



Crib Sheet for Parish Councils

What is the Mobile Access North Yorkshire project?

MANY is part of the Rural Connected Communities programme, which works under the Department for Digital, Culture, Media and Sport. It is part of the 5G Testbed and Trials initiative.

What is the project doing?

The project is researching the latest technology to determine if it can deliver high-speed broadband and mobile connectivity in rural areas on a cost-effective basis. It is a research project, but if it is successful, it will lead to a permanent commercial service.

The primary purpose of this project is to test the delivery of connectivity – the fact that it happens to be 5G means it can deliver additional applications, which will benefit the end user:

- High speed, high capacity broadband to enable rural communities to have the same level of access as urban communities
- Real time checks on patients so they don't have to travel long distances to hospitals and clinics
- Monitoring via sensors on river levels to assist with flood management or utilities when communities do not have access to main supply's
- Business growth – especially for the rural business
 - Real time monitoring of farming operations and documentation to improve productivity
 - Direct input of data to speed government payments
 - Safety and supporting mental health

How will it do this?

The project will deliver this connectivity via a wireless connection. This is because it is cheaper than fibre and provides a mobile signal to the end user as well as connection to the premises. Ensuring the whole of a rural area gains connectivity.

The ultra-fast connectivity will enable broadband and data telephony.

A further element of the project in Coverdale is to enable connectivity with a 'conventional' mobile phone service – thus enabling users to have the same experience as those in an urban setting/

This element of the trial is a test for the integration of current technologies but is essential to try to overcome the digital divide that exists in rural areas.

Why now?

This research can only be undertaken now as the newly available technology and spectrum makes the coverage feasible from a wireless service.

What frequency and spectrum is being used?

The spectrum being used are classed as 5G because that is the industry term for technology beyond 4G. 4G and earlier technology could not deliver what is being trialled via MANY.

The frequencies the project are using are below 6 GHz. The project is using 1.8Ghz, 2.4 - 2.6Ghz and 3.8 – 4.2Ghz. These frequencies are already used throughout North Yorkshire and the UK for 4G and earlier technology.

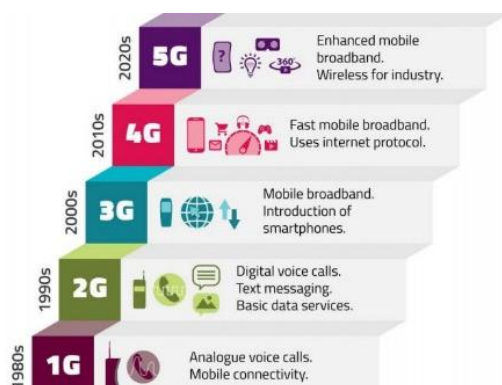
The project can use these frequencies because:

- A lot of processing has moved from the antennas on the mast into the core network (servers)
- We can now combine frequencies to make data move more efficiently
- Our technical lead partners are upgrading their network to fibre

All these changes allow data to move faster enabling the quicker speeds for the end user.

What is the difference between 5G and previous technology?

The following diagram explains the difference:



Why is the project using 5G?

Over the coming years 5G technology will become more prevalent meaning end users will be required to buy 5G technology when doing upgrades to devices. Therefore, ensuring Coverdale is on par with urban neighbours rather than being behind.

Who are the MANY consortium?

Quickline Communications Ltd, the UK's largest provider of fixed wireless broadband; North Yorkshire County Council; the University of York; Lancaster University; aql ltd; Cybermoor Ltd; Safenetics; Flo-culture; Wireless Coverage (Boundless).

What do you expect to be doing over the next month (Feb/March 2021)?

Currently, we are awaiting deliveries of technical equipment. We would hope to start erecting the masts over the coming weeks – **we will let you know in advance when we will be doing this**. The aim is for the network to go live in April/May 2021.

We are still keen to hear from community members about their current experiences of digital connectivity. We are also keen to hear from those community members who would like to test the technology out.

