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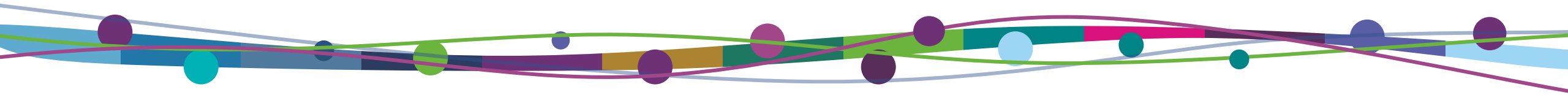
Cambridgeshire and Peterborough

Digital Connectivity Strategy 2025 - 2029



In collaboration with Cambridgeshire County Council, Peterborough City Council, Cambridge City Council, East Cambridgeshire District Council, South Cambridgeshire District Council, Fenland District Council, Huntingdonshire District Council, Greater Cambridge Partnership

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Introduction

Digital connectivity is vital for meeting some of the key challenges of our age - from sustainable growth to climate change mitigation and the management of scarce resources including water and energy and improving people's life chances through the provision of access to retail, leisure, education, and health facilities.

This pivotal role is reflected in the **Combined Authority's Local Transport and Connectivity Plan (LTCP)** and this Digital Connectivity Strategy 2025-2029 is a key supporting component to the LTCP and builds upon the successes of the **Digital Connectivity Strategy 2021-2025**.

This new strategy will ensure that the Combined Authority can deliver its ambition of outstanding and much needed digital connectivity and that our region continues to exceed the ambitious targets set by central government on the availability and accessibility of digital connectivity across the UK, supporting effective public service delivery, thriving communities and sustainable economic growth. Building on investment in digital infrastructure to develop connected communities is central to the vision for the region. The Connecting Cambridgeshire programme's collaborative work with multiple partners underpins wider ambitions for the region including greater use of sustainable transport, reducing health inequality, progress towards net zero and mitigating climate change.

Mobile and fixed connectivity to the internet continues to be increasingly important to residents and local businesses and in many ways has already become the 'new utility' in most people's lives. We are now living in an era of increasing digitisation across all industries. The government targets for coverage continue to rise, as they should, which means the pressure to reduce barriers and improve efficiencies will also continue. Set against the backdrop of the cost-of-living crisis and increasing reliance on digital connectivity in everyday life, together with a rapidly changing commercial telecoms market and unprecedented digital delivery, it is important that the deployment of digital infrastructure is delivered as efficiently as possible and that those who are at risk of remaining digitally excluded are identified and provided with the tools they need to thrive.

This strategy for the period 2025-2029 builds on the existing achievements of this established partnership programme, which has been primarily led by the Combined Authority since 2017, working with Government bodies, local councils, academia and a wide range of external organisations, including telecoms suppliers, mobile operators and technology experts.

Introduction

The Connecting Cambridgeshire programme will deliver across three themes:

Infrastructure – ensuring that fast and reliable digital connectivity is available across the region to meet the connectivity needs of residents and businesses. Focussing specifically on future-proof full fibre, 4G and 5G as well as other advanced wireless and satellite communication solutions.

Innovation – supporting and demonstrating the capabilities of innovative solutions to offer a wide range of benefits for residents, visitors, and businesses. Encouraging commercial and government investment to develop innovative solutions in the region.

Inclusion – empowering our residents and businesses to develop the skills and confidence they require to make the most of the digital connectivity available to them and raising awareness of the benefits of being online. Working collaboratively to promote access to affordable connectivity and devices.

This new strategy aims to promote and encourage inclusive access to online public and community services, and has been written to align with and complement not only the Local Transport and Connectivity Plan but also other national, organisational and partner strategies including:

Local Economic Recovery Strategy (LERS): As set out in the LERS, the Combined Authority aims to accelerate the recovery, rebound and renewal of the economy by helping people affected, and achieving the ambition to double Gross Value Added (GVA) by 2042 in a digitally enabled, greener, healthier, and more inclusive way. Improved high-speed broadband provision across the region will enable communities to better take advantage of all the content and services that the internet has to offer. It will further enable businesses to provide their goods and services online, driving efficiency, productivity and economic growth.

Employment and Skills Strategy: It is important that local people can access support into education and employment how and when they need it, at any point in their lives and whatever their starting point. Fast and affordable Digital Connectivity will help to reduce barriers and support access to education and employment opportunities.

National strategies including the **Wireless Infrastructure Strategy** and the **5G supply chain diversification strategy**: The Connecting Cambridgeshire programme will encourage private sector investment by explaining the benefits of wireless infrastructure and linking these to digital inclusion and economic growth ambitions of the region. We will do this by attracting investment and identifying and removing barriers to support mobile operators to bring standalone 5G coverage to all populated areas by 2030. We will also identify investment opportunities and undertake pilot projects to attract new suppliers into the UK market to drive competition.

This new strategy also complements and supplements other local County, City and District wider strategic frameworks and ambitions to help people become capable of using and benefiting from the internet.

