manchester's global position at the centre of graphene and 2D material research and commercialisation for the benefit of the city-region, Northern Powerhouse and UK economy.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy. Greater Manchester will:

- Develop an ecosystem to commercialise graphene and other advanced materials for the benefit of the Greater Manchester and UK economy, contributing to the delivery of all four Grand Challenges, through the actions set out in this Local Industrial Strategy.
- Strengthen the city-region's advanced materials and manufacturing clusters, ensuring 'Graphene City' in the former North Campus of the University of Manchester is networked with industrial and technology parks across Greater Manchester and leading technology parks across the UK.
- Develop 'Advanced Materials City' in the M62 North East Growth Corridor, focused on opportunities in Greater Manchester's manufacturing base, attracting significant inward investment and giving the market for 2D materials manufacturing a physical home in Greater Manchester.
- Improve productivity in Greater Manchester's manufacturing base by adopting Made Smarter approaches to accelerating the development, design, adoption and creative application of digital technologies, Artificial Intelligence, environmental technologies, and graphene and 2D materials, thereby revolutionising manufacturing processes and accelerating commercial growth.

The specific actions identified in this chapter will contribute to, and complement, the delivery of Greater Manchester's long-term aspirations.

The city-region is a global hub for transitioning breakthrough graphene and 2D materials science into new and disruptive products and applications. This lab-to-market leadership follows significant investment by government, UKRI, industry and Greater Manchester in state-of-the-art facilities and infrastructure to create a unique ecosystem and supply-chain in the city-region. This includes the National Graphene Institute, the Graphene Engineering Innovation Centre, and the Henry Royce Institute for Advanced Materials Research and Innovation.



Supporting Britain's economy

These assets sit at the heart of a wider research centre of excellence in advanced materials and manufacturing, including: the BP International Centre for Advanced Materials, the Cockcroft Institute, and nuclear and industrial biotechnology excellence at the University of Manchester; centres for advanced materials and surface engineering, computational intelligence, big data, and industrial digitalisation at Manchester Metropolitan University; the Institute for Materials Research and Innovation at the University of Bolton; and specialisms in robotics, artificial intelligence and automation at the University of Salford. The city-region's universities are also a pipeline of manufacturing talent: producing 5,000 engineering, maths and science graduates per year.

From lab to market

Greater Manchester continues to have a strong manufacturing base, employing over 110,000 people and generating £8bn of economic output each year. Made up predominantly of small and medium-sized enterprises (SMEs), the city-region has specialisms in advanced materials, textiles (which has a strong concentration in north east Greater Manchester), chemicals, food and drink (with a strong cluster in Wigan), and is developing capabilities in industrial digitalisation. The wider north west region is a substantial manufacturing and advanced engineering cluster, with specialisms in aerospace and energy and clear potential to absorb graphene and advanced materials. Greater Manchester also has one of Europe's largest industrial parks in Trafford Park. New strategic sites for manufacturing activity have been identified in the draft Greater Manchester Spatial Framework, which will provide a step-change in the market offer for industrial sites and provide space for the large-scale production and manufacturing of advanced materials. Plans are being progressed by the University of Manchester to create 'Graphene City' in the new innovation district at the former North Campus of the University of Manchester, which includes three and a half million square feet of new buildings and facilities. This will act as a magnet for inward investment and spin-outs.

The largest new growth area in Greater Manchester is the M62 North East Growth Corridor, which cuts across the boundaries of Bury, Oldham and Rochdale in the north east of the city-region and also has the potential to be a magnet for inward investment to the UK. Subject to consultation, development in this corridor potentially includes over one million square metres of new mixed employment space. Logistics centres will sit alongside advanced manufacturing, advanced materials production, renewables and green technologies. This area has already been identified by government as a 'High Potential Opportunity' pilot area for developing and scaling up production of lightweight and specialist materials for the transport sector, particularly light alloys, technical textiles, coatings, graphene and 2D

materials, and materials for demanding environments. Part of the development in the M62 North East Growth Corridor will be a new specialised 'Advanced Materials City', focused on accelerating opportunities in Greater Manchester's advanced materials manufacturing base. The ambition is that this space will include specialist premises and facilities to pilot particular applications of advanced materials aligned with Greater Manchester's manufacturing strengths and UK strategic priorities, integrated with digital and transport infrastructure.

Its development will be supported by technical expertise and investment from both national and local sources. As part of the Advanced Materials City development, Greater Manchester partners will develop links to the university sector, local colleges and schools to complement and improve the existing skills base.

Cutting-edge manufacturing

For the whole of Greater Manchester's manufacturing base, digitalisation of production, including the increased use of artificial intelligence and automation, presents significant opportunities to increase competitiveness and efficiency. Following the ground-breaking Made Smarter Review, the wider north west is now piloting a 'Made Smarter' adoption programme to support SMEs in the manufacturing sector to develop and adopt digital and environmental technologies to boost productivity, revolutionise manufacturing processes and accelerate commercial growth. This will identify how a Made Smarter approach can enable increased productivity across the whole manufacturing base by encouraging the development, design, adoption and creative application of digital technologies, artificial intelligence, environmental technologies, and graphene and 2D materials. Greater Manchester's ambition is to create a world class 'Made Smarter' ecosystem, building on the ongoing North West pilot programme, to support all local manufacturers to become leaders in the Fourth Industrial Revolution.

Leading industry

Greater Manchester's global assets in graphene and advanced materials, complementary research strengths, industrial base and development opportunities provide enormous potential to lead the UK effort on graphene and advanced materials commercialisation. There are clear opportunities to connect the local manufacturing base to the potential applications of graphene and 2D materials, and other innovations in universities, to drive industries of the future across the city-region. Greater Manchester will establish a new alliance to coordinate this multi-faceted opportunity to drive faster commercialisation activity across a wide range of sectors, based on independent research on the lessons learned from the graphene commercialisation experience so far.

The Greater Manchester Graphene, Advanced Materials and Manufacturing Alliance (GAMMA) will develop the city-region's advanced materials and manufacturing strategy.

The alliance will address gaps in the commercialisation and diffusion ecosystem for graphene, advanced materials and industrial biotechnologies.

GAMMA's remit will be to:

- exploit Greater Manchester's strengths by identifying opportunities to apply graphene and advanced materials technologies to address all four Grand Challenges: Ageing Society; Artificial Intelligence and Data; Clean Growth and the Future of Mobility;
- increase innovation, productivity and commercial growth in the advanced manufacturing sector through the roll out of Made Smarter, encouraging firms to adopt new technologies, such as advanced materials, digital technologies and artificial intelligence;
- drive innovation and productivity by ensuring that the advanced technical and design skills required are available to support manufacturing growth across the city-region;
- support the development of advanced manufacturing and materials sites across Greater Manchester, including ensuring that 'Graphene City' at the University of Manchester is engaged with local plans for an 'Advanced Materials City', as well as other industrial and technology parks across the city-region and the UK;
- advise on inward investment and marketing activity for the sector, including identifying potential target partners; and
- identify wider barriers to advanced materials commercialisation and manufacturing growth - such as access to finance and the availability of specialist premises and sites – and take forward local actions to address them.

GAMMA will be led by a board with representatives from Greater Manchester's universities, government, the Local Enterprise Partnership, GMCA, Growth Company (Business Growth Hub and MIDAS), UKRI and the private sector.

GAMMA will invite a strategic relationship with the Advanced Materials Leadership Council, providing a mechanism to coordinate local and national activity in collaboration with other UK assets, such as the University of Cambridge's Graphene Centre, the CPI's Graphene Application Centre and the NPL's National Graphene Metrology Centre.

Digital, Creative and Media: globally recognised clusters and the digitalisation of all sectors

Greater Manchester will be a leading European digital city-region, with the infrastructure, skills, and networks needed to digitalise all sectors, and internationally significant clusters in broadcasting, content creation and media, and cyber security.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

- Sustain and grow the internationally significant digital, media and creative industry clusters in the regional centre.
- Revitalise town centres and high streets by supporting creatives, digital entrepreneurs, and innovators to start or scale a business, social or cooperative enterprise.
- Grow our existing and emerging sector strengths in cyber security, broadcasting, content creation and media, software development, digital telecoms, fintech and e-commerce.
- Underpin cross sectoral growth by developing a digital skills pipeline and taking a Made Smarter approach to all industries, supporting firms across Greater Manchester to adopt productivity-enhancing digital technologies.
- Transform the local economy and public services by digitally enabling citizens and making more publicly held real-time open data available for anyone to use.

The specific actions identified in this chapter will contribute to, and complement, the delivery of those aspirations.



A strong base

Greater Manchester has the largest digital and creative sector outside London. National assets based in the city-region include MediaCityUK and The Factory, delivered through significant government investment. Innovation and creativity are synonymous with culture and a Greater Manchester Culture Strategy is being developed to create the conditions for creativity to flourish in every part of the city-region, enriching the lives of all residents and protecting, diversifying and growing Greater Manchester's unique culture, heritage strengths, assets and ecology.

Government and the creative industries sector, through the Creative Industries Council, have agreed a sector deal that includes a range of activity to boost creative sector growth which Greater Manchester will benefit from. This includes the location of a regional hub of Tech Nation (which supports digital companies and start-ups) in Greater Manchester; successful projects as part of the £33m Audience of the Future Challenge, via the Industrial Strategy Challenge Fund; and a £4m Creative Scale Up programme to support creative firms in three English regions including Greater Manchester.

The Science and Innovation Audit and Prosperity Review identified the digital sector as an important and growing strength in Greater Manchester's economy.

In 2018 the digital sector accounted for around 70,000 jobs and produced £3.4bn GVA in Manchester alone. This reiterated the 2016 Science and Innovation Audit's finding that the city-region has a "fast-growth" opportunity in digital as a key enabling technology across all sectors, with specific opportunities in 'big data', smart cities and the Internet of Things, which intersect with the mature creative, digital and media economy in the city-region. Greater Manchester's cultural and creative output, including its music, art and design, and new media content, is recognised around the world and is deeply rooted in the city-region's identity and the ways its people work. Growth in the digital sector and its inter-connections with creative and media assets will continue to propel the city-region's economic performance by providing highly productive jobs and companies, and exciting start-ups and scale-ups.

The Prosperity Review also identified sub-sectors with potential to be leading industries of the future. These stem from the vibrancy and coverage of the networks of the city-region's digital industries, which have created intersections with Greater Manchester's traditional sector strengths. E-commerce and retail tech businesses in the city-region are thriving through cross-fertilisation between digital companies and textile and clothing manufacturers, wholesalers and retailers.

The emergence of 'fin-tech' in Greater Manchester is taking place at the interface between financial and professional service companies and digital firms. Digital technologies are being used to design new business models and applications that link venues, artists and consumers in new ways. Strengths in software engineering and digital telecoms underpin the health of these new industries.

Opportunity: Broadcasting and content creation

Two opportunities stand out for Greater Manchester. Firstly, the city-region's broadcasting sector is internationally recognised, and sits at the heart of a wider content creation and media sector, underpinned by technological innovation. Over the past decades there has been significant public and private investment to build the physical facilities to grow, retain and attract media talent in Greater Manchester – from the facilities at MediaCityUK, the home of BBC North, ITV, the Landing, and dock10, to The Space Studios, and The Sharp Project. The city-region has strong academic strengths in creativity including the University of Salford's MediaCityUK campus and Manchester Metropolitan University's concentration of expertise in creative design, which will continue to grow through additions like the forthcoming School for Digital Arts. Planned investments including The Factory – a world-class cultural space being developed at the border of Manchester and Salford – will create new opportunities to bring the world's most exciting artists and creatives to the city-region and embed further interactions with content creators, digital companies and audiences. These investments have changed the make-up of the creative and media industries across the north and drawn in international investment, talent, and visitors. This creates a powerful platform for all firms, from small start-ups to major multinationals, to innovate, invest, create content and thrive in the city-region.

