

Your response

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Introduction	Cornerstone is the UK's leading mobile infrastructure services company, managing over 16,000 sites nationwide. Our infrastructure is essential to delivering coverage and capacity efficiently, meeting the Government's ambition for widespread, high-quality mobile connectivity while helping to keep bills affordable for consumers and businesses. Through our focus on sustainability, innovation, and collaboration, we enable infrastructure that helps communities stay connected and thrive, now and into the future. Cornerstone welcomes the opportunity to respond to Ofcom's discussion paper, <i>Mobile Connectivity You Can Count On</i>. The paper is timely and reflects the growing recognition that mobile connectivity now underpins how people live, work and access services. With private investment delivering this increasingly important public infrastructure, it is essential that government and regulators understand how the market is working, and how it can deliver better for communities across the country now and in the future. We strongly support Ofcom's focus on the gap between coverage and real-world performance. The central question is no longer only whether a user can receive a signal, but whether the network has the capacity, reliability and latency needed to support the services people expect to use and to respond to future demand. From digital payments and tickets, to business operations, remote monitoring, public services, transport, healthcare and emerging technologies, mobile connectivity is increasingly fundamental to economic participation and social inclusion. This has important implications for how mobile infrastructure is planned, upgraded and protected. Better information for consumers is valuable, and Ofcom's proposed Map Your Mobile performance metric is a welcome step towards measuring the quality of connectivity people experience in practice. However, better data will only support better outcomes if it is connected to an understanding of the infrastructure conditions required to improve performance.

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	The private sector will continue to play the central role in delivering mobile network investment. However, market outcomes alone will not necessarily deliver the quality, capacity and resilience the UK will need while practical barriers to deployment and upgrades remain. Sustained price competition has delivered benefits for consumers, but investment in higher-quality infrastructure will not happen automatically, particularly where planning constraints, site loss, access issues or weak commercial incentives make deployment more difficult. For that reason, Ofcom's work should help build a stronger evidence base on where performance is falling short, and why. This includes understanding the role of planning barriers, local authority decision-making, constrained siting, indoor signal constraints, rail mobile connectivity, rural connectivity and the loss of existing sites through redevelopment or Notices to Quit. Better data on these issues would support more effective decision-making by Ofcom, planning authorities and industry. Cornerstone believes there are several areas where further action could help improve mobile network quality. These include proportionate permitted development reform, stronger recognition of the social and economic benefits of mobile connectivity in national planning policy, a clearer strategy to address site loss, better data on local infrastructure barriers, and further consideration of how shared infrastructure, private networks and complementary deployment models can support more efficient investment. As the discussion paper notes, we are also seeing a broader evolution in digital infrastructure. The capacity and resilience of future digital connectivity will depend not only on mobile capacity, but on compute; and both will make demands on other infrastructure networks including energy. Through our strategic partnership with StonesThro, Cornerstone is exploring how our existing nationwide mast estate could support distributed compute infrastructure, bringing compute capacity closer to where it is needed and strengthening performance, resilience and regional digital capability while reducing energy consumption. Across this response, we focus on the infrastructure conditions needed to improve real-world mobile performance. We support Ofcom's direction of travel and would welcome further engagement with