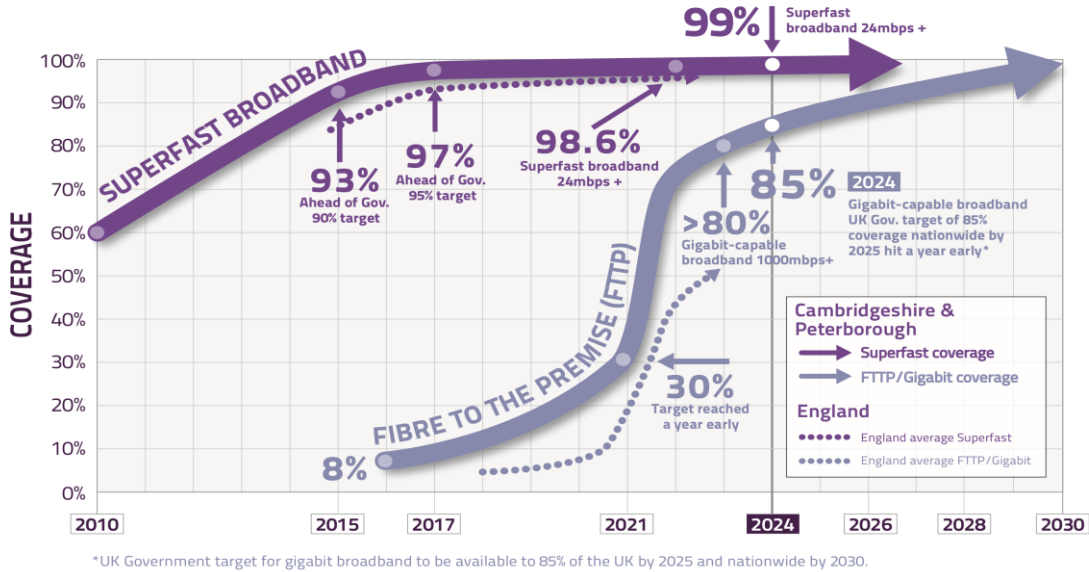
Building on success

Over the past 13 years the Connecting Cambridgeshire programme has gained a strong reputation for the delivery of significant digital connectivity projects, facilitating commercial deployments and attracting investment in the development and delivery of new technologies to the Combined Authority region. The programme has leveraged this reputation and experience to deliver the 2021-2025 strategy. Highlights include:

Broadband

We have already achieved the government's target of 85% Gigabit capable coverage over a year early. Whilst Gigabit and full fibre broadband coverage across the region exceeds the national average, there is more to do to achieve ubiquitous fibre broadband coverage and ensure there are no remaining not-spots in coverage.

Commercial Broadband Rollout – Since the launch of the strategy in April 2021 our innovative barrier busting approach has seen the number of active full fibre providers increased from 5 to 14 working in the region with over 43,000 street works permits submitted. This represents 43% of all street work applications. The Street Works team play a pivotal role in coordinating, approving, and monitoring all works on the highway to both minimise the impact on traffic and ensure the road is maintained in a safe operating condition. Investment in both permit officer and inspector resource has allowed the Street Works team to provide dedicated support for the delivery of superfast and full fibre broadband to enable significant commercial and government funded fibre coverage to be delivered at pace. Where new digital infrastructure has been installed, over 75% of premises have made the switch to high-speed Internet access.



*UK Government target for gigabit broadband to be available to 85% of the UK by 2025 and nationwide by 2030.

"The Connecting Cambridgeshire funding has been invaluable in enabling us to support the pace of commercial and government funded fibre rollouts in our area. It's also allowed us to provide a dedicated resource to ensure we could provide the support needed to enable the rapid deployment of the infrastructure by the many providers seeking to work in Cambridgeshire. This level of co-ordinating and monitoring the works on the public highway to reduce the local impacts for residents and businesses and speed up delivery for the providers would not be possible without the resources provided" - Sarah Widdows, Street Works Manager

Building on success

Government Investment – The Connecting Cambridgeshire-led Superfast Broadband programme successfully completed delivery in 2022 with over £60m combined public and private investment in the region and returning over £4m of gainshare clawback from the Openreach contract. Building on the success of the programme, the Department for Science, Innovation and Technology (DSIT) announced Cambridgeshire and Peterborough as one of the first areas to be included in further investment of £69m to support the delivery of full fibre to around 45,000 premises through Project Gigabit. Works on the ground began in January 2024 and are expected to be completed by 2027. The programme is actively supporting the Project Gigabit rollout to ensure that gigabit capable fibre is provided in harder to reach areas of the region to complement commercial investment and delivery.

Fibre Ducting & Light Blue Fibre – Over the last few years the programme's pioneering 'Dig Once' policy has continued to ensure the provision of fibre ducting in new transport infrastructure schemes and has made this ducting available on a commercial basis - bringing measurable benefits for the economy, local communities, and the environment. To date, over 21km of additional fibre ducting has been installed or is planned to be installed during the construction of new road and cycleway schemes which has already resulted in savings of over 20 tonnes of CO2 emissions in relation to materials use alone over three years.

Mobile

4G Coverage – 4G Coverage – Following a mobile coverage survey undertaken in 2019, to establish accurate baseline coverage figures in the region, 20 priority locations were identified as suffering from the worst coverage, and discussions were held with mobile network operators (MNOs) to highlight these. In 2023, Connecting Cambridgeshire's re-survey demonstrated a 2% combined network improvement (across all 4 main mobile networks operators). The re-survey also demonstrated that while some targeted areas had improved, other locations had seen a decline in coverage. Although this is understandable, given the changing geographies and commercial models, it shows that continuing work and interventions are required to identify and drive mobile coverage improvements.

