Discussion Paper: Enabling an effective Birmingham Smart City Commission

Purpose

The aim of this discussion paper is to bring Commission members up to date with the development of the working groups; set out the key priorities and provide a reasoned approach moving forward for focusing key activity across the groups on a spatial environment.

Background

Since 2011 a growing group of city leaders, led by Digital Birmingham and drawn from the public, private, third sectors and academia, has engaged in a debate about how a smart city approach could help Birmingham to tackle its local challenges. In 2012, an interim Smart City Commission was set up to lay out the vision and key principles for establishing a smarter Birmingham. Subsequently, Birmingham's Smart City vision document was published in November 2012 to set out the vision and strategic direction, which was followed in March 2014 by Birmingham's Smart City Roadmap, which provided a framework for Birmingham's economic, community and third sector leaders and Birmingham City Council to come together and address the city's challenges of today – with the clear goal of building a more resilient and adaptable city for the future.

The Smart City Roadmap has started Birmingham's journey outlining a range of actions, many of which are being delivered in collaboration with the business, community and public sectors that embrace use of smart city technologies and access to data to contribute to the challenges of low economic performance and unemployment, tackling health & wellbeing inequalities, improved mobility and low carbon society.

Role of the Commission

A more strategically focused Commission was formed in December 2013 to drive forward the strategic aims and principles of the Roadmap, embedding the core values of being visionary, open and collaborative, inclusive and people-centric. The Commission as a collaborative and networked group have the opportunity to effect transformational change in the city by joining up some of their own assets and activities alongside city investments to drive greater connectedness across people, places and city region to enable greater intelligence, added value and innovation with the potential to create a better place to live, improving access, mobility and urban living.

Mobilising for Action – aligning activities of Smart and Green Commission

The Mobilising for Action work led by Commission Member Mark Barber, KPMG has started a process to make the Smart City Commission as effective as possible through the development of a number of roundtables (working groups) led by members of the Smart City Commission (theme drivers) to take forward the strategic delivery of the Roadmap.

Alongside this there are the clear synergies that exist between the Green Commission (also established in 2012) Carbon Roadmap and Smart City Roadmap outcomes that necessitate a much more joined up approach across the two Commissions. The Green Commission has the aim to make Birmingham a leading Green City and reduce total carbon emissions by 60% by 2027 against a 1990 baseline and the Smart City activity provides the enabling infrastructure, data release and access in supporting Birmingham's transition

to a prosperous green economy. There is already representation from members of the Green Commission on the Smart City Commission to connect this together.

Smart City Theme Drivers and roundtables

To develop this further we are proposing six theme drivers and roundtable groups; each being led or supported by a member of the Smart City Commission and three (Transport & Mobility; Energy & Resources; Buildings & Efficiency) that are common to both the Green and Smart City Commission.

