

A New Lens on the Connected Capital: Mobile Network Performance in London

A study of how mobile networks perform across the capital,
and a new connectivity standard for London

The Greater London Authority and Ookla have partnered to measure mobile network quality across 19 areas of London. This is the first city-scale study combining controlled RootMetrics walk-test measurement with Ookla Speedtest crowdsourced data, giving the city a single bird's-eye view of street-level performance, city-wide experience and international comparison. It provides an independent evidence base to support better connectivity for all Londoners, and introduces the Capital Connectivity Standard: a transparent, replicable framework for assessing whether a city's mobile networks are fit for the applications, workloads and services that define a leading global capital. This evidence report should be read alongside the Greater London Authority's London Mobile Connectivity Framework, which sets out the practical actions available to boroughs and their partners.



SUPPORTED BY
MAYOR OF LONDON





Summary in plain English

This section explains the report's main findings in everyday language. If you read nothing else, read this page.

What we did. We tested mobile phone networks in 19 areas across London. Trained testers walked through each area using specialist equipment that measured how well phone networks performed. We ran about 10,900 tests in total, covering all four major UK mobile networks. The testing took place during the busy winter shopping period, when networks are under real-world load, not in quiet, ideal conditions. We then combined those controlled walk-test results with Ookla's wider Speedtest crowdsourced data, which captures the everyday experience of millions of users. Together, these sources give London the first city-scale evidence base of its kind for a UK city: precise street-level measurement on one side, city-wide and international comparison on the other.

Why we did it. London's economy depends on mobile connectivity. The technology sector employs nearly one in four Londoners. Tourism, public services and businesses all rely on mobile networks working well. This report gives the Greater London Authority a combined evidence base (both controlled measurement and crowdsourced experience)

showing where networks work well, where they do not, and how London compares with other global capitals. It also introduces a new way of measuring whether London's connectivity is good enough for a global capital.

A new way to measure 'good'. Until now, the main reference point for mobile network quality in the United Kingdom has been the threshold set by Ofcom, the national telecommunications regulator. Ofcom's threshold serves an important national purpose: it tells consumers across the United Kingdom whether their mobile service meets a minimum standard. However, it was designed to describe everyday performance for the country as a whole, not to set the bar for a leading global city or to anticipate the demands of artificial intelligence, immersive applications and real-time services. To complement the Ofcom view, this report introduces the Capital Connectivity Standard. Alongside Ofcom's 'Successful' baseline, it adds a 'Strong' tier that reflects what citizens, workers and visitors should reasonably expect in a global capital today, and a 'Forward-looking' tier anchored against the demands of the next decade. The framework is simple, evidence-based, and designed to be replicable in any city.

What we found:

1. London passes Ofcom's minimum standard on speed in every area we tested, but no area yet passes all four Strong checks. Fleet Street and Cheapside come closest, passing three of four (failing only on latency, where every area in London falls short). Twelve more areas pass two of four. Dalston, and Eversholt Street/Somers Town, fail all four. No area in London yet meets the Forward-looking tier.
2. Network response times (latency) are too high across the city. Latency is the time it takes for your phone to send data and get a response. It was above Ofcom's 50-millisecond target in all 19 areas. Latency is what makes the difference between a smooth video call, a responsive online game or a natural conversation with an artificial intelligence assistant, and a frustrating, lagging experience. This is a London-wide issue, not a problem with any one network.
3. The quality of your mobile experience depends on which network you use and where you use it. No single network is best everywhere. In some areas one network performs strongly while another lags; a few miles away the picture can reverse. This report does not recommend any particular operator. It highlights that performance varies sharply by location, and that this variation is shaped by infrastructure decisions that the city, planning authorities and operators jointly influence.
4. There is a 'doughnut hole' of weak performance in inner north and east London. Most measured areas in Camden, Islington, Hackney and Tower Hamlets sit at or below the Strong signal threshold. By contrast, every area in the City of London, Kensington and Chelsea, Newham, Lambeth, and Hammersmith and Fulham passes (with Leadenhall Market sitting at the boundary). This pattern points to a concentrated cross-borough planning and infrastructure challenge.
5. 5G is widely available but unevenly deployed. Nearly 90 per cent of our tests detected 5G. Where 5G is available, speeds are 4 to 9 times faster than the older 4G technology. But areas such as Brick Lane, Dalston and Eversholt Street have weak or absent 5G coverage, and customers on networks with patchy 5G are systematically worse off in those locations.