Greater Manchester will consider creating a fund to both grow local, regionally based independent production companies and attract larger scale TV, film and drama content production companies to relocate to the city-region (subject to approval by the Combined Authority). This would, in turn, be supported by a hub and spoke network to support apprenticeships, internships, work placements and graduate recruitment in TV, film and drama content production. This would improve access to employment in content production for talent from diverse communities and those furthest away from the labour market.

Opportunity: Digital and creative clusters as drivers of inclusive growth

Smaller digital and creative clusters exist across the city-region, usually underpinned by strong cultural assets and often linked to social enterprises and cooperatives. From the creative cluster in Ramsbottom to the emerging digital sector springing up around Ashton Old Baths, from Wigan Old Court's innovative approach to the repurposing of old buildings in the town centre and the increasingly diverse offer in Oldham's creative and independent quarter, it is clear that the digital and creative industries can be a driving force in revitalising local towns and high streets. Greater Manchester will continue to support the development of digital and creative clusters across the city-region.

Opportunity: Cyber Security

Secondly, the cyber security sector, already a strength in Greater Manchester, is set to grow significantly with the creation of a large Government Communication Headquarters (GCHQ) operation in the city-region. This will be complemented by a new office of The Heilbronn Institute for Mathematical Research - a major national centre that will drive collaboration between GCHQ and local universities. The direct and associated supply-chain opportunities from strengths in cyber security for residents, universities and businesses are unique in the UK, within a growing global industry estimated to be worth £170bn annually.

Building on existing relationships, closer working with government to fully realise this opportunity is a priority and the city-region will continue to bring strategic resources and iinfluence to support its growth throughout Greater Manchester.

Digital by default

Increasing digitalisation and application of artificial intelligence, big data, data science and data analytics, and robotics are impacting on every sector of Greater Manchester's economy as well as every aspect of people's lives and work. These new technologies create significant opportunities to raise productivity and competitiveness in the city-region's frontier and foundational sectors. However, they also present challenges including ensuring that the local business base is capable of absorbing them and that citizens have the skills and abilities to thrive in the new digital age. A critical issue for Greater Manchester will be ensuring that its large, diverse and growing financial and professional services sector – which has been the engine of jobs growth in the city-region for over a decade – continues to evolve and grow as increasing use of artificial intelligence changes business models in this sector, and creates new demand for digital skills amongst its workforce.

Made Smarter is demonstrating that the digitalisation of production in Greater Manchester's manufacturing sector can increase competitiveness and efficiency in existing firms.

Taking into account the learning from this programme, Greater Manchester intends to take a 'Made Smarter' approach to improve the productivity of all industries by encouraging the development, design, adoption and creative application of digital technologies, alongside skills development programmes.

Digitally driven strategy

Underpinning digital and media growth is the critical importance of ensuring a proper pipeline of digital skills and talent needed across all industries. 31 per cent of businesses responding to the 2019 Manchester Digital Skills Audit reported turning away work due to being unable to recruit the breadth of skillsets required to deliver it. Action is required to raise awareness of the range of careers and opportunities available and to up-skill and re-train the existing and future workforce so that people can adapt to the fast pace of technological change. This will be a significant challenge as over a fifth of Greater Manchester's population lack one or more of the five basic digital skills. The city-region's new National Institute of Coding is one example of the work Greater Manchester is already doing to meet the demands for technical digital skills. The city-region must also instil the design skills and creativity needed to build on the inter-connections between our local industries, and maintain the adaptability and resilience in the city-region that helps the economy respond positively to economic change.

Similarly, high quality pervasive digital infrastructure is a pre-requisite to success and will be delivered through market engagement and the Greater Manchester Digital Infrastructure Plan. This is articulated further in the Infrastructure Section. Greater Manchester's £3m Digital Skills Pilot, agreed at the 2018 Budget, will see the city-region and government work together to boost digital skills.

As part of the city-region's Digital Strategy, the Greater Manchester Combined Authority is investing in digitally enabling citizens which not only includes the focus on basic digital skills and connectivity but also a technology platform to improve secure information-sharing across public services to inform more comprehensive family and citizen support. This will improve the public sector's ability to target programmes to the specific needs of an individual and evaluate their impact more effectively, whilst giving residents greater transparency on how their data is working for them. Greater Manchester already has very productive collaborations with government on digital policy and strategy and is building closer ties with the national Connected Places and Digital Catapults to support this work. Greater Manchester will also establish closer ties with the new National Centre for Data Ethics and Innovation and Office for AI through a new Greater Manchester Office for Data Analytics.

Open Data

In parallel, it is recognised that leading digital cities appreciate the value of releasing local data to stimulate open innovation and enable productivity growth. By making more data publicly available, it is possible to drive productivity improvements and investment in diverse sectors, such as mobility. For example, the financial value of Transport for London's open data scheme initiative was estimated at £130m per year and is a cornerstone of London's narrative as a global digital city. In Greater Manchester this would support the city-region's green ambitions by enabling modal shift.

Greater Manchester will therefore initiate a review of local data. Government will continue to provide policy support on design, best practice, and available data sources. The review will identify willing partners and data owners - including real-time big data owners - to identify and address barriers to making this data openly available for re-use. The assumption will be that data that can be made available should be made available, unless it is prohibitively expensive or not appropriate (for legal, commercial or security reasons) to do so. This will include an open consultation with the public to allow citizens, businesses and other stakeholders to come forward with their suggestions. It will report by the end of 2020.

World-leading industries

Finally, the Prosperity Review highlights that firms that trade internationally are more productive. In a digital future this will be even more important, since for many industries, competitors will be global, not local. One of the initiatives to support the internationalisation of the digital and media industries in the city-region will be showcasing the digital and creative output of Greater Manchester, providing platforms for artists, musicians, makers, designers, coders and developers to promote products and content around the world. Government will work with Greater Manchester and trailblazing digital and creative companies in the city-region to promote a locally funded biennial international event that showcases the best of Greater Manchester's digital and creative industries. This will be supported by a wider programme and digital platform to curate and promote conversations, approaches and products unique to Greater Manchester.

The Clean Growth Grand Challenge: driving rapid decarbonisation

Greater Manchester's 5-year Environment Plan sets out its long-term environmental vision "to be carbon neutral by 2038". Greater Manchester will launch the first city-region mission to achieve this. Government welcomes this locally led mission, which will support the delivery of the government's Clean Growth Grand Challenge.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

- aim to achieve carbon neutral living within the Greater Manchester economy by 2038 - driving innovation, the creation of new technologies, improved resource efficiency, and improved quality of life.

Greater Manchester's 5-year Environment Plan sets out its long-term environmental vision "to be carbon neutral by 2038". Greater Manchester will launch the first city-region mission to achieve this, aiming to:

- deliver environmental improvements that directly enhance well-being, health, resilience, biodiversity and quality of life, including by enhancing the natural capital of the city-region;
- design and trial innovative technology and financial mechanisms to support delivery of energy efficient homes, buildings and low carbon transport, helping to to reach the point at which all new homes and commercial/industrial buildings are net zero carbon;
- tackle poor air quality - the largest environmental risk to the public's health – through a co-ordinated Clean Air Plan developed by Greater Manchester's local authorities;
- accelerate new models of local renewable energy generation, storage and efficiency within the city-region, adopting a 'whole system approach', and testing the creation of a local energy market; and
- support Greater Manchester enterprises to accelerate the implementation of energy and material efficiency measures in the design and production of products and services through the Growth Hub and local partners' activity.

Finally, Greater Manchester will improve air quality by developing a coordinated Greater Manchester Clean Air Plan to tackle poor air quality, the largest environmental risk to the public's health.

The specific actions identified in this chapter will contribute to, and complement, the delivery of these aspirations.

Taking action nationally and regionally

In March 2018, the Greater Manchester Combined Authority began a consultation on adopting a target to achieve carbon neutrality in the city-region by 2038, over a decade earlier than the 2050 date adopted by the European Commission. Greater Manchester sets out its aim to achieve this in the 5-Year Environment Plan[4], published in March 2019. This aim and wider environment ambitions present an opportunity to deliver improvements that directly benefit Greater Manchester residents by improving air quality, mobility, housing and access to green space, as well as driving local innovation and growth in green industries. It is an opportunity for Greater Manchester to emerge as one of the leading green cities in the world, offering a high quality of life that attracts and retains skilled workers.

The government's 25 Year Environment Plan[4] sets out UK-wide actions to improve the environment within a generation, and designated Greater Manchester as the UK's Urban Pioneer for testing innovative ways to protect and enhance natural capital. Through this, Greater Manchester is already connecting people with the environment, and testing new tools and methods for creating natural liveable places that improve mental and physical health and child development. This includes the 'City of Trees' initiative for increasing urban planting across the city-region.

The draft Greater Manchester Spatial Framework sets out proposals to create sustainable places, recognising the social, environmental and economic inter-relationships between all communities and parts of the region. The co-ordinated Clean Air Plan being developed by Greater Manchester's local authorities will set out an approach to tackle poor air quality - the largest environmental risk to public health.

Intervening at the right scale and pace

While significant progress has been made in improving the city-region's environment, there is a recognised need to go further and faster. Greater Manchester's commitment to becoming a carbon neutral city-region provides an opportunity to accelerate this progress and also creates real potential to be the first city-region to determine how to apply the many new individual and interconnected technologies, services and social innovations needed to dramatically reduce carbon emissions and improve the environment, while growing the economy. Greater Manchester is big enough to test new solutions at scale and small enough to understand what does and does not work. The city-region already has a diverse and thriving group of around 2,500 companies (which employ over 45,000 people) in low carbon environmental goods and services on which to build the new types of jobs and industries at the forefront of clean and green growth.

However, there are serious technical and design challenges to tackle to realise carbon neutrality, including:

- the need to rapidly increase the energy efficiency of residential and non-residential buildings – significantly increasing the uptake of basic insulation measures and at the same time starting to deliver and then upscale deeper retrofit of homes;
- decarbonising the heating of homes and heating and cooling of commercial buildings – this applies to both existing and new buildings;
- significantly upscaling local renewable energy generation and storage with deployment of smart energy management systems; and
- decarbonising the transport system, accelerating the uptake of electric vehicles and providing the charging infrastructure to facilitate this.

Many of the solutions to these challenges do exist, though large-scale decarbonisation will require increased effort to upscale their deployment. Viable mass deployment requires further innovation to reduce costs and increase efficiency and interconnectivity. This in turn requires increased and coordinated cross-sector and cross-disciplinary research and innovation programmes.

Ultimately this will be part of a global effort. Greater Manchester's universities can play an important role by advancing and disseminating existing expertise in energy distribution, multi-purpose advanced materials, and industrial biotechnology (Manchester Institute of Biotechnology, University of Manchester), smart meters and Energy House (University of Salford) and hydrogen fuel cells (including through the Greater Manchester Hydrogen Partnership and the Manchester Fuel Cell Innovation Centre at Manchester Metropolitan University). There are also opportunities for the social economy to design solutions that will transform energy systems, reduce energy poverty and improve the environment.