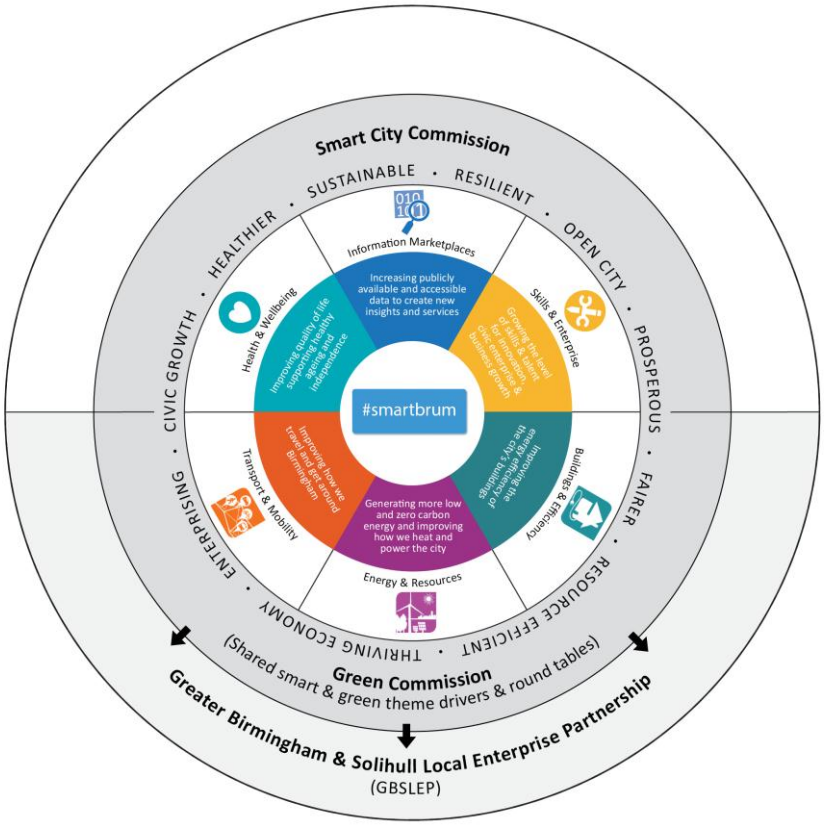


Figure 1: *Smart City Theme Drivers and Roundtables*

Figure 1 shows the theme drivers and roundtables and Appendix 1 provides a more detailed structure and overview. Each group are tasked with working together with key stakeholders and meet on a quarterly basis to drive forward the strategic aims of the Roadmap and give guidance and advice to the development of project activity in an integrated way. The theme drivers will drive the strategic development of the Smart City roadmap that will help identify and shape future projects and activities with partners. The next stage is to look at how the groups can work together effectively to ensure that the opportunities of integration are not lost and that the impact is greater than the sum of the parts.

Smart City Principles

Our smart city principles are at the heart of supporting integration and city wide transformation that will accelerate economic development for the city region; support integrated public services around health, care, safety, housing, environment for the city and facilitate integrated neighbourhood services. This shift as defined by John Tolva, Chicago's Chief Technology Officer will see the "government no longer the provider of the end user experience but the provider of a foundation for others to build on."

SMART CITY PRINCIPLES

- **INTEGRATION** - *Changing our framework, processes and integrating our multiple city systems that will make the city work better and deliver social, economic and environmental value*
- **DIGITAL** - *Securing investment in new urban and smart technologies that will help us manage what we do more efficiently – technology enabled not technology driven*
- **DATA** - *Recognising information and inclusion are key assets*
- **CITIZEN ENGAGEMENT** - *Placing citizens and businesses need at the heart of decision making process*

The Smart City Approach - Integration Opportunity

We are seeing significant investments transforming the City's built environment that will drive economic growth; in the city centre alone we have created the largest Enterprise Zone in the country that is helping to support local investments (e.g. Paradise Circus Redevelopment); The Big City Plan growing city centre development has transformed the built environment and more recently the creation of Eastside Park, along with development of Learning Quarter – relocation and expansion of Birmingham City University facilities, the transformation of the Aston University campus, two new academies established with HS2 academy; growth of Innovation Birmingham campus with the new i-Centrum tech lighthouse to follow; the Curzon Master plan for the area around High Speed 2 station will create further opportunities to create jobs and enhance the city's economy by regenerating an area of 141 hectares.

We have the opportunity to build on this substantial future investment and look at how we unlock economic value and other benefits by connecting up investment opportunities, integrating city systems and processes – both technically and organisationally, which will allow more data and infrastructure to be put at the disposal of innovative organisations and citizens. A holistic view, starts to look at how we can create a place that can operate as a 'system of systems' to work more effectively and sustainably, improving transportation, energy, waste management, crime, safety and all those other things which make living in a city amazing and at times challenging.

By taking this connected and integrated approach it maximises our existing and planned investment to bring a range of opportunities:

- Stimulate market growth and enablement in the provision of smart city services, technologies and applications.
- Commercial engagement with public sector service delivery driving new business models and services.
- Stimulate further private sector investment and support additional public sector procurement through added value services linking together investments and activities

- Drive innovation and new value creation through the use of commercial and public data assets.
- Greater visibility that will enable early intervention across a range of services, with less duplication and more focus on continuity of intervention.
- Drive more effective use of resources across multiple agencies, minimising waste and increasing value adding activity; improving public sector productivity and procedures.