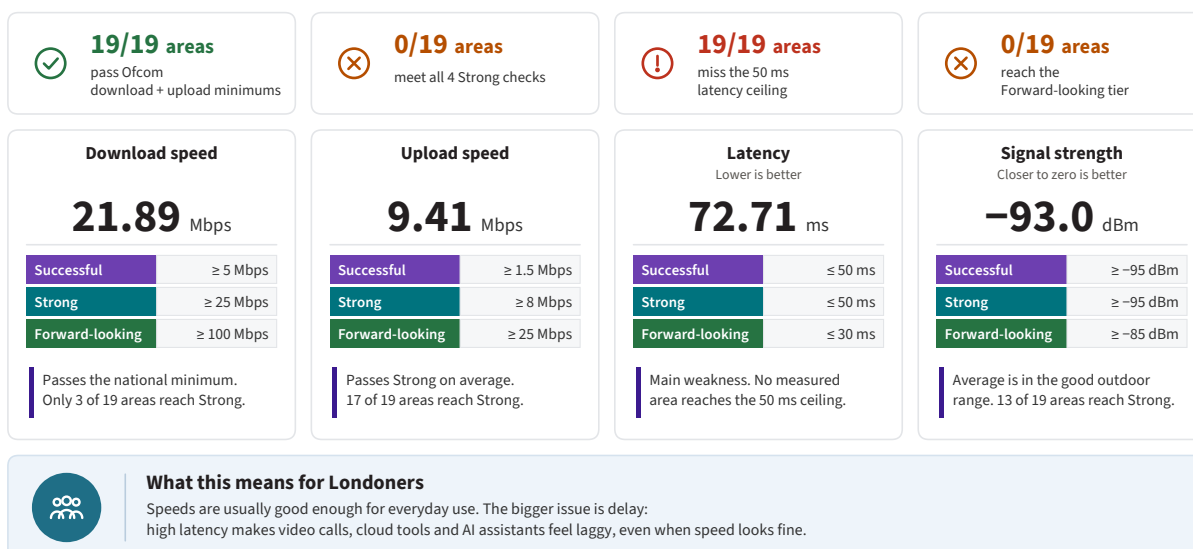
Key findings at a glance

The seven headline findings, scored against the Capital Connectivity Standard introduced in this report.

London's Mobile Networks Pass the Basics, But Not the City-Grade Standard

Ookla® Data, RootMetrics® | Winter 2025

All-operator medians from 19 London areas tested against the Capital Connectivity Standard.



RootMetrics

OOKLA

Status	Finding
	Speeds are strong against the national minimum London's typical download speed (21.89 Mbps) is 4.4 times Ofcom's 5 Mbps minimum. Upload speeds are 6.3 times the minimum. Every measured area clears Ofcom's national thresholds for download and upload.
	No area yet reaches the full Strong tier Fleet Street (City of London) and Cheapside (City of London) come closest, clearing three of four Strong checks; both miss only the 50 ms latency ceiling, which no area in London meets. Twelve further areas reach two of four. Dalston, and Eversholt Street/Somers Town, fail all four. No area yet meets Forward-looking.
	Latency is too high everywhere All 19 areas exceeded Ofcom's 50-millisecond latency target. Only Old Street (51 ms) and Chapel Market (55 ms) come close. Latency is the dimension on which London's networks fall furthest behind the demands of modern interactive applications, including video calls, cloud collaboration and conversational artificial intelligence.
	Network and location both shape the experience In 14 of 19 areas, the gap between the strongest and weakest network exceeded 75 per cent, but the strongest network changes by area. The findings should be read as evidence of local asymmetries rather than a recommendation of one operator over another. No single network is best everywhere.
	A 'doughnut hole' of weak coverage in inner north and east London Most measured areas in Camden, Islington, Hackney and Tower Hamlets sit at or below the Strong signal threshold. Every area in the City of London passes it (with Leadenhall Market at the boundary), as do all areas in Kensington and Chelsea, Newham, Lambeth and Hammersmith and Fulham. The pattern points to a four-borough cluster that is best interpreted as a cross-borough infrastructure condition.
	5G is widely deployed and much faster Nearly 90 per cent of tests detected 5G. Where available, it delivers speeds 4 to 9 times faster than 4G. But coverage is uneven across networks and areas, and several priority areas have weak or absent 5G.
	A 3 to 1 gap exists between best and worst areas Fleet Street scored 77.3 on the report's composite performance score; Eversholt Street scored 25.9. Areas with newer development and complex planning or infrastructure conditions lag furthest behind.

Table of Contents

Glossary of technical terms ›	6
1 Foreword ›	9
2 Introduction: why this matters ›	10
3 Methodology ›	12
4 The Capital Connectivity Standard ›	15
5 London's mobile performance: the overall picture ›	21
6 London in international context ›	24
7 Area performance under the Capital Connectivity Standard ›	30
8 The operator landscape ›	33
9 The asymmetry challenge: location-dependent performance ›	35
10 5G: the transformation underway ›	38
11 Signal quality and infrastructure gaps ›	40
12 Indoor cellular connectivity: the gap behind the front door ›	43
13 Spotlight: four examples where infrastructure choices shape performance ›	46
14 Looking ahead ›	50
Appendix A: Per-area Capital Connectivity Standard scoring ›	51
Appendix B: Indoor connectivity ›	52
References ›	53

Glossary of technical terms

This glossary explains the technical terms used in this report in plain English. Terms are listed in alphabetical order. Where a term appears for the first time in the report, it is also explained in context.