5G coverage – The local mobile coverage survey in 2023 for the first time identified locations where 5G coverage was available. Connecting Cambridgeshire has worked closely with the local planning authorities to provide training on the updated national planning regulations that were amended to facilitate the deployment of new infrastructure to deploy 5G networks. This included training sessions with planning teams by industry experts as well as presentations to local councillors to further impress the importance of 5G and the practical requirements for its deployment.

Building on success

5G availability ranged from 1.3% to 68% coverage across the region for each of the MNOs and there's been a steep rise in planning applications and notifications for telecoms equipment, peaking at 115 applications in 2023-24 across the region. Having identified the increasing number of applications and subsequent rejections as a barrier to improved connectivity, Connecting Cambridgeshire funded a dedicated resource for the Planning team to develop the specialist knowledge required and respond to the applications.

Small Cell Licence Agreement - A key milestone in the 2021-25 strategy was the pilot of the first commercial agreement to deploy 13 small cells on street lighting columns being signed. Work on this was complicated due to the existing county council PFI contract preventing telecoms equipment from being deployed. The programme worked around these issues in collaboration with the Street Lighting team. And in parallel, Connecting Cambridgeshire agreed new heads of terms with the incumbent Street Lighting Service Provider to amend the PFI to allow telecoms equipment to be installed in the longer term, meaning continued improvements to mobile connectivity can be supported. Once the PFI changes are finalised, this will allow street lighting assets to be made available to all small cell providers and MNOs.

Government Investment – Connecting Cambridgeshire was successful in leading two funding bids in 2023 to trial new telecoms technology worth over £9.5m. The Cambridgeshire Open RAN Ecosystem (CORE) project is exploring new 5G technology aimed at diversifying the telecoms supply chain, developing new industry and demonstrating the capability of 5G to boost the local economy through driving new opportunities and efficiencies. The Smart Infrastructure Pilot Project (SIPP) is developing and deploying smart poles that can host multiple items of smart infrastructure such as small cells, sensors, EV charging and CCTV.

Additionally, Connecting Cambridgeshire is part of a local authority consortium project that was awarded £3.6m of government funding for 5G Innovation Regions (5GIR). The England's Connected Heartland (ECH) project covers much of the same geography as England's Economic Heartland (EEH) with a focus on demonstrating 5G and other advanced wireless technology to stimulate investment and develop new business models.

Smart

Future Transport – The Connecting Cambridgeshire programme supports the Greater Cambridge Partnership (GCP) to attract funding from industry and government (e.g. Centre for Connected and Autonomous Vehicles (CCAV)) to investigate and trial autonomous, or self-driving, technologies in the region. To date these projects are worth over £11m.

In 2021, three custom-built shuttles were deployed in Cambridge and over 300 passengers were carried as part of the trial. National and international media coverage of the deployments made sure that our regions' ambition to be at the forefront of emerging technology deployment, further supporting bids to secure future funding. The latest of the trials which is worth £7m, builds on the success and will deliver self-driving electric buses into Cambridge for a trial in 2024-25

Internet of Things – A common challenge faced by innovative solutions is progression from development to trial and into operational use. Connecting Cambridgeshire has worked with partner organisations and industry to facilitate that journey. In 2019 a mobility monitoring sensor was installed to identify and classify different vehicle types and deliver near real-time traffic volumes. The data collected was reviewed and its accuracy assessed against more traditional, manual methods of collection. The data was used by multiple teams within the combined authority to support use cases such as identifying issues with signal scheduling, the impact of traffic displacement during roadworks, and the monitoring of temporary TROs during COVID-19 lockdowns. As accurate data becomes increasingly critical for local authorities, the programme has established a framework agreement for the purchase of this technology, which is available to CCC, CPCA, GCP and the district councils to use. At the end of 2024, over 80 sensors had been deployed and the capability of the systems continue to evolve - now including the opportunity to monitor near-miss situations as well as journey times and classified counts.

Road Network efficiency & travel mode priority – The Smart workstream has led Smart Signal trials to assess the capability of AI-enabled technology to improve traffic conditions for a variety of road users with a particular focus on sustainable transport including cyclists, buses and pedestrians. Initial findings have demonstrated the limitations and capabilities of these technologies with further work being undertaken to understand and define how they can be used more widely. Initial trials indicated up to a 30% reduction in dwell times for pedestrians when prioritised appropriately at traffic signals.

Access & Inclusion

Free Public Wifi – CambWifi is available in Cambridge and Peterborough city centres as well as most of our market town centres with 3,950sq km of outdoor coverage. CambWifi is also available in over 200 public service buildings, 45 libraries, 31 village halls,

and 7 park and ride locations. Access to free and secure Wifi is a contributor to local economic growth as well as affordable digital connectivity for those who need it.

Digital Inclusion – In 2023 Connecting Cambridgeshire took an important step in leading the digital inclusion approach for Cambridgeshire and Peterborough by appointing a Digital Inclusion Lead to work within the programme. The aims of this role were to develop a greater understanding of digital exclusion across the region, as well as coordinate the work already being delivered by cross-sector organisations to combat its negative effects.

This subsequently led to the development of the **Connecting Cambridgeshire Digital Inclusion Delivery Plan 2024/25** setting out our initial ambitions to enable communities to choose digital as their preferred solution where it is relevant and beneficial to them, working with partners to deliver holistic, meaningful support, and empowering residents and businesses to be capable, confident, and resilient online.

Initial engagement and delivery using the approach and principles set out in the strategy have proved successful, allowing us to begin to build broad, robust stakeholder networks for sharing information, learning and best practice, as well as directly engaging with communities and sharing information and piloting solutions that are targeted at issues they have evidenced and have been co-developed with the communities themselves.