Bringing greater impact and a step change to what we do

The theme drivers and roundtables create the opportunity to ensure that the Smart City agenda continues to grow and how this works to leverage the maximum impact was the discussion of a recent roundtable leads workshop (26 September 2014 –https://birminghamsmartcity.files.wordpress.com/2014/11/working-group-leads-smart-city-commision-workshop-notes-24-septembr-2014.pdf)

Three key points emerged:

1. The need to prioritise our efforts and focus and show what is possible
2. To create a demonstrator and concentrate on a spatial environment where there is significant planned investment so that we can start to understand how we can create a place which works more effectively and sustainably and is greater than the sum of the parts.
3. Recognise our contribution to supporting the Leader's Statement "Working towards a fair, prosperous and sustainable Birmingham that will deliver tangible outputs and outcomes in terms of life expectancy, jobs, social enterprises etc. – fair in terms of connecting up our different capitals to address inequalities; prosperous in terms of enabling sustainable green growth and democratic supporting access to and sharing of data.

Responding to this the theme drivers identified two priority areas: – Healthy Ageing and Economically Active Young People. For the purpose of the demonstrator, which was centred on the spatial environment of Learning & Research Quarter & HS2, the priority area of economically active young people fitted best for a smart approach.

Demonstrator: As an initial demonstrator Learning Quarter, Curzon Street HS2, Nechells – A Catalyst for Growth

Priority focus: *Economically Active Young People*
Aim: *To unlock and capture the city centre growth opportunities and investments from the Learning Quarter, Curzon Street HS2, Creative Quarter (Digbeth), Innovation Birmingham Campus that will support a 'whole place' context to enable social, economic and environmental benefits to permeate the neighbouring community of Nechells*

The arrival of HS2 – Curzon Masterplan provides a significant investment and catalyst in a locality setting that provides a demonstrator for testing out an integrated Smart City approach that will have the potential to bring together information and infrastructure to drive new services and products, entrepreneurship and service innovation. The opportunity is to look at how investment in the HS2 facilities at Curzon Street and those in Eastside, the Learning Quarter, Digbeth Creative Quarter can be levered to address the challenges faced by young people in neighbouring community of Nechells, who are affected by high levels of

unemployment and poor health. Our ambition is to use our smart city approach to permeate and address challenges of youth unemployment, skills and health inequalities in new ways, maximising and leveraging use of investment and our assets to do more.

While Nechells has been selected as a community in this exemplar because of its immediate proximity, the proposition is that we can build on the asset based approach to take forward a smart city approach that will enhance opportunities for young people, which can be replicated across other neighbourhoods and communities in Birmingham.

Appendices 2, 3, 4 provide more detail about the proposed demonstrator; a fast forward to 2026 visual and several scenarios of young people living in Nechells 2026

Next Steps

The Commission is asked to reflect on this paper and consider how through the Commission and theme drivers, it can bring together the right governance and processes that will enable the Commission to leverage investment opportunities such as HS2 - Curzon Masterplan and the Learning Quarter; and to identify opportunities to develop these into Smart City activities and projects that will benefit multiple neighbourhoods and communities across Birmingham.

The Commission members are also requested to consider what additional members are required to support the strategic development of these opportunities going forward.