Term	What it means
4G	The fourth generation of mobile technology, introduced around 2012. 4G provides the mobile internet speeds most people are familiar with today. It can stream video, browse the web and make video calls, but is slower than the newer 5G technology.
5G	The fifth and newest generation of mobile technology, now being rolled out across London. 5G can deliver internet speeds 4 to 9 times faster than 4G. It also reduces delays. There are different types of 5G: 'standalone' 5G uses a completely new network, while 'non-standalone' 5G piggybacks on existing 4G equipment.
5G standalone (SA)	A version of 5G that runs on its own dedicated network equipment, rather than relying on older 4G infrastructure. It is more advanced and can deliver lower delays and more consistent performance.
Backhaul	The connection between a mobile mast and the wider telecommunications network. Think of it as the motorway that carries data from your local area to the internet. If the backhaul is slow or congested, your mobile experience suffers even if the mast near you is working well.
Capital Connectivity Standard	The three-tier framework introduced in this report to assess mobile network performance from the perspective of a leading global city. It sits alongside Ofcom's national thresholds and adds two further tiers, Strong (what a global capital should expect today) and Forward-looking (what will be required for the applications and services of the next decade).
Carrier aggregation	A technique where a mobile phone uses several radio frequency bands at the same time to increase speed. It is like opening multiple lanes on a motorway instead of using just one.
Conservation area	A planning designation given to areas of special architectural or historic interest. Conservation status places extra restrictions on what can be built, including on visible mobile equipment.
Crowdsourced data	Data collected from large numbers of ordinary users who voluntarily run speed tests on their own phones. This is different from the controlled testing used in this report. Crowdsourced data gives a broad picture of real-world experience; controlled testing gives precise, comparable measurements.
dBm (decibel-milliwatts)	A unit used to measure signal strength. The numbers are negative: a value closer to zero (for example, -85 dBm) means a stronger signal, while a more negative number (for example, -105 dBm) means a weaker signal. In practical terms: -85 dBm or above is good; between -95 and -105 dBm is unreliable; below -105 dBm is poor.
Download speed	How fast data travels from the internet to your phone. This affects activities like loading web pages, watching videos and downloading files. Measured in Mbps.

Electronic Communications Code	A set of UK laws that govern how mobile network operators can install equipment on land and buildings they do not own. The Code sets out the rights of operators and property owners when negotiating access for masts, cables and other equipment.
eMBB (enhanced mobile broadband)	One of the three main classes of 5G service defined in international standards. eMBB is designed for high-speed data services such as video streaming, downloads and immersive applications.
Forward-looking	The third tier of the Capital Connectivity Standard. Anchored against published international standards and the requirements of next-generation applications including artificial intelligence assistants, real-time enterprise tools, immersive video and emerging interactive services.
GLA	Greater London Authority. The city-wide government for London, led by the Mayor of London.
Gross Value Added (GVA)	A measure of the economic value produced by a sector or region, similar to GDP but measured at a local level.
Handover	When your phone switches from one mobile mast to another as you move around. If the handover fails, your call may drop or your internet connection may briefly stop working.
Jitter	The variation in latency over time. Even if average latency is acceptable, high jitter can disrupt video calls and online games.
Latency	The time it takes for data to travel from your phone to the network and back again. Measured in milliseconds. Lower latency means a more responsive connection. High latency causes noticeable delays in video calls, online games and other interactive activities. Ofcom considers 50 ms or less to be acceptable.
London City Experience	An alternative name sometimes used to describe the Strong tier of the Capital Connectivity Standard.
Macro cell	A large mobile mast, typically mounted on a rooftop or tall pole, that provides coverage over a wide area. The traditional masts that form the backbone of any mobile network.
Mbps (megabits per second)	A unit used to measure data speed. One megabit per second means one million bits of data can be transferred every second. 5 Mbps is enough for basic web browsing; 10 to 20 Mbps is good for video streaming; above 25 Mbps supports most activities comfortably.
Median	The middle value in a set of measurements. Area results use medians because they are less affected by extreme values. London-wide results are averages of area medians; see Section 3 for the calculation.
Strong	The middle tier of the Capital Connectivity Standard. Reflects what citizens, workers and visitors should reasonably expect of mobile networks in a leading global capital today.
Modulation	The technical process by which data is encoded onto a radio signal. When signal strength is poor, the phone uses simpler encoding methods, which reduces speed.
ms (milliseconds)	One thousandth of a second. Used to measure latency. A latency of 50 ms means it takes 50 thousandths of a second for data to make a round trip.

