

Response to Request for Information

Reference FOI 002943
Date 06 November 2018

5G Strategy

Request:

1. Do you have a 5G strategy?
[No although we are working with WMCA in the development of the Urban Connected Communities 5G project as set out in 1.4.](#)
 - 1.1 If yes, I request to see the complete strategy, its ambitions and its objectives in PPTX, Word, PDF or picture format.
[N/A](#)
 - 1.2 If yes, has the public had the opportunity to read and understand Wolverhampton's 5G strategy? Where was this information published?
[N/A](#)
 - 1.3 I also request a supplementary document that includes the highest level of detail on all 5G technology that's planned to be used and current in use in public spaces within Wolverhampton:
 - (a) Companies and entities involved and the names of the company/entity officers.
 - (b) Specification sheets of all 5G technology.
 - (c) What technology e.g. units and arrays are not currently 5G, but can be 5G enabled e.g. with current software, future software, hardware upgrades or retrofitting?
 - (d) What UK, EU and International safety standards is Wolverhampton complying with for the 5G strategy and existing 5G technology.
 - (e) I request proof e.g. a certificate from Wolverhampton that confirms that UK, EU and International safety standards for workers and the public have been met.

[In respect of questions contained in 1.3, it has been established after careful consideration that the Council does not hold the above information at present.](#)

Consequently, we are unable to provide any information relating to the above, and are informing you as required by Section 1(1) (a) of the Act, that states:

"Any person making a request for information to a public authority is entitled to be informed in writing by the public authority

- 1.4 If no, I request all documentation, memos, emails and communication on companies and entities you're in talks with regarding the formulation of a 5G strategy.

In response to question 1.4, Section 1 of the Freedom of Information Act 2000 places two duties on public authorities. Unless exemptions apply, the first duty at:

- Section 1(1) (a) is to confirm or deny whether the information specified in a request is held.
- The second duty at Section 1(1)(b) is to disclose information that has been confirmed as being held.

Your request for information has now been considered and the City of Wolverhampton Council is not obliged to supply the information you requested for the reasons set out below.

Section 17 of the Freedom of Information Act 2000 requires City of Wolverhampton Council, when refusing to provide such information (because the information is exempt) to provide you, the applicant with a notice which:

- (a) states the fact,
- (b) specifies the exemption in question and
- (c) states (if that would not otherwise be apparent) why the exemption applies:

In relation to your particular request, the following exemption applies:

Section 22 – Information Intended for Future Publication

We can confirm that City of Wolverhampton Council hold the information requested however a Section 22(1)(a)(b)(c) – Information Intended for Future Publication exemption has been applied to the data thereby exempting its release.

Section 22((a)(b)(c) – Information intended for Future Publication

“(1) information is exempt information if-

- (a) The information is held by the public authority with a view to its publication, by the authority or any other person, at some future date (whether determined or not)
- (b) The information was already held with a view to such publication at the time the request for information was made, and

- (c) It is reasonable in all circumstances that the information should be withheld from disclosure until the date referred to in paragraph”

Section 22 is a qualified class-based exemption and consideration must be given as to whether there is a public interest in providing the information prior to the anticipated publication.

Public Interest Test

City of Wolverhampton Council is committed to recognise there is a strong public interest to demonstrate openness, transparency and accountability with regards to the Freedom of Information legislation particularly in relation to an individual's right to know. We recognise that disclosure would provide reassurance that the City of Wolverhampton Council is processing the requests that it receives in a timely manner particularly as it would indicate how we are meeting our obligations as outline in the provisions of the Act.

Considerations favouring Non-Disclosure

City of Wolverhampton Council is committed to publishing information however we do not consider that it is in the public interest to place information into the public domain, prematurely, before pre-publication procedures have taken place.

We have therefore reached the view that, on balance, the public interest is better served by withholding this information under Section 22 of the Act at this time.

2. I request the name/s of the Officer/s in charge of the 5G strategy and roll out including their CV and qualifications in 5G and Smart Cities; and who their subject area expert or consultancy is, their CV and qualifications on 5G and Smart Cities.