How can I get in touch with the project?

W: www.mobileaccessnorthyorkshire.co.uk E: info@mobileaccessnorthyorkshire.co.uk

T: 0300 400 4444

More about 5G

Is it safe?

Mobile networks use wireless signals to communicate with devices – this has happened throughout the innovation of mobile phones. Growth in this area is safely managed through the industry conforming to independent international health standards based on a large amount of research carried out over the last 50 years (ICNIRP guidelines). This includes television, radio and WiFi, which along with emergency service communications is delivered via wireless signals.

This means that the frequencies used within this project to deliver 5G to the area are checked and regulated by industry experts.

Any radio waves or electromagnetic fields (EMFs) given off by telecommunications masts are non-ionising and also at levels well below the maximum safety guidelines. This means that these radio waves do not carry enough energy to directly damage cells. They are seen in everyday life including: TV and radio broadcasting, WiFi, microwave ovens, smart lightbulbs, and some TV remote controls and car key fobs. **This is where mobile phones operate.**

The other type of radiation is ionising, which is disruptive to tissue and is found in things such as ultra-violet light (i.e. sunbeds), diagnostic and therapeutic radiation (X Ray and MRI). **Mobile phones DO NOT operate here.**

5G Testing

The emissions of 5G have been tested to ensure that they come under the ICNIRP guidelines. The most recent one in the UK was by Ofcom in February 2020. The results indicate that all measurements were a fraction of the maximum safe levels identified within the ICNIRP guidelines – the highest being 1.5% of the relevant level.

Another recent study carried out in Australia late in 2020 by the International Electrotechnical Commission measured levels in a SMART home with over 50 5G devices working at one time. They found that the maximum levels measured at any point during the 2-day trial were 0.00149% of the ICNIRP guidelines. This was measuring both network and devices.

The MANY project will measure outcomes to ensure they are well within the guidelines set out. These results will be made public. We have asked Ofcom specifically whether they would be willing to come and test the emissions as part of this project.

What recognised bodies say?

Public Health England

The Centre for Radiation, Chemical and Environmental Hazards (CRCE) takes the lead on public health matters associated with radio waves used in telecommunications.

Central to PHE advice is that exposures to radio waves should comply with the guidelines published by the ICNIRP.

Some 5G technology will use similar frequencies to existing communications systems. Other 5G technology will work at higher frequencies, where the main change would be less penetration of radio waves through materials, such as walls.

ICNIRP guidelines includes frequencies used by both existing mobile systems and those intended for 5G. While a small increase the localised exposure to radio waves is possible when 5G is added to the



existing network it is the responsibility of the industry to ensure the total remains well within ICNIRP guidelines.

Public Health England and other organisations have concluded there is no convincing evidence that human exposure of radio waves below these guideline levels causes health effects in either adults or children.

Chief Medical Officer for England

In June 2019, the Chief Medical Officer for England confirmed that there is sufficient evidence to demonstrate that the roll out of 5G does not represent a public health risk.

Cancer Research UK5 Do mobile phones cause cancer?

No. The best scientific evidence shows that using mobile phones does not increase the risk of cancer.

There also aren't any good explanations for how mobile phones could cause cancer. The radiofrequency electromagnetic radiation that mobile phones or phone masts transmit and receive is non-ionising and is very weak. This non-ionising radiation does not have enough energy to damage DNA and cannot directly cause cancer.

But research is still continuing, to make sure there aren't any potential long-term effects. And we continue to monitor any new evidence.

World Health Organisation

Provided that the overall exposure remains below international guidelines, no consequences for public health are anticipated. (WHO January 2021)

Useful links

[Cancer Research: Do mobile phones cause cancer?](#)

[Ofcom EMF measurements \(highest level recorded 1.5% of the relevant level\)](#)

[Coverage on new ICNIRP 2020 Guidelines which cover 5G](#)