Notice to Quit (NTQ)	A legal notice given to a mobile operator (or other tenant) requiring them to remove their equipment, often because the host building is being redeveloped. NTQs reduce active mast capacity even when the underlying network plan is sound.
Ofcom	The Office of Communications. The UK's independent regulator for telecommunications, broadcasting and postal services.
Operator asymmetry	A large difference between the strongest and weakest network in the same location. It does not mean one network is always better, because the pattern changes from area to area.
Opportunity Areas	Locations identified in the Mayor's London Plan as having significant potential for new housing, jobs and infrastructure. Major growth and regeneration sites across London.
Permitted Development	A category under UK planning law that allows certain types of building work to go ahead without needing a full planning application.
RSRP / SS-RSRP	Reference Signal Received Power (for 4G) and Synchronisation Signal RSRP (for 5G). The technical measurements behind the signal-strength values reported in this study.
Signal strength	How strong the radio signal is between your phone and the nearest mobile mast. Measured in dBm.
Small cell	A compact piece of mobile network equipment, much smaller than a traditional mast, typically attached to lamp posts, bus shelters or building walls. Small cells provide coverage over tens to hundreds of metres.
Spectrum	The range of radio frequencies used by mobile networks to transmit data. Different frequency bands have different properties: lower frequencies travel further but carry less data; higher frequencies carry more data but travel shorter distances.
Street furniture concession	An agreement that gives a mobile network operator the right to install equipment on public structures such as bus shelters, lamp posts or advertising boards. Some concessions grant exclusive access to a single operator, which can create unfair advantages in coverage.
Throughput	The actual amount of data successfully transferred over a network connection in a given time. Closely related to 'speed' but reflects real-world conditions.
Upload speed	How fast data travels from your phone to the internet. Affects activities like sending emails with attachments, uploading photos and making video calls. Measured in Mbps.
URLLC (ultra-reliable, low-latency communications)	A class of 5G service designed for safety-critical applications such as autonomous vehicles, remote surgery and industrial control. Specified in international standards with very low latency targets and extremely high reliability.
Walk-test	A method of measuring mobile network performance where trained testers walk through an area carrying standardised testing equipment. Produces controlled, repeatable results that can be compared fairly across locations and time periods.



1 | Foreword

London is a global digital capital. Its mobile networks support a technology sector that employs nearly a quarter of the city's workforce and contributes more than £150 billion in economic value each year. As the city prepares for an artificial intelligence-driven future and the demands of hybrid working, the quality and reliability of mobile phone networks has never mattered more.

The Greater London Authority and Ookla partnership provides the first city-scale combined evidence base of its kind for London for understanding where mobile networks work well, where they fall short and why. By combining Ookla's network measurement capabilities with the Greater London Authority's strategic planning role and local knowledge, this report provides a comprehensive, evidence-based assessment of mobile network performance across London's key areas.

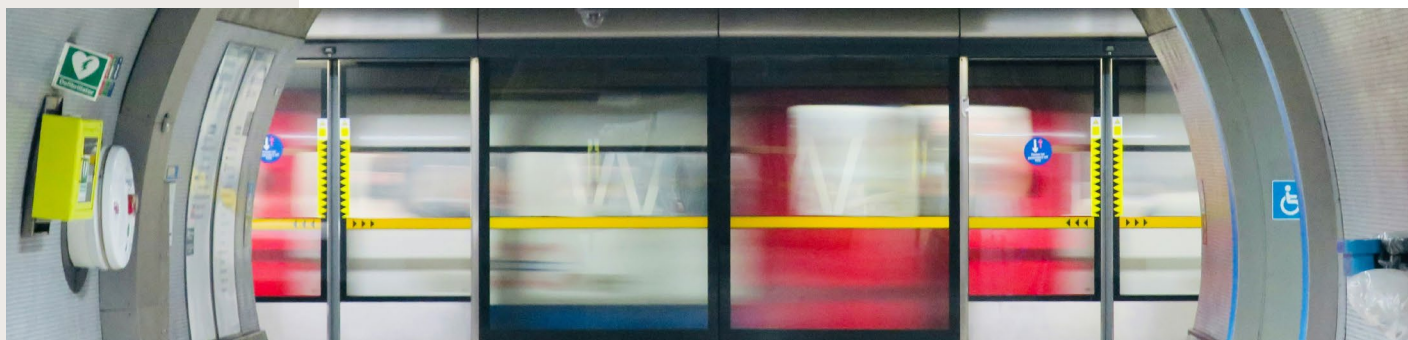
The report's distinctive contribution is methodological. It is the first city-scale study to bring together two complementary evidence sources for a UK capital city: controlled RootMetrics walk-test data, which captures precise, repeatable street-level performance at named locations; and Ookla Speedtest crowdsourced data, which captures the everyday experience of millions of users across the whole city. Speedtest captures both Android and iPhone devices at scale: a distinction that matters in an iPhone-heavy market like the United Kingdom. Because tests are run wherever the user happens to be, Speedtest also reaches into the building-level granularity and indoor moments that walk-tested measurement, by design, cannot. It allows London to be measured against international peers on the same basis. Neither source on its own gives the full picture. Together, they provide a first-of-its-kind city-scale view for a UK capital for London. The report uses this combined view to move from city-wide patterns down to street-level detail and back out to the international comparison in Section 6.

The report goes one step further. It introduces the Capital Connectivity Standard, a transparent and replicable framework for assessing whether a city's

mobile networks are fit for the applications, workloads and services that define a leading global capital. The framework sits alongside the thresholds set by Ofcom and is anchored in international best practice. The intention is not to replace Ofcom's national view, which serves an important consumer and statutory purpose, but to give the Greater London Authority and other city authorities a sharper lens for measuring the connectivity of a capital city against the demands of the next decade.