Wolverhampton are a partner in the 5G project and as such, the lead is for the city's digital infrastructure programme as a whole not just 5G. The Senior Responsible Officer for the Digital Infrastructure programme experience is set out below.

Senior Responsible Officer – Jennifer Brake has over 5 years' experience of delivering telecommunications programmes in local authorities including: Great Western Fibre Broadband Delivery as Programme and Contract Manager for the procurement and delivery of £36m superfast broadband network across South Gloucestershire resulting in 94% coverage. Bristol telecommunication duct concession advising Bristol City Council on competitive dialogue procurement of a concession partner to realise the value from 76km duct network to improve broadband coverage. Wireless concession leading a competitive dialogue procurement for a concession contract to use the four West of England unitary street furniture to provide wireless services to residents. Digital inclusion and broadband demand stimulation programme leading development and implementation of overarching digital inclusion strategy for South Gloucestershire including demand stimulation to support investment in fibre broadband delivery. West of England Strategic Economic

Plan Voucher scheme and national assets for local growth programmes – SRO for West of England SEP programme aimed to secure grant funding for voucher scheme to support roll out of superfast broadband and scoping opportunities with the Highway Agency to open up their National Roads Telecommunications Service fibre network to enable high speed broadband connectivity within and between Enterprise Zones and Areas. Jennifer is the SRO for Wolverhampton's Digital Infrastructure programme.

3. Are you in talks with any experts, companies or entities about autonomous vehicles (AV) for public transport and/or private use on Public Highways?
No – we are not discussing AV strategies.

3.1 If yes, I request to see the complete strategy, its ambitions and its objectives in PPTX, Word, PDF or picture format.

N/A

3.2 I also request a supplementary document that includes all levels of detail on: N/A

(a) Companies and entities involved and the names of the company/entity officers?

(b) Specification sheets of all technology.

(c) What type of communication system will Wolverhampton be utilising to control the vehicles?

(d) What UK, EU and International safety standards does your AV strategy and rollout comply with?

(e) I request proof e.g. a certificate from Wolverhampton that confirms that UK, EU and International safety standards for workers and the public have been met.

3.3 If no, I request all documentation, memos, emails and communication on companies and entities you're in talks with regarding the formulations of an autonomous public and private vehicle technology strategy.

Please see our response to question 3 therefore in respect of question 4.3, it has been established after careful consideration that the Council does not hold the above information.

Consequently, we are unable to provide any information relating to the above, and are informing you as required by Section 1(1) (a) of the Act, that states:

"Any person making a request for information to a public authority is entitled to be informed in writing by the public authority whether it holds information of the description specified in the request".

4. Do you have a strategy for smart roads and smart signage on Public Highways and Public spaces?

No

- 4.1 If yes, I request to see the complete strategy, its ambitions and its objectives in PPTX, Word, PDF or picture format.
- 4.2 I also request a supplementary document that includes all levels of detail on:
- (a) Companies and entities involved and the names of the company/entity officers?
 - (b) Specification sheets of all technology.
 - (c) What technology e.g. units and arrays will not be 5G, but can be 5G enabled e.g. with current software, future software, hardware upgrades or retrofitting etc (you must be specific on anything here)?
 - (d) What UK, EU and International safety standards does your 5G strategy and rollout comply with?
 - (e) I request proof e.g. a certificate from Wolverhampton that confirms that UK, EU and International safety standards for workers and the public have been met.
- 4.3 If no, I request all documentation, memos, emails and communication on companies and entities you're in talks with regarding smart roads and smart signage.

Please see our response to question 4, therefore in respect of question 4.3, it has been established after careful consideration that the Council does not hold the above information.

Consequently, we are unable to provide any information relating to the above, and are informing you as required by Section 1(1) (a) of the Act, that states:

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5. Are you planning to rollout or have rolled out LED street lighting?

The City of Wolverhampton Council is considering the rollout of LED lighting

- 5.1 If yes, please answer these questions:
- (a) What is the CMS and specification of the software and hardware of the LED street light system?
 - (b) What type of waveform is the LED? e.g. Square wave?