APPENDIX 1: Birmingham Smart City Commission – Theme Drivers & Roundtable Groups

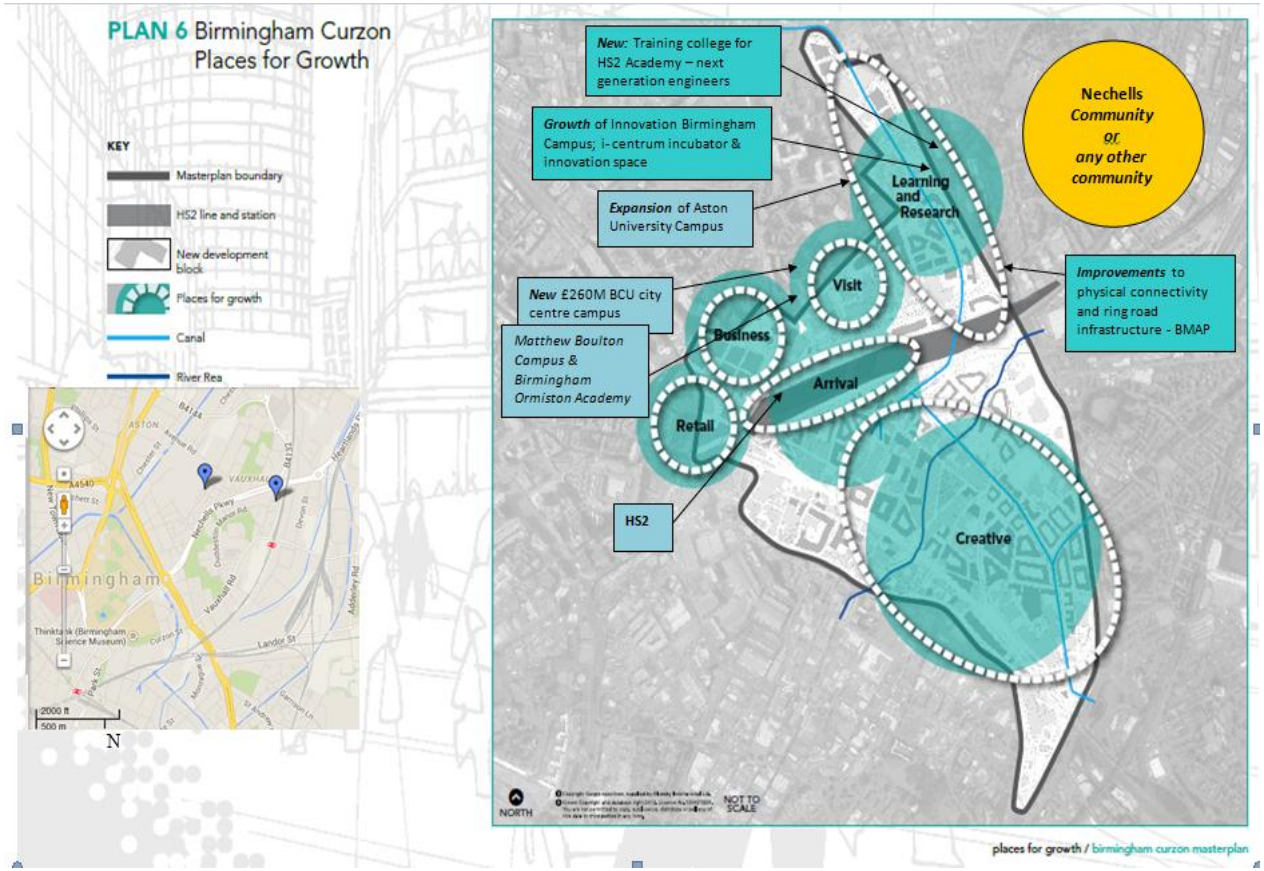
Themes	**Health & Wellbeing**	**Skills & Enterprise**	**Transport & Mobility**	**Energy & Resources**	**Buildings & Efficiency**	**Information Marketplaces**
				Smart & Green		
Theme Drivers	Tim Jones (UHB) AHSN TBC (WM Police) Pat Laughlin (MEBC)	Jas Bains (Ashram Moseley Housing) David Hardman (Innovation Birmingham) Tracy Westall (SCC)	Keith Sexton (Amey) TBC (Centro) TBC (Sustrans)	Julia King (Aston University) Richard Williams (UoB) TBC (Smart City Commission member) TBC (Cofely)	Simon Wright (EST) Martin Orrill (British Gas)	Bjorn Birgisson (Aston University) WMODF
	Stakeholders within working groups - roundtables					
Theme Outcomes	A fairer, improved and sustainable quality of life supporting healthy ageing and independence	Economically active & skilled citizens Thriving businesses and growth in civic enterprises	Better ways of moving people & resources across the city, reduced greenhouse gases and improved air quality for healthier citizens	Greater energy security & resilience, increased flows of finance / investment inside the city Better use of city's waste as a resource & reduced risk from resource scarcity	Reduced fuel poverty, affordable energy & a better quality of life	Improved ways of delivering services and creating new services & products bringing social, economic and environmental value More agile and resilient city
	Fair, prosperous and democratic city **Growth in smart city goods and services creating prosperity and jobs**					
BCC Officer Support	Nicola Bryant (DB) TBC (Public Health - BCC)	Annette King (DB) Employment Team (BCC)	Raj Mack (DB) Anne Shaw Sylvia Broadley	Heike Schuster-James (DB) Richard Rees (CCE) Clifford Hill (P&R) Penny Smith (F&WM)	Nikki Spencer (DB)	Stuart Lester (DB)
	Funding, knowledge and opportunities – linkages to LEP Benchmarking and Evaluation - KPMG; Heike Schuster-James (DB)					

