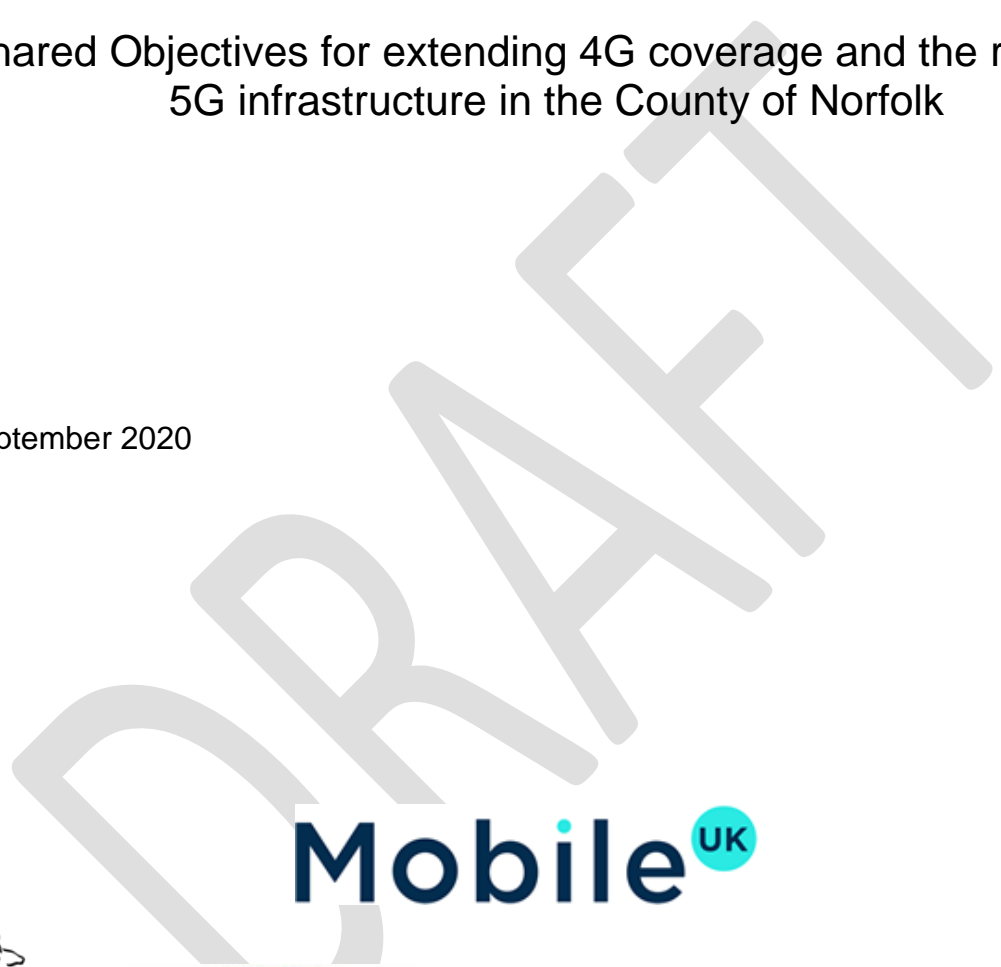


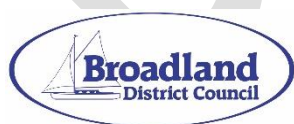
# Norfolk Strategic Planning Framework

Shared Objectives for extending 4G coverage and the rollout of 5G infrastructure in the County of Norfolk

September 2020



**Mobile**<sup>UK</sup>



Borough Council of King's Lynn & West Norfolk



**NORWICH**  
City Council



**Norfolk** County Council

## INTRODUCTION

Mobile connectivity to fast, reliable data services is becoming increasingly important to residents and businesses in Norfolk and constitutes a common expectation of everyday life. However mobile coverage in Norfolk, particularly rural areas isn't as good as it can be with a recent independent survey suggesting only 82 percent of call attempts in Norfolk are successful<sup>1</sup>. While the survey shows Norfolk is comparable to the rest of the UK in some respects, it's clear there is still considerable room for improvement, particularly in ensuring people have reception wherever they are in the county.

