Cumbria
County Council

Digital Infrastructure
Strategy
2020-2025

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Foreword

The importance of digital connectivity is increasing as it becomes more critical to the modern day lives of residents and productivity of businesses. This importance has been further highlighted by the coronavirus crisis and as we recover and restart, access to fast, reliable internet connectivity is no longer a luxury; it is a basic necessity for residents, local businesses and the delivery of public services. Digital connectivity is playing a central role in the Government's levelling-up agenda to support economic growth and greater social inclusion across the UK.

Cllr David Southward
Cabinet Member of
Economic Development
and Digital Champion

"From living and working in Cumbria, I know first-hand some of the challenges in delivering infrastructure in our county. However, I also know how transformative good connectivity can be. As portfolio holder for economic development, digital infrastructure is my top priority given the significant economic and social benefits for Cumbria."

Angela Jones
Executive Director
Economy and
Infrastructure and
Digital Champion

"Recognising the importance of digital infrastructure, we have developed this strategy to ensure Cumbria's voice is heard. Cumbria County Council is committed to working to help Cumbria develop the futureproof infrastructure our businesses and services need in tandem with ensuring that all communities catch up with the rest of the UK."

Introduction and Background

Cumbria is a beautiful rural county and the most sparsely populated county in England. Our resident population is just under 500,000 but we typically receive more than 40m visitors a year[1]. We are a very diverse county containing national parks, England's border city of Carlisle, and two world heritage sites.

Digital infrastructure is now recognised as the fourth utility given its importance to modern life and the connectivity it provides to services and markets. Providing futureproof digital infrastructure to all residents and businesses in Cumbria, either through supporting commercial deployments, or working with central government to secure funding where intervention is required is a key enabler for economic growth, education and social inclusion.