Milestones and achievements

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>99%

Percentage of premises that can access superfast broadband – ahead of national average.

>73%

High take-up of superfast broadband >70%

Percentage of premises that can access gigabit-capable full fibre broadband – one year ahead of UK Government national target of 85% by 2025.

2025 TARGET

85%

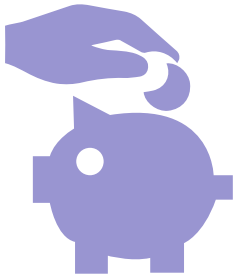
ACHIEVED IN

2024

ONE YEAR EARLY

UK Government target for gigabit broadband to be available to 85% of the UK by 2025 and nationwide by 2030.

Full fibre upgrades to 117 public buildings, schools and libraries and 21.3km of fibre ducting being deployed in transport infrastructure schemes by 2025.



Project Gigabit Work has begun by CityFibre to connect approx. 45,000 hard-to-reach premises with government funded gigabit-capable fibre.

Mobile coverage survey data being used to improve coverage for communities, road/rail lines, business/research parks.

200+

Free CambWifi available in 200+ public buildings, city and market town centres, and village halls.

Innovative use of smart technology for real-time travel updates, air quality and water-level monitoring.

£10

£10 million additional funding secured from UK Government and commercial partners to support innovative technology projects and unlock new connectivity opportunities and investment in digital infrastructure.

Cambridgeshire and Peterborough Digital Connectivity Strategy 2025-2029

Digital connectivity has never been more important for businesses, communities and public services and the key objectives for the future strategy, which builds on the current programme, are set out below. However, each area within the Cambridgeshire & Peterborough Combined Authority is unique with its own challenges and priorities, requiring a local approach to digital infrastructure planning.

This next phase of the Digital Connectivity Strategy will ensure the continued investment in the digital infrastructure required to:

- Enable future-proof digital infrastructure to support sustainable economic growth and innovation
- Drive innovation to enable data-driven decision-making
- Ensure accessible and inclusive connectivity, reducing the digital divide and unlocking the potential of the rural economy
- Support net zero and climate change mitigations

Our Vision

To make Cambridgeshire and Peterborough the leading region for digital connectivity and innovation to enable our residents and businesses to thrive.

Cambridgeshire and Peterborough Digital Connectivity Strategy Overview

Infrastructure

- Gigabit broadband to be available to 99% of Cambridgeshire and Peterborough homes and businesses.
- Meet the Government's 2023 Wireless Infrastructure Strategy ambition to bring standalone 5G coverage to all populated areas by 2030.
- Work with MNOs to drive improvements in mobile coverage, particularly for not spots/partial not spots.

Innovation

- Expand the coverage of sensor networks in the region to support further targeted collection of environmental data.
- Develop an Innovation Framework for the region.
- Increase the number of technology and data trials executed in the region over the next four years.
- Ensure that data collected by the programme and across the partner organisations can me shared to support more informed decision making.

Inclusion

- Enable all residents and businesses to be digitally included by providing access to relevant connectivity, devices, and skills and confidence.
- Achieve minimum digital living standard for all residents ensuring they have the ability to communicate, connect, and engage with opportunities online safely and with confidence.
- Extend CambWifi services across more of Cambridgeshire and Peterborough.
- Improve standards of connectivity and digital inclusion for residents living in social housing and temporary accommodation.

LEADING EDGE DIGITAL CONNECTIVITY

for businesses, communities, and public services across Cambridgeshire & Peterborough

Outcomes

Fewer individual journeys by car and improvements in air quality.

Greater use of **sustainable transport modes.**

Reduction in digital exclusion, leading to **reduction in health inequalities** and better access to jobs, education and public services.

Thriving local economy - Digital Connectivity improvements will contribute to GVA and job growth.

Moving towards **net zero** and climate change mitigation/adaptation.

Infrastructure

Introduction

Fixed broadband

National Government policy identifies that gigabit capability is critical for sustainable economic growth, the provision of high quality online public services and the delivery of digital and social inclusion. Ofcom report that average monthly internet traffic increased by 11% in the past year alone and network data usage in the UK continues to rise by almost 40% year on year and reliable connectivity has therefore become a fundamental expectation for both residents and businesses[1]. According to The Good Things Foundation, 92% of UK residents think most essential services require internet access[2].

The enabling work that has already taken place to deliver superfast and gigabit capable broadband has provided a solid foundation for the future delivery of gigabit broadband to the more challenging areas across our region.

Cambridgeshire and Peterborough is a large and diverse region that has significant numbers of hard-to-reach rural communities. These locations are very unlikely to see commercial gigabit deployments in the near future and therefore the Connecting Cambridgeshire programme will continue to work with both commercial providers and the Project Gigabit programme to ensure that we maintain our reputation as one of the best-connected areas in the Country.

Faster and higher capacity mobile solutions have an even greater reliance on fibre connectivity to provide the connectivity between mobile towers and other wireless infrastructure. The deployment of full fibre underpins the deployment of 5G networks and has therefore taken on additional importance in ensuring that is available across the region.

