

**GREATER MANCHESTER LOCAL ENTERPRISE PARTNERSHIP BOARD**

Date: **18<sup>th</sup> September 2017**

Subject: **GM Draft Digital Infrastructure Implementation Plan**

Report of: **Margaret Asquith – Digital Portfolio Lead Chief Executive**

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**Purpose**

Having a ubiquitous, affordable, competitive, future proofed digital infrastructure will be a prerequisite for world leading cities. These will be places where connectivity bandwidth is never a barrier to commercial, social activities or the delivery of public or other services. Just like water – digital connections would be available anywhere at any speed you need – when you need it; how you need it and, due to strong market competition, at a price and quality that provides a significant competitive edge internationally.

The development of a Digital Infrastructure Implementation Plan is a part of the draft Greater Manchester Strategy and a GM Mayoral priority.

The purpose of this report is to seek the views of the LEP on the Draft Plan (set out under Appendix A).

**Recommendations**

- That the LEP agrees in principle the priorities set out in the Draft Digital Infrastructure Implementation Plan
- That the LEP notes that the Expression of Interest submitted to Government for its Full Fibre Networks Challenge Fund is in line with priority to accelerate full fibre investment as set out in the draft implementation Plan
- That the ambitions and actions set out in this Plan are developed further by the Digital Infrastructure Leadership Group informed by the feedback from the Mayors Digital & Tech Summit on 6<sup>th</sup> July 2017.

### Background

This Draft Implementation Plan defines digital infrastructure as fixed connectivity (e.g. Superfast broadband or fibre to the premises); next generation 5G mobile connectivity and public wifi.

The GMCA has stated an ambition for Greater Manchester to be a “World Leading Digital City Region” and the GM Mayor is held a Digital and Tech Summit on 6<sup>th</sup> July.

A key part of our ambition is to develop a plan for digital infrastructure which will deliver superfast broadband and fibre connectivity across the whole of Greater Manchester and expand public Wi-Fi provision in the city-centre and all the main towns of GM.

The LEP at its meeting at its meeting on 16<sup>th</sup> January received a report that highlighted the need for GM to

- a. Put forward a vision to providers about how GM public sector reform and the levers of control we have through devolution will drive early demand for full fibre infrastructure.
- b. Minimise the barriers to implementation including the use of blanket wayleave agreements to speed up access to premises and streamlining the highway works approval process.
- c. Work with providers to develop/pilot innovative approaches that can accelerate fibre investment taking advantage of Government funding support.

GMCA at its meeting on 27<sup>th</sup> January confirmed that GM would develop a plan of action to encourage market investment in fibre infrastructure and take advantage of the Government’s funding announced in the 2017 Spring Budget<sup>1</sup> to achieve this.

The Government has since announced that it aims to encourage market investment in fibre infrastructure through a Full Fibre Challenge Fund.

It is clear from discussions with industry (including regulators, providers and users), that to be considered world leading our digital infrastructure will need to be built upon the foundations of having a full fibre network<sup>2</sup>. This will drive innovation in services and delivery; create the best possible conditions for GM to take advantage of next generation 5G mobile services and support the provision of high speed public wifi.

The following four Digital Infrastructure priorities are proposed:

- 1. Make Greater Manchester a full fibre connected city region as quickly as possible so that we can offer the highest possible fibre to the premises speeds (1Gbps+) to businesses and homes.**
- 2. Place GM at the forefront in the adoption and roll out of next generation 5G mobile technology.**

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<sup>1</sup> The National Productivity Investment Fund investment £740 million in digital infrastructure by 2020-21 which will include £200 million to fund a programme of local projects to test ways to accelerate market delivery of new full-fibre broadband networks.

<sup>2</sup> Where all premises have fibre connections

## ITEM 4

3. **Deliver fixed superfast broadband<sup>3</sup> at minimum speeds of 25Mbps across all GM by 2020 to ensure that everyone can participate in the digital world.**
4. **Deliver ubiquitous wifi across all GM city centres and town centres to support our international and other visitor markets and provide alternative means of digital access for GM citizens and businesses.**

This is a fast moving area of industry undergoing rapid evolution with regular announcements from existing and new market players. This will inevitably require some of the actions in this Plan to be flexed accordingly but is unlikely to change the priorities and outcomes we are seeking to achieve.

A private sector led Digital Infrastructure Leadership Group has been established following the Mayor's Digital Summit to finalise the Plan following consultation and then oversee its delivery. LEP and GMCA agreement to the final plan will be sought before the end of this year.