- (c) Can you control the Pulse Width Modulation (PWM) of the streetlight system using the CMS?
- (d) Can you control the PWM of each streetlight that's connected to the system?
- (e) What restrictions do you have in place for the control of the PWM?
- (f) What is the UK, EU and International safety limit (low and high) for the amount of 'flicker' (Hz) the Human Body and eyes can be exposed to and for how long?
- (g) I request to see the training manual and safety operation manual for the CMS and the LED streetlight system.
- (h) Who is the company who is or has installed the CMS LED streetlight system?
- (i) What company maintains and repairs the CMS and LED streetlight system?
- (j) What entity and Officer is responsible for the safety standards for the CMS and LED streetlight system?
- (k) I request proof e.g. a certificate from Wolverhampton that confirms that UK, EU and International safety standards for workers and the public have been met.
- (l) What is the amount of Blue Light leakage that's safe for the public and workers during the LED streetlights operation?
- (m) What level of LED streetlight exposure is safe for the public at daytime and night time?
- (n) Is there a legal requirement for diffusers to be fitted to LED streetlights?
- (o) How have you have addressed the amount of Oxidative Stress on Human and Animal cells that's produced from LED?

In response to question 5.1, Section 1 of the Freedom of Information Act 2000 places two duties on public authorities. Unless exemptions apply, the first duty at:

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- The second duty at Section 1(1)(b) is to disclose information that has been confirmed as being held.

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Considerations favouring Non-Disclosure

City of Wolverhampton Council is committed to publishing information however we do not consider that it is in the public interest to place information into the public domain, prematurely, before pre-publication procedures have taken place.

We have therefore reached the view that, on balance, the public interest is better served by withholding this information under Section 22 of the Act at this time.

- 5.2 If no, then I request a declaration from Wolverhampton that you will not be installing LED streetlights in the future. If you cannot provide a declaration, I would like the following answered in the future tense:
Please see our response to question 5.1. above.

Please note that the information you have requested below has not been completed and no tender documents have been issued.

- (a) What is the CMS and specification of the software and hardware of the LED street light system?
- (b) What type of waveform is the LED? e.g. Square wave?
- (c) Can you control the Pulse Width Modulation (PWM) of the streetlight system using the CMS?
- (d) Can you control the PWM of each streetlight that's connected to the system?
- (e) What restrictions do you have in place for the control of the PWM?
- (f) What is the UK, EU and International safety limit (low and high) for the amount of 'flicker' (Hz) the Human Body and eyes can be exposed to and for how long?
- (g) I request to see the training manual and safety operation manual for the CMS and the LED streetlight system.
- (h) Who is the company who is or has installed the CMS LED streetlight system?
- (i) What company maintains and repairs the CMS and LED streetlight system?
- (j) What entity and Officer is responsible for the safety standards for the CMS and LED streetlight system?
- (k) I request proof e.g. a certificate from Wolverhampton that confirms that UK, EU and International safety standards for workers and the public have been met.

- (l) What is the amount of Blue Light leakage that's safe for the public and workers during the LED streetlights operation?
 - (m) What level of LED streetlight exposure is safe for the public at daytime and night time?
 - (n) Is there a legal requirement for diffusers to be fitted to LED streetlights?
 - (o) How have you have addressed the amount of Oxidative Stress on Human and Animal cells that's produced from LED?
6. I request all memos, presentations, documents, plans, rollouts, emails and details regarding 2G, 3G, 4G, WiFi and WiGIG in public.

In respect of question 6, it has been established after careful consideration that the Council does not have any communication relating to 2G, 3G or 4G, however we did explore the potential of WiFi through a concession agreement.

Consequently, we are unable to provide any information relating to the above, and are informing you as required by Section 1(1) (a) of the Act, that states:

"Any person making a request for information to a public authority is entitled to be informed in writing by the public authority whether it holds information of the description specified in the request".