A recent report commissioned by City Fibre (The Economic Impact of Full Fibre, March 2022) makes reference to 'core' and 'wider' impacts; with core being those which directly arise from connectivity (e.g., gains in productivity, property price uplifts and other business benefits), and with wider impacts exploring the role of Full Fibre capability in enabling the continuing transition to internet based technology (e.g. moving services online), and extending potential for new hybrid ways of working and remote collaboration (which in turn have potential to positively impact on climate impacts by reduced travel etc).

1 Connected Nations 2023 - UK report (ofcom.org.uk)
2 Good-things-foundation-digital-nation-uk-2024

Infrastructure

Mobile broadband

4G continues to be the backbone of data connectivity for mobile devices providing access to services, entertainment, shopping, digital payments/banking, home/remote working and socialising due to its wide coverage and compatibility with most modern devices. Ofcom report that network data usage in the UK continues to rise by almost 40% year on year and reliable connectivity has therefore become a fundamental expectation for both residents and businesses. However, the coverage surveys undertaken by Connecting Cambridgeshire continue to demonstrate gaps in connectivity even in some of the larger towns and cities such as Ely.

Mobile Network Operators (MNOs) as part of their estimated £2bn annual investment in new infrastructure in the UK are continuing their rollout of non-standalone 5G (deployed on top of existing 4G infrastructure) across the region with many areas soon to benefit from the availability of 5G coverage. Mobile UK reported in 2023 that there were 111.8 million mobile subscriptions in the UK in 2023, 87m active mobile devices and 25m connected things. 5G will significantly increase the capacity of the networks allowing more devices to connect and helping to eliminate 'not-spots'.

The programme will unlock opportunities for sustainable economic growth using world-class digital infrastructure supporting standalone 5G (where the whole network has been upgraded with 5G technology, rather than using a mix of 5G and 4G) and other advanced wireless technologies. These leading-edge communication technologies are seen as key to harnessing digital transformation in building a more inclusive, competitive, and innovative digital economy. We will be responsible for driving adoption of 5G. This new wireless standard is particularly important in business and industry where advanced wireless technologies are proving transformative, especially when combined/incorporated with Artificial Intelligence and other emerging technologies.

Infrastructure

Challenges

- There is an uneven distribution of gigabit capable broadband infrastructure across the region and what is known to be planned both commercially and via Project Gigabit will not cover 100% of premises due to the difficulties and/or costs of deployment to some areas/premises. Although this issue is primarily associated with rural areas it has become obvious there are a significant number of urban not-spots. These challenges will require appropriate, different and locally focussed interventions where market failure is apparent.
- Without specific investment, there is insufficient resource and/or expertise available within local authority planning and highways teams to properly facilitate the deployment of digital infrastructure. Research completed by Digital Connectivity Forum in July 2023 shows that planning authorities do not have the internal resource or expertise to deal appropriately with digital connectivity planning applications. In addition, rapid digital infrastructure rollout requires a high level of Street Works permits and inspection which highlights the level of resource that is required to continue to support the deployment of connectivity infrastructure. Failure to provide suitable resource can lead to delays and/or refusals of works and where operators incur significant difficulties, we have evidence that the reallocate their investment to other areas.
- Our independent mobile coverage surveys have found areas where mobile coverage is worse than that modelled by Ofcom and mobile network operators. However, MNOs are reluctant to commit the significant investment required in new mobile infrastructure in areas which are deemed to have suitable coverage based on their modelling for both 4G and 5G. Engaging with MNOs to request investment and improvement in these locations has proved challenging due to the competing requirements and priorities for MNOs across the UK.

Continued

Infrastructure

Challenges continued

- The data requirement and physical landscape is constantly changing for mobile connectivity which impacts on where mobile data is required both now and in the future. Unlike broadband that has a physical presence at individual premises, a single mobile mast covers a wider area and multiple users. The amount of users a mast needs to cover can fluctuate significantly both in the short and longer term. This can mean that when a mast is installed it will be fit for purpose but at times of peak usage or in the longer term as new developments occur it can become insufficient.
- As the UK's roll-out of 5G continues to lag, decision-makers/investors/businesses remain unclear on the business case for the significant investment required to deploy the technology.
- Local Authority land, building and assets are not widely available for the deployment of digital infrastructure. This has prevented and/or significantly delayed the deployment of improved connectivity in a number of locations.

Infrastructure

Solutions

Enable the deployment of commercially and government funded digital infrastructure – Continuing to work with providers and Government utilising our barrier busting approach to wayleaves, planning and highways that provide the conditions required to install infrastructure efficiently and effectively in the region; whilst providing our local knowledge and data analytics to suggest solutions and direct investment to where it is required. This includes resourcing local teams that are critical to the deployment of digital infrastructure. We will also lobby government for additional "not spot" interventions, both rural and urban.

Promote alternative broadband solutions in hard-to-reach areas - It is clear that Project Gigabit and commercial deployments will not reach all premises therefore alternative solutions to connect some premises should be considered such as 4G/5G broadband, satellite & fixed wireless access etc. The programme is committed to continuing to work in partnership with alternative network providers to improve broadband coverage and options, particularly in areas where the telecoms market has no investment plans.

Improve the availability of assets – The previous strategies have put the region in a good position to offer assets to the commercial market. Further work is now required to ensure providers are able to access these assets efficiently. In order to facilitate these assets including fibre ducting, street lighting and suitable land/premises will need to be mapped on a digital infrastructure database. Additional policies/guidance across the local authorities will need to be put in place including defining the appropriate use of Smart Poles and Digital Infrastructure Access policy.

