

"Mobile Implementation Plan for Worcestershire"

PROJECT DEFINITION

Project description

The Mobile Implementation Plan for Worcestershire Project sets out a series of desired outcomes for 'mobile connectivity' in Worcestershire and how these will be achieved to support the latest iteration of the Corporate Plan – Shaping Worcestershire's Future 2022 – 2027, explicitly states that WCC will prioritise investment in digital infrastructure to provide gigabit capable broadband connectivity to 90% of our homes and businesses in Worcestershire by 2027, support improvements in mobile telecommunications and continue to explore leading edge digital technologies, such as 5G, for the benefit of the County.

Embracing the digital revolution will support Worcestershire's economy for the next generation and maximise opportunities associated with our changing ways of work and life.

It is intended to be viewed alongside Priority 5 of WCC's 'Digital Strategy 2021-23' which includes an action to 'work with commercial operators to support and facilitate improvements of mobile 4G/5G technologies and fixed broadband infrastructure capable of Gigabit speeds to communities and local businesses through the Connected Worcestershire.'

The project will aim to understand the current state of mobile connectivity throughout the county through liaising with partners, commercial operators and members of our communities on their real-world experiences.

Project background

In 2012 Worcestershire County Council, with the support of the Department for Culture, Media and Sport (DCMS) and Broadband Delivery UK (BDUK), started on an ambitious programme to implement a multi-million-pound broadband upgrade across the county.

The original objectives were that everyone in our county would have access to broadband speeds of at least 2Mbps; and that superfast broadband would be available to 90% of our county's homes and businesses by 2016.

Since then, the deployment of broadband infrastructure based on the latest technologies has formed key parts of Worcestershire County Council's corporate strategies and we have leveraged millions of pounds of external funding to achieve this goal.

Not only have we explored the quality of mobile coverage across our county via two live data capture assessments, Worcestershire has also been chosen by Central Government as the home of two new 5G Testbed and Trials programmes. These have put the county at the forefront of technological innovation. The 5G programmes have pioneered the concept of 'Industry 4.0', rural network deployment, and innovative technological solutions in the health and social care sectors.

And now, the way people in Worcestershire utilise connectivity has fundamentally changed. Residents regularly use on-demand services within the home; homeworkers and remote learners require access to cloud services; businesses rely on connectivity to interact with their customers; and many public services rely on digital connections too. Crucially, connectivity requirements have also become more mobile.

Technology, and especially mobile technology, is constantly evolving as hardware and software progresses. Not only is the technology moving from the historic desktop machines to mobile devices, but there has been an expansion of digital first online services to end users. This has meant that to have a level provision of services to users, the connectivity within the wider community has to fall in line with those found in more urban areas.

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As the Digital Infrastructure and Connectivity Team, we regularly engage with a range of broadband infrastructure providers and different wireless technology companies as we explore digital solutions in the county.

We also regularly engage with residents, businesses, and elected representatives on issues of unsatisfactory digital connectivity, both fixed and mobile, giving us insight into the real experiences of the people working and living within Worcestershire.

Evidence of Need

Technology, especially mobile technology, is constantly evolving as hardware and software progresses. To provide a level provision of services to users, the connectivity within the wider community must fall in line with those found in more urban areas. We know that such a level provision does not exist currently.

Crucially, we also recognise that mobile connectivity has quickly moved beyond a 'nice-to-have' and is already a requirement for most citizens and businesses.

Mobile connectivity requires physical network infrastructures to support it, including telephone masts, poles and the associated radio equipment, street level cabinets, appropriate security, access to power and a mid/backhaul connection back to the network core. The networks also require appropriate management, monitoring and upgrades to ensure service levels remain high.

In the UK, the public mobile networks are provided by 4 Mobile Network Operators (MNOs) - EE, Virgin Media O2, 3 (Hutchinson) and Vodafone - with other mobile operators e.g., Tesco, PlusNet and GiffGaff being Mobile Virtual Network Operators (MVNOs) who use the spectrum and networks of the MNOs.

From available data - contacts with residents and business owners, and more anecdotally - we know that people living, working and visiting Worcestershire do not always receive the mobile connectivity they need (as services move online), expect (same level of service in rural to urban areas) or want (to fit their business or lifestyle needs).

Currently, as data and opinions do not always reflect reality, we are unable to answer fully the question around where services do not meet expectations. This means an important part of our strategy is to investigate exactly what issues exist so we can focus attention on possible solutions in the most effective way.

There are also plans to retire the Openreach fixed 'copper-network' by 2025, with the ISDN (Integrated Services Digital Network) and PSTN (Public Switched Telephone Network) already being turned off in stages. This is important for several reasons, not least the mitigation for the fixed communications network during a power-cut is to use 'mobile', which in rural areas presents potential issues of increased power cuts but also increased mobile 'not-spots'.