<u>APPENDIX 2:</u> DEMONSTRATOR OF A SMART CITY APPROACH IN A SPATIAL CONTEXT

Learning Quarter, Curzon Street HS2, Nechells – A Catalyst for Growth

Priority focus: *Economically Active Young People*
Aim: *To unlock and capture the city centre growth opportunities and investments from the Learning Quarter, Curzon Street HS2, Creative Quarter (Digbeth), Innovation Birmingham Campus that will support a 'whole place' context to enable social, economic and environmental benefits to permeate the neighbouring community of Nechells*

Overview: The arrival of HS2 – Curzon Masterplan provides a significant investment and catalyst in a locality setting that provides a demonstrator for testing out an integrated Smart City approach that will have the potential to bring together information and infrastructure to drive new services and products, entrepreneurship and service innovation. The opportunity is to look at how investment in the HS2 facilities at Curzon Street and those in Eastside, the Learning Quarter, Digbeth Creative Quarter can be levered to address the challenges faced by young people in the neighbouring community of Nechells, who are affected by high levels of unemployment and poor health. Our ambition is to use our smart city approach to permeate and address challenges of youth unemployment, skills and health inequalities in new ways, maximising and leveraging use of investment and our assets to do more.



The 'Whole Place' Integration opportunity

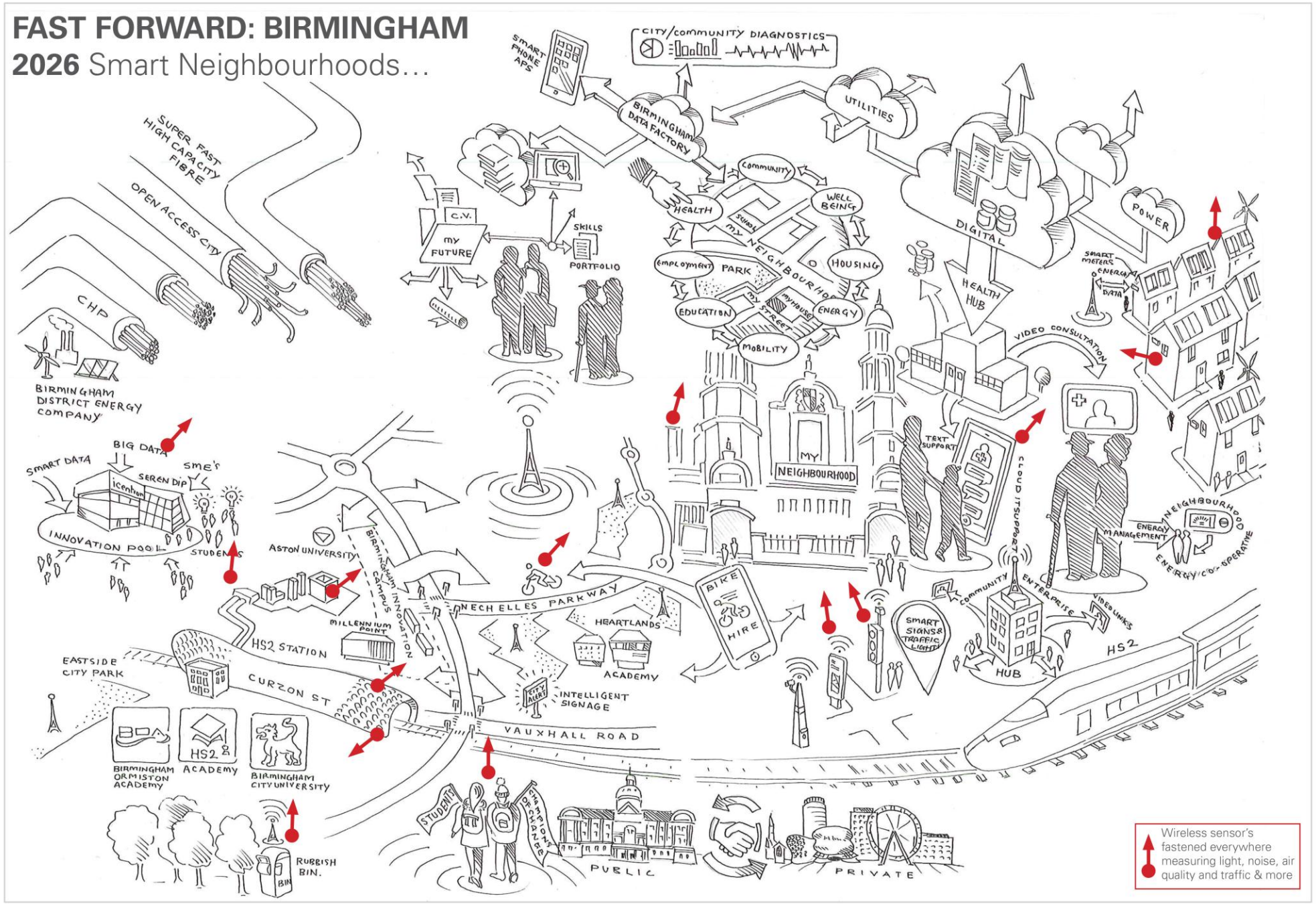
The Birmingham Curzon HS2 Masterplan maximises the regeneration and development potential of HS2 in the City Centre, in particular the Eastside, Digbeth and eastern side of the City Centre Core. It is forecast to create 14,000 new jobs and add £3.1bn of GVA to the city's economy by regenerating an area of 141 hectares. The GBSLEP SUD plan will support the maximisation of the development for HS2, delivering economic impacts which are beneficial in a 'whole' place context (sustainable development actions that are integrated at a local level in a holistic way), to achieve low carbon and ecological gains for the benefit of communities, at the same time as supporting connectivity, economic and employment gains for the urban and rural communities across the whole GBSLEP area. **ESIF** funds will be used to achieve whole place sustainable investments in land, public realm, environmental measures, development opportunities, ICT innovation, infrastructure and improved travel connectivity and mobility around the HS2 facilities and connecting to the wider GBSLEP area.