### **CONTACT OFFICERS**

**Phil Swan – Chief Information Officer**

**John Steward – Principal: Digital Growth & Internationalisation**

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<sup>3</sup> In the industry this is termed as fibre cable to the street cabinet – where the last mile to the premises is a copper or coaxial cable – which ultimately provides limitations to the speeds that can be achieved.

## APPENDIX A

**DRAFT GM DIGITAL INFRASTRUCTURE IMPLEMENTATION PLAN**

Our ambitions for digital infrastructure are set out under four priorities (which are summarised under Appendix B). These reflect the draft GMS and Mayor's manifesto pledges which includes the ambition to be a world leading digital city region:

- 1. Make Greater Manchester a full fibre connected city region as quickly as possible so that we can offer the highest possible fibre to the premises speeds (1Gbps+) to businesses and homes.**

Overview of current position

*To be considered world leading we will need full Fibre to the Premises (FTTP) infrastructure which is the ultimate in fixed connectivity because it has no known bandwidth ceiling. It will enhance our competitive advantage by attracting more digital and technology businesses and encouraging innovation in new services and products that can take advantage of the speeds that FTTP can deliver our business based and public services.*

*Ofcom confirmed in its recent review that UK has been falling behind its international competitors (UK currently has 2% full fibre to the premises coverage compared with around 60% in Spain and Portugal). The earliest adopters of FTTP in the UK have been larger businesses and organisations. Without intervention full fibre (FTTP) coverage in GM by 2020 is unlikely to exceed 10%.*

*Both BT Openreach and Virgin Media have been investing to maximise the speeds of their existing fibre to the cabinet networks (superfast, ultrafast, lightning etc.) – focused primarily on the residential market. Both companies believe that the speeds being delivered through those technologies<sup>4</sup> are likely to satisfy market demand from households in the short and medium term. However, it should be noted that BT has recently announced that it now plans to deliver fibre to the homes of 10 million households in the UK by 2025.*

*Industry consultation has confirmed that the public sector can have a key role in leveraging market investment in fibre to the premises across the economy. Aggregating demand from within the public sector and opening up publically controlled assets that can be used to deliver fibre (e.g. road, rail, street furniture) has proven to be important in unlocking investment to deliver the fibre infrastructure.*

*It is estimated that aggregated public sector demand (across local authorities, health, fire and police services) could leverage as much as £250m private sector investment in GM. This could deliver the fibre connected public services we need to deliver our reform ambitions and lead to our key business and industrial estates and town centre*

<sup>4</sup> BT Superfast delivers speeds of 25Mbps – 70Mbps; BT/Virgin Media Ultrafast and lightning fast products delivers speeds from 100Mbps to 1Gbps.

*having fibre to the premises connections. The estimated cost of full fibre roll out is in the region of £750m.*

*City Fibre are currently a key player in this area and have been using this model to implement investment projects in a number of smaller cities in the UK including York, Edinburgh, Coventry and Peterborough. It has proved to be a very effective way for the public sector to bring about substantial market investment in new fibre networks in line with current State Aid rules<sup>5</sup>. This is because the business model involves adding additional ducting for fibre for its commercial revenues at the same time as installing fibre to connect public premises. City Fibre are just one of a new breed of players now coming into the infrastructure market who are ready to invest in FTTP, if the conditions are right. This includes Gamma and Vodafone, which has also expressed an interest, particularly because it can support the development of its mobile infrastructure.*

*In the Budget on 8<sup>th</sup> March the Government (DCMS) confirmed its intention to support public sector aggregation interventions through an investment of £200 million to seed local projects that can accelerate market delivery of new full-fibre broadband networks – and in doing so encourage new challengers into the market.*

*DCMS requested expressions of interest for its proposed “Full Fibre Challenge Fund” on 21<sup>st</sup> July. GM submitted its response by the 23<sup>rd</sup> August deadline.*

*That response confirmed that GM would seek support to:*

- Aggregate public sector connectivity demand from its Health and Social Care Services, Fire and Rescue Services and at least three early adopter GM local authorities as an anchor contract to encourage wider private sector investment*
- Make available key public assets including Metrolink and National Rail available to all market providers to support the connection of public sector premises to further accelerate private sector investment*
- Develop a provider agnostic gigabit business voucher scheme aimed at accelerating demand by connecting 5,000 businesses to very high speed connections.*

### Key Actions

The Digital Infrastructure Leadership Group will oversee the Full Fibre Challenge Fund Bid to Government. This will leverage levels of market investment that can lead to fibre connecting our key business areas including towns and city centres – where there is the strongest evidence of early demand.

It is also intended that we will reflect our fibre to the premises ambitions in our planning policy for new development within the Greater Manchester Spatial Framework.