A city-region mission

The Prosperity Review highlighted the opportunity to use the local ambition around carbon neutrality and environmental improvements to drive mission-based innovation and achieve the coordinated approach required. To maximise the local contribution to the national Clean Growth Grand Challenge, Greater Manchester will launch a city-region Mission to achieve carbon neutral living within the Greater Manchester economy by 2038. This will be delivered through a series of Greater Manchester-led mission-orientated projects, supporting delivery of the government's Clean Growth Grand Challenge.

The Greater Manchester 5-Year Environment Plan sets out the first set of actions to reduce carbon across all sectors of society (residents, communities, businesses, academic institutions, utility providers and local and national government).

Mission-orientated projects will be defined during implementation and are expected to include the following:

- **Carbon neutral retrofit and new-build:**

- Greater Manchester will work with the UK Green Building Council and other building environment professionals in the city-region to test Greater Manchester's ambition that all new homes and commercial / industrial buildings should be net zero carbon by 2028 - and see whether it can be achieved sooner (and the intervening steps required such as the balance between building efficiency, on-site energy generation and off-setting measures for remaining carbon emissions).
- Designing innovative finance and delivery mechanisms to retrofit homes and buildings with energy efficiency and carbon reduction technologies (and thereby reducing fuel bills of local authorities, businesses and residents). This is a key challenge with a potential global market as existing technologies are not currently commercially viable at scale.
- Developing large-scale modular construction facilities capable of building new homes at the quantity, pace, and to the environmental standards needed to deliver carbon neutral living and meet Greater Manchester's demanding new homes pipeline. This will be the key component of a wider Modern Methods of Construction and Design for Manufacture and Assembly centre of excellence in the city-region, feeding local employment, skills development and training and supporting a new manufactured homes industry. The centre of excellence will coordinate its activities with the UK Construction Innovation Hub.

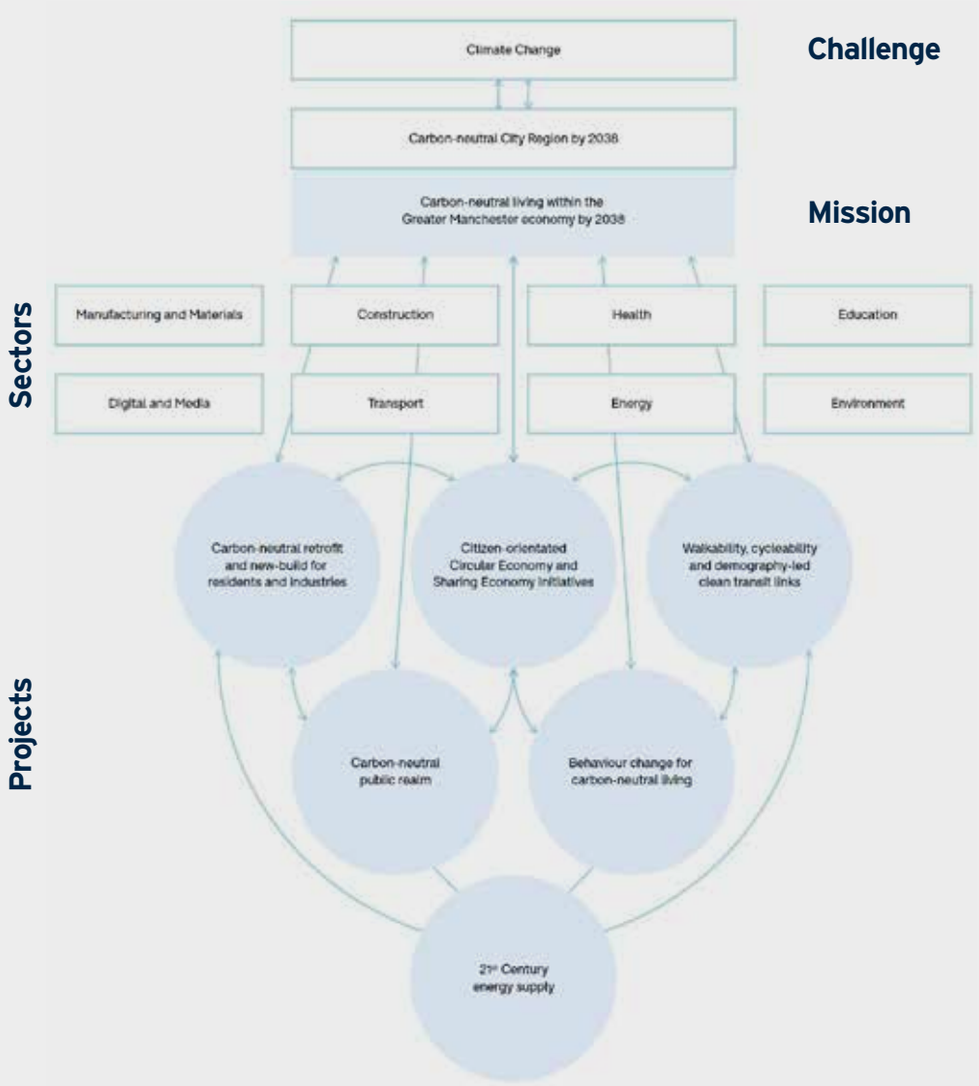
- **21st century energy supply:** A particular challenge is the generation of renewable energy in Greater Manchester given its established infrastructure and geography, which limit opportunities for centralised power generation. Government and Greater Manchester will continue to work together to provide the policy, legal and financial arrangements to establish the city-region as an energy transition region to accelerate innovative local renewable energy generation, storage, and efficiency. This will include a place-based whole system approach to energy supply and demand to create a local energy market and setting for integrating existing technologies with trials of new ones. This will build on learning from the Greater Manchester Local Energy Market research, funded by UKRI, which is testing the feasibility of city-region wide local energy markets that respond to 'place-based' constraints and market needs.

- **Sustainable and low carbon transportation:** The Greater Manchester Transport Strategy 2040 set out an ambition to reduce car use to no more than 50 per cent of daily trips by 2040. This will mean finding ways to create a radical change in behaviour, with a million more trips each day using public transport, cycling and walking, reducing congestion and pollution and increasing safety. The city-region's strengths in advanced materials and light-weighting also create the potential to drive new technologies that will reduce emissions from public and private transport.
- **Natural capital:** Making use of innovative finance, policy and delivery mechanisms to increase natural capital and realise the ecosystem service benefits that go with this (such as health, resilience, air quality and reduced flood risk).
- **Clean Growth and Productivity:** The shift to carbon neutrality will mean that some firms, particularly those that have carbon intensive operations, will need support to accelerate their progress towards carbon neutrality without constraining growth. Greater Manchester partners will develop a programme to support businesses to accelerate the implementation of energy and material efficiency measures in the design and production of products and services. This will also support a reduction in waste and the eradication of avoidable single use plastics. The Greater Manchester Sustainable Business Partnership will be key leaders in identifying and driving the changes needed.

The right skills will be essential to delivering the city-region mission for carbon neutral living by 2038. Greater Manchester will prioritise rapid action to provide relevant training, particularly in priority skill gap areas such as whole house deep retrofit.

Figure 3: Mission Roadmap for Net Zero Carbon Region by 2038

Designed for Greater Manchester Combined Authority by UCL Institute for Innovation and Public Purpose (IIPP), with support from the Commission for Mission Oriented Innovation and Industrial Strategy (MOIIS).



Ideas

Driving prosperity and leading industrial, social and economic transformation through innovation, partnerships and investment.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

- Strengthen the city-region's innovation asset base in our Industrial Strategy priority areas of health innovation, advanced materials, digital, creative and media, and clean growth.
- Integrate Greater Manchester's innovation eco-system to drive commercialisation, facilitate collaborations, partnerships and cross-overs between technologies and industries, and coordinate innovation that addresses the Grand Challenges.
- Drive increased private sector investment into R&D and increase the take-up of national innovation funding in Greater Manchester to support the achievement of the national 2.4 per cent target.

The specific actions identified in this chapter will contribute to, and complement, the delivery of these aspirations.

The Prosperity Review found that Greater Manchester has a strong and broad innovation base, which is why innovation – the development and deployment of new ideas – is embedded throughout the Greater Manchester Local Industrial Strategy.

Previous sections have set out how Greater Manchester intends to capitalise on internationally recognised scientific and research excellence in health innovation and advanced materials and manufacturing in order to drive the growth of innovation led, high value industries in the city-region, as well as building Britain's leadership in tomorrow's technologies.

For example, the city-region's digital and creative sectors will underpin the emergence of new specialist markets in Greater Manchester based on the design and development of new ideas, products and services and in leading the Fourth Industrial Revolution.

The Clean Growth Mission will drive bottom-up innovation, collaborations, partnerships and cross-overs between unrelated technologies and industries to develop new technologies and decarbonise our economy.

Maximising investment in research and innovation and tackling the Grand Challenges

Government has a target for national investment in R&D to match 2.4 per cent of GDP by 2027. The Prosperity Review showed Greater Manchester lags behind comparable city-regions in overall R&D spending, R&D tax-credit take-up, InnovateUK funding take-up, and university R&D spending. To ensure Greater Manchester maximises its contribution to this target and increases overall investment in innovation, it will be critical to extract maximum value from both Greater Manchester's existing innovation assets, and those under construction, and to continue to invest in maintaining world-class excellence in our opportunity areas. Synergies between Greater Manchester's areas of strength and the Grand Challenges must also be exploited, for instance using advanced robotics in biomechanical healthcare or using industrial biotechnology to develop low carbon fuels. Greater Manchester will continue to work with government and UKRI to maximise the impact of existing investments in innovation assets in the conurbation and incentivise private sector investment in R&D.

The opportunities identified in this Local Industrial Strategy will provide a framework for bids by local partners into the Strength in Places Fund, Industrial Strategy Challenge Funds and other national competitive funds (including those delivered by UKRI), as well as for embedding connections between universities, businesses and public bodies.

Central to Greater Manchester's local plans is the development of options for the Pankhurst Centre for Research in Health, Technology and Innovation. This will be a path-breaking, cross-disciplinary institute for translational research, to link clinical research with materials science, informatics, engineering and computer science to address major health problems, and capitalise on synergies between our strengths of health and materials plus digital and biotechnology. It will play a key role in creating exciting start-ups and high growth businesses in emerging sectors. Initial funding for the Centre has been identified, and the University of Manchester is now considering the best way to realise this plan.

Reinforcing Greater Manchester's innovation ecosystem

Greater Manchester will continue to reinforce its innovation ecosystem. This work will be coordinated by the Greater Manchester Innovation Board, whose membership includes local universities, leading innovative firms, the Medicines Discovery Catapult, Manchester Science Partnerships, public bodies, UKRI, and Nesta.

The Board provides the city-region with a platform for shared action, building on Greater Manchester's integrated governance, deep culture of collaboration between government, business, academia, and health, and strong partnerships. It will play a leading role in coordinating the public and private sector response to the Greater Manchester Local Industrial Strategy, focused on the opportunity areas of health innovation, advanced materials, digital, creative and media, and clean growth.

Greater Manchester will also work to identify and address gaps in the innovation funding ecosystem in the city-region to reduce financial barriers to private sector innovation and drive progress towards the national 2.4 per cent target. As a first step, Greater Manchester will review the availability of venture capital funding - in partnership with the City of London, financial services firms, and industrial strategy sectors - assessing the current landscape of Early Stage Investment seed funding and Venture Capital Funding in the city-region. This will evaluate missed opportunities to commercialise innovation due to gaps in this section of the financial landscape. This will include an assessment of the case for an early stage investment seed funding programme drawing on private investment and targeted at sub-£500,000 investments.