To achieve this Norfolk authorities, in partnership with Mobile Network Operators need to be in alignment around a shared goal to the roll out of improvements and updates to the network, to vastly reduce the reception black spots prevalent within Norfolk.

The Norfolk Strategic Planning Member Forum has set up an officer group with the support of Mobile UK, to explore how to improve 4G and 5G infrastructure roll-out in Norfolk. This group is focused on setting out what operators and Norfolk's local authorities need to do to improve digital connectivity.

Improvements in mobile connectivity will entail both the extension of 4G coverage and the introduction of 5G in due course. 4G will not only improve mobile coverage where it is currently absent but will also provide the underpinning infrastructure for 5G, they will be complementary technologies.

The private sector is responsible for the delivery of Norfolk's digital connectivity. Further 4G and 5G roll-out will require significant investment by private telecoms operators. Outside of the Norwich Urban area, Norfolk is a challenging environment, whose digital infrastructure needs have been neglected in the past.

## Future Growth

Smartphone ownership has grown from 52% in 2012 to 87% in 2018<sup>2</sup> and data usage is predicted by Giff Gaff to increase to as much as 98.34GB per month by 2025 from 3.95GB in 2017<sup>3</sup>

Businesses see broadband and mobile connectivity as critical to their company's growth. Digital connectivity also enables local authorities to deploy smart technologies which can help them plan services more efficiently. Everything from water and energy consumption to air quality and waste increasingly depend on data that needs to be transferred in real time for analysis.

To meet rising demand for data, operators expect to introduce the fifth generation (5G) of mobile technology from late 2019 into the major conurbations<sup>4</sup>. 5G is expected to directly contribute billions of pounds a year to the UK economy. 5G is likely to reach speeds that are twenty times faster than 4G LTE. 4G LTE has a peak speed of 1GB per second; 5G is able to achieve speeds of 20GB per second.

The Government's £1 billion Emergency Services Mobile Communications Programme (ESMCP) will ensure that Britain is a world leader in Emergency Services communications, and a 4G pioneer. The network and infrastructure provider EE has been selected to deliver critical new 4G voice and data network for Britain's Emergency Services. EE already has the UK's biggest and most mature 4G network, and will expand coverage and enhance resilience to meet the Emergency Services' critical communications requirements.

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<sup>1</sup> See <https://www.norfolk.gov.uk/mobilemap>

<sup>2</sup> See Deloitte Survey - <https://www.deloitte.co.uk/mobileuk/>

<sup>3</sup> See <https://www.ispreview.co.uk/index.php/2018/01/giffgaff-predict-uk-5g-mobile-data-use-per-user-100gb-2025.html>

<sup>4</sup> Including Glasgow, London, Manchester, Liverpool, Birmingham, Cardiff and Bristol

### Mobile Coverage in Norfolk

Norfolk County Council commissioned AWTG (Advanced Wireless Technology Group) to conduct an independent benchmark assessment of mobile coverage and user experience across Norfolk. The benchmarking campaign was conducted in February and March 2018 using a robust four-tier methodology to maximise the extent and breadth of data collection. This included walk testing at over 30 locations including museums, tourist attractions, camping and caravan sites, rail testing on all main rail routes in Norfolk, drive testing on over 5,500 kilometres of Trunk, A, B and C class roads across Norfolk and stationary testing at enterprise zones and 28 Norfolk Broads mooring points. The scope of the campaign covered a detailed assessment of the GSM (2G), UMTS (3G) and LTE (4G) radio network (coverage) performance and received signal strength of the four main mobile network operators in the UK.

The headline results are that where coverage is available the quality of service is good. However, there are significant gaps in coverage across all 4 providers such that one call in 5 placed will currently fail.

The table below shows how often the signal strength matches the Mobile Network Operators (MNO) minimum target. When using a regular phone the latter figure would be the one which would relate to a good user experience.