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<sup>5</sup> This situation may change follow EU exit. But DCMS are assuming that there will not be a significant change for the foreseeable future two years. State aid has proven to be a significant barrier to progress in this area in the past.

**Outcome**

- A. By 2020 GM will have implemented a public sector demand aggregation pilot and have plans in place to deliver full FTTP coverage in all GM public sector buildings, key business parks and town and city centres.**

**2. Place GM at the forefront in the adoption and roll out of next generation 5G mobile technology.**

Overview of current position

*When it is rolled out internationally from 2020 it is expected that 5G will be up to 80 times faster than existing 4G speeds (currently in the region of 25Mbps in GM). 5G will be transformative because it will bring new technologies providing opportunities for wide ranging and, as yet, unforeseen new applications and business models and will support innovations such as the “internet of things” and driverless vehicles.*

*International standards for 5G have not yet been agreed. However, we have started to engage with the mobile industry to determine what we would need to do to create the best possible conditions to accelerate implementation. It is clear that those places with substantial fibre networks (needed to feed mobile masts) and readily available public sector assets (e.g. Street furniture) are likely to be favoured by the market for early roll out.*

*In the Spring Budget the government announced a new National 5G Innovation Network to trial and demonstrate 5G applications with funding for future trials to be awarded on a competitive basis. Following our discussions with DCMS it is understood that other “Challenge Fund” will support 5G pilot projects in small areas around key themes. Those mentioned include driverless vehicles, internet of things and augmented reality.*

Actions / Opportunities

- The Digital Infrastructure Leadership Group (DILG) will oversee work with the mobile industry to develop a 5G mobile pathfinder project to prove 5G technologies and applications and thereby best position the City Region for early roll out of 5G from 2020. This will include:
  - o Identifying requirements for access to public assets
  - o Utilising and building upon the GM infrastructure map and database
  - o Identifying infrastructure support needs (including fibre)
- The DILG will then work closely with DCMS to develop a bid for the pathfinder project through the proposed new Government 5G “Challenge fund”.

**Outcome**

- B. By 2020 GM will be in a strong position to be selected for early stage roll out of new 5G mobile technologies.**

**3. The delivery of fixed superfast broadband<sup>6</sup> at minimum speeds of 25Mbps across all GM by 2020 to ensure that everyone can participate in the digital world.**

Superfast, Ultrafast/Lightning fast Broadband: Overview of current position

*It is expected that BT Openreach will have delivered 99% coverage of Superfast Broadband (from 25Mbps) across GM by the end of 2017 supported through BDUK funding. The previous Government announced plans to introduce a Universal Service Obligation for broadband which would guarantee a minimum of at least 10Mbps for the final 1% by 2020. BT Openreach has announced that it will be delivering this.*

*At the same time BT Openreach and Virgin Media are also rolling out much faster Ultrafast/Gfast/Lightning products which, it is claimed are capable of delivering speeds of up to 1Gbps. These products will be targeted principally at the residential market. BT Openreach has announced that it plans to cover 10million UK homes at these speeds (up to 1gbps) by 2020.*

Proposed Actions

- GMCA and local authorities, work with BT Openreach to address the remaining “not spot” areas before 2020 and ensure that the speeds delivered to “not spot” places in Greater Manchester through the Universal Service Obligation are at least 25Mbps (superfast).
- GMCA and local authorities work with BT Openreach and Virgin Media to accelerate delivery of Ultrafast and Lightning Fast 300Mbps products by reducing costs through the introduction of standardised wayleaves by 2018 and enhanced road permit coordination.

Increasing broadband take-up: Overview of current position

*The UK average take up of superfast and other broadband was 42% at the end of 2015 (Ofcom). Specific figures for Greater Manchester are not available currently, however it is understood from BT Openreach that is likely to be in line with the national average. The proportion of people using mobile to access the internet in the UK in 2016 was 66%. The proportion of online adults using social networking sites was 73% in 2015.*

*We will need to drive the take up of superfast broadband and mobile internet in Greater Manchester if we are to maximise the participation of our citizens in the digital economy and society.*

Action

The Digital Infrastructure Leadership Group will evaluate successful local authority initiatives in GM & the UK aimed at improving take up and use this best practice to create a Digital Take-Up Programme that will be implemented leveraging the

<sup>6</sup> In the industry this is termed as fibre cable to the street cabinet – where the last mile to the premises is a copper or coaxial cable – which ultimately provides limitations to the speeds that can be achieved.

collective marketing resources and capacity internet providers to drive wider citizen take up of digital services.