However, we did explore the potential of WiFi through a concession agreement. This was superseded by the work on 5G so never proceeded. I have attached this on page 10 and hope this is of use to you.

WiFi Concession Business Case

Summary

It is proposed to issue an invitation to tender for a concession agreement to use street furniture for next generation mobile public WiFi, to further improve connectivity in the city, in accordance with the actions approved by the Cabinet (Resources) Panel report 'Achieving Our Broadband Vision' (Jan 2018).

The preferred bidder will deliver and maintain a commercial wireless network in areas of high footfall (city centre and district centres, transport nodes and stadia) operating a wholesale model but including a publicly accessible WiFi network for all users with a simple login process and daily access charges outside of an initial free period of 1 hour. In the coming years they will also install 4G 'small cells' on behalf of telecoms providers to address capacity problems in mobile network coverage maps, and as an alternative to installation of additional 4G mobile phone masts around the borough with scope to expand to 5G in future.

Background

In 2014, the Council explored offering a concession to the market to secure commercial rights to use Council owned street furniture to deploy small cell technology enhancing mobile coverage for business and residents within the City of Wolverhampton. In addition to enabling the rollout of the next generation of mobile services, concession agreements on back of infrastructure could enable free WiFi. However, following soft market testing at that point, the model was no longer considered commercially viable and an alternative model linking to CCTV procurement was investigated but not implemented due to timing of CCTV procurement. However, more recently, the Council has been contacted by two commercial organisations who would be interested in a pure concession model.

A1 Strategic context

West Midlands Combined Authority (WMCA) Mayor Andy Street's places a strategic focus on digital transformation within the region. As part of this, the mayor published a 'digital manifesto' which emphasises the importance of providing a 'world class digital infrastructure' within the region, an ambition that would be furthered through the provision of a free Wi-Fi network in Wolverhampton.

Black Country LEP Digital Strategy - The LEP has placed free, public access Wi-Fi within the Black Country as a key aim in creating a 'Connected Black Country', as part of its digital strategy.

Wolverhampton's Strategic Economic Plan (SEP) theme Future City - emphasises the need future proof infrastructure including fibre broadband in the city centre and Smart enabled infrastructure. This will be enabled through developing 'smart connectivity' initiatives which improve ultrafast connectivity across the city, particularly in the city centre and ensuring public sector assets are used to maximise smart city capabilities – including smart streetlighting, sensor deployment and other technology solutions.

Wolverhampton Corporate Plan:

- Place Stronger Economy:
 - Developing a vibrant city: free, publicly accessible Wi-Fi will help develop a more vibrant city by encouraging visitors and residents to spend more time within the city centre. A Wi-Fi network will support the creation of the 'good quality' public spaces 'based on smart city principles' called for in the corporate plan.
 - Supporting businesses, encouraging enterprises and attracting investment: the creation of a publicly accessible Wi-Fi network will also help to attract inward investment, by improving the city's image as an innovative and forward thinking urban centre.
 - People develop the skills to get and keep work: supporting digital inclusion by giving people to access to the internet.
- Confident Capable Council: the landing page of the network will allow users to easily access the council's online services from one page, as prioritised in the 'Future Customer' priority of the corporate plan.

Wolverhampton City Centre's Area Action Plan (AAP) aims to regenerate the city through to 2026 placing an emphasis on connectivity within the city centre.

Wolverhampton's Connected Places Strategy recognised that to remain competitive in the digital age, Wolverhampton must ensure that modern digital infrastructure be regarded as having the same criticality for investment as transport infrastructure. It is therefore a priority to for the council to establish WI-FI and other digital networks within the city centre.

Wolverhampton has ambitions to become a **Smart City**. Its Smart City Strategy has five themes - Smart Connections, Data; People; Services and Development. Smart Connections including fibre broadband and the provision of free city centre Wi-Fi will help towards establish a more smartly connected city in line with these priorities.