The coronavirus pandemic has only served to reinforce the importance of digital connectivity. From getting the latest information and health guidance, home working, education and learning, online access to food and supplies, staying connected to family and others and to maintain supply chains – we all now depend on the ability to connect remotely across distance. It is expected that work patterns post Covid-19 will feature more home working and flexible working. Students and children will have an even greater need to study online. Business models will have a bigger online presence and the Council must be able to deliver as many of its services digitally to as many citizens as possible.
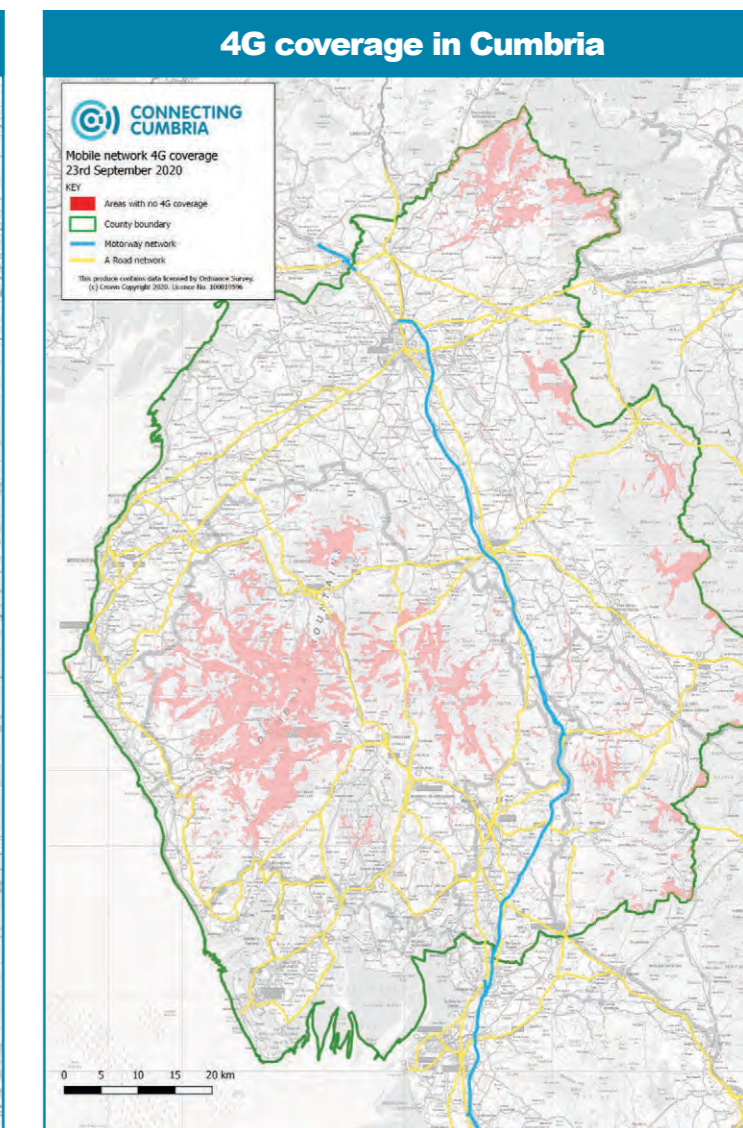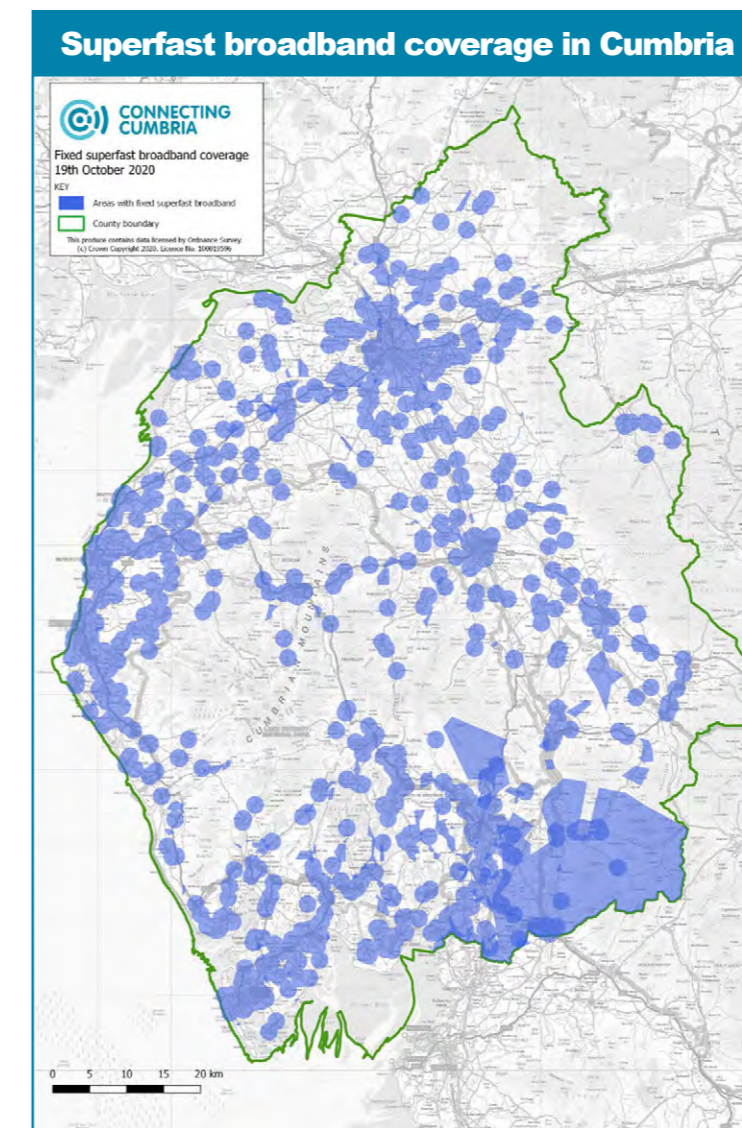
As we work to support recovery in the county we expect to see:

- **Rural homes with good connectivity becoming more attractive.**

- **Increase in direct online consumer sales from agriculture.**

- **More domestic tourism, but with greater sensitivity to digital connectivity.**

- **Universal contactless payment with an almost cashless society.**

- **Online trading as consumer first choice.**

Cumbria County Council has already successfully delivered superfast broadband connections for more than 122,000 premises through the Connecting Cumbria programme. The programme was delivered through a partnership between the County Council and British Telecom Plc from 2012 to 2020. As at 1st October 2020 almost 94% of properties across Cumbria are able to access services of at least 30Mbps. However, gaps in coverage remain and only 6.3% of properties are currently able to access gigabit capable services therefore more investment is still needed to ensure that Cumbria catches up with and keeps pace with the rest of the UK.