The significance of this work goes beyond telecommunications alone. The Mayor's London Growth Plan, published in February 2025, sets out a ten-year ambition to add more than £100 billion to London's economy by restoring productivity growth and backing frontier sectors such as artificial intelligence, lifesciences, robotics and clean technology. The accompanying London Infrastructure Framework forecasts that mobile data demand will grow fourteenfold over the next ten years, with current operator plans not keeping pace. Those ambitions depend on digital infrastructure that is not only present, but measurable, dependable and capable of supporting increasingly data-intensive activity across the capital. Better mobile connectivity is not a narrow technical goal. It is part of how London sustains its position as a global city.

This report presents findings from controlled walk-tests across 19 Areas of Interest, conducted by RootMetrics, an Ookla company, in the second half of 2025. It is designed to be read by citizens, policymakers and industry professionals. To focus attention on system-wide patterns rather than the performance of individual brands, operator identities are concealed. The four major UK mobile networks are referred to as Operators A, B, C and D. The report does not recommend any particular operator. The data shows clearly that no single network is best everywhere, and that performance depends as much on location as on choice of network. The aim is to build a shared evidence base that enables the Greater London Authority, operators and national government to work together towards better connectivity for all Londoners.



2 | Introduction: why this matters

London's digital economy at a crossroads

London is the world's second-largest global technology hub, with a digital economy worth more than £150 billion in Gross Value Added. Nearly one in four Londoners works in technology or digital sectors, making connectivity infrastructure a fundamental part of the city's competitive advantage. The United Kingdom's artificial intelligence economy alone is valued at £230 billion, with London at its centre. This report provides a first-of-its-kind independent assessment of mobile network quality at the UK city level.

The policy context has also developed. Through Connected London, led from City Hall by Theo Blackwell, London's first Chief Digital Officer, the Mayor has set an ambition for London to be the best-connected city in Europe. Gigabit fibre availability has risen from 4 per cent of London premises in 2017 to 92 per cent as of April 2026. The £1 billion 20-year concession with Boldyn Networks is delivering 4G and 5G across 137 sub-surface Tube, Docklands Light Railway

and Overground stations and around 80,000 fibre-connected Transport for London street assets, with 62 of 121 sub-surface Underground stations live by 2025 and high-speed mobile coverage rolling out across the Elizabeth Line tunnelled sections from July 2024.

Through London Plan Policy SI 6 and the Mayor's Digital Connectivity Infrastructure London Plan Guidance (October 2024), the Greater London Authority has already made clear that new development should provide the right levels of connectivity, coverage and capacity, and should not make mobile conditions worse in surrounding buildings or streets. What has been missing is detailed, independent evidence on London's mobile coverage and capacity challenges: where those policy goals are being achieved, where they are not, and how to judge whether London's connectivity is good enough for a global capital. This report addresses both.

Mobile connectivity matters to London for five reasons:

- **Economic growth.** It supports the artificial intelligence businesses and digital services that drive the city's economy forward, including the Google, Meta and major financial-services anchor tenants concentrated in places such as Kings Cross, Old Street, the City, and Canary Wharf.
- **Digital inclusion.** It enables all Londoners, regardless of where they live, to access essential services online. Tower Hamlets and Hackney both publish digital inclusion strategies that explicitly identify pockets of digital exclusion.
- **Tourism.** Tourism contributes more than £15 billion annually to London's economy. Visitors at Camden Market (more than 30 million visitors a year), the South Kensington museums (the Natural History Museum reached an all-time visitor record in 2025) and Brick Lane all expect reliable mobile connectivity.
- **Public services.** Emergency response systems, transport networks and other public services increasingly depend on mobile infrastructure. Liverpool Street is now Britain's busiest railway station for the third year running, with 98 million entries and exits in 2024-25.
- **Smart-city ambitions.** Achieving London's goals as a smart, data-driven city requires a network that is measurable, accountable and well understood.

This is particularly important in London's major growth locations. The Mayor's Opportunity Areas are intended to accommodate substantial new homes, jobs and services. Several of the 19 areas measured for this report sit inside named Opportunity Areas: King's Cross (target of 1,000 homes and 25,000 jobs by 2041), the City Fringe Opportunity Area covering Old Street and Shoreditch (15,500 homes and 50,500 jobs), the Lower Lea Valley and Olympic Legacy Opportunity Area at Stratford, and the Euston Opportunity Area into which Eversholt Street and Somers Town fall. City Hall recognises that delivering on this potential depends on coordinated planning of transport, utilities, social infrastructure and digital connectivity. In practice, this report treats mobile performance as an infrastructure condition that can be planned, monitored and considered alongside wider development goals.