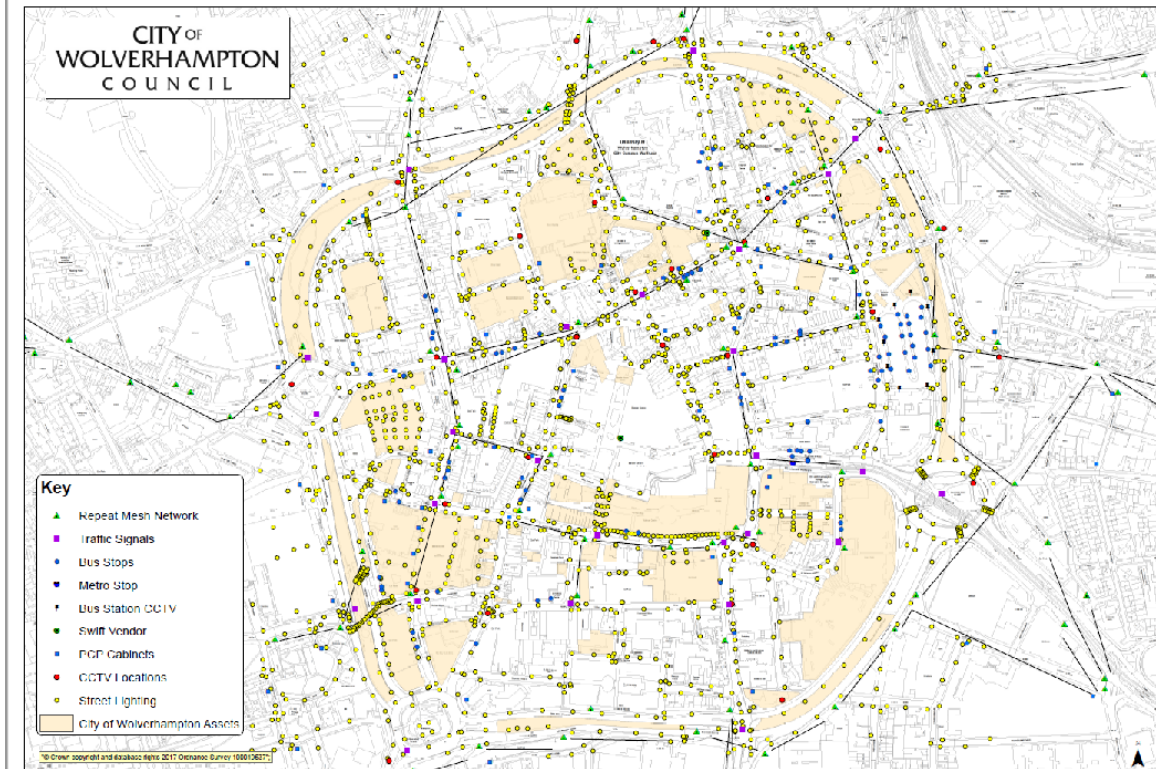
Publicly accessible Wifi will also contribute to Wolverhampton's **Digital Inclusion Strategy** by providing free internet access to residents through which they will be able to access services. Digital inclusion is a particular challenge given 36% of Wolverhampton residents do not have access to the internet at home (Point Topic 2013) and 20% lack the skills and expertise to use a computer independently.

A2 Current Environment

There is Currently no publicly available Wi-Fi in Wolverhampton, apart from within Council premises such as libraries - where WiFi was upgraded in 2015/16. However recently the Council has been contacted by two companies who would now be interested in providing this model on the back of a pure concession agreement. To inform the options, we mapped the existing infrastructure environment in Wolverhampton city centre.

- **Dark fibre:** City of Wolverhampton Council have very limited dark fibre rented from 3rd party suppliers connecting two sites with the remainder of council buildings reached by rented fibre. Wolverhampton has recently been successful in attracting Local Full Fibre Network funding for a public sector fibre network which opens up opportunities for 5g and smart technology.

- **Urban Traffic Control** System is run through fibre and mesh. We are exploring the use of spare bandwidth to run Smart activities such as real time information for buses.
- **CCTV** is currently delivered through a contract with BT, however there is no spare bandwidth to run additional Smart sensors, therefore we would aspire to upgrade.
- **Street Lighting** is being upgraded with Smart enabled lampposts to enable us to operate other Smart functionality including 5g and public WiFi which would be enabled through city centre gigabit connectivity. An ERDF outline application has been submitted to enable this.