Eastside is well established as the City Centre learning quarter. Aston University continues to invest in its teaching, research, student residential and welfare facilities realising the Aston University Masterplan. The University also has a strong relationship with Innovation Birmingham Ltd where there are significant opportunities for further growth in research and hi-tech industries through development of i-Centrum. Birmingham Metropolitan College is investing in new facilities, strengthening the educational role for Eastside. The Ormiston Academy opened in 2010 adds to the range of facilities and options for students within the City Centre. Birmingham City University's investment in its new City Centre campus in Eastside is bringing fresh impetus to the further development of the Eastside Locks proposals.

Physical connectivity –will see HS2 station fully integrated into the wider transport network with new and improved sustainable transport connections integrated with the wider City Centre and beyond to facilitate and promote regeneration and new high quality pedestrian/cycle routes and public spaces which promote the development of an attractive sustainable transport network.

Nechells, despite all the significant regeneration opportunities taking place and being planned in adjacent areas such as Eastside, Nechells still have high levels of deprivation, poor health / life expectancy and unemployment as well as a particularly young population that is not benefiting from the world class learning assets on their doorstep. Bounded by major ring road means Nechells lacks physical connectivity with no good sense of place, presenting a barrier to the opportunities that already exist and will grow as HS2 plans develop. Mobility is being addressed through BMAP (Birmingham Mobility Action Plan) that will bring complete redesign of the Garrison corridor and Curzon Street replacing the roundabouts with signal junctions and crossings. HS2 development will also bring with it new and improved sustainable transport choice into and around the area.