Secure further government and commercial investment in digital infrastructure deployment – Building on the outcomes and relationships built with commercial organisations, DSIT and other local authorities as part of the CORE, SIPP and 5GIR projects will allow us to extend these projects beyond their current end date of March 2025. The sustainability plans being developed will identify how these projects can become sustainable and build the business case for this. The demonstratable experience of both securing funding and successfully delivering projects like these will put the region in a good position to secure additional government innovation and adoption funding that is expected to be released as part of the Wireless Infrastructure Strategy.

Continued

Infrastructure

Solutions continued

Introduction of new interventions – Where there is true market failure or investment stimulations required, a range of interventions will be considered including grants and neutral host solutions.

Continued monitoring of the availability of digital connectivity – Understanding the current and planned connectivity via data analysis and mobile coverage mapping is crucial to deploying appropriate interventions and allowing engagement with multiple providers who now serve the region for broadband and mobile connectivity. This has become increasingly important due to the number of operators in the region combined with Project Gigabit and the changing landscape which regularly sees deployment plans change. Being proactive in identifying suitable interventions helps ensure any investment is maximised.

Local Authority Future Connectivity Review – A number of local authority services in the region are reliant on the availability of reliable communications to enable them to undertake their tasks efficiently and cost effectively. This includes traffic signals, traffic/AQ sensors, CCTV, and remote workers in teams such as health & social care. These communication requirements need to be reviewed against current provision to understand how investing in local digital connectivity infrastructure can provide opportunities to improve services, future-proof for service innovations, better understand benefits versus costs and become a potential source of income.

Infrastructure

Targets

- The Government's target is for gigabit broadband to be available to 85% of the UK by 2025 and nationwide (c. 99%) by 2030. The programme has already met the 2025 target a year early and is now aiming to meet 99% gigabit capable connectivity ahead of 2030.
- This strategy will aim to meet the Government's 2023 Wireless Infrastructure Strategy to bring standalone 5G coverage to all populated areas by 2030. We will work with Mobile Network Operators (MNOs) to drive improvements in mobile coverage for not spots/partial not spots, exploring a variety of interventions.

Innovation

Introduction

As we move towards 2029, we will build on the improvements delivered by the infrastructure workstream making the best use of connectivity and continuing to grow our reputation as one of the best connected and most supportive locations in the UK to build, trial and deploy technology and data innovations.

By bringing together partner organisations, academics, and world-leading local and national businesses to deliver technology and data driven solutions we will ensure that the right technology is delivered at the right time and in the right way to realise the greatest possible outcomes for the region.

A digital infrastructure focused around IoT-enabled sensors (internet of things) is already providing an array of data-led benefits across the region. Now it is important to maximise the potential of place-based and people-based data. The gathering of data will support authorities to deliver services and manage assets more efficiently. It can also provide authorities, residents, and businesses with a clear evidence base for decision-making across a range of scenarios. This could include environmental monitoring, which continues to become increasingly critical as the impacts of climate change are more keenly felt, for example, in those areas of our region most susceptible to flooding.

Emerging transport technologies such as modelling techniques, network management solutions and connected and automated vehicles (CAVs) can be used to “harness and explore an integrated transport network that meets the needs of businesses, people and communities” as set out in the LTCP. In doing so we are able to support better places, more sustainable travel, and better access to opportunities. Further economic growth can be supported across the wide range of industries operating in our region including AgriTech, Biomedical and knowledge-based industries by collaborating on leading edge pilot projects (such as the use of AI and digital twins) to recognise efficiencies within businesses and encourage further inward investment.

Innovation

Challenges

- Cambridgeshire and Peterborough is a diverse region with both urban and rural landscapes. In order to provide the greatest opportunity for data collection, various types of connectivity are required such as 4G/5G mobile connectivity and low power wide area networks (LoRaWAN).
- Collection of data is the first step to realising the benefits that sensor technology can bring to the region, however providing this data in an accessible, understandable, and practical way is critical to achieving the maximum possible value.
- Understanding which questions we need to answer in order to support the CPCA in solving key challenges is critical to planning what data should be collected and how; as well as when it is needed and in what format.
- Barriers such as silo working, the use of legacy systems and resistance to change around how data is collected, held, and used must also be overcome.
- Innovation can be defined in many ways and requires a wide range of roles. Identifying the correct role for the CPCA to take on under each circumstance is key to achieving the greatest benefit from the process
- The difficulty of scaling-up from the pilots and trials to fully operational deployment is a common challenge across all innovation schemes. In order to truly recognise the value of innovation and investment, it is necessary to work with operational teams from the outset ensuring that what is delivered is responding to a genuine challenge and offering a beneficial outcome.

Innovation

Solutions

Increased connectivity - Expanding the LoRa sensor network across the region and providing knowledge and support in its use, will offer authorities, businesses, and communities a low-cost method of collecting a wide range of local data. This data can be used across a variety of industries and in support of a number of the CPCA's ambition to drive towards lower carbon emissions, better understanding of flooding, in-home monitoring to support health and social care and promote better places. We will also develop a register of testbeds (such as those developed in other projects) so we can advise on the best locations for trials of technology across the region as well as advocate for improved coverage in specific areas where innovation is stifled without it such as smart agriculture trials.

Data Audit and platform provision - Collating information from teams on types and quality of data available to understand where there are gaps, helping to avoid duplication and supporting the better sharing of data where appropriate. We will also facilitate more effective use, sharing, analysis and visualisation of a wide range of IOT data sources specifically through the provision of an IOT Data Platform. The deployment of additional sensors will also support the collection of data required for stakeholders to make better informed, data-driven decisions.