A3 Scope of project

Project Profile

Options Appraisal and Preferred options

Following soft market testing, the following options and models have been considered:

Option 1 – Do Nothing: It has been argued that with the advent of 4g and 5g technology, publicly accessible Wi-Fi is being made redundant. However, doing nothing carries significant disadvantages. Firstly, the creation of a public Wi-Fi system has become common practice amongst cities following a ‘smart city’ agenda, and failure to do so will place Wolverhampton behind cities such as Coventry in perceptions of a connected and innovative city. Secondly, a public Wi-Fi network will offer the chance to provide a virtual city platform, failure to implement such a network will make it more difficult to provide such an offer. Thirdly, failure to implement a

concession agreement will mean the council will miss out on any potential rental prices or split revenue.

Option 2 – CWC pay for a public Wi-Fi itself: Although this would allow for CWC to implement a network completely on its own terms, there are no available funds to pay for such network.

Option 3 – CWC puts a concession agreement for street furniture out to tender: The supplier would be granted access to the council's street furniture (particularly street lighting), with which it would increase 4g capacity and at the same provide public Wi-Fi. This would allow for the implementation of a Public Wi-Fi system, at no cost and provide a new income stream for the council.

Option 4 – CWC ties in a concession agreement for public Wi-Fi by linking to the procurement of the city's CCTV network. This would involve using the extra bandwidth on the city's CCTV network to provide publicly accessible Wi-Fi 'hotspots'. This would require collaboration with the CCTV to ensure this option is considered when the CCTV contract is being renegotiated. However, this would require upgrading of CCTV from analogue which would incur a cost to the Council.

Option 3 is the preferred option since it will enable Public WiFi at no cost to the Council and could potentially develop a small income stream, although this is likely to be very low so should not be the motivation.

Deliverables and objectives

- the WiFi solution will be delivered across the areas as identified by the authority
- where required a level of public free wireless will be provided.
- relevant mapping data identifying these areas and boundaries within which wireless will be deployed and where required, a level of free usage allowing enabled end user devices to gain access Wi-Fi for Internet access, will be supplied by the Authority.
- the solution must be a wholesale small cell model where Mobile Network Operators will lease space for wireless (small cell) provision.
- the wireless network shall be made available, accessible and usable to all individuals and the user experience and quality of service shall be the same for all users regardless of the identity of their network provider or device type

B Economic Case

Once the concession has been granted, the council would receive a rental price from the operator, and a split of the revenue raised by the operator for offering 4g capacity. Whilst it would be difficult to estimate the amount the council would receive from this, discussions with providers, and experiences of other councils (such as Lambeth) indicate that a small income stream would be realistic. No cost would be incurred by the council.

However, it is the non-cashable benefits that would be of most value to the city. Digital infrastructure is the backbone of a modern thriving economy driving up

productivity and spreading growth and in delivering effective and efficient public services. Wolverhampton Strategic Economic Plan (draft) aims to facilitate the economic growth of the city. City centre connectivity is key to economic growth and addressing challenges improving our productivity and increase job density given 20% of all Wolverhampton businesses and 17% of the cities jobs are in our city centre.

It is also envisaged that free Wi-Fi access will improve the city centre offer, driving up visitor numbers. More specifically, the provision of a Wi-Fi network will open the opportunity to offer a virtual city platform on users' devices. This platform could be used to promote a comprehensive and coherent city centre offer, tying together, for example targeted advertising and marketing.

In response to the Broadband Review of Wolverhampton City Centre (Analysys Mason June 2017), a City Centre Broadband Plan was developed to enable gigabit broadband in the city centre and spur the development of a free Public Wi-Fi network.