Metric	Summary of Main Findings
2G	Coverage <ul style="list-style-type: none"> <li>• 98.83% Service availability on test handset based on MNOs defined threshold</li> <li>• 74.28% Service availability on test handset based on Ofcom defined threshold</li> </ul>
3G	Coverage <ul style="list-style-type: none"> <li>• 89.74% Service availability on test handset based on MNOs defined threshold</li> <li>• 65.68% Service availability on test handset based on Ofcom defined threshold</li> </ul>
4G	Coverage <ul style="list-style-type: none"> <li>• 98.92% Service availability on test handset based on MNOs defined threshold</li> <li>• 83.38% Service availability on test handset based on Ofcom defined threshold</li> </ul>
Voice	<ul style="list-style-type: none"> <li>• Voice performance acceptable when user is within the coverage area.</li> <li>• 82% call attempt success rate and 98% call completion rate.</li> <li>• Average voice quality is 3.93 out of 5</li> <li>• Average call setup time is 3.27 seconds</li> </ul>
Data	<ul style="list-style-type: none"> <li>• Data performance acceptable when user is within the coverage area.</li> <li>• 14.54Mbps average DL speed / 7Mbps average UL speed</li> <li>• Average download time for webpage is 6.86 seconds</li> <li>• 86.46% of web browsing tests completed successfully</li> </ul>

### **Implications for 5G roll out**

5G will use a wide range of frequency bands<sup>5</sup>, such as 700MHz, 3.4GHz and 30GHz

The higher frequencies of 5G will have a shorter range. Achieving the levels of network capacity where there is a very high volume of network traffic will over time increasingly rely on smaller cells situated nearer to the ground on lampposts and other street furniture, in addition to rooftop and ground-based masts.

Whilst more base stations will be required, Mobile Network Operators will use Multi-Input and Multiple-Output (MIMO) technology which can be rolled out on existing infrastructure where possible. The initial phase will be to strengthening the existing infrastructure or rebuilding the network where required, then densification for major areas using small high frequency cells which will be rolled out in areas with high demand. The rollout of 5G commercially is expected to commence in late 2019, and take several years to complete. Getting high quality 5G infrastructure rolled out across Norfolk will be important to delivering the vision of the Norfolk Strategic Planning Framework.

Mobile operator investment in mobile coverage is ongoing around the UK. In addition, Ofcom is currently consulting on the 2020 auction of further spectrum licences (in 700MHz and 3.8GHz bands). It is expected that further 4G coverage obligations for rural coverage will be attached to the new licences. It is very important that Norfolk is well positioned to take advantage of the new rural coverage obligations and also for 5G rollout (which is expected to occur initially in urban areas, where the capacity need is greatest.)

Mobile networks are integrated entities made up of cell sites, switches, and backhaul. Backhaul is the cables that link up the cell sites to the switches that transmit data quickly around the network. Making Norfolk ready for 5G also means making it easier to roll out full-fibre connections underground.

The recently announced £8m of funding from DCMS to upgrade 372 Norfolk sites will enable 230 schools, 108 Norfolk County Council Corporate buildings (including 38 libraries) and 34 fire stations to be upgraded to gigabit (1,000 mbps) fibre internet connections within two years. Where possible, fibre backhaul will also be provided to improve mobile data capacity.

Extending 4G coverage and meeting the scale of the 5G and digital roll-out challenge will require a considerably more joined-up approach than is currently the case. This means a complete alignment of Norfolk's local planning authorities and operators towards a shared goal to improve digital connectivity, focused on meeting the specific challenges of rolling out 5G.