Mobile network performance is shaped by a distributed delivery environment. Ofcom regulates at the national level; operators make commercial investment decisions; the Greater London Authority sets strategic planning policy; and boroughs, Transport for London, landowners and developers control many of the assets and local processes that affect deployment. London already has examples of proactive digital-connectivity work, including asset-hosting programmes, full-fibre partnerships, digital-inclusion strategies and planning guidance, but implementation is necessarily mixed across a city of 33 boroughs. This report provides independent, detailed data and a transparent framework so those actors can work from the same evidence base.



The Greater London Authority and Ookla partnership

This study is the first city-scale combination of controlled RootMetrics walk-test measurement and Ookla Speedtest crowdsourced data for a UK capital city. It is informed by Dublin City Council's partnership with Ookla, which showed how city-level measurement can support telecoms policy conversations and planning evidence. London adapts that model with the Capital Connectivity Standard, a more ambitious framework designed for a city operating at the global frontier of digital services.

The methodology combines two complementary evidence sources, as Section 3 sets out in detail: controlled RootMetrics walk-test measurement at named Areas of Interest, and Ookla Speedtest crowdsourced data for city-wide trend analysis and the international comparison in Section 6.



3 | Methodology

How we measured London's mobile networks

This report is based on controlled walk-test measurements conducted by RootMetrics, an Ookla company, during the second half of 2025. The study covered 19 Areas of Interest across London, including central business districts, transport hubs, retail areas

and residential neighbourhoods. Across these areas, we conducted about 10,900 individual network tests, measuring performance across all four major UK mobile operators.

The tests measured six things:

- **Download speed:** how fast data travels from the internet to a phone, measured in megabits per second (Mbps). A higher number means a faster connection.
- **Upload speed:** how fast data travels from a phone to the internet, also measured in Mbps.
- **Latency:** the time it takes for data to make a round trip between a phone and the network, measured in milliseconds (ms). Lower is better.
- **Video streaming performance:** how well the network handles video playback.
- **Voice call quality:** how clear and reliable phone calls are.
- **Signal strength:** how strong the radio signal is between the phone and the nearest mast, measured in dBm. Values closer to zero indicate a stronger signal.

All tests were conducted outdoors, along pedestrian routes that reflect typical walking patterns, during standard business hours (09:00 to 17:00, Monday to Friday). This ensures consistency and fair comparison across areas and operators.

The testing window was deliberately chosen to capture the busy winter shopping period, when networks across London are under real-world load from high footfall, dense visitor populations and seasonal events. The findings therefore reflect how

the city's networks hold up under busy conditions rather than during quiet periods, which is the more demanding and more useful test for city planning.

Area results are medians, the middle values when measurements are ordered. This limits the effect of unusual readings. London-wide and operator aggregates are unweighted averages of the 19 area medians. All measurements are independent and the results were not influenced by any operator.

Why latency matters in this analysis

Latency receives particular attention in this report because it is the metric most closely tied to the everyday quality of interactive services. High download speeds matter for downloading a film or a software update; high latency, by contrast, is what makes a video call awkward, an online game frustrating, or a conversation with an artificial intelligence assistant unnatural. It is the silent measure of whether a network feels responsive.

Three classes of application are particularly latency-sensitive, and all three are growing rapidly in importance:

- 1 Real-time communication.** Video conferencing platforms (Microsoft Teams, Zoom, Google Meet) all publish target one-way latency below 50 milliseconds for a high-quality experience. Above this level, users notice the delay and conversations become stilted.
- 2 Real-time enterprise tools.** Cloud-rendered design software, collaborative editing platforms and live data dashboards rely on consistently low latency to feel responsive. Where the network adds tens of milliseconds, every interaction feels slower.
- 3 Conversational artificial intelligence.** Modern voice assistants such as those built on the OpenAI Realtime API or Google Gemini Live route a user's voice to a large language model and back as audio in a single conversational loop. Published research on natural turn-taking in conversation places the comfortable response window at 200 to 500 milliseconds. Once the language model takes 200 to 300 milliseconds to respond, the network has only a small share of that budget. Latency of 30 milliseconds or less is needed for these systems to feel natural; latency of 70 milliseconds or more breaks the sense of conversation.

These are not future concerns. They are the everyday tools of London's businesses, students and professionals today. The weighting that latency receives in the Capital Connectivity Standard reflects this evidence-based reality.

Ofcom performance thresholds

To put our findings in context, we compare them against the performance thresholds used by Ofcom, the United Kingdom's independent telecommunications regulator. These thresholds are valuable as a common reference point, but they were designed primarily for consumer information and national comparability. They are therefore treated in this report as a baseline, not as the sole measure of whether London is achieving city-grade connectivity.

Term	Threshold	Category	What it means
Download speed	5 Mbps or more	Successful	Fast enough to stream video and browse the web
Upload speed	1.5 Mbps or more	Successful	Fast enough to send photos and make video calls
Latency (delay)	50 ms or less	Successful	Responsive enough for real-time applications
Signal strength (4G or 5G outdoor)	-95 dBm or above	Good outdoor	Strong, reliable connection
Signal strength (4G or 5G outdoor)	-95 to -105 dBm	Variable	Connection present but may be unreliable
Signal strength (4G or 5G outdoor)	Below -105 dBm	Poor	Connection likely to drop or be very slow



4 | The Capital Connectivity Standard

From minimum service to city-grade connectivity

Ofcom's thresholds have served the United Kingdom well for over a decade. They are the basis on which national coverage obligations are tracked, consumers are informed about service quality and regulatory interventions are assessed. They were designed for that national, statutory purpose. They were not designed to set the ambition for a leading global capital, nor to anticipate the performance demanded by the next generation of artificial intelligence, immersive and real-time applications.