To drive increased private sector investment into R&D, Greater Manchester will also test new, and evaluate existing, routes for commercialising knowledge. This will include a locally funded pilot programme to develop a Cooperative Intellectual Property (IP) Bank to exploit latent Intellectual Property held by research organisations and large firms by making it available to smaller firms. The IP is attractive to smaller firms as it reduces up-front R&D investment costs, shortens time to market, and creates opportunities to solve technical challenges or create new market opportunities. Large firms and research organisations will benefit from deeper commercialisation of their IP portfolio and new IP-led industrial collaboration opportunities with SMEs.

People

Investing in a highly skilled and healthy city-region.

We will ensure that the education, skills and employment system allows everyone to reach their potential and employers have access to the skills required to deliver the Greater Manchester Local Industrial Strategy.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

- Support institutions to increase the number of people learning in those rated as good or outstanding – from early years, to schools, colleges and training providers.
- Give all young people and adults a clear line of sight to opportunities for education, skills development and work in the city-region.
- Ensure all residents have the functional skills and attributes employers need, particularly English, maths and digital skills; and enhance creative skills.
- Support adults to enter the labour market and progress in work through connected employment, progression and transition support.
- Increase take-up of the technical qualifications, including apprenticeships, needed to drive the Greater Manchester Local Industrial Strategy (particularly at levels 4 and 5).
- Increase employer investment in workforce development - including digital skills, management and leadership - and in workforce health. It will also ensure that employees are gaining the skills to retrain and progress.

The specific actions identified in this chapter will contribute to, and complement, the delivery of these aspirations.

In a modern, innovation-led, service-rich economy, people are genuinely a city-region's best asset. Greater Manchester has one of the largest and most diverse populations in the UK. It is home to nearly three million people, including more than 100,000 students, and there are over seven million people within an hour's travel time. The city-region's universities have strong and improving graduate retention rates, and it has one of the most linguistically diverse populations in the world, with over 200 languages spoken. One-in-six residents come from a black and minority ethnic background and the city-region has the UK's third largest LGBT+ community after London and Brighton. This access to skilled labour, cultural diversity and inclusivity is an inherent strength and provides a foundation for future growth, generating new ideas and making the city-region a magnet for new talent and investment.

Rapid progress over the past decade

The Prosperity Review identified many strengths in Greater Manchester's education and skills system. Over the past decade, Greater Manchester has transformed its qualifications profile: the proportion of the population with Level 4+ skills increased by 46 per cent, for example.

However, it is still the case that, despite good progress in recent years, we want more people to have the qualifications and functional skills employers need and that provide the foundations to progress in work.

Too few people are realising their potential and ill health is a major economic constraint, keeping people out of work and lowering the productivity of those in work. Not enough employers are utilising their workforce's full range of skills or developing their capacity to adopt innovations to drive productivity.

Early years provision is key to long-term success for individuals and the city-region's future productivity. Greater Manchester has an ambition to increase the proportion of children leaving reception with a 'good level of development' to at least the national average within the next five years. To deliver this, the city-region is rolling out a new delivery model for early years, based around the integration of public services in neighbourhoods, bringing together education, health and housing to address the wider social determinants of physical and mental health. It is also developing and upskilling the early years workforce to help them deliver early intervention, prevention and early education, while empowering families and communities to take greater responsibility in their health and wellbeing.

Work is also underway to make sure all young people are work and life ready, with raised aspirations, a clear line of sight of the opportunities and different education and training pathways available, and the attributes and soft skills to help them flourish and prosper.

Greater Manchester is already investing in: free bus travel for 16-18 year olds and the development of an Opportunity Pass (subject to Combined Authority agreement); the Bridge GM programme that connects schools, students and employers; a UCAS-style Career Platform that will simplify access to education, learning and training; and creating a Curriculum for Life. Government is already working differently in the city-region, such as through the Digital Skills Pilot, Self-Employment Pilot, Future Workforce Fund and through the Oldham Opportunity Area. The latter, is focusing on improving early literacy at home; building high performance across the school system; and boosting support for mental health.

To improve outcomes for adults, Greater Manchester has established an Employment and Skills Advisory Panel as announced in the national Industrial Strategy. This Panel brings colleges, training providers, local and national government, and employers together to identify local skills needs. Through the adult education budget, Greater Manchester and government are already collaborating to develop strategic responses to economic and technological change. The joint development and delivery of the Working Well employment support programme (that pooled funding from Greater Manchester's 10 local authorities, 10 Clinical Commissioning Groups, local Job Centre Plus districts, and the Greater Manchester Health and Social Care Partnership) provides locally tailored support to help long-term unemployed residents get back into the labour market, and supports people at risk of falling out of employment. Greater Manchester also has a vital and unique relationship with Health Education England (HEE), which underpins joint commissioning and allocation of HEE budgets, where appropriate, to pilot new models to address the skills requirements of the region's health and care system.

To help more people over-50 get back into employment, Greater Manchester, the Department for Work and Pensions, and the Centre for Ageing Better are exploring a new approach to employability support using a 'test-and-learn' approach. This will be used to inform the national and local evidence base about what works. Government and Greater Manchester are also working together to support the development of the National Retraining Scheme through the development of the Greater Manchester Local Industrial Strategy.

Towards deeper partnership

There is great potential in the education, skills and work system. Government and Greater Manchester have agreed to work in partnership to determine how this can be harnessed. The aim is to ensure the education, skills and work system can support everyone in the city-region to reach their potential, and for employers to have access to the skills needed to deliver the ambition set out in the Greater Manchester Local Industrial Strategy.

All parties have agreed to work together to explore opportunities to connect national and local post-16 skills and work policies in the city-region to deliver an effective offer for the near-three million citizens of Greater Manchester.

This will include using Greater Manchester's convening power, with government support, to issue a call to action for schools, providers and employers in the city-region to work together to bring about the changes needed.

Through this joint partnership working, we will identify strategic and delivery areas for review and, based on evidence and advice, identify the respective actions needed from all parties to deliver them. We want to make quick progress, but all parties recognise, and accept, that this will require their commitment for the long term.

As a starting point on that journey the Department for Education, the Department for Work and Pensions and Greater Manchester have agreed to identify the ways in which their priorities and activities across the various parts of the post-16 skills and work system come together and, based on evidence and consultation with the sector, have agreed to take forward actions to help ensure the system is effective.

Some early areas where there is potential for great results are: ensuring greater businesses engagement in the whole system from careers to in-work progression; supporting institutions with their efforts to raise quality and therefore help more young people to benefit from good or outstanding learning; identifying what more can be done at a national and local level to support those in work on low pay to progress in work and out of in-work poverty; supporting employers to retain older workers and those with health problems; and finally supporting more high quality apprenticeship opportunities with SMEs, securing employer commitments to provide high quality T Level industry placements, and boosting employer investment in retraining.

Within nine months, Greater Manchester, the Department for Education and the Department for Work and Pensions will set out to the GMCA and DfE and DWP Secretaries of State the respective actions, both in the short and longer term, which all parties will agree to take forward and will move the joint working between Greater Manchester and government to the next stage.

This deeper partnership will build on the strong track record of successful partnership working on the skills and work agenda that already exists between Greater Manchester and government.

This includes:

- the Employment and Skills Advisory Panel, which brings colleges, training providers, local and national government, and employers together to identify and respond to skills needs;
- the joint development and delivery of the Working Well employment support programme that pooled funding from Greater Manchester's 10 local authorities, 10 Clinical Commissioning Groups, local Job Centre Plus districts, and Health and Social Care Partnership;
- the vital and unique relationship between Health Education England (HEE) and Greater Manchester, which underpins joint commissioning and decision-making, including the allocation of HEE budgets where appropriate to pilot new models for addressing the requirements of the region's health and care system.

Greater Manchester will also align skills and work activity with health and care and other public services, in line with the recommendations of the Prosperity Review, recognising the links between good physical and mental health, employment and productivity. It is already ensuring:

- the Health and Social Care Prospectus contains actions to create a sustainable health and care system that realises economic potential in the city-region;
- the Greater Manchester Model of Unified Public Services sets out an approach to aligning services around people and place;
- the Greater Manchester Reform Investment Fund provides a unified city-region fund to use alongside local funding to drive improvements in health, housing, skills and education, crime and prevention services in tandem and at greater pace;
- that Working Well continues to reduce worklessness and improve well-being by supporting more people with poor health and disabilities to play an active and fulfilling role in the Greater Manchester labour market.



Infrastructure

Upgraded, integrated and future-proofed.

Greater Manchester will put in place the integrated 21st century infrastructure needed for digitally connected, clean and inclusive growth, and to facilitate international trade and investment.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

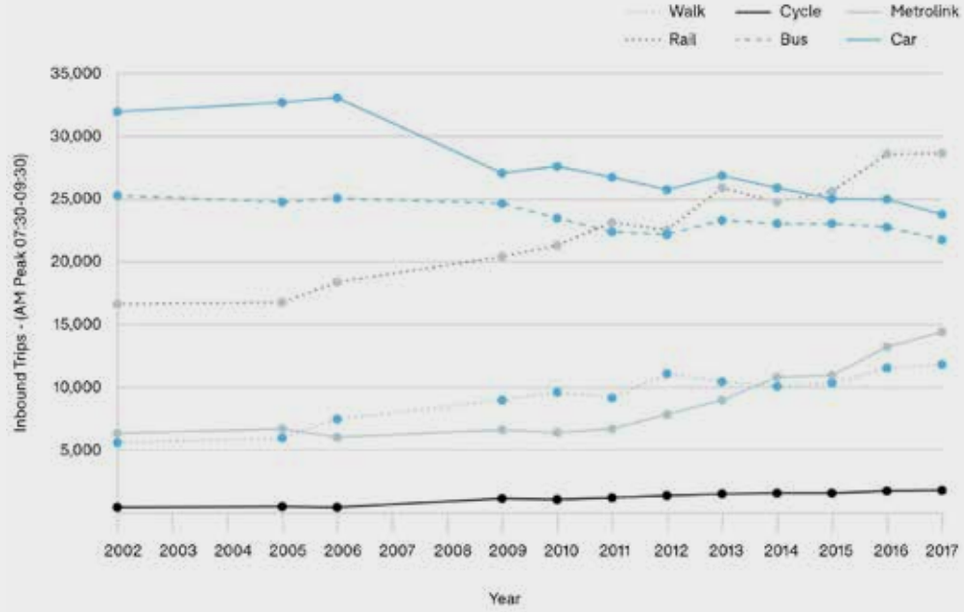
- Develop an Infrastructure Plan for the city-region and identify sources of sustainable, long-term local investment, to sit alongside devolved funding streams, to fund the delivery of the Plan.
- Short-term action to improve transport system performance through rail devolution, bus reform, trialling tram-trains, continuing to expand the city-region's walking and cycling infrastructure, and changing regulations to promote a cleaner, more efficient and integrated transport system.
- Radically improve connectivity with other UK cities through High Speed 2, continue developing Greater Manchester as the global 'Gateway to the North' through the Manchester Airport Transformation Programme[5], and work through Transport for the North to deliver the growth case for Northern Powerhouse Rail.
- Develop a roadmap for digital-led innovations that enable better coordination of the transport system.
- Continue transforming the digital connectivity of the city-region to drive economic growth and innovation, working with government to meet national targets of nationwide full fibre coverage by 2033 and full roll-out of 5G technologies for most people by 2027.