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<sup>5</sup> <https://5g.co.uk/guides/5g-frequencies-in-the-uk-what-you-need-to-know/>

## **What can Mobile Network Operators and their contractors do to improve mobile connectivity in Norfolk?**

In order to drive progress in Norfolk, we need to ensure that mobile operators are committed to following the Code of Best Practice for Mobile Network Development<sup>6</sup>, and in relation to the Broads, the National Parks England and Mobile UK Joint Accord / Memorandum of Understanding<sup>7</sup> in particular:

1. Sharing suitable mobile digital connectivity infrastructure sites where this meets network objectives.
2. To work with the Norfolk local planning authorities to facilitate early access to public sector owned buildings and structures to improve coverage. Where possible, fibre backhaul will also be provided to improve mobile data capacity (for 4G and 5G).
3. Share Roll out plans at county level to provide a valuable opportunity for operators to share information about their proposals with local planning authorities who can in turn offer feedback and advice on the suitability of the plans<sup>8</sup>.
4. Detailed consultation with planners at both pre-application and planning application stages, working together to solve the continuing demand for mobile connectivity in a timely way. Ensure that applications are clearly presented and understandable to both professionals and members of the public
5. Consultation with communities and other stakeholders about network developments, in accordance with the Code of Best Practice.
6. Proposing appropriate design solutions in line with national and local policies which achieve technical objectives.

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<sup>6</sup> See <http://www.mobileuk.org/codes-of-practice.html>

<sup>7</sup> See [https://www.nationalparksengland.org.uk/data/assets/pdf\\_file/0009/1253682/Mobile-UK-National-Parks-England-Accord-2018.pdf](https://www.nationalparksengland.org.uk/data/assets/pdf_file/0009/1253682/Mobile-UK-National-Parks-England-Accord-2018.pdf)

<sup>8</sup> Where required Non-disclosure agreements can be in place to ensure market sensitive information is not shared with competitors

## What can Local Planning Authorities do to improve mobile connectivity in Norfolk?

Local planning authorities can support Mobile Network Operators in their improvements to mobile connectivity in Norfolk through:

1. Ensuring Local plans and Economic Strategies recognise the benefit of reliable connectivity and include actions to be taken at local level to enhance mobile connectivity.
2. Making local authority-owned buildings and structures available for use where appropriate for the location of equipment needed to improve mobile connectivity in locations which currently have poor coverage.<sup>9</sup>
3. Respond positively to requests for pre-application advice, where new or upgraded infrastructure is proposed the potential impacts on the local environment will need to be considered. The Norfolk local planning authorities encourages early engagement from operators where new network infrastructure is proposed in order to identify and discuss any particular issues with the design or siting of new equipment and to reach mutually agreeable solutions. Norfolk local planning authorities will engage with the County Council for applications which may have a wider impact on other existing built and natural infrastructure. The County Council are also able to offer advice and assistance with way leaves. Operators will be encouraged to develop innovative solutions in terms of design, structure, materials and colouring to ensure that these issues are appropriately addressed and the impact of installations minimised.
4. All planning applications for telecommunication infrastructure will follow the statutory requirements in terms of providing timely decisions on planning applications raising issues sufficiently early to allow mobile operators time to provide information and work together to find solutions. All application for new base stations and upgrades to existing ones will be considered in line with national and local planning policy. Any planning conditions will be applied appropriately and proportionately and will not duplicate conditions already imposed by statutory instruments such as the Electronic Communications Code<sup>10</sup>.
5. New major development sites (over 10 dwellings) and large scale buildings should include infrastructure design from the outset to sympathetically locate masts, and/or provide backhaul ducting to negate the need for retro-fix infrastructure.
6. Work with Mobile UK to maintain communication channels about progress of technology and the roll out of 5G and network enhancements. Provide knowledge on telecommunications planning, including permitted development rights. Share local plans and growth locations to understand the impact on mobile network capacity and coverage taking into account local economic development, digital connectivity, sustainability, and social inclusion considerations.

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<sup>9</sup> See [www.norfolk.gov.uk/mobileassetregister](http://www.norfolk.gov.uk/mobileassetregister)

<sup>10</sup> <https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/policy/electronic-comm-code>

## **National Planning Policy Context**

The National Planning Policy Framework 2019 (NPPF) sets out government's planning policy approach to achieving sustainable development for England. Paragraph 20 (b) states an expectation that development plans should contain strategic policies making sufficient provision for telecommunications infrastructure. Delivery of advanced, high quality and reliable communications infrastructure is covered in section 10 'Supporting high quality communications' paragraphs 112 to 116. The NPPF considers that such communications infrastructure is essential for economic growth & social wellbeing.