4G coverage has also improved significantly since 2017 through the work of the commercial programmes and in preparing to support the new 4G based Emergency Services Network. However, 4G coverage remains 'patchy' with significant large areas of countryside being unconnected particularly affecting our agricultural and tourism sectors.

[1] https://councilportal.cumbria.gov.uk/documents/s18253/Item%209%20-%20Cumbria%20Tourism%20final%20report.pdf?nobdr=2

Superfast broadband coverage in Cumbria

4G coverage in Cumbria

Vision

Our vision is to maximise deployment of full fibre and mobile infrastructure, in order to support:

- **Economic growth of our businesses.**

- **Digital inclusion so that no resident or business is left behind.**

- **Delivery of more effective and efficient provision of local public services.**

Digital infrastructure is a key enabler which supports the delivery of our Council Plan and contributes to our priority outcomes for the people of Cumbria.

Outcomes for the people of Cumbria

People in Cumbria are healthy and safe	Places in Cumbria are well-connected and thriving	The economy in Cumbria is growing and benefits everyone

New ways of working

Working together	Enterprise and efficiency
Working with partner organisations and communities to achieve shared aspirations	Exploring new ways to deliver services and maximise our resources

Putting our customers at the heart of everything we do

Prevention and early intervention	Digital transformation
Acting early to achieve better outcomes	Giving our customers choice and easy access to online services

Core principles

Focusing on the most vulnerable	Managing demand	Supporting communities to thrive

Objectives

Our objectives are aligned with the UK Government's ambition as set out in the Future Telecoms Infrastructure Review (July 2018)[2] for delivery of improved full fibre and mobile networks. The aim is to see 30 million premises connected to gigabit-capable (typically full fibre) services by 2025, with coverage across all parts of the country by 2033 and the majority of the population to have 5G coverage by 2027.

The UK Government is currently developing two programmes to deliver its commitments in relation to digital connectivity:

- **Shared Rural Network – A combination of commercial and public investment to deliver 95% geographical 4G coverage across the UK from at least one mobile network operator.**

- **UK Gigabit Programme – Public investment to deliver gigabit connectivity to the most challenging 20% of UK properties (F20) and stimulation of commercial investment into the remaining 80% of the UK.**

Cumbria County Council is already engaged in these programmes working with UK Government to enable early deployment in Cumbria, to ensure the infrastructure is in place to support increased business productivity and social inclusion.

The Council will support 'outside in' deployment of gigabit capable infrastructure to prioritise the remaining superfast not-spots, encourage commercial deployment to rapidly expand gigabit capable services in urban areas, seek to contribute to the UK Government commitments to complete 4G rollout to 95% of the UK landmass from at least one mobile network operator, expand gigabit capable full fibre broadband and encourage the development of 5G.

[2] **https://www.gov.uk/government/publications/future-telecoms-infrastructure-review**

Our approach to meeting our objectives

Future proofed digital infrastructure is crucial to making Cumbria a more attractive place to live, run a business, to study and to visit. Better connectivity will result in more efficient and innovative ways of meeting the needs for residents and businesses. We will achieve our objectives by:

Tackling the barriers
Historically digital connectivity in Cumbria has been poor in comparison to the rest of the UK because:

- **Geographical challenges.**

- **General rurality.**

- **Increased cost of deploying and maintaining infrastructure with a low return on investment.**

- **Isolated properties and dispersed communities.**

- **Lower density of residential properties, particularly in rural areas.**

- **Perceived planning barriers.**

- **High incidence of flood blockages in undercarriage ducting.**

Achieving improved connectivity is dependent on deploying more fibre across the county, be that to service full fibre connections to residents and businesses or backhaul to mobile mast infrastructure for 4G or 5G. We will work with service providers to support the convergence of technology for seamless connectivity to services and applications through the most appropriate route. That could be through a cable or Wi-Fi connection to in-premise fixed fibre, or through 4G or 5G mobile infrastructure, either indoors or outdoors, or indeed via fixed wireless or satellite solutions.