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	Ofcom and relevant officials on how industry, Government, local authorities and other stakeholders can work together to deliver mobile connectivity that people, businesses and public services can count on.
Section 2: The quality of mobile connectivity we want to see - What are your views on the use of the Map Your Mobile good performance metric and how should the measure evolve over time? What are your views on the usefulness of: - the 90% figure as a benchmark applicable across geographies and based on crowdsourced data?, and - Whether the 90% benchmark is realistic and sufficiently ambitious?	Confidential? – N Cornerstone welcomes Ofcom's focus on the quality of mobile connectivity that people can count on in practice. We support Ofcom's recognition that the user experience cannot be understood through coverage alone. A person may technically be in an area marked as covered, but still experience poor service if signal strength, capacity or latency are not sufficient to support the applications and services they rely on. This is increasingly important as the way people use mobile networks changes. Mobile connectivity now supports digital payments, paperless tickets, location-based services, remote monitoring, business operations and access to online public services. As a result, poor or inconsistent performance is not simply an inconvenience; it can affect how people access services, run businesses and participate in daily life. Ofcom's qualitative research is useful as it demonstrates that users are already aware of the gap between nominal coverage and real-world experience. This is particularly important for small businesses, vulnerable users and communities where access to services, information or commercial activity depends on reliable mobile performance. Cornerstone therefore supports the use of the Map Your Mobile good performance metric. The proposed benchmark, based on whether users are on average able to get mobile connectivity that supports everyday apps and services at least nine out of ten times, is a clear and practical way to shift the debate from theoretical coverage to usable service. We also consider the 90% benchmark to be a reasonable starting point. It is easy to understand, can support comparison across areas and networks, and reflects the reality that mobile networks are dynamic systems where performance varies by time, location, local demand, device type, topography and the

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	built environment. The use of crowdsourced data is also important because it can capture real-world performance in a way that modelled coverage does not always achieve. The benchmark should evolve over time as user needs and network demands change. In particular, Ofcom should continue to consider whether the metric properly reflects capacity, reliability, latency and performance in the places where users are most likely to face difficulties, including busy urban areas at peak times, shared indoor spaces, transport corridors and rural communities. It is also important that the metric is not treated as an end in itself. Better measurement can identify where users experience poor performance, but the causes will vary. In some places, the issue may be lack of coverage. In others, it may be insufficient capacity, constrained site access, planning delay, indoor signal constraints, site loss, power resilience or the difficulty of upgrading existing infrastructure. Ofcom's performance metric should be connected to a wider understanding of the infrastructure conditions needed to improve service quality. We address these issues in more detail in later answers, but the key areas include: • Proportionate permitted development reform, so existing sites can be upgraded and networks can be densified where demand requires it • Identifying best practice between developers and infrastructure providers on ensuring communities don't lose network during construction • Stronger recognition in national planning policy of the social and economic benefits of mobile connectivity, so local decision-making gives appropriate weight to the infrastructure required to deliver reliable service. This might include how statutory services delivered by local government could be enhanced or made more cost effective by mobile connectivity. • Consideration of how private networks and shared infrastructure can support wider deployment where they are complementary to public mobile networks and help improve the commercial case for site development or upgrade.

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	Cornerstone overall supports Ofcom's proposed direction. The Map Your Mobile good performance metric and 90% benchmark provide a useful starting point for assessing whether users can rely on mobile connectivity in practice. The next step is to ensure that the data generated by this approach helps Ofcom, Government, local authorities and industry identify where policy or delivery changes are needed to improve the mobile experience for consumers, businesses and communities.
Section 3: Market-led improvements in mobile network quality • What information do customers need about network quality to choose the best network for their needs, and where are the main gaps in current provision of that information? • How well does Map Your Mobile currently meet customer and stakeholder needs, and what specific improvements would make it more useful?	Confidential? – N Clearer information on mobile network quality can play an important role in supporting consumer choice and strengthening incentives for operators to improve performance. To be effective, however, that information must reflect the service users experience in practice, as opposed to only whether a location is theoretically covered. As set out in response to Section 2, we agree that there remains a gap between traditional coverage information and the experience users have in practice. Map Your Mobile is a positive step towards filling that gap. It can help move the market away from a narrow focus on theoretical coverage and towards more meaningful information about usable service. Over time, it should continue to evolve so that consumers can more easily understand the likely quality of service in the specific places that matter to them, including homes, workplaces, transport routes, town centres and rural communities. However, better consumer information will not, on its own, deliver the infrastructure improvements needed to meet future demand. The private sector has played, and will continue to play, the central role in delivering mobile network investment. However, as demand rises, the industry will need a policy and regulatory environment that enables private investment to be deployed efficiently - particularly where upgrades are needed to improve capacity and real-world performance. This is particularly important given the wider investment context. Sustained price competition has delivered clear benefits for consumers, but it also means