APPENDIX 3: Priority – Economically Active Young People



APPENDIX 4: Scenarios – Young People living in Nechells 2026, a Smart City neighbourhood

Jake is 16 and lives with his mum in Nechells. He was bullied at school during his early years and felt let down by the school system. Consequently he has frequently missed school and has never really settled properly, often mixing with the wrong crowd. He finds it hard to talk to his mum and spends most of his time at home in his bedroom playing online games, where at least he is known to a select group of people that seem to respect who he is and admire his skills. He is set to leave school with no GCSEs.

The local Inspire social enterprise, using the new collaborative city platform has identified Jake as a person that would benefit from extra support, mentoring and coaching to help get his life back on track. Jake is given access to his own personal My Future app that he can access through his smartphone and links him to a personalised IT platform that is helping to nudge, incentivise and develop his skills and future prospects with tailored training and development supported by a range of partners that are integrated into the platform. Although no formal qualifications, he has recorded in the e-portfolio section his gaming skills, and as a result has just received through an alert of a Game Fair at Innovation Birmingham Campus – inviting him to take part in activities. A little hesitant and not sure what to do he connects up to his virtual mentor, who gives him encouragement and some helpful tips and advice as well as also suggesting that he visits the virtual campus where he can connect and get to know the other people that will be in his group on the day and also take a look at their video wall of aspirations to see how people got into the jobs they do now. By registering for the games fair, further doors have opened – the local college - BMET has pinged him some details of an IT course that has been specifically tailored for him in mind covering gaming, coding and team working. It's a modular style course that is also hooked up to a local business - he can shape and design the course to fit and also how he wants to study. He plans to use the local community business hub to study virtually, as he can meet up with people from his area at the same time as well as get support. They also have good video links so he can also connect into the classroom activity and be part of the group if he wishes to. Clicking the send me more information has just notched up more credits on his My Future app which he can redeem using his smartphone using it as local currency either through the local shops or some of the new shops and restaurants that have opened up next to the new HS3 station. He plans to use the new bike scheme, which has opened up outside the old swimming pool, where he can book, pay and reserve a bike using his credits and drop it off at the bike station next to Aston University; by using the bike to get to the games fair at Innovation Birmingham he will instantly add on another 50 credits.

Zahira is 14 years old and lives in Nechells with her mum and dad. She has been registered on the Smart City platform as a Young Carer for the last four years providing personal support to her mother Jaya, who has been registered disabled for all of Zahira's life, having been confined to a wheelchair since losing an arm and a leg in a car crash in her teens. Although Jaya still leads a full and productive life and has adapted to her situation, she still requires elements of care that she relies on Zahira to provide. Jaya is employed part time at a call centre, her husband works unsociable hours as a taxicab driver and Zahira is at secondary school.

After Zahira wakes, she checks her mum's care schedule on her smartphone through a new app that supports her family's health and wellbeing needs and services linked to a wider tele health package, which details the family's health, a calendar, any important events and what day / time the registered carer will be attending. After helping her mum with her personal care and washing and dressing herself Zahira starts breakfast. Jaya checks in with her Assisted Living mentor using Skype, where she has face to face access to her personal, qualified carer; explaining the increased pain she has been experiencing over the last couple of days and after going through her symptoms, her assisted Living mentor allocates her a slot for the District Nurse to visit to resolve any issues. Jaya is subsequently diagnosed with type-2 diabetes and will need her blood sugar levels regularly checked and insulin injections administered. Logging onto the family's tele-health web site system, the family are able to access a number of awareness raising and support videos, providing tutorials on diabetes, its effects and self-help diet tips; all of which they are able to access through their mobile, TV or PC to help improve their quality of life through learning, information and support. Zahira gets regular alerts about services in the community and theirs even news of a new Diabetes Notice Board for both the cared for and carers, providing peer to peer support, advice and guidance.

Zahira also has a personal mentor to provide added support when things get particularly difficult that are linked into her wider school networks. The support networks are all validated with inputs from a range of stakeholders representing professional and non-professional carers, medical and social service organisations. Zahira is able to make informed decisions about her mother's care or seek the advice she needs through the tele-health system. She also knows that she is gaining valuable skills and that this is accredited through an appropriate awarding body and Zahira is able to build a tele-health e-portfolio of her achievements which contribute to her future employability.