Capitalising on opportunities
There are a number of opportunities arising from improvements to digital infrastructure that have potential to deliver longer term benefits for Cumbria. We need to capitalise on the following:

- **Remote Working**
  Increasing numbers of people are able to work remotely which is allowing them to choose where they want to live for family and lifestyle more flexibly than ever before. Adoption of remote working and online collaboration has been accelerated by Covid-19. This is expected to be a long-term trend which will provide a range of new job opportunities, strengthen our economy and encourage more families to move to Cumbria.

- **Decarbonisation**
  More home working and access to services remotely will provide opportunities to reduce congestion and aid in decarbonisation of our economy. Developing technologies, which rely on digital connectivity, will allow smarter management of energy and other services to reduce waste.
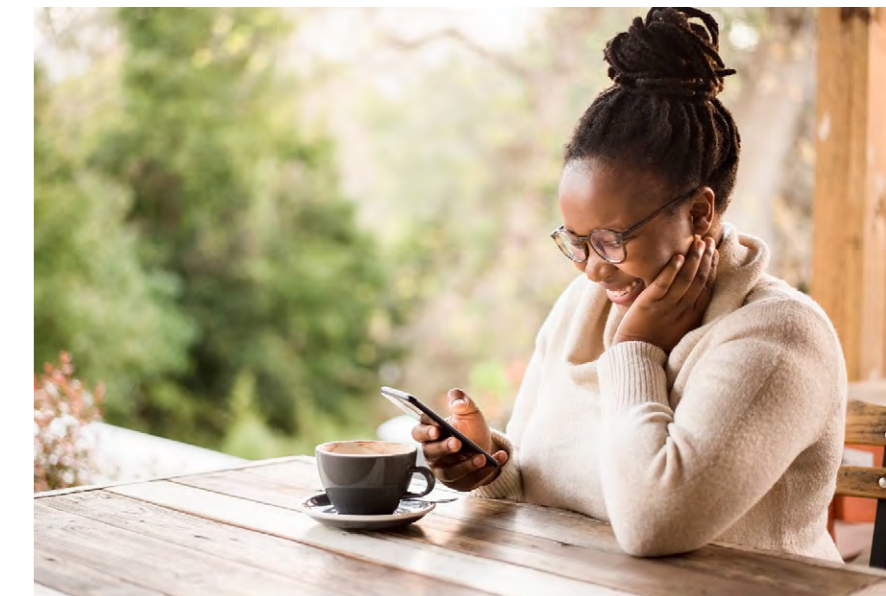
- **Skills**
  Increasing recognition is being given to developing people's skills from basic digital skills to support social inclusion through to higher level skills to increase business productivity. Digital skills will be essential if we are to fully realise the economic benefits from improved digital connectivity.

- **Tourism**
  Increasingly visitors expect to be able to access digital connectivity seamlessly wherever they are for accessing services, making payments, keeping in touch, social media and entertainment. Covid-19 has made visitors increasingly aware of the need for good connectivity at holiday accommodation and surrounding areas.

- **Resilience**
  Over the last 10 years there have been extreme weather incidents which like the current Covid-19 crisis have challenged the resilience of our public services and communities. Improved connectivity will assist us in monitoring conditions, delivering services remotely and safe-guarding workers and the public.

Working in partnership

Achieving our objectives is dependent on working in partnership to encourage commercial deployment of infrastructure and develop publicly funded support programmes. We are working with the following partnerships:

- **Borderlands Partnership**
  A partnership between Cumbria County Council, Carlisle City Council, Dumfries & Galloway Council, Northumberland County Council and the Scottish Borders Council which is working to support transformation and economic growth across the region. Digital connectivity is a major theme for the Borderlands Partnership and Borderlands Inclusive Growth Deal.

- **UK Government**
  To work with Department of Digital, Culture Media and Sport and BDUK to help maximise digital infrastructure deployment, including engagement with Local Partnerships and the Barrier Busting Task Force.

- **Cumbria Local Enterprise Partnership (CLEP)**
  Digital Connectivity is a key priority in CLEP's draft Local Industrial Strategy (2019). Their 10 year target is to "achieve full coverage of full fibre infrastructure (in terms of premises passed) and of 4G/mobile phone coverage (of our land area) by 2025". CLEP is also leading on a digital skills programme of activity to increase understanding, use and application of digital services and technology.

- **District Councils and National Parks**
  All six District Councils and both National Parks in Cumbria have ambitions to improve digital connectivity and many are working to develop policies in their Local Plans to ensure provision for high quality digital connectivity is made at the planning stage for new developments.