2G and 3G technologies are scheduled to be phased out by 2033, with 3G expected to be turned off in 2024. At the same time, 5G deployment is expected to increase at pace and improvements in 4G coverage to address not-spots is ongoing. There seems to be little point spending time seeking to improve 2G and 3G and so our focus should be on 4G and 5G. On top of this, 4G provides much of the functionality for currently available 5G services which means that 4G will remain crucial for mobile connectivity for some time to come.

While there is wide coverage in Worcestershire there are obvious 'not-spots' or areas where mobile users would require multiple SIM cards / contracts to access the different MNO networks to guarantee continuous geographical coverage. We also believe there may be 'performance issues' in some locations linked to network capacity and network optimisation settings. As well as some recognised quality issues (globally) with Voice over LTE (VoLTE) calling, a technology that is increasingly replacing 2G, 3G supported voice calls. N.B. Long Term Evolution (LTE) is the technology that is also known more widely as 4G.

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The market and government already have plans for a 'Shared Rural Network' (SRN) to tackle partial and full 4G not-spots. However, the aim is still only to achieve 95% landmass 4G coverage nationally and we do not know how this will impact Worcestershire specifically.

In 2016, the project team undertook extensive survey asking 1,250 businesses their views on economic priorities for Worcestershire. 89% viewed 'maintenance and development of key infrastructure, particularly roads and broadband as economic priorities for Worcestershire. The 89% who identified it as a priority were then asked how important various types of infrastructure were to their business. The majority of businesses feel that all options are very or quite important.

- High speed fibre broadband (82%)
- Mobile phone voice coverage (81%)
- 3G or 4G mobile phone data coverage (73%)

Project Objectives and Targets

Objectives:

To define and agree a definition for 'mobile connectivity' and how this translates to our residents, business and visitors experience of mobile connectivity.

The project will look to identify areas of poor performance, the not-spots and partial not-spots within Worcestershire through the data both locally and nationally but also through our own research and drive trials. This will provide Worcestershire County Council with a Rich Picture of the connectivity within its boundary as well as providing a basis how to address issues.

Using the definition for 'mobile connectivity' and identification of the issues that our residents, businesses and visitors currently face, determine what solutions are available in the market and their viability.

Finally, create a Mobile Strategy which is agreed for Worcestershire County Council for 5 years, defining how WCC will address and support its communities to improve its mobile connectivity and continue to be a leading digitally connected county. Provide a resource for the community to understand connectivity by location, the options that are available to them and the support provided by WCC and partner organisations.

Ambitions:

The ambition is to build a comprehensive of the connectivity availability within Worcestershire not only from an MNOs perspective but the real-world experiences of members of the public.

To research and put forward viable solutions to address the imbalances in connectivity that is expected through the Rich Picture between urban and rural areas of the county.

To design a robust Mobile Strategy for Worcestershire and support the implementation over a 5 year period.

Have regular reporting to ensure that Worcestershire County Council is achieving its digital connectivity goals and improving services to its residents especially those with poor very poor connectivity now.

To represent Worcestershire on a national level to leverage national funding put aside to address the Levelling Up Agenda and the government's ambitions for connectivity to homes and businesses.

To provide tools and advice to the public that will inform them as to what services are available in their area, what is the best solution(s) for their own requirements and helps them reach the full potential of their chosen connectivity plan.

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Project Approach

The project will seek to first understand the mobile coverage and network performance across Worcestershire through a combination of national reports and local activity, e.g. benchmarking assessments, drive trials and data we can access. The key outputs from the assessment will be the provision of raw data, analysis of data and a list of findings including 'asks', queries and comments to take to Mobile Network Operators, Fixed and wireless infrastructure suppliers, Telecoms regulators etc. so as to inform discussions on where there are differences from the existing publically available coverage maps, issues and areas on which to improve.

We aim to understand the current mobile performance, across all four major mobile network operators, in Worcestershire. Our aim is then to use the outcome of any survey to engage with the network operators, fixed and wireless infrastructure suppliers, telecoms regulators etc to:-

- Develop action plans to address performance issues,
- Identify new sites where coverage / signal is poor or absent
- Develop a roadmap and an action plan to design and build the right 5G network for the county.

In terms of outputs, the project would aim to establish the following:

- A written report(s) capturing methodology, metrics, analysis and conclusions.
- Advice on targeting of technologies - i.e 2G, 3G, 4G and 5G.
- Advice on benefits of drive trials covering both directions on road and rail.
- Identification of coverage areas - wide spread or targeted at problem areas.
- Comparison of at least peak and non-peak times in terms of commuting and other drivers of service/data demand, as well as a comparison of different days or months - e.g. multiple runs required.
- Access to an explorable electronic dashboard of the results and provision of the raw data in a format compatible with WCC's GIS systems.
- A comparison of different mobile network operators.
- A comparison to other geographical areas (similar counties in terms of rurality and other nations).
- Clear view of private consumer and business consumer real-world experience based on real-world behaviours.
- Comparison of problem areas with publicly available modelled data (from Ofcom or service providers).
- Recommendations of actions to address performance issues identified.
- Availability to attend at least one half-day meeting with each network operator.
- Knowledge transfer of skills required to interpret technical outputs on technical KPIs.