Khan is 13 years old and attends Heartlands Academy School in Nechells. His school is piloting a new Future Cities course, which replaces the old Citizenship studies and is focused on motivating and empowering young people, as well as meeting the needs of local business and those of growing a sustainable city. Today at school they are using data from Birmingham's Data Factory and collecting real-time data from sensors that have been installed over the last several years into many of the buildings and street furniture. They are using it to model services in their local neighbourhood and look at how they can address congestion, waste recycling problems and a recent spike in air emissions that have been alerted through the city dashboard. They have been asked to present their findings back to their local neighbourhood planning team responsible for managing and delivering services collaboratively and cooperatively with residents.

They are being supported by Aston University graduates and students who are part of an innovation pool working with local businesses and the tech businesses at the i-Centrum building. His class has a regular video conference call booked with them to discuss the project. Today there will also be a couple of local businesses specialising in green technologies from the Tyseley Environmental Enterprise District on the call together with Amey who are responsible for highways maintenance and infrastructure. They have also been given some new 'inexpensive' sensors to trial, which Khan and his classmates have located outside their homes; the data is integrated with other data onto a map to show the pollution levels. Depending on all of the modelling data and results they are looking at suggesting alternate patterns of working to shift to a '5 minute walk' model of a neighbourhoods where leisure school, work and school are accessed within a 5 minutes walk. Khan likes the thought of possibly changing his school day to a 10.30am start and getting a lie in and also doing more work through virtual supported study. He does wonder though what impact that will have on his energy use at home – important to him because his dad has recently had their terrace house super insulated again and retrofitted with solar PV and a highly efficient wind cowl and battery storing energy. He and his dad like to monitor and manage their energy use through a technology system linked to their smartphone via an app as part of the Nechells energy co-operative scheme. They trade electricity back to the network and Khan gets a percentage of any savings as pocket money. Khan is not sure what he wants to do when he leaves school but he knows that his skills e-portfolio is starting to look pretty impressive and he can see that he has lots of opportunities open to him and already he has made a number of contacts with businesses in the local area who are hungry for his range of skills.

Maryam is 19 years old and lives in a small flat in Nechells. She is employed by Birmingham Ormiston Academy as part of a 2 year apprenticeship scheme, supported by the local enterprise hub in Nechells. Through this scheme Maryam works for a range of SMEs on short term projects and has just landed 3 month contract with FreshEye a start-up web developer based at i-Centrum who has been awarded a contract to develop a series of interactive digital art installations to capture feedback from young people in the city centre around the new Curzon HS2 Arrival and Learning Quarter. These art installations will be built into the existing wayfinding signs that are located from the heart of Nechells into the centre of the Learning Quarter. Maryam has been part of a local coding club since she was 12, so has gained a lot of technical skills, making use of data from Birmingham's Data Factory as well as using her creative talent for digital art to support a host of web prototypes on the back of community and local business challenges, so feels at home in this environment. FreshEye was impressed by Maryam's local market knowledge and understanding of the target audience as well as her unique artistic talent. Today Maryam is running some focus group sessions with young people that she has arranged through her social networking channels at the local community enterprise hub. The centre offers drop in facilities, meeting rooms, video conferencing and workshop facilities that include access to 3D printing. Her use of the enterprise hub facilities for this project has been funded through the Nechells neighbourhood crowdfunding scheme, where residents and local businesses have made contributions to help extend the digital art installations to cover more areas of Nechells and Duddeston.

She has arranged a video call with FreshEye so that they can set the context and background at the start of the focus group session. She is recording the session to review later and discuss in more detail with other people at the enterprise hub. She enjoys meeting people at the hub and is fascinated by all the ideas and projects that are being developed into businesses

While at the hub she drops into the 3D workshop to see Mr Jones, her step dad's next door neighbour. Her dad had just messaged her to say that Mr Jones wanted some help with the design of his packaging and she is keen to see what she can do - you never know it may lead to some more work.