The framework policies lay out expectations of plan makers, applicants and decision takers – encouraging local authorities to take a pro-active and supportive approach, stating: "Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections... providing access to services from a range of providers"; and for applicants to fully consider the appropriate locations and impacts of their proposals relating to design, location and in accordance with International Commission guidelines.

Paragraph 39 of NPPF 2018 advises that Pre-application early engagement has significant potential to improve the efficiency & effectiveness of the planning application system for all parties.

Not all communications infrastructure requires formal planning consent, certain installations may be carried out under permitted development or application for prior approval under Schedule 2, Part 16 'Communications': Classes A to E of The Town and Country Planning (General Permitted Development (England) Order 2015 (as amended).

On 22 July 2020 the Government published its response to the joint MHCLG and DCMS consultation published last year on proposed planning reforms to support the deployment of 5G and extend mobile coverage. This included the principle of amending permitted development rights for operators with rights under the Electronic Communications Code and the circumstances in which it would be appropriate to do so.

The government response summarises the submissions received and confirms its intention to take forward the in-principle proposals consulted on. This will be subject to a technical consultation with representatives from both the local planning authority and mobile industry sectors representatives, on the detail of the proposals, including for appropriate environmental protections and other safeguards to mitigate the impact of new mobile infrastructure.

This will be undertaken prior to amending Part 16 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) to enable:

- the deployment of taller and wider masts;
- building-based masts located nearer to highways; and
- faster deployment of radio equipment housing, such as equipment cabinets.

## **Local Planning Policy Context:**

This guidance has been prepared to inform the Local Planning Policy of all local planning authorities under the Norfolk Strategic Planning Framework in order to provide a uniform and pro-active approach to communications infrastructure in Norfolk countywide. It is intended that the policy content provided here may be incorporated into individual Local Plans as they are reviewed.

## Suggested Telecommunications Infrastructure Policy

The Council will support proposals for the provision and improvement of new telecommunications infrastructure provided that:

- It has been demonstrated that there are no reasonable opportunities for sharing a site, mast or facility with existing telecommunications infrastructure in the area that would not result in a greater visual impact, and;
- The installation and any associated apparatus is sited and designed to avoid any unacceptable impact on the character, on residential amenity or on the safe and satisfactory functioning of highways and appearance with particular consideration given to the impact on:
  - designated or locally identified heritage assets; or
  - internationally and/or nationally protected nature conservation sites, AONBs, regional and local sites, and areas of designated open space (as shown on the Policies Map).
  - the special qualities of the Broads
- It has been demonstrated that the siting of the proposal and any other additional equipment involved with the development does not unduly detract from the appearance of the surrounding area, including the use of innovative design and construction and/or sympathetic camouflaging, and;
- Any building-mounted installations would not have an unduly detrimental impact on the character or appearance of the building.
- Prior approval of the siting and appearance of the development will be required if the proposal is within or would affect the Norfolk Coast AONB, The Broads, a Conservation Area, a Listed building, a site of archaeological importance or a site designated for its nature conservation importance.

Although larger scale telecommunications development requires planning permission, there are many aspects which do not, as they are permitted by virtue of the General Permitted Development Order (GPDO). Where it is the intention to install equipment under permitted development rights that is subject to the prior approval procedure, consideration must be given to the siting and appearance of development in accordance with the requirements of the GPDO and the relevant safeguards imposed by the operator licensing regime. The GPDO also requires operators to remove any telecommunications equipment when it is redundant elsewhere.

All residential developments and new employment generating development should consider the mobile telecommunications requirement of the development proposals to ensure and demonstrate that there would be sufficient coverage. This information should be submitted in a site connectivity plan during the pre-application and application stages.