C1 Market engagement – soft market testing

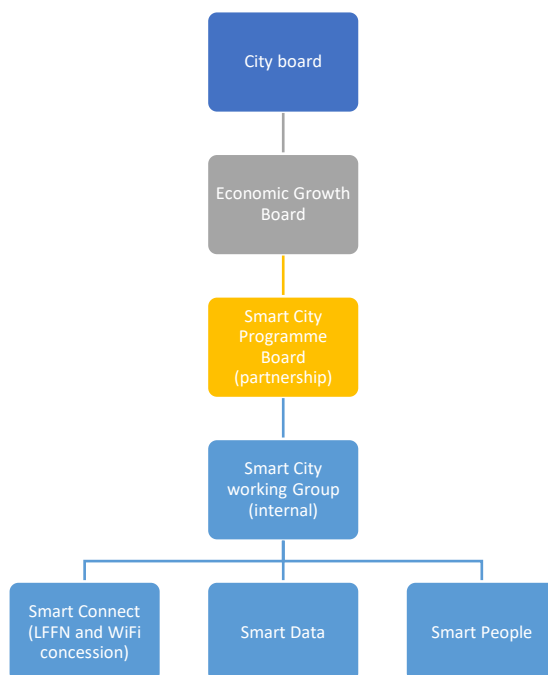
The Council has undergone market testing to ensure that there is commercial appetite to take up a Public Wi-Fi concession agreement.

C2 Procurement strategy – OJEU procurement of concession agreement to use street furniture.

D1 Funding requirements – If the preferred option of a concession agreement is pursued, no funding is necessarily required since free WiFi would be enabled on the back of the concession agreement although, a small income stream could be generated from hire of street furniture plus sharing of revenue generating opportunity. However, income generation should not be a key motivator since feedback from soft market testing is that it will be limited.

E Management case

Governance: It is proposed that this project be aligned with the Local Full Fibre Network Working group, a sub-group of the Smart City Programme Board and Working Group.



Project Management: as part of the Smart Connected strand, it is proposed to align with the LFFN Project Manager to oversee implementation. WiFi concession will be a workstream under Smart City on Verto.

EVIDENCE OF LOCAL SUPPORT

Project Plan

Action	2018				2019	
	Jan-Mar	Apr-Jun	July-Sept	Oct-Dec	Jan-Mar	Apr-Jun
Soft Market Testing						
Business Case						
ITT developed						
Procurement						

E4 Risk management/log

Risk: There will be little or no response to the invitation to tender.

Mitigation: The council has undertaken soft market testing, which has ascertained that there is commercial appetite to take up the tender.

Risk: The Wi-Fi network will have few users.

Mitigation: Ensure that there are no costs or repercussions incurred if use of the network is low in the contract

Risk: No public Wi-Fi network is installed in Wolverhampton.

Mitigation: Ensure 4g capacity is increased, and push for early implementation of 5g network in Wolverhampton.

Risk: Street Light replacement programme means that Wi-Fi on street lights has to be disabled.

Mitigation: Ensure Wi-Fi capability is installed on street light columns rather than lamps.

Risk: Priority Areas for a Public Wi-Fi Network are missed out by the provider.

Mitigation: Specify priority areas in the invitation to tender and contract.

F Implications

F1 Financial Implications

If a pure concession agreement went ahead, the agreement would provide a small income stream for the council, the costs of installation would be covered by the network provider. If the council chose to implement its own network without a concession agreement, then there would be a cost of £10,000+ depending on the size of the network.

F2 Legal Implications

A specialised Invitation to Tender and contract will have to be drafted by the legal team. These will require the council to grant permission for any prospective network providers access to street furniture.

F3 Equalities implications

Increased connectivity through a publicly accessible WiFi network will allow marginalised groups, such as those who are unable to afford WiFi at home, to access council and other services online.

F4 Environmental implications

There will be no environmental implications, as the small cell technology deployed on street furniture will be barely visible from street level.

F5 Human resources implications

There are no human resource implications. The cost of project management would be included in the Local Full Fibre Network bid. Existing staff time will be used to match funding the Digital Passport project.

Corporate landlord implications

Access, by way of concession agreement may be granted to network providers to deploy small cell technology.