This report introduces a complementary framework, the Capital Connectivity Standard, designed specifically for that purpose. It is not intended to replace Ofcom's view. It is intended to sit alongside

it. Where Ofcom's approach answers the question 'is this network meeting the United Kingdom's minimum standards?', the Capital Connectivity Standard answers a different question: 'is this network performing at the level London's citizens, workers and visitors should reasonably expect of a leading global capital today, and at the level the city's economy will need from it tomorrow?'

The framework is deliberately simple, transparent and replicable. Any city authority that wants to measure its connectivity can apply the same three tiers to its own data. In that sense, the Capital Connectivity Standard is presented as a blueprint, not as a London-specific instrument.

Why a complementary lens is useful

Ofcom's own published methodology is direct about the scope and limits of its thresholds. The Map Your Mobile coverage checker is described as a tool to 'help consumers make informed decisions' about choosing a provider. Its predicted-coverage thresholds are calibrated against the standard deviation of operator prediction error, which Ofcom estimates at around 12 decibels in combined effects. Ofcom states explicitly that predicted coverage 'may not always match people's real-world experience at a very local level'. Connected Nations, the wider national assessment, is published under a statutory duty to report on the availability and performance of networks across the United Kingdom as a whole. Both publications do their job well; neither is calibrated for street-level city planning at the global frontier.

The practical issue is visible in the London data. Ofcom's 5 Mbps download and 1.5 Mbps upload thresholds are exceeded in every measured area, so they confirm that basic mobile service is generally available but do not separate adequate from strong. At the same time, the 50 ms latency threshold is missed in every measured area, which is analytically useful but too blunt as a standalone prioritisation tool. The Capital Connectivity Standard preserves Ofcom's baseline while adding two further tiers that allow more meaningful judgement of performance against city-grade ambitions.

Ofcom Features	Why it is useful	Constraint for this study	How this report responds
5 Mbps download and 1.5 Mbps upload threshold	Clear minimum-service benchmark for common consumer activities.	All 19 measured London areas exceed both levels at the all-operator median, so the thresholds do not distinguish stronger city-grade performance.	Add a 25 Mbps download and 8 Mbps upload Strong check, plus a 100 Mbps and 25 Mbps Forward-looking ceiling.
50 ms latency threshold	Recognises that responsiveness matters, not only raw speed; aligns with the targets published by Microsoft Teams, Zoom and other interactive services.	All 19 areas fail it, which makes a single pass-or-fail result less useful for prioritising local analysis.	Hold the Strong tier at the same 50 ms ceiling, the bar that interactive applications already require, and add a 30 ms Forward-looking target for the next decade of services.
Predicted signal-strength coverage maps	Provides national coverage comparability at granular map level.	Ofcom acknowledges that predicted signal has local uncertainty (around 12 dB combined standard deviation) and cannot guarantee actual service.	Use controlled walk-test measurements and combine signal with user-experience metrics.
Operator comparison at postcode level	Helps consumers see relative performance by provider.	Can mask street-level asymmetry and infrastructure gaps specific to a single area.	Add an operator-asymmetry overlay flagging where the best-to-worst operator download gap exceeds 75 per cent.
Single ‘Successful’ classification	Simple to communicate.	A connection delivering 5.1 Mbps and one delivering 510 Mbps are both ‘successful’. The framing loses information that the city needs.	Adopt a three-tier ladder so that areas, operators and metrics can be classified at meaningful intermediate steps.

Table 1. Ofcom’s national thresholds remain a valuable reference point for the United Kingdom; the Capital Connectivity Standard supplements them with city-grade and Forward-looking measures.

How other regulators approach the question

International peers offer a useful map for designing a city-grade framework. Several leading regulators publish thresholds and use-case-anchored ladders that have informed the design of the Capital Connectivity Standard.