The specific actions identified in this chapter will contribute to, and complement, the delivery of these aspirations.

Transformative approaches

The Prosperity Review concluded that Greater Manchester's future growth, prosperity and sustainability will be restricted unless ambitious and long term infrastructure solutions are found. The growth potential set out in the draft Greater Manchester Spatial Framework will require large-scale, integrated and strategic infrastructure investment. This will build on recent investments by Greater Manchester and government, including in the Metrolink and the Bee Network supported by Greater Manchester's £312.5m allocation from the Transforming Cities Fund. These are innovative programmes which point the way to achieving modernised, carbon neutral infrastructure. However, there are challenges that Greater Manchester must address to achieve the modernised, carbon neutral 21st century infrastructure needed to deliver this Local Industrial Strategy. These are set out in the Greater Manchester Infrastructure Framework. They include new demands for electricity generation, storage and transmission coming from changes in how buildings are heated, energy is stored, and transport systems and vehicles are fuelled. Climate change will demand more resilience to flooding and greater 'eco-system services' from green and blue infrastructure.

Figure 4: Transport investments are driving change





Universal, affordable and resilient digital connectivity and better social infrastructure will be essential for driving inclusive growth across the growing city-region. Congestion is already providing persistent pressures and drags on productivity, leading to carbon emissions and air pollution. The transport system will need to address this problem at the same time as accommodating a growing population and providing affordable and flexible responses to the shifts in the major sites of employment, working patterns and school and college provision that means people are travelling further and at different times. To meet Greater Manchester's ambitions for an innovation-driven economy, industries will need the best digital and physical connectivity. Areas with lower productivity, pay and living standards need infrastructure that supports access to jobs in the centre but will also help improve the quality of local opportunities in the long term. New trading routes after the UK leaves the European Union will place greater importance on Greater Manchester's international transport infrastructure and east-west connections including the links to the Port of Liverpool, the development of Port Salford and the ongoing national strategic importance of Manchester Airport.

Integrating Greater Manchester's infrastructure

To build the integrated 21st century infrastructure that Greater Manchester needs, a comprehensive infrastructure plan for the city-region is required. This needs to meet both local and national priorities, developed in consultation with government and infrastructure providers, and underpinned by a consensus to propel its delivery and success. To secure this agreement, government will join the Greater Manchester Strategic Infrastructure Board overseeing implementation of national and local plans and providing operational expertise to improve the performance of the city-region's transport, housing, energy and digital infrastructure. Implementation Plans will take into account how infrastructure development can contribute to the delivery of the full Greater Manchester Local Industrial Strategy. For example, linking to relevant outputs from the Clean Growth Mission, which will provide new technologies and models for low carbon infrastructure. It will also be critical that reforms of the education and skills system set out above will ensure a local pipeline of talent is in place to support the design and implementation of infrastructure programmes, and that new innovations like modular housing can be delivered at scale and pace.

Greater Manchester has a successful track record of delivering significant investment programmes, including the Transport Fund; the portfolio of housing, infrastructure, and business investment funds agreed through devolution deals; and public service programmes like the Working Well programme.

However, delivering truly integrated 21st century infrastructure will require further institutional development to build on the already robust governance, capacity and assurance processes in place in the city-region. Greater Manchester will therefore review its institutions, structures and processes to ensure the city-region can continue to deliver successful integrated infrastructure programmes.

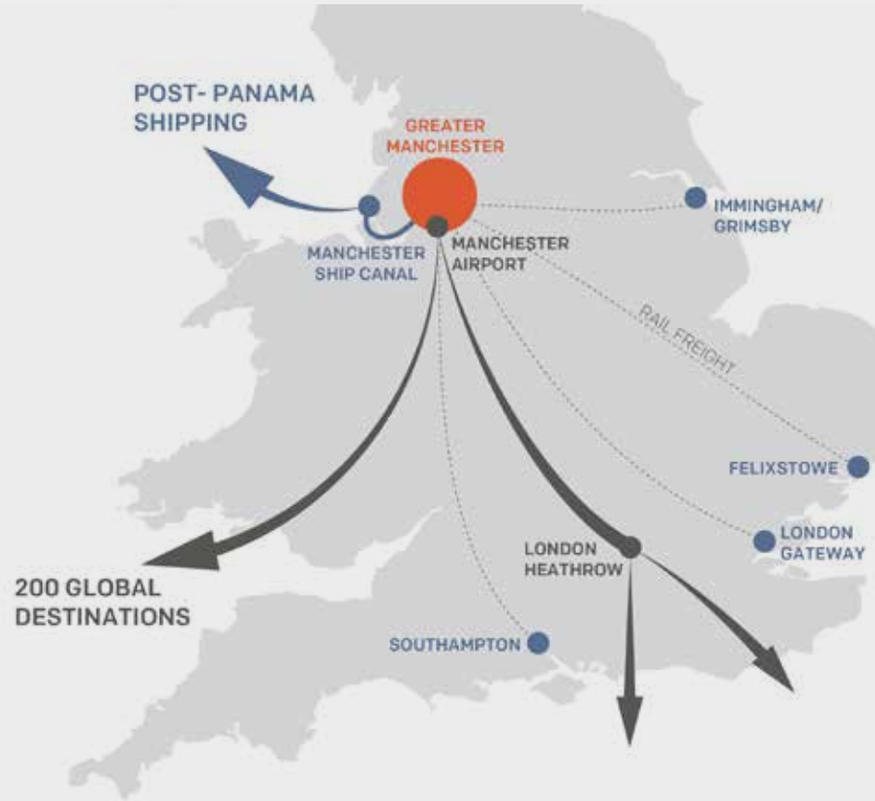
The city-region will need appropriate and innovative investment and delivery models to deliver the scale and range of investments needed, which do not currently exist. The Prosperity Review agreed with the National Infrastructure Assessment that an integrated strategy for infrastructure at city-region level should be backed up by stable, substantial, devolved funding. Greater Manchester will consequently explore options for achieving sustainable, long-term local investment into infrastructure.

Short-term action is needed to address congestion and increase productivity and employment growth. The next stage of Greater Manchester's 2040 Transport Strategy (2020-2025) includes a further 65 projects including continued Metrolink expansion, new interchanges and ongoing investment in the city-region's innovative Bee Network of active travel corridors and junctions to encourage cycling and walking in the city-region, funded through the Transforming Cities Fund. Specific opportunities to tackle congestion include trialling tram-trains in the city-region, increasing the pace of improving rail and bus service quality, reliability and integration through ongoing devolution and reform, and improvements to existing TransPennine rail services.

The completion of the full Northern Hub programme and the Transport for the North Northern Powerhouse Rail programme would transform rail infrastructure, improving service patterns, frequency and capacity between key economic centres of the north, particularly east-west connections. An Integrated and Smart Travel programme is streamlining journey planning and payment.

Figure 5: Greater Manchester's global connectivity

Manchester Airport is the global gateway to the north of England. It serves more destinations than any other UK airport (over 200), facilitating trade and the cultural and visitor economies. The city-region's rail and road networks create fast national connections, and the development of Port Salford will establish the city-region as a modern UK port, and link to new international trading routes. The arrival of High Speed 2 and improved Northern Powerhouse links will strengthen inter-city connections across the UK.



Building on the powers already devolved to the Greater Manchester Mayor, Greater Manchester will continue working with government to improve the performance of Greater Manchester's transport system through implementation of existing devolution deals including greater local influence over rail services and stations, bus reform, trialling tram-trains, and regulatory reforms that complement the shift to cycling and walking, in the context of the Williams Rail Review.

To increase network capacity, widen labour pools and business access to markets across the UK cities, Greater Manchester will work to deliver the growth cases for High Speed 2, and through Transport for the North the business case for Northern Powerhouse Rail and improvements to Manchester-Sheffield road links. Enhanced connectivity will help Manchester Airport to fully utilise its capacity (55 million passengers per annum), open up new routes and increase services to key growth markets in line with the national Aviation Strategy.

The Future of Mobility in Greater Manchester

The Prosperity Review recommended new digital-led transport innovation – including as part of the government's Future of Mobility Grand Challenge – to improve services at less cost. This needs policy and technology co-ordination to maintain overall system performance, embed policy objectives like clean air, improved health and social inclusion; and to create public trust, alongside new data sharing agreements and platforms. Greater Manchester is building the foundations for a digital mobility ecosystem by: testing and assessing new technologies like Connected and Autonomous Vehicles; integrating transport infrastructure with the 'Internet of Things'; and adopting new models of integrated and flexible on-demand transport provision: namely of Mobility as a Service. Transport for Greater Manchester has built considerable knowledge and expertise in this field, pioneering proof of concept and significant research programmes, and working with businesses in this emerging market.

To identify the necessary locally led changes needed to drive and shape innovation-led transport improvements, Greater Manchester and government will develop a programme of activity for transport innovation to explore new ideas and bring together relevant stakeholders to collaborate with Transport for Greater Manchester. This will increase Greater Manchester's ability to improve the transport system as a whole, and to inform policy-making. Transport for Greater Manchester and the government's Future of Mobility team will work together to bring together the right set of stakeholders and private and local investors for transport innovations, exploring new technologies and governance models, and potentially trialling them in Greater Manchester.

Transport for Greater Manchester and government will consider how best to trial emerging technologies and services where the regulatory framework is not yet fixed. This whole systems approach and regulatory "sandbox" will support the Future of Mobility and Clean Growth Grand Challenges by creating a blueprint for the integrated, low carbon transport systems of the future, whilst building on digital infrastructure, industry strengths and Greater Manchester's approach to integrated public policy.

Digital infrastructure for a leading city-region

To enable these changes to the transport system and deliver all the aspirations in this Local Industrial Strategy, Greater Manchester will aim to become one of the best digitally connected city-regions in the UK. Digital infrastructure is integrated within the new Greater Manchester Infrastructure Framework and the remit of the Infrastructure Advisory Board, and Greater Manchester has the most significant city-region digital connectivity investment programme in the UK. The city-region is investing over £100m in digital initiatives, transformative data life cycle management, cyber security, health digitisation, better data governance and analytical capabilities. This includes £23.8m contributed by government to digital infrastructure development and almost £39m is already committed to investing in 'Full Fibre'.

This approach is accelerating market investment and will continue to do so with the city-region's ambition to attract private sector investment of over £200m, create further opportunities to develop 5G networks and test beds, and capitalise on over 500,000 mapped street furniture items that have the potential to provide high bandwidth, low latency 5G networks. Local Full Fibre Networks (LFFN) funding will connect over 1,300 public sector sites and will have a transformational impact on digital infrastructure - increasing full fibre coverage from two per cent to around 25 per cent within three years. Greater Manchester is continuing to facilitate further commercial investment by reducing the cost of works through granting of wayleaves, surface reconstitution, and harmonising regulatory processes across all 10 boroughs. Greater Manchester will continue to work with government to meet national targets of nationwide full fibre coverage by 2033 and roll-out of 5G technologies for the majority of the population by 2027.

Business environment

Supporting highly productive, innovative and international enterprise.