Working together we will seek to explore access to public assets to host mobile infrastructure where appropriate, consider in procurement of new street furniture the ability to host mobile infrastructure and the waiving of non-domestic rates to digital infrastructure (likely to be driven by national policy guidelines).

Priorities for Investment

Providing digital infrastructure to all residents and businesses in Cumbria, either through supporting commercial deployments, or working with central government to secure funding where intervention is required is a key enabler to facilitate delivery of the Council Plan. The rural nature of Cumbria means that digital infrastructure improvements will not be delivered through commercial provision alone. This digital infrastructure strategy therefore recognises that funded intervention from central government will be required including investment to eliminate the remaining superfast and 4G not-spots.

Priorities for investment are to encourage gigabit capable services and universal high-quality mobile services to ensure that no resident, business or place is left behind.

Gigabit Capable Services can be delivered through different technologies but full fibre to the property is the most typical. As at 1st October 2020 6.3% of properties in Cumbria can access gigabit capable services compared to 27% of properties across the UK. We have three main priorities:

- Extend coverage into areas that don't currently have superfast. It should be noted that full fibre is likely to be prohibitively expensive for the last 1% to 2% of premises where different technologies will be required such as 4G, 5G, fixed wireless or even satellite for the last fraction of a percent.
- Encourage rapid development of gigabit services in strategic economic areas.
- Encourage developers of new commercial and residential properties to make provision for gigabit capable connections at the planning stage of all projects.

Mobile (4G & 5G) infrastructure for these services rely on extending gigabit connectivity, particularly full fibre, to provide backhaul connectivity to core networks. There has been significant improvements in 4G connectivity in urban areas and on main roads through the development of commercial programmes and the new Emergency Services Network but gaps in coverage remain, particularly in rural areas. We have two main priorities:

- Maximise delivery in Cumbria through the Government's Shared Rural Network programme and the developing Digital Borderlands 4G Infill programme.
- Encourage further commercial infrastructure development through offering opportunities to use public assets, research projects and encouraging property developers to engage with mobile network operators.

The council will facilitate the granting of planning permission and securing the necessary wayleaves to ensure that mobile infrastructure can be deployed where appropriate and enable maximum mobile coverage. This will take cognisance of the National Planning Policy Framework[3]. All planning authorities will be encouraged to mandate a digital plan in any new build development.