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	that investment in higher-quality infrastructure will not happen automatically. Ofcom could therefore strengthen the usefulness of Map Your Mobile by ensuring that its outputs help different stakeholders understand where performance issues are concentrated and where infrastructure barriers may be holding back improvement. For consumers, the tool should remain clear and easy to use. For local authorities, planning authorities, industry and Government, there may be value in more detailed datasets or periodic publications that show patterns of performance by area, network, setting and time. In particular, Cornerstone would support Ofcom considering whether further data publications could help identify the relationship between poor performance and practical deployment barriers. This could include, for example, more granular performance information at local authority level, better visibility of areas where capacity rather than coverage appears to be the main constraint, and data that supports more consistent decision-making by local planning authorities. There may also be value in developing a clearer evidence base on site loss. Where mobile sites are lost or displaced during redevelopment, particularly through Notices to Quit, the impact can extend beyond the immediate location. This increases pressure on surrounding sites and reduces capacity or service quality for users. Better data on site loss, the time taken to restore service and the performance impact of displaced infrastructure could help Ofcom, Government and industry understand where intervention or coordination is needed. We also believe there is merit in identifying best practice between developers and infrastructure providers on ensuring communities do not lose network during construction. Similarly, Ofcom's evidence on real-world performance can support the case for proportionate permitted development reform. Where data shows persistent performance issues linked to capacity constraints, timely upgrades and network densification will be essential. Planning and permitted development rules should therefore enable responsible upgrades to existing infrastructure where they are needed to improve service quality.

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	Map Your Mobile should therefore serve two related purposes: helping customers make more informed choices, and helping Ofcom, Government, local authorities and industry identify where poor performance is linked to practical barriers to deployment or upgrade. Used in this way, it can support both effective competition and the wider infrastructure conditions needed to improve mobile network quality.
Section 4: Connectivity in busy areas • What do you think are the biggest barriers to achieving better mobile performance in town and city centres and why? • What do you think should be Ofcom's main priorities for our future work in this area? • What information would stakeholders, especially local authorities / planning authorities find useful for Ofcom to provide further insights on and why?	Confidential? – N Town and city centres are among the most difficult environments in which to deliver consistently high-quality mobile performance. Demand is high and concentrated, the built environment is complex, and networks often need greater site density and more frequent upgrades to maintain capacity. The main barriers are practical and structural • Constrained access to suitable rooftop and street-level sites • Planning complexity, particularly in conservation areas and other protected settings • Difficulty upgrading existing infrastructure to support modern network requirements • Loss of existing sites through redevelopment or Notices to Quit • Inconsistent local understanding of how infrastructure decisions affect service quality These barriers mean that, even where coverage exists, networks may not have sufficient capacity to support high levels of demand at peak times and in specific locations. In busy areas, the issue is often not whether a signal is nominally available, but whether the network can provide the reliability, speed and capacity users need in practice. In dense urban areas, planning constraints are particularly significant because networks often rely on rooftop infrastructure, streetworks poles and carefully located small cells to add capacity where demand is highest. Routine upgrades can be slowed where additional antennas, support apparatus or replacement structures require more complex planning routes. In protected urban settings, even modest rooftop upgrades can be delayed by full planning requirements, despite the fact that such upgrades