The productivity of businesses in Greater Manchester will be radically improved by strengthening their leadership and management, increasing innovation commercialisation, adoption and diffusion, and raising levels of exports, foreign direct investment (FDI) and inward investment.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester, will:

- Strengthen the leadership and management capacity of businesses and enterprise in Greater Manchester to increase productivity and skills utilisation.
- Implement a Greater Manchester Good Employment Charter to improve skills utilisation and management standards and so raise productivity across all sectors.
- Support all business and enterprise to adopt innovations and create new products, services and business models.
- Sustain and develop the strong business support infrastructure, based around the Business Growth Hub, by further strengthening support to drive innovation (including business model innovation), productivity, workforce development and scaling up businesses in key sectors.
- Drive further internationalisation of Greater Manchester's business and enterprise base, supporting exports, inward investment, and international partnerships.

The specific actions identified in this chapter will contribute to, and complement, the delivery of those aspirations.

Greater Manchester's business base

The Prosperity Review highlighted the diversity of Greater Manchester's business base and the sophisticated mix of industries and supply chains in the city-region that creates multiple growth opportunities and diversification routes for business. The Review confirmed that Greater Manchester is a significant and growing UK international trading hub, and this is creating dividends for the economy in terms of strong FDI and the presence of highly productive foreign-owned firms in the city-region. International partnerships in the city-region span from IT giant Tech Mahindra's Salford HQ and innovation lab to the work of University of Manchester scientists at the Large Hadron Collider at CERN in Geneva.

Greater Manchester has a very strong track-record in attracting Foreign Direct Investment, and has invested in developing international partnerships to drive forward the city-region's priorities, including the Manchester-China Forum and the Manchester-India Partnership. This has made the city-region an international centre for business, and developed a nationally significant set of relationships and assets.

The Greater Manchester businesses that export are also the most productive, and are mainly in the manufacturing, digital and creative industries. However, in 2017 the city-region exported less than half the level of goods than would be expected for its size, despite strong performance in manufacturing exports.



Business support

Greater Manchester has an extensive and mature network of business advice services, centred around the Business Growth Hub. This community includes the Manufacturing Champions Network, private partners and business membership bodies including the Chamber of Commerce, the Federation of Small Businesses and the Forum of Private Business. Businesses have access to private equity, including Venture Capital and Business Angels, and benefit from the services and advice of a strong financial and professional service sector alongside Enterprise Zones and incubator and accelerator spaces across the region. The Growth Hub hosts Innovate UK and the Enterprise Europe Network (EEN) resources that connect local, national and international innovation networks, and takes part in the Interreg North West Europe Programme as part of transnational consortia. The British Business Bank and Department for International Trade have set up Greater Manchester offices to support initiatives like the Northern Powerhouse Investment Fund.

However, business density levels are below the national average and, while there are highly productive firms in every sector, there is a long tail of less productive firms in the city-region – and productivity within sectors differs more than between sectors.

The Prosperity Review suggests the causes of this need to be addressed by improving leadership, management skills, diversity and business models, and addressing low export rates, poor skills utilisation, and low levels of innovation adoption amongst firms.

Improving business productivity

To improve productivity, there must be a higher take-up of innovation across the business base, from adopting new internal processes, to developing new products, services and business models and finding applications for new scientific discoveries. Businesses will be supported to link to networks for knowledge and best practice exchange between peers, and clearly signposted to the available finance (including tax credits), support and advice. Government and Greater Manchester have already made significant investments in the Growth Hub, making it the largest in the country.

The Growth Hub and Greater Manchester partners will better coordinate existing business support programmes for increasing innovation and productivity, leadership and management, and supporting scale-ups to internationalise, as well as the wider business support offer available. Work will focus on enabling more local businesses to access this support, and providing more targeted support including one-to-one advice, mentoring and peer-to-peer programmes. Programmes will drive up leadership and management capacity to increase skills utilisation and innovation, and improve productivity.

Greater Manchester will also continue to rationalise regulation services to make access to advice and support simpler and easier for business, particularly regulations relating to innovation and exports.

To reinforce Greater Manchester's increasing contribution to UK soft power, existing global partnerships and approach to business (such as Manchester-India Partnership and Manchester-China Forum), and to build on the focus provided by this Local Industrial Strategy, Greater Manchester will launch a 'Global Prosperity Partnership Model', to be promoted by the Department for International Trade. This model will create city-to-city partnerships to build deep two-way relationships between cities, and strategic partners therein, in key markets and sectors through programmes on entrepreneurship, technology, IP exchange and collaborative R&D.

These thematic elements will give Greater Manchester and the UK useful insights into emerging technologies and innovations in overseas markets, such as green transport infrastructure advancements in China, to help accelerate commercial application in the UK. A balanced exchange that encourages the development of pilot zones and initiatives to encourage researcher collaborations and commercial spin-offs will underpin meaningful city-to-city collaboration.

To foster these partnerships, Greater Manchester will create a "soft landing" platform for international entrepreneurs, academics and researchers and companies coming into Greater Manchester, and in the partner cities, such as Bangalore, India, to provide similar soft landing bases for Greater Manchester's high-growth scale-up companies and universities.

This will build on Greater Manchester's Global Scale-up Programme which will take Greater Manchester's most exciting businesses and give them access to strategic international growth advice and coaching from partners, supporting them to scale up and grow into new markets, export and internationalise their business strategy.

Greater Manchester's Global Prosperity Partnership Model will aim to grow high value city-to-city trade and technology or IP exchange, and attract inward investment, visitors and global talent, and support exporters and high growth companies to scale operations globally as well as attracting high value inward investors and research investment. The programme will also include a focus on attracting major global events, in alignment with the Greater Manchester Convention Bureau, and leveraging the talents of the international student base in the city-region.

Supporting all workers

Through programmes like 'Be the Business', 'Made Smarter', executive development programmes provided by the Business Growth Hub, and the Greater Manchester Productivity and Inclusive Growth Programme, Greater Manchester and government are supporting businesses to improve their leadership and management capacity, as well as their efficiency and effectiveness. The Greater Manchester Good Employment Charter, which is being developed and implemented with employers and employees, will be another key lever for raising leadership and management amongst Greater Manchester's employers, improving productivity, wages, and job quality in all sectors, particularly those that have not traditionally engaged with public sector funded business advice. The Charter will also improve skills utilisation, raise employment standards and encourage employers to focus on the health and well-being of their workforce. It will use a tiered structure, backed up with support for employers, engaging a wide range of businesses, social enterprises, public service providers and voluntary and community sector organisations to help them progress to higher standards. Greater Manchester will also work with local universities to maximise the local impact of their excellent leadership and management training and development offer.

Greater Manchester will also develop a plan for increasing the productivity of big sectors in the 'foundational economy' – such as retail, hospitality and tourism, and social care. Greater Manchester will work with large employers in these sectors to help understand progression routes and skills gaps to inform the work of the skills partnership and help businesses develop plans to access new workers or tap unused skills among their existing workforce. Greater Manchester will continue to support the adult social care workforce, developing new roles, better career prospects and leadership training, skills and development. As these sectors face many of the same challenges across the country, Greater Manchester's leadership will provide lessons for other areas.

The city-region is the home of the Cooperative Movement and has a strong history of innovation in business models and integrating social values with enterprise and economic activity. Greater Manchester has a strong embedded social value procurement policy, which is being updated to reflect Local Industrial Strategy objectives, including those relating to the foundational economy. A significant proportion of Greater Manchester's social enterprises work in the foundational economy sectors of health, community development, education and training, sport and leisure services. Greater Manchester will continue to create the optimum conditions for Social Enterprises to thrive and grow productive and valuable careers, products and services, including support and advice on development and innovation. The Business Growth Hub, itself a social enterprise, will provide a range of services from growth support, access to finance, specialist sector advice and leadership and workforce development, to cooperatives and social enterprises who are seeking growth. The forthcoming Greater Manchester Social Enterprise Strategy being developed by the sector will set out how the sector can support the implementation of this Local Industrial Strategy and promote good jobs, and innovation.

Sector deals

Government has agreed a series of sector deals that affect the Greater Manchester economy.

The **Life Sciences Sector Deals** aim to ensure pioneering treatments and medical technologies are produced in the UK to improve patients' lives and drive economic growth by coordinating substantial investment from government, private and charitable sectors. Investments include The Medicines Company big data project with the Greater Manchester Health and Social Care Partnership, to improve the understanding, management and economics of cardiovascular disease. QIAGEN, a leading provider of molecular testing solutions is partnering with Health Innovation Manchester to develop a genomics and diagnostics campus. IQVIA Ltd is investing in a Northern Prime Site with NHS research-ready hospitals in Greater Manchester, Leeds and Sheffield to use data-enabled approaches to design and deliver hundreds of additional clinical trials and real-world evidence studies.

Roche is investing an additional £30m in the UK, including £20m over three years into a precision cancer research partnership with The Christie in Manchester, making the UK a leading global hub for rare cancer trials and potentially benefiting nearly 5,000 patients annually.

Greater Manchester has the largest digital and creative sector outside London. National assets based in the city-region include Salford's MediaCityUK and The Factory. Innovation and creativity are synonymous with culture and a Greater Manchester Culture Strategy is being developed to create the conditions for creativity to flourish in every part of the city-region, enriching the lives of all residents and protecting, diversifying and growing Greater Manchester's unique culture, heritage strengths, assets and ecology. Government and the creative industries sector, through the Creative Industries Council, have agreed a **Creative Industries Sector Deal** that includes a range of activity to boost creative sector growth which Greater Manchester will benefit from.

Sector deals (continued...)

This includes the location of a regional hub of Tech Nation, which supports digital companies and start-ups, in Greater Manchester; successful projects as part of the £33m Audience of the Future Challenge, via the Industrial Strategy Challenge Fund, and a £4m Creative Scale Up programme to support creative firms in three English regions including Greater Manchester.

Greater Manchester is the third most visited UK city by international visitors, behind only London and Edinburgh. This includes a significant volume of business tourists attending conferences and events in the city-region. Our sporting assets – especially our leading football clubs – are a key driver of visitor numbers to the city-region. The hospitality, tourism and sport sector employs approximately 110,000 people in just under 10,000 businesses and provided £2.9bn GVA in 2016. Greater Manchester and government are working with businesses locally and across the UK to examine options for a **Tourism Sector Deal**. This will aim to address issues around job quality and seasonality of work, as well as supporting the development of a 10-year Visitor Economy Strategy.

Greater Manchester has R&D strengths in nuclear energy. The **Nuclear Sector Deal** sets out a vision for the nuclear industry to 2030 and proposals for government, sector and joint action to deliver this vision.

The research institutes and manufacturing companies in Greater Manchester include key aerospace specialisms and form part of the north west manufacturing cluster. The **Aerospace Sector Deal** positions the UK to take advantage of the global move towards hybrid electric and electric propulsion and to exploit valuable emerging markets such as drones and Urban Air Mobility. It sets out proposals for a UK Aerospace Research Consortium, which includes the University of Manchester; a new supply chain competitiveness programme; export champions; a future flight challenge; and support for engineering apprenticeships.

Places

Cultivating prosperous cities, towns and communities across the city-region.

All parts of Greater Manchester will be supported to realise their full potential, cementing Greater Manchester's role in rebalancing the UK economy and reducing regional disparities.

Greater Manchester has many place-based strengths: from the dynamic city centre, to the creative cluster around the Quays and the concentration of research excellence on the Oxford Road Corridor, to the industrial hubs in Trafford Park, Rochdale, Wigan, and Bolton.