5G is a critical emerging technology but it will frequently be built through enhancing existing 4G infrastructure and 5G applications may need to fall-back on 4G technology when 5G signal is not available. Any 4G infill solution in Cumbria will be future-proofed as much as possible to enable the hosting of 5G infrastructure in future. This will include potential use of Council assets, such as street lighting, to facilitate 5G deployment.
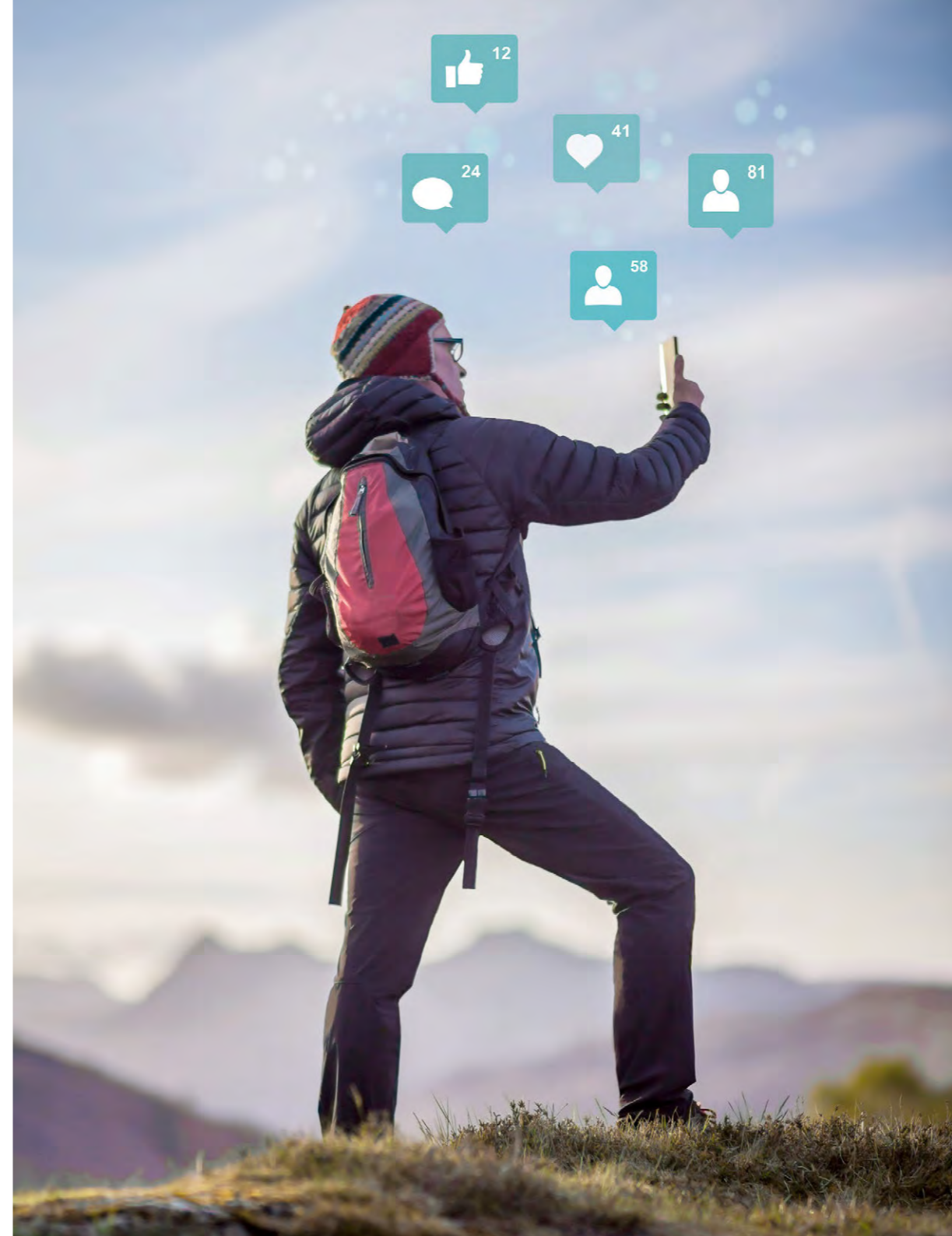
[3] See in particular section 10 'Supporting high quality communications: https://www.gov.uk/government/publications/national-planning-policy-framework--2

Action Plan

We have identified a range of projects and programmes to contribute to the delivery of the digital infrastructure strategy – some of these will be subject to development of business cases and identification of suitable funding. We have identified a number of actions to support delivery of this strategy:

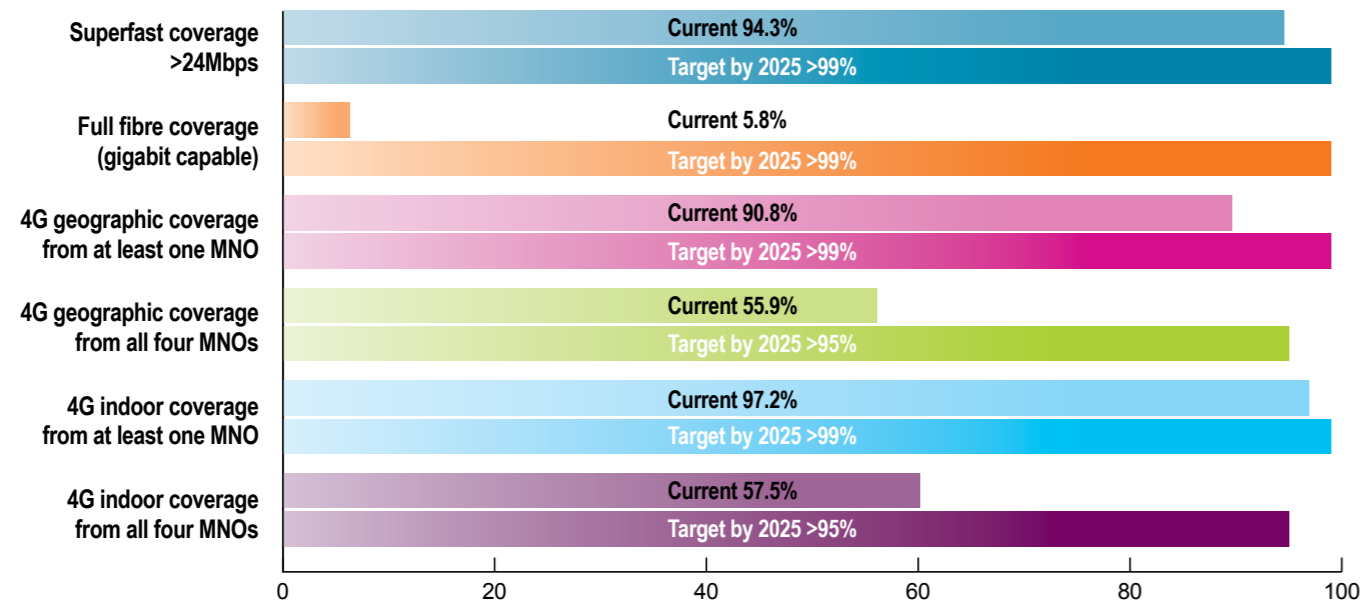|	Gigabit Capable Infrastructure		Mobile Infrastructure
1	**Facilitate gigabit capable connectivity** to public sector premises and to hub sites such as schools and GP surgeries. Such connectivity will then support expansion to other local residential and business premises, potentially supported by voucher schemes (see below).	1	**Securing funding and mobilising the Digital Borderlands 4G infill scheme** that aims to go beyond existing UK 4G targets through the deployment of 5G ready infrastructure.
2	**Through the Digital Borderlands voucher top-up scheme** provide up to £1,500 for residential premises and £3,000 to business premises to provide gigabit capable connectivity to communities in the last 5% to 6% of superfast not-spots. This funding works with the UK Rural Gigabit Connectivity scheme vouchers giving a combined funding of up to £3,000 for residential premises and £7,000 to business premises.	2	**Working with partners on 5G research and development** to build a toolkit that can be used to create trials in Cumbria and the broader Borderlands region subject to further funding. It should be noted that this project is not about the roll-out of 5G, but Digital Borderlands will work within the consortium to access the toolkit and understand how rural 5G might be rolled out in future.
3	**Work with UK Government to secure funding** for gigabit capable connections in line with the policy of providing £5bn of subsidy for the hardest to reach 20% of premises across the UK and to ensure that Cumbria is not left behind. UK Government targets completion by 2025.	3	**The County Council will facilitate the granting of planning permission** and securing the necessary wayleaves to ensure that mobile infrastructure can be deployed where appropriate and enable maximum mobile coverage.
4	**Work in partnership with planning authorities and other bodies** to ensure provision for gigabit capable digital connectivity is strongly encouraged at the planning stage for new developments.		

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Measuring Our Success

Digital infrastructure deployment requires a concerted effort across the Council and through working with partners. Our Digital Champions will help co-ordinate delivery of the action plan with the support of the Connecting Cumbria team. We will measure our success against achievement of the following targets:

Delivery of these targets will be through the key projects outlined in the Action Plan section of this document.

Delivery of these targets will be through the key projects outlined in the Action Plan section of this document. We will also seek to respond to the impacts of climate change to support the County Council target of reducing CO_2 emissions by 34% by 2020 and 80% by 2050.

We and our partners have a lot of work to do to achieve our vision of delivering our targets and world class digital connectivity in Cumbria. As each aspect of our action plan is further developed we will share more detail and updates on our website and via County Council publications.

Current digital infrastructure footprint and target coverage of Cumbria

Category	Current	Target by 2025
Superfast coverage >24Mbps	Current 94.3%	Target by 2025 >99%
Full fibre coverage (gigabit capable)	Current 5.8%	Target by 2025 >99%
4G geographic coverage from at least one MNO	Current 90.8%	Target by 2025 >99%
4G geographic coverage from all four MNOs	Current 55.9%	Target by 2025 >95%
4G indoor coverage from at least one MNO	Current 97.2%	Target by 2025 >99%
4G indoor coverage from all four MNOs	Current 57.5%	Target by 2025 >95%

Further information can be found using the following website link:
www.connectingcumbria.org.uk/digital-infrastructure-strategy