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	may be needed to maintain or improve service quality. This is particularly acute in some parts of London; 60-70% of some boroughs are protected areas with more onerous planning rules. The effect on users is direct. Where operators and infrastructure providers cannot upgrade existing sites, add capacity or deploy replacement infrastructure in a timely way, the consequences can include congestion, slower speeds, dropped calls and poorer performance of services that rely on real-time connectivity. Replacing sites lost due to Notices to Quit is particularly difficult in dense urban environments, where rooftop availability is constrained, alternative locations are limited and ICNIRP compliance can narrow the options further. The combination of these factors, alongside the planning challenges outlined above – is what makes maintaining network quality so challenging. Cornerstone's own data shows the scale of the challenge: we are managing more than 560 NTQs nationally, including around 240 in London. More than 120 sites are already off-air, and replacement times average around 2.6 years outside London and 5.7 years in London, with some cases taking up to nine years. As mentioned in response to section 3, or Ofcom's priority for future work in busy areas should be to connect evidence on user experience with evidence on infrastructure delivery. Identifying where performance is poor is essential, but it is only part of the picture. To support practical improvement, stakeholders also need to understand <u>why</u> performance is poor and what may be preventing infrastructure from being upgraded, replaced or deployed. In particular, Ofcom could provide or support: • More granular performance data for town centres, city centres, high streets, business districts and other high-footfall areas • Analysis showing where poor performance appears to be driven by capacity constraints rather than lack of nominal coverage • Local authority-level data on planning outcomes for mobile infrastructure, including approval rates, determination times, refusal reasons and appeal outcomes • Aggregated data on site loss, including sites affected by NTQs, sites off-air, time taken to

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	restore service and the wider performance impact of displaced infrastructure • Internal analysis of consumer and business complaints data relating to outages or persistent service deterioration, to assess whether there is any observable link with site loss • Evidence to help planning authorities understand - and local digital teams convey - how delayed or refused upgrades affect network capacity and user experience We also believe it is important that a form of best practice between developers and infrastructure providers is established to ensure communities do not lose network during construction. This could encourage earlier engagement between landowners, developers, operators and infrastructure providers where existing mobile sites may be affected, and support earlier identification of replacement or mitigation options.
Section 5: Connectivity in indoor, shared public places • What do you think are the biggest barriers to achieving better mobile performance indoors and why? • What do you think should be Ofcom's main priorities for our future work in this area? • What information would you find useful for Ofcom to provide further insights on in relation to connectivity indoors and why?	Confidential? – N Indoor mobile connectivity is a clear example of the gap between nominal coverage and real-world experience. A location may appear to be served by outdoor coverage, but users can still experience poor performance inside a building because the signal available outdoors does not always translate into reliable service indoors, particularly in larger, denser or more complex buildings. Cornerstone supports Ofcom's analysis that indoor connectivity requires specific attention, particularly in shared public places where people rely on mobile services for payments, tickets, navigation, safety information, work, access to online services and communication with others. Poor indoor performance can therefore affect not only individual consumers, but also venues, landlords, public bodies and local economies. The barriers to better indoor performance are both physical and practical. Building materials can weaken or block mobile signal, particularly in large, dense or complex buildings. High-footfall locations can place heavy demand on surrounding networks, while dedicated in-building solutions can be difficult to deliver where responsibility, funding, access rights

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	or coordination between building owners, operators and service providers is unclear. Better information would help address this, so we believe that Ofcom has an important role in providing population-scale, geographical coverage estimates and increasingly granular open datasets on mobile signal across the UK. However, indoor connectivity is often experienced at a much more specific level: i.e. the individual hospital, shopping centre, station concourse, office, public building or entertainment venue. For this reason, Ofcom's work should be considered alongside building-level approaches such as WiredScore-style certification. These tools serve a different purpose from Ofcom's national coverage data, but they can help landlords, tenants, public bodies and users understand the actual connectivity performance of a particular indoor space. Ofcom's future work could focus on the following: • Clearer information on the scale and distribution of indoor mobile performance issues across different types of shared public places • Analysis of whether poor indoor performance is driven mainly by the limitations of outdoor signal reaching indoor spaces, capacity constraints or lack of dedicated in-building infrastructure. Consistent metrics for assessing indoor mobile performance, so that building owners and users can compare performance more easily • Further exploration of WiredScore-style connectivity scores or equivalent building-level indicators, particularly for shared public places where reliable connectivity is important to service delivery and user experience • Evidence to help building owners, landlords and public bodies understand when dedicated in-building solutions may be needed Ofcom should avoid duplicating commercial certification models where they are already working. However, it could add value by helping to define consistent expectations, encourage greater transparency and identify where building-level information could support investment in better indoor connectivity.