Digital Twins – We will investigate models that bring data together to support greater understanding of the impact of actions and policies between teams and facilitate a more integrated approach to achieving the same outcomes. For example, understanding how energy, connectivity and network management policies can be most effectively combined to reduce congestion, support flexible working and improve air quality.

Evidence Base for Monitoring and Evaluation - Data allows us to provide clear overviews of situations and the impacts of actions on them. By creating an evidence base, the CPCA will be able to identify trends, clearly define the impacts of actions taken and use this more detailed understanding to make well informed decisions based on accurate, local data. Such an evidence base can also be used to support funding bids and the evaluation of schemes as well as allowing for targeted investments in specific areas or projects.

Continued

Innovation

Solutions continued

Supporting Innovative Transport Solutions - With the introduction of The Automated Vehicles Bill, the government has made a clear commitment to supporting the development and growth of the automated vehicle industry in the UK. The combined authority is well placed to take advantage of this, with manufacturing and knowledge/technology-based businesses already working in this space and with the opportunity to grow. Self-driving technologies have the potential to support a wide range of use cases including improving the public transport, logistics and provision of service in more rural areas as well as on routes currently deemed to be economically unviable to operate. The programme will also continue to support the CPCA's work on Demand Responsive Transport (DRT) and Active Travel solutions such as e-scooters and e-bikes as well as looking to leverage learning from other areas on solutions such as Mobility as a Service (MaaS) making journeys across the region for leisure, work and education opportunities easier for everyone. Creating an inclusive and equitable transport system is a priority for the CPCA and it's clear that technology and data have a significant role to play in making journeys more reliable and accessible.

5G Innovation Regions - As a partner in England's Connected Heartlands 5G Innovation Region, we are ideally placed to utilise the learnings from this government funded project. We will work with partners to trial new 5G use cases, increasing demand and uptake of connectivity solutions delivered by the infrastructure workstream and promoting opportunities for economic growth within the region

Secure further government and commercial investment - Connecting Cambridgeshire will investigate new funding opportunities to develop and pilot digital solutions that align with the combined authority's strategic priorities. Building on previous successes and utilising the evidence base collated, we will bring together relevant consortiums of authority, industry and academic partners to secure funding that enables innovative solutions to be trialled in the region. We will also build on the existing reputation for successful innovation ensuring the region is nationally recognised as a collaborative, connected place for businesses to grow and invest. Creating an Innovation Framework will allow us to demonstrate the strengths of the region, our openness to collaborate and our determination to deliver worthwhile, innovative solutions to support the sustainable growth of our communities and businesses.

Innovation

Targets

- Expand the coverage of sensor networks in the region to support further targeted collection of environmental data.
- Develop an Innovation Framework for the region.
- Increase the number of technology and data trials executed in the region by 50% over the next four years, with at least 30% of new trials focused on rural areas.
- Make the data collected across the partner organisations available internally between teams and externally to businesses and the public in line with appropriate guidelines/policies to support more informed decision making.

Inclusion

Introduction

Technology and digital has become increasingly pervasive of modern life and will continue to do so; over three quarters of people in the UK believe that the internet is now an essential service[1]. It is more important than ever that citizens have safe, affordable, inclusive, suitable access to connectivity, devices, and the skills and confidence required to function and engage with them properly to live a full life.

The government is already investing in world class internet access and digital infrastructure, including a £5 billion public investment programme to enable hard-to-reach communities to access lightning-fast gigabit-capable broadband. However, to make sure the connectivity is for everyone, we need to provide more than just access. We need to equip the whole region with the skills, motivation, and trust to go online, be digitally capable and to make the most of the available digital infrastructure.

There is a lot of great work going on across the public, private and voluntary sectors to help people and organisations go online, but digital exclusion remains a big issue. Therefore, Connecting Cambridgeshire is committed to delivering robust and holistic digital inclusion support.

Digital is becoming the primary means of connection to access to essential services. Digital skills are key to economic resilience and growth, providing additional jobs and social inclusion. The return of investment for digital inclusion delivery is £9.48 for every £1 invested[2]. It is crucial all residents can benefit by ensuring they have the devices and connectivity to get online and improve their life.

According to Good Things Foundation, 10.2m people across the UK lack the most basic digital skills they need[3]. As well as this, nearly half of those not engaged online asked someone to go online on their behalf[4]; showing that the desire and need to be online is there, but barriers exist stopping them from being able to do so independently.

1, 3 & 4 Building a Digital Nation - Good Things Foundation

2 Economic impact of digital inclusion July 2022

Continued

Inclusion

Introduction continued

Mobile UK's recent report shows that 63% of councillors nationally agree that rollout of broadband and 5G is vital to levelling up the UK. However, the strategies, people and skills needed to enable mobile deployment are often simply unavailable at a local authority level.

This strategy will enable us to develop a place-based approach to digital inclusion, working with partners to ensure that support is fit for purpose and complementary to the digitalisation of wider public services such as public health, finance and budgeting, and general engagement.

A meaningful engagement and co-development directly with communities is the foundation of digital inclusion delivery. This should help create a sense of true community spirit for our residents, proving our commitment to ensure they are not left behind as technology evolves, particularly where service developments are not in our control, i.e. banking or health services closing physical presences.