The geographic coverage for the study - a minimum set of requirements will be provided once the market testing event has taken place (planned for 30 Jan 2023).

Key tasks will include:

- Establishing current coverage based on publicly available data. Establishing the forecasted coverage if we adopt a passive 'do nothing' approach. Assess if granularity seems realistic and helpful.
- Establishing areas of poor coverage and combining results from a new bespoke measurement 'drive trial' and/or similar bespoke Worcestershire assessment and crowd sourced data.
- Establishing user experience in Worcestershire through exploration sessions with communities expressing difficulties combined with wider citizen and business surveys.

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The project will develop a toolkit / set of guides to help residents and businesses make best use of existing mobile connectivity. This could include better device selection, changing device settings, switching networks, or utilising Wi-Fi calling or satellite broadband, where appropriate.

Interventions will need a fully costed budget depending on the level of ambition identified – for example, making it easy to invest in Worcestershire may have a relatively low budget requirement but co-building our own network would be much more significant.

Quality Management

The Quality of this project will be achieved via the internal assurance activity lead by Worcestershire County's Council's team.

Reporting of the following output metrics will be proposed and agreed to reflect the project quality:

- Gather data from local and national sources and ensure accuracy
- Produce a not-spot and partial not-spot mapping for Worcestershire based on available data
- Source real-world up to date data through targeted drive trials (to provide supporting evidence to the above not-spots) and through cloud gathering data tools from members of the public
- Create and present a real-world and up to date mapping of mobile connectivity within Worcestershire
- Review areas of not-spots and partial not-spots to identify from market solutions that could be implemented
- Provide a platform for residents, businesses and those visiting Worcestershire to understand the mobile connectivity within an specific geographic location and the options available to them to make best use of.
- Ensure the quality of the information provided to communities through the "How to:" range of guides produced by WCC
- Knowledge dissemination

The Project will document and share learning from experience, contributing to the development connectivity improvements that councils could implement in rural spaces. The sharing of information will include project announcements, reports and visits where appropriate.

The Project will baseline, measure, document, and report over time on the Project's benefits and impacts. Benefits should include social, economic and environmental value in addition to any financial or commercial benefits. As part of this the utilisation of the Bridge data sharing platform and exploring opportunities to expand and incorporate increasing amounts of current data.

Stakeholder and Communication Management

A detailed marketing and communications plan is currently being developed and will be included in due course.

Project Plan

The detailed Project Plan is currently being developed and will be included when complete.

The indicative outline timetable is set out below. This is intended as a guide whilst the project teams develops a full project plan.

Discovery Phase (H1 of 2023/2024)

- Soft Market Engagement (alongside Herefordshire, Shropshire and Staffordshire) – 30 January 2023
- Review with neighbouring authorities & Develop Procurement Strategy – 4-6 weeks

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- Procurement 6 weeks-8 weeks (aiming to release in Q2 23/24)
- Contract award (may be multiple contracts)
- Contract Duration TBC

Initial Engagement Phase (H2 of 2023/2024)

Engagement Phase with Mobile Network Operators and DCMS/BDUK/Ofcom - This period will overlap with the 'Discovery Phase'. A second engagement phase with Mobile Network Operators will be undertaken after a period of time to establish improvements in anycase after a sustained period of the Intervention Phase

Intervention Phase (Q4 Of 2023/2024 and onwards)

Strategy to be informed by the Discovery Phase and Initial Engagement Phase

Risks and issues

The Project is putting in place risk management processes to provide assurance about the security and resilience of key suppliers, taking into consideration the conclusions of the Government's Telecoms Supply Chain Review, and other relevant supply chain considerations.

WCC, as the project lead, will be accountable for Data Protection (GDPR) and Security and Information Governance compliance, to ensure that data and information security and governance standards are meet. This includes ensuring that if any personally identifiable data is collected that it is stored appropriately (access and security) / is not shared / released inappropriately / mistakenly – any suppliers working on the project will also need to ensure compliance.

Appendices

Item	Link
Appendix 1 – 2019 Independent Bench Assessment of Mobile Coverage in Worcestershire	<p>An executive summary of the 2019 Independent Benchmark Assessment of Mobile Coverage in Worcestershire.</p> <p>N.B. Full versions of the 2017 and 2019 reports are available on request, however due to size are not included.</p> <p>Provided below are individual feedback reports (draft) to support conversations with operators, due to impact of Covid the planned face to face meetings were cancelled due to both lockdown, furlough and the need for parties on both side to prioritise immediate operational needs.</p>