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	The priority should be to make indoor performance more visible. Better national and local data can identify patterns of poor indoor connectivity, while more consistent building-level information can help those responsible for shared public places understand whether users are likely to receive the service they need.
Section 6: Connectivity on trains • What do you think are the biggest barriers, technical and commercial, to achieving better mobile performance on trains? Which are most significant and why? • Do you agree with our proposal to work with government to support improvements in train connectivity? • What information would you find useful for Ofcom to provide further insights on in relation to connectivity on trains and why?	Confidential? – N Improving mobile performance on trains is technically challenging because rail corridors are constrained environments. Coverage often needs to be delivered across long, linear routes, with limited siting options, varying topography, cuttings, tunnels, tree cover and built-up areas all affecting signal propagation. Delivering reliable 5G coverage can also require denser infrastructure and carefully positioned sites, which may be difficult to secure along or near the rail estate. Cornerstone agrees that Ofcom should work with Government to support improvements in train connectivity. This is an area where progress is likely to require coordination between telecoms providers, infrastructure providers, rail bodies, landowners, planning authorities and Government. Commercial investment will be easier to unlock where the policy, planning and access environment supports timely deployment. Access and clearance processes associated with the rail estate can also create practical bottlenecks. Where third-party rules or approval processes delay access to suitable locations, this can slow the deployment or upgrade of infrastructure needed to improve passenger connectivity. From our perspective, it would be useful if Ofcom could provide further insight into where poor train connectivity is most acute, and whether the main constraints relate to coverage, capacity, resilience, in-train signal constraints, or deployment barriers along the rail corridor. Route-level or corridor-level performance data would be particularly useful, as would analysis of the relationship between poor passenger experience and the availability of suitable infrastructure sites.

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	There may also be value in Ofcom working with Government to consider how future rail connectivity, including the transition from legacy GSM-R to FRMCS, could support both operational rail requirements and improved commercial mobile connectivity for passengers. Where dual-use infrastructure is technically and commercially viable, it could help improve the investment case for rail-side deployment while supporting wider public mobile coverage. Specifically, Cornerstone supports dual purpose 5G FRMCS and commercial masts to be delivered under Part 8 (Schedule 2, GPDO) permitted development rights. We believe this would be an important lever to support private sector investment in rail side mobile connectivity, including from MNOs and Cornerstone. This would also ensure that the planning framework supports, rather than constrains, the rail sector's transition from the legacy GSM R system to the Future Railway Mobile Communication System (FRMCS).
Section 7: Connectivity in rural areas • What do you think are the biggest barriers to achieving better mobile performance in rural locations and why? • What do you think should be Ofcom's main priorities for our future work in rural locations and what outcomes should we aim to achieve? • What solutions (technical, commercial, policy or delivery) could improve rural mobile performance? • What information would you find useful for Ofcom to provide further insights on in relation to rural connectivity and why?	Rural connectivity presents a distinct set of connectivity challenges. Coverage needs to be delivered across larger areas, often with more difficult topography, lower population density, fewer viable sites and greater exposure to resilience issues such as power outages and extreme weather. In many rural locations, poorer performance may reflect a combination of coverage gaps, limited capacity and the difficulty of making additional investment commercially viable. Cornerstone supports Ofcom's recognition that market-led developments alone may not fully address rural mobile connectivity challenges. Commercial investment will remain key, but in lower-density areas the return on additional deployment or upgrade can be more difficult to justify. This is why interventions such as the Shared Rural Network have been important, and why future rural improvement will require a mix of market investment and targeted policy support to reduce deployment barriers. The Electronic Communications Code has been a positive development in supporting mobile infrastructure deployment and upgrade. Cornerstone also strongly welcomes further recent progress on implementation of the Product Security and Telecommunications Infrastructure (PSTI) Act, including