**Outcomes**

- C. There will be 100% superfast and high speed broadband coverage in GM by 2020 delivering minimum speeds of 25Mbps.**
- D. Greater Manchester will be ahead of the national average by 2020 in take up of internet service by citizens through broadband, mobile and wifi.**

**4. Deliver ubiquitous free Wifi across all GM city centres and town centres**

Overview of current position

*The availability of free public wifi will support international and other visitor markets and provide alternative means of digital access for GM citizens, students and businesses. There is currently reasonably good public wifi coverage in GM across most town and city centres. TfGM also now provide free wifi on Metrolink. Wifi is also available on some bus services. However, there are some gaps in wifi provision which need to be better understood. In addition, where it is available, free wifi often requires registration every time it is used with only limited free time before user is charged.*

Action

The Digital Infrastructure Leadership Group will coordinate mapping of existing public wifi arrangements and will then develop a GM wifi programme, working with the market, to address gaps in wifi provision and quality of service issues.

**Outcome**

- E. By 2020 GM will have full free 24/7 public wifi<sup>7</sup> availability across our City and town centres.**

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<sup>7</sup> Freely available following one time log in.

# GM Digital Infrastructure Implementation Plan (draft)

PRIORITIES	CURRENT POSITION	2017	2018	2019	2020 OUTCOMES
<p><b>1. Build a world class full fibre connected City Region offering the highest possible speeds</b></p>	<p>Current very high speed connections (fibre to the premises) are available at a cost – early demand is from large businesses and organisations who can afford construction costs. BT Openreach FTTP coverage is currently in the region of 2%.</p>	<p>Implement large scale public sector aggregated demand UK demonstrator as an anchor to accelerate market investment in fibre networks supported with DCMS funding</p>	<p>Access Local Fibre Networks DCMS funding and other funding to establish fibre voucher scheme in GM for businesses to leverage private sector marketing capacity in driving FTTP demand</p>	<p>Fibre to the premises (FTTP) for new build adopted as GMSF policy / LAs develop Standardised wayleaves to Accelerate commercial investment by BT and Virgin Media in FTTP coverage and other providers in GM</p>	<p><b>A. Public sector demand aggregation pilot implemented with plans in place for full FTTP coverage in all GM public sector buildings, key business parks and GM town and city centres.</b></p>
<p><b>2. Place GM at the forefront of next Generation 5G mobile roll out</b></p>	<p>5G standards not agreed internationally – early focus on R&amp;D pilots and preparing the ground. GM well placed with full public sector assets data– Improved coverage of fibre networks will support 5G rollout.</p>	<p>Working with mobile providers develop and submit Challenge Fund bid to DCMS for proof of concept 5G demonstrator in GM.</p>	<p>Public sector to use demand aggregation to accelerate the private sector investment in our fibre networks to make GM a more attractive proposition for early 5G roll out</p>		<p><b>B. GM selected for early stage roll out of 5G mobile.</b></p>
<p><b>3. Deliver Superfast Broadband coverage across GM</b></p>	<p>BDUK and LA funding will deliver superfast broadband to 99% of GM by Dec 2017. It is estimated that current Broadband take up in GM is 42% (internet by mobile is 66%).</p>	<p>BT implement BDUK programme to deliver 99% Superfast across GM by Dec</p>	<p>Develop and implement model options to address the remaining gaps in provision including Community Broadband &amp; Universal Service Obligation.</p>	<p>GM identifies with BT the final 1% not covered by Superfast Broadband</p>	<p><b>C. 100% broadband coverage in GM with min. speeds of 25mbps</b></p>
<p><b>4. Deliver ubiquitous free wifi across all GM city centres and town centres</b></p>	<p>Provision of public wifi coverage is good in places but also patchy. Where there is coverage most providers require pre-registration and provide only limited free time.</p>	<p>LA develop standardised wayleaves to accelerate BT Openreach and Virgin Media roll out of Ultrafast and Lightning Fast 300Mbps products.</p>	<p>Local authorities to evaluate current public wifi coverage and key gaps in provision</p>	<p>Build on established projects and work with market to accelerate broadband take-up with focus on the disadvantaged</p>	<p><b>D. Number of GM citizens online exceed the UK average.</b></p>
		<p>GM model options developed through Digital Infrastructure Leadership Group to address remaining gaps in town and city centres including public sector provision, joint ventures and exploring with BT the potential to turn existing phone boxes into wifi hot spots.</p>			<p><b>E. Free high speed wifi across GM City and Town Centres</b></p>



\* BT has announced that it will be covering 10 million UK premises with Gfast by 2020. It is assumed that Virgin Media will mirror part of that coverage. 2 million premises will have FTTP coverage.