The town centres across the city-region are important hubs for employment, housing and transport. The community and voluntary sector make vital contributions to Greater Manchester's social, environmental and economic wellbeing. But the Prosperity Review highlighted that not all parts of Greater Manchester have benefited from the growth experienced over the past decade, and access to employment, opportunity and other assets is unequal.

Greater Manchester's strategic priorities

To help realise the long-term strategic aspirations set out in this Local Industrial Strategy, Greater Manchester will:

- Ensure a thriving and productive economy in all parts of Greater Manchester, by maximising national and international assets, city and town centres, strategic employment locations and neighbourhoods.
- Reduce inequalities, promote diversity and improve prosperity by addressing barriers to participating in employment and accessing opportunities across the city-region.
- Building on city, growth and devolution deals and continue reforming public services to ensure local public services are focused on improving outcomes and reducing inequalities.

The specific actions identified in this chapter will contribute to, and complement, the delivery of those aspirations.

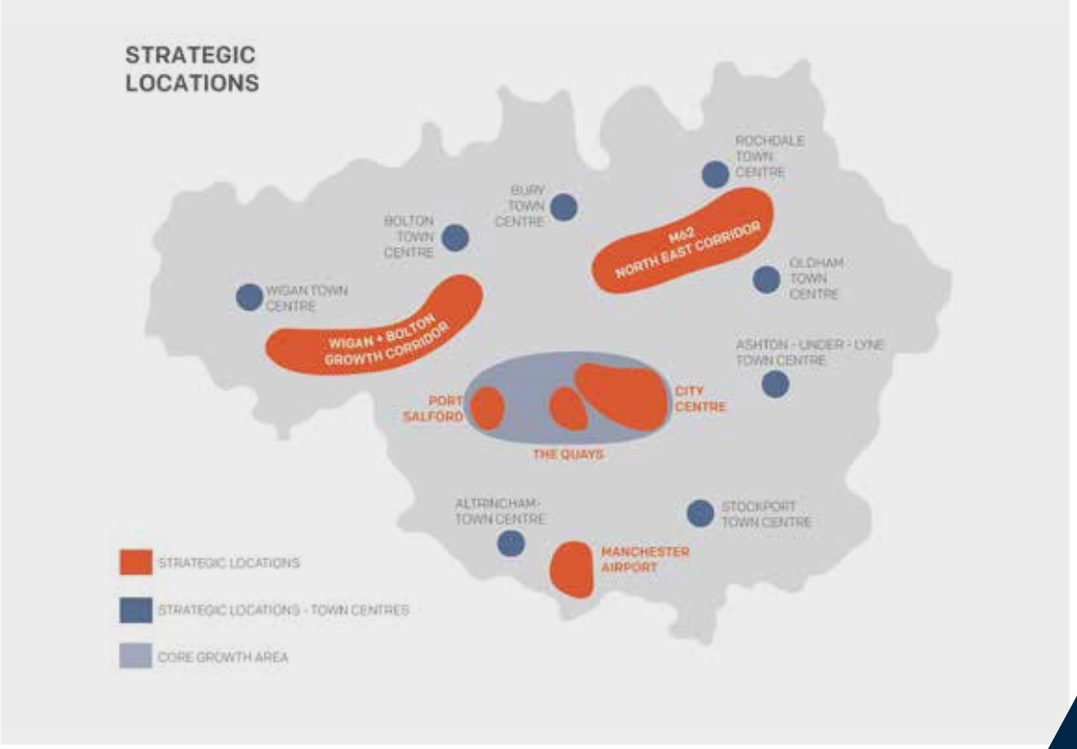


Delivering the ambitions of this Local Industrial Strategy requires all parts of the city-region to realise their full potential.

Through the implementation of this Local Industrial Strategy, Greater Manchester will seek to strengthen economic areas across the city-region based on their unique opportunities and challenges, building on the diversity of its people and places. The draft Greater Manchester Spatial Framework clearly sets out the key locations that will be prioritised to drive inclusive economic growth:

- The expanding city centre, which will further strengthen as the most significant economic location in the UK outside London, providing a concentration of jobs that are readily accessible from across Greater Manchester and beyond. The city centre includes the Oxford Road Corridor which is continuing to develop as a world-class innovation hub with a very high concentration of research activity and enhanced business connections.
- The Quays, which is expected to deliver sustained growth as a major business location including an internationally important digital and creative cluster.
- The wider area of economic activity at the heart of Greater Manchester, stretching from the Etihad Campus in the east, through the city centre and The Quays, to Trafford Park and the Trafford Centre. This area includes key clusters of growth sectors, including the Salford Innovation Triangle which is emerging as a key site of research and innovation, and provides an enormous and extremely diverse range of businesses and jobs, which currently accounts for around one-quarter of employment in Greater Manchester and is expected to grow.
- Manchester Airport Enterprise Zone, with the expansion of the airport as the UK's primary international gateway outside London and the South East, providing easy business connectivity across the world, and increased employment activity around the airport site, Wythenshawe Hospital, and rail connections.
- The eight main town centres (Altrincham, Ashton-under-Lyne, Bolton, Bury, Oldham, Rochdale, Stockport and Wigan), which will be supported to provide a stronger focus for local economic activity by exploiting important advantages such as the direct mainline rail links to London from Stockport and Wigan, High Speed 2 and the university in Bolton.
- Port Salford, providing sustainable freight connections by water and rail and acting as an international gateway via upgraded facilities at the Port of Liverpool.
- The M62 North East Corridor, including the proposed development of 'Advanced Materials City' to accelerate opportunities in Greater Manchester's advanced materials manufacturing base and provide a physical home for the market for 2D materials, which will see a massive expansion of the existing employment areas forming a major facility similar in size to Trafford Park. This will help to deliver a better distribution of growth across Greater Manchester and boosting the economy of the northern part of the city-region.
- The Wigan-Bolton Growth Corridor is located in the north-west of Greater Manchester, and will complement the M62 North-East Corridor to ensure that there are significant investment opportunities across the northern areas, helping to boost the competitiveness of all parts of the north. The Wigan-Bolton Growth Corridor proposals are smaller in scale than the M62 North-East Corridor, but are nevertheless important in supporting long-term economic prosperity. The M6 logistics hub in Wigan (extending into Warrington, St Helens and West Lancashire) provides a major cluster of warehousing and distribution activity with easy access to the Port of Liverpool via the M58.

Figure 6: Strategic locations



The complexity analysis undertaken for the Prosperity Review demonstrates opportunities to develop higher value industries across all districts of Greater Manchester, if the right networks and mix of policy interventions are in place.

Existing and new businesses will be supported to raise productivity and job quality, and Greater Manchester will act to stimulate new growth opportunities in underperforming areas. Each part of Greater Manchester and each industry sector will need a different mix of policy interventions to realise their full potential, which could include investment in infrastructure, skills, business support, design and marketing, or specialist incubator spaces and premises. Each Greater Manchester local authority has committed to setting out how the key issues identified in the Greater Manchester Local Industrial Strategy interlink with opportunities and barriers in their locality, and to develop action plans to coordinate Greater Manchester and district level implementation and to deliver real change in all parts of the city-region.

In some cases, to create the conditions for private sector investment and growth, it will be necessary to tackle the excessive costs of bringing brownfield sites back into use and to raise the quality and attractiveness of urban environments and town centres. Greater Manchester will take an integrated place-based approach to bringing forward strategic regeneration proposals in town centres and strategic sites, which integrate investment in land remediation, housing, transport and other infrastructure to create sustainable employment locations.

A key element of this will be to develop and support the unique culture and heritage of the city-region, improving desirability and the quality of place to attract and retain talent and investment, especially in town and city centres. Where appropriate, this will align with and build on the Greater Manchester Town Centre Challenge and the use of Mayoral Development Corporations.

But prosperous places are not just about employment sites and local jobs. The Prosperity Review is clear that, for parts of Greater Manchester with lower productivity, pay and living standards, there needs to be both better jobs across the city-region and better access to jobs. Greater Manchester will continue to deliver the Transforming Cities Fund in ways that support the ambitions in this strategy and underpin continued and inclusive growth. Improvements to the transport system are clearly key to enabling access to jobs in the centre, but so too is addressing non-transport barriers to economic participation, particularly around low skills and ill health. Interventions to improve skills, work and health interventions will be coordinated to reduce inequalities and improve outcomes for residents.

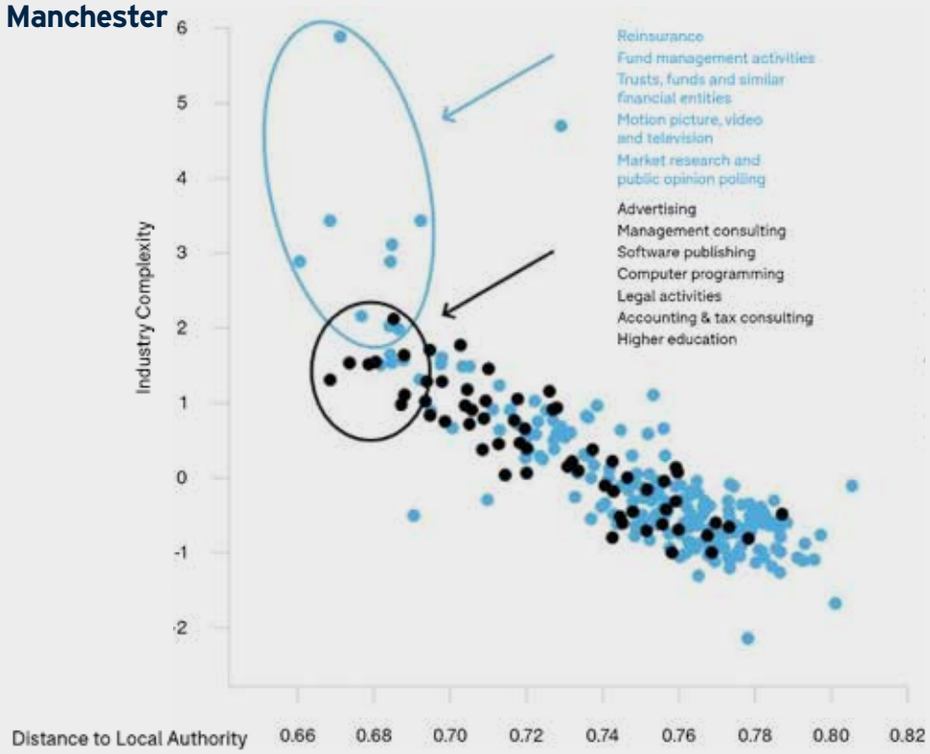
Key to this is integrating public services, so that they can be tailored to the unique circumstances of an individual and place, and so priorities like improving skills and increasing innovation are embedded and reflected in public services to find new place-based ways to approach industrial strategy. Greater Manchester will continue to build on the City and Growth Deals and the devolution of powers and resources to the city-region to reform and redesign public services.

The Greater Manchester Model of Unified Public Services is the framework through which the city-region will ensure that all public services are focused on improving outcomes and reducing inequalities. Greater Manchester will continue to implement and review the city-region's emerging public service reform model, supported by existing innovation funding and other local funding streams.

Using evidence to identify potential opportunities

The University of Cambridge has undertaken pioneering analysis to identify new industrial opportunities based on what an area is currently good at and, crucially, where they have potential to move to higher product complexity, as this could be advantageous in informing growth and capability upgrading. This analysis, undertaken for each Greater Manchester district, uses data on the current industry profile and skills mix, and uses this to identify possibilities to broaden into new specialisms.