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	measures that should help support upgrades to existing infrastructure. However, the benefits of these reforms will only be fully realised if they are matched by a supportive planning environment and consistent local decision-making. Much like in built up and densely populated urban areas, planning remains one of the most important barriers to better rural mobile performance. In rural areas, the siting of mobile infrastructure is often technically constrained by geography, coverage requirements and the need to serve dispersed communities. Where local planning authorities give insufficient or inconsistent weight to the social and economic benefits of mobile connectivity, necessary deployment or upgrades can be delayed, or refused. Ofcom's own analysis of variation in prior approval and planning outcomes is useful in this context, as it demonstrates that local decision-making can vary significantly, creating uncertainty for operators and infrastructure providers. In rural areas, where there may be fewer alternative sites and a weaker commercial case for deployment, this uncertainty can have a particularly significant effect on whether improvements are delivered. For this reason, Cornerstone believes national planning policy should give stronger and clearer recognition to the benefits of mobile connectivity. The NPPF should support responsible deployment and upgrade of digital infrastructure, including in rural and semi-rural areas where reliable mobile coverage and capacity are essential to digital inclusion, local businesses, public service access, farming, tourism and emergency resilience. Shared infrastructure is also central to improving rural connectivity efficiently. Cornerstone's model enables multiple operators to use the same physical infrastructure, helping to extend coverage and capacity while reducing duplication, cost and local impact. Private networks and complementary deployment models may also have a role to play, as some rural locations, industrial, agricultural, logistics, utility or public sector users may have specific connectivity needs that are not fully met by public mobile networks alone. Where private networks are designed to complement public networks and support shared infrastructure, they may help improve the investment

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	case for sites or upgrades that also benefit wider mobile performance. Cornerstone would also support Ofcom exploring how future rural connectivity could be linked more closely to wider digital infrastructure needs. Through our strategic partnership with StonesThro, Cornerstone is exploring how its existing nationwide mast estate could host distributed compute infrastructure, bringing compute capacity closer to where it is needed. This model is still developing, but it demonstrates how existing sites could potentially support a broader infrastructure role, improving resilience, regional compute capacity and the strategic value of digital infrastructure outside major Where distributed compute strengthens the commercial and strategic case for investment at existing sites, it may also support the viability of upgrades in some rural areas. This should be understood as a potential enabling benefit rather than a direct or automatic solution to rural mobile coverage challenges. Ofcom's future work in rural areas should therefore focus on identifying which barriers are technical, which are commercial, and which are created or worsened by policy and delivery conditions. The outcome should be a clearer understanding of where the market is likely to deliver improvement, where targeted support may be needed, and where planning, site access, power or resilience barriers are preventing otherwise viable upgrades. There are several key steps Ofcom could take to support this: • More granular rural performance data, including distinctions between coverage, capacity and reliability issues • Rural case studies that identify the practical barriers preventing deployment or upgrade in specific locations • Further analysis of how planning outcomes and local authority approaches affect rural mobile infrastructure delivery • Evidence on where shared infrastructure, neutral host models, private networks, spectrum sharing or satellite could be most effective • Data on resilience challenges in rural areas, including dependence on single sites, power availability and recovery after outages

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	Guidance to help local authorities understand the social and economic benefits of rural mobile infrastructure when considering planning applications Cornerstone would welcome further engagement with Ofcom and relevant officials on these issues, including the role of shared infrastructure, the practical barriers affecting rural deployment, and the emerging findings from Cornerstone's strategic partnership with StonesThro.

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