Continued

Inclusion

Challenges

- Inequality and the lack of affordability of utilities mean that more communities are feeling harsher impacts of the rises in the cost of living and are becoming more reliant on food banks and other anti-poverty services. This can lead some people to cut off their connectivity services so that they can pay other bills[5]. Connectivity is now an essential service, and all residents must have affordable access to connectivity and devices to make the most of that connectivity.
- Digitalisation of services and closure/reduction of in-person services such as banking, healthcare, etc. As well as the increasing digitalisation of public sector services due to decreasing budgets.
- The Digital Switchover[6] is happening on an ongoing basis until the end of December 2025, yet there is little to no awareness of it among a large number of businesses and residents. It is imperative that everyone is ready and confident going into the switchover to ensure the smooth continuity of their daily lives.
- Lack of resources to deliver effective digital inclusion support, compounded by a lack of prioritisation for this support at a national level[7].
- Lack of motivation from some residents to engage online, usually as they don't see the benefits that being online can deliver for them.
- The fear of change, particularly among older people often exacerbated by concerns about data security that their personal data could be stolen or misused can be intimidating, leading to hesitation or outright resistance to adopting digital tools.
- Lack of cohesion across the area for digital inclusion strategy, delivery, and resourcing.
- Digital skills gap in employment, without clear pathways to employment for local residents seeking jobs in the technology and digital sector, as well as those who require essential digital skills for non-industry jobs.
- Acute digital exclusion and lack of access to connectivity in social housing and temporary accommodation settings.

5 Good Things Foundation research shows 1 million households dropped their broadband contracts as a result of the cost of living crisis - Building a Digital Nation - Good Things Foundation.
6 Moving landline phones to digital technology: what you need to know - Ofcom
7 Response: House of Lords Digital Exclusion Inquiry | Good Things (goodthingsfoundation.org)

Inclusion

Solutions

Raising awareness - Raise awareness of affordable broadband and mobile connectivity options, while also leveraging better cost-based support from industry.

Circular Economic Model - Implement a circular economic model for organisations and groups to be able to repair, reuse, and recycle their technology to reduce their environmental impact, while simultaneously creating a central stock of digital hardware to be distributed to those in need of truly suitable access to a suitable device.

Digital Exclusion Impact Assessments - Integrate digital exclusion impact assessment gateways alongside existing data protection and equality impact assessments within local authority partners when developing new services, projects, or other delivery.

Digital Switchover Support - Engage directly with partners across all sectors to ensure awareness, understanding, and readiness for the Digital Switchover.

Funding Opportunities - Improve utilisation of funding opportunities for those delivering digital inclusion support through raising awareness of opportunities, bringing groups and organisations together for more effective consortium bids, and provision of subsidy schemes where appropriate and feasible.

Build upon behavioural insights research - Build on research carried out in 2024/25 by using findings to deliver 'nudge' initiatives to reach those most entrenched in digital exclusion and meet their circumstances, needs, and motivations to gently develop better digital inclusion that delivers benefits to their daily lives.

Cross-Sector Working - Work together with cross-sector partners in both Cambridgeshire and Peterborough to convene networks with a focus on digital, helping to share learning, knowledge, experience, and collaborative opportunities.

Continued

Inclusion

Solutions continued

Digital Champions - Nominate Digital Champions to coordinate local authorities' digital strategies and relationships with the industry, to help deliver positive outcomes in the smooth deployment of mobile networks and in building more effective relationships both within councils and with telecommunications providers, as well as overall promotion of the digital inclusion agenda. The recent Connecting the UK report highlighted that, where Digital Champions were in place, they were four times more likely to have an effective relationship with digital infrastructure providers[8].

Skills Shortages - Convene employers, education and skills providers, and residents seeking employment to co-develop effective pathways into meaningful employment, particularly in areas where there are current skills shortages.

Social Housing Inclusion - Work with social housing and temporary accommodation providers to deliver accessible, robust connectivity to their residents, as well as broader digital inclusion support to meet their needs and ambitions.

8 Digital-Champions.pdf

Inclusion

Targets

- Enable all residents and businesses to be digitally included by providing access to relevant connectivity, devices, and skills and confidence.
- Empower all those who live and work in Cambridgeshire and Peterborough to be a part of the solution, working together to deliver effective digital inclusion.
- Achieve minimum digital living standard[9] (MDLS) for all residents ensuring they have the ability to communicate, connect, and engage with opportunities online safely and with confidence. We will work alongside MDLS partners to broaden the remit of this standard to include all residents.
- Extend free public access Wifi (CambWifi to more Cambridgeshire and Peterborough locations.
- Explore opportunities to deliver subsidy schemes for voluntary and community groups delivering digital inclusion support.
- Improve standards of connectivity and digital inclusion for residents living in social housing and temporary accommodation.
- Support communities to be resilient in adapting alongside digital and technology as it evolves.
- Develop a robust digital skills plan with education and skills, and employment partners, as well as employers across the region to ensure relevant pathways from engagement, through education/accreditation, to employment opportunities.

9 https://mdls.org.uk

Glossary

A comprehensive Glossary of digital connectivity infrastructure terms can be viewed on the Connecting Cambridgeshire website.

Useful links

UK Digital Strategy 2022
UK Wireless Infrastructure Strategy
Cambridge Wireless Digital Strategy
Digital Connectivity Forum
Spring Budget 2024
The Case for Cambridge (publishing.service.gov.uk)
Cambridgeshire County Council Digital Strategy 2023 to 2028
Connecting Cambridgeshire website

Contact

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