Manchester

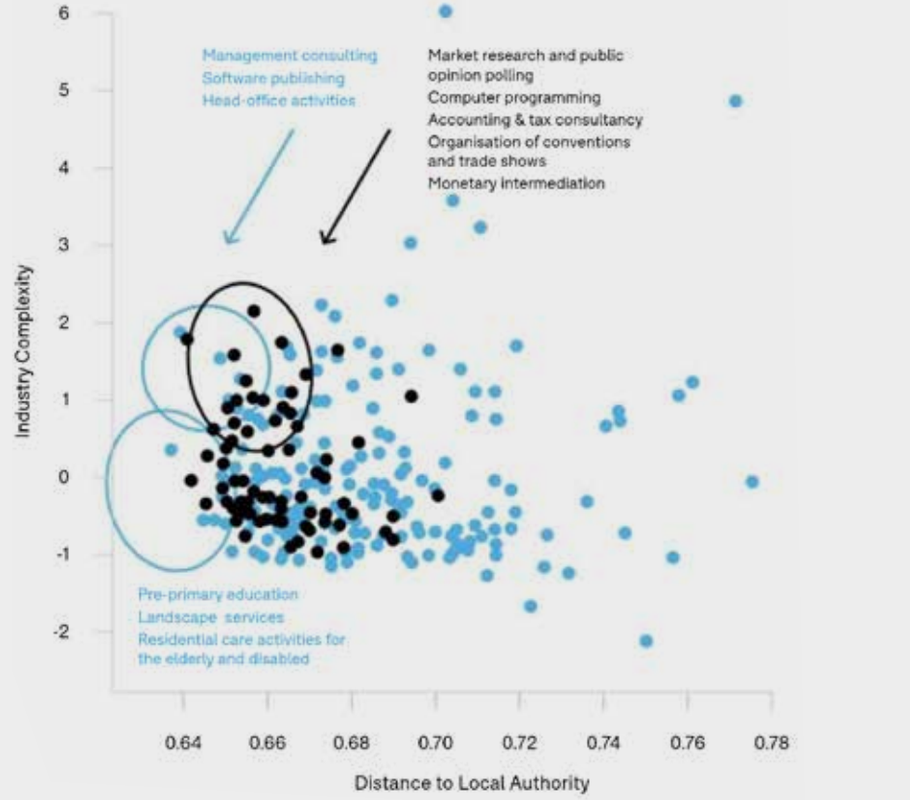


As an illustration for how this analysis could be used, the plot for Manchester shows 'related' opportunities for the city in market research and public opinion polling, trusts and fund management activities, and motion pictures, video and television, that complement the local authority's existing strengths in advertising, management consulting and computer programming. Not only are these specialisms well-aligned to Manchester's current industrial strengths, they also have higher product complexity, which is potentially positive for earnings and growth performance.

Using evidence to identify potential opportunities (continued...)

The plot for Stockport shows that, owing to its different set of existing capabilities, it has a number of 'related' opportunities including management consulting, software publishing and head-office activities with a high product complexity and also some with a low product complexity, such as pre-primary education, landscape services, and residential care activities.

Stockport



Implementation

A place-based approach has been used to develop the Greater Manchester Local Industrial Strategy, and it is designed to be implemented in the same way: capitalising on strengths and opportunities and recognising the barriers to growth and prosperity that parts of the conurbation face.

This section sets out the overarching framework for implementing the strategy to ensure it delivers for the whole of Greater Manchester.

Shared outcomes

As well as setting out specific actions, this Local Industrial Strategy also sets out Greater Manchester's long-term aspirations and the specific outcomes local partners are aiming to achieve. These will help guide future action and evaluate progress. **By 2040, Greater Manchester will aim to have secured:**

- increased productivity and pay across sectors, particularly where they are currently behind national averages, driven by businesses which are well led and managed, innovative and trading and investing globally;
- a greater number of high-quality manufacturing opportunities in strategic sites across the city-region, giving a more productive manufacturing base close to transport links and population centres;
- a fully integrated and digitalised health and care system, creating and adopting the latest in preventative and assistive health technology, and helping people stay in the labour market and stay productive for longer;
- achievement of carbon neutrality in a way that improves quality of life for residents, minimises the productivity impact on current businesses and maximises commercial opportunities across Greater Manchester;
- recognition as one of the top five city-regions for the digital economy in Europe, with full fibre broadband and 5G coverage;
- a city-region skills and work system that enables people to realise their potential, supports emerging industries, and is responsive to employers; and
- a coordinated infrastructure system, with a transport network that provides clean and effective intra-GM commuting and leveraging connections throughout the UK: north-south (HS2) and throughout the Northern Powerhouse.

Successful implementation will require the coordinated efforts of local and national government, as well as a broad set of stakeholders including private business and social enterprise, public services, universities, and community and voluntary organisations.



This is a challenge, but it is also a great opportunity. Coordinating the implementation of cross-departmental policies in a place, and aligning those with local priorities and actions, will enable us to deliver increased prosperity and productivity more efficiently and effectively for Greater Manchester's people and places.

Success will also depend on how responses and solutions, products and services are designed at all levels of implementation, from integrated public services to bringing new products to market and digital transformation.

The civic authorities, business stakeholders and people across all sectors, from transport and architecture to digital applications and service design, will collaborate through a range of mechanisms to ensure optimal use of skills, processes and thinking to deliver successful outcomes for the whole of Greater Manchester.

The government will continue to support the Greater Manchester Local Industrial Strategy through implementation of Greater Manchester's devolution deal, and improved partnership as set out in this strategy.

The Local Enterprise Partnership Senior Sponsor will champion implementation of the Local Industrial Strategy in Whitehall on an ongoing basis.

Greater Manchester will develop an Implementation Plan setting out clear milestones, deliverables, and timings for the actions set out in this strategy. An annual review of progress will be produced, that will be reviewed at a meeting of a government and Greater Manchester Implementation Board, made up of senior officials from across government and Greater Manchester.

At a regional level, the Greater Manchester Local Industrial Strategy will inform, and be aligned with, the government's Northern Powerhouse Strategy, which is due to be refreshed in 2019. Greater Manchester will continue to engage with partners in the north, including other Local Enterprise Partnerships and Mayoral Combined Authorities creating Local Industrial Strategies, to take forward shared priorities in line with this Local Industrial Strategy.

This Local Industrial Strategy does not include any new spending commitments outside of existing budgets. Instead, it will inform the strategic use of local funding streams and, where relevant, spending and decisions at the national level. It will also help Greater Manchester decide on its approach to maximising the long-term impact of the new UK Shared Prosperity Fund once its details and priorities are announced at Spending Review.

To demonstrate progress towards the long-term vision set out by this Local Industrial Strategy, the Strategy contains a number of specific actions. Where these actions are locally led, these will be drawn from local budgets which exist for those purposes; where actions are shared between Greater Manchester and government, they will be funded from existing local and departmental budgets, with funding allocated for those specific purposes.

This strategy does not represent all the priorities and action being developed in Greater Manchester. As detailed in this Strategy, Greater Manchester will regularly review the latest evidence to continue designing the most effective approaches and interventions to be at the forefront of the future UK economy. This Strategy sets out long-term ambitions and will continue to evolve as the economy changes.

Within Greater Manchester, the implementation of this Local Industrial Strategy will be brought into the Greater Manchester Strategy Implementation and Performance Management framework, ensuring that the delivery of the Local Industrial Strategy is coordinated with other actions. This will ensure alignment with key related plans, including the draft Greater Manchester Spatial Framework, Public Services White Paper, Health and Social Care Prospectus, and 2040 Transport Delivery Plan.

In line with the national Local Enterprise Partnership Assurance Framework, the Greater Manchester Local Enterprise Partnership will produce an annual delivery plan and a qualitative end-of-year report to evaluate how the Local Enterprise Partnership and other partners have contributed towards achieving Industrial Strategy objectives.

Evaluation

The government is committed to devolution where there is a strong evidence base, robust governance and delivery track-record in place. Robust evaluation is an essential element of demonstrating these competencies.

Greater Manchester will put in place a comprehensive evaluation programme for the Local Industrial Strategy. This will include the following:

- Project evaluations for the specific schemes that are implemented as part of the Local Industrial Strategy. It is expected that all projects funded as part of the Local Industrial Strategy will be subject to robust evaluation with independent input. Wherever possible and proportionate, cutting-edge independent evaluation methods will be used from the outset of programmes. The results of these evaluations will be shared widely. The process evaluation, described below, will include a mechanism for agreeing and monitoring that project evaluation is being undertaken robustly.
- An independent overarching process and impact evaluation will be put in place to assess the efficacy of government and Greater Manchester in delivering against the objectives set out in this strategy. Results will be reported annually to both Greater Manchester and government. A three-year review will be undertaken in April 2022 on the quantitative impact of the strategy, recognising that interventions will have a lag before taking effect. This should include an assessment of whether the current set of interventions are effecting the desired change and assessing the latest evidence on 'what works' in collaboration with independent experts.

Results of the evaluation will also be presented annually to the national Industrial Strategy Council.

Annex 1: Contributors to the Greater Manchester Local Industrial Strategy

A selection of the key groups involved in the development of the Greater Manchester Local Industrial Strategy are set out below in alphabetical order. We are also indebted to the individual businesses and people who took the time to engage with the creation of this Industrial Strategy.

- Be the Business
- Bolton Council
- Bury Council
- Business Growth Hub
- Business Services Association
- Confederation of British Industry
- Construction Industry Training Board
- EEF - Manufacturers' Association
- Employment and Skills Advisory Panel
- Federation of Small Businesses
- Greater Manchester Ageing Hub
- Greater Manchester Business Advisory Panel
- Greater Manchester Centre for Voluntary Organisation
- Greater Manchester Chamber of Commerce
- Greater Manchester's Colleges and training providers
- Greater Manchester Combined Authority
- Greater Manchester Devolution Voluntary, Community and Social Enterprise Reference Group
- Greater Manchester Digital Summit
- Greater Manchester Foresight Group
- Greater Manchester Green Summit
- Greater Manchester Health and Social Care Partnership
- Greater Manchester Housing Providers
- Greater Manchester Local Enterprise Partnership
- Greater Manchester Public Health Directors
- Greater Manchester Youth Combined Authority
- Greater Manchester Universities
- Growth Company clients
- Health Innovation Manchester
- Institute of Directors
- Manchester City Council
- MIDAS
- Marketing Manchester
- North West Business Leadership Team
- Northern Powerhouse Partnership
- Oldham Council
- Pro-Manchester
- Rochdale Borough Council
- Salford City Council
- Stockport Metropolitan Borough Council
- Tameside Metropolitan Borough Council
- Think-tanks (local and national)
- Trade Unions
- Trafford Council
- Transport for Greater Manchester
- Wigan Council

References

1. Details of the Manchester Independent Economic Review are available here: http://manchester-review.co.uk/
2. Details of the Greater Manchester Independent Prosperity Review are available here: https://www.greatermanchester-ca.gov.uk/news/independent-prosperity-review/
3. The Greater Manchester and Cheshire East Science and Innovation Audit is available here: https://www.greatermanchester-ca.gov.uk/media/1136/science_audit_final.pdf
4. The Five Year Environment Plan for Greater Manchester, 2019-2024, is available here: https://www.greatermanchester-ca.gov.uk/media/1986/5-year-plan-branded_3.pdf
5. Details of the Manchester Airport Transformation Programme are available here: https://www.mantp.co.uk/



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