Comparator	Relevant benchmark or practice	Implication for London
Ofcom (United Kingdom)	Map Your Mobile uses 5 Mbps download, 1.5 Mbps upload, 50 ms latency, and outdoor signal categories at -105 dBm and -95 dBm.	Strong baseline for consumer information, but London needs a complementary city-quality layer.
Federal Communications Commission (United States)	The National Broadband Map includes 5G mobile coverage layers at 7/1 Mbps and 35/3 Mbps, while the FCC's fixed broadband benchmark was raised in 2024 to 100/20 Mbps with a 1 Gbps long-term goal.	A 25 Mbps city-grade mobile download check is conservative beside the FCC's 35 Mbps 5G map layer and well below modern fixed benchmarks.
Federal Communications Commission, 5G Fund for Rural America (United States)	Subsidy recipients must deliver at least 35 Mbps median download, 3 Mbps upload and 100 ms round-trip latency.	Median speed thresholds and explicit latency obligations are now standard practice for funded mobile deployments.
ARCEP (France)	Mon réseau mobile uses a three-tier ladder: 3 Mbps for least demanding uses, 8 Mbps for typical uses, 30 Mbps for most demanding uses, with measurement stratified by dense, intermediate and rural areas.	ARCEP's three-tier ladder is the cleanest international precedent for use-case-anchored thresholds.
CRTC (Canada)	Proposed three-tier service definition (Emergency, Basic, Advanced) with simultaneous thresholds on signal, download, upload, latency and voice quality. The 'Advanced' tier requires at least -100 dBm signal, 10 Mbps download, 2 Mbps upload and 100 ms latency.	Multi-tier classifications with simultaneous metric requirements are now an explicit international direction.
ACMA (Australia)	The 2026 Mobile Network Coverage Maps standard introduces four signal-strength tiers (Good, Moderate, Useable, None) with separate thresholds for 4G and 5G, and treats -85 dBm as a 'strong signal with good data speeds' anchor.	Tiered (rather than binary) classification is the international direction of travel; the -85 dBm anchor informs the Forward-looking signal threshold.
IMDA (Singapore)	Enforces 4G coverage at 99 per cent outdoor, 99 per cent on roads and tunnels and 85 per cent inside each surveyed building, all at -109 dBm or stronger.	City-states with regulator powers set tight, location-specific coverage obligations.

BNetzA (Germany)	Binds operator licences to performance commitments of at least 100 Mbps download for 98 per cent of households in each federal state.	100 Mbps is increasingly the per-state, per-household licence-level commitment, anchoring the Forward-looking download threshold.
Ministry of Science and ICT (South Korea)	Annual measured-performance evaluation reports median 5G download at around 1,025 Mbps nationally, more than 1,121 Mbps in major cities, and 5G latency at around 20 ms.	Defines the practical ceiling of mature 5G performance globally; Forward-looking aspirations should look in this direction.
AGCOM (Italy)	Codifies a numerical floor below which the term ‘5G’ may not be used in advertising, set at 20 Mbps. A 5G service that cannot deliver this is regulated as misleading.	Sets a practical floor for the use of ‘5G’ as a marketing term that is consistent with Strong download expectations.
ITU IMT-2020	International technical requirements specify 100 Mbps user-experienced downlink in dense urban scenarios, with very low radio-interface latency targets (4 ms eMBB, 1 ms URLLC).	London’s Forward-looking tier is intentionally less aggressive than 5G technical ideals, but anchors against the same direction.

Table 2. Selected international benchmarks. Two patterns stand out: peer regulators are moving towards multi-tier classifications, and several anchor thresholds to specific use cases or international engineering standards rather than to a single national consumer-information minimum.

The three tiers, four metrics

The framework is built on the four metrics most directly experienced by the user: download speed, upload speed, latency and signal strength. Each metric is evaluated against three tiers. An area is classified per metric: a single area may meet the Strong tier on

download speed, the Ofcom Successful tier on latency and not yet meet either tier on signal strength. This metric-level classification preserves more information than a single binary pass-or-fail.

 Metric	 Ofcom Successful	 Strong (City-grade)	 Forward-looking
Download speed	≥ 5 Mbps	≥ 25 Mbps	≥ 100 Mbps
Upload speed	≥ 1.5 Mbps	≥ 8 Mbps	≥ 25 Mbps
Latency	≤ 50 ms	≤ 50 ms	≤ 30 ms
Signal strength (4G or 5G outdoor)	≥ -95 dBm	≥ -95 dBm	≥ -85 dBm

Table 3. The Capital Connectivity Standard at a glance. An area meeting all four Strong checks is classified as ‘city-ready’. An area meeting three is ‘near city-ready’. Areas meeting two or fewer require targeted investigation.

Tier 1: Ofcom Successful (the national minimum)

The first tier reproduces Ofcom's published thresholds for a successful connection. It serves as the floor: the level a mobile connection must clear to meet the United Kingdom's national minimum standard. Sources: Ofcom Map Your Mobile coverage checker methodology (August 2025); Ofcom Connected Nations 2024.

Tier 2: Strong (what a global capital should expect today)

The Strong tier reflects what a citizen, worker or visitor in a global capital should reasonably expect today. Each threshold is anchored to published international evidence:

- **Download speed of 25 Mbps or more.** Five times Ofcom's performance level. Below the Federal Communications Commission's 35 Mbps high-speed 5G map layer and the German federal regulator's 100 Mbps household licence target. Comfortably supports 1080p group video conferencing alongside concurrent ultra-high-definition video streaming, and aligns with the floor below which Italy's regulator will not allow the use of the term '5G' in advertising.
- **Upload speed of 8 Mbps or more.** More than five times Ofcom's 1.5 Mbps minimum. Comfortably supports Twitch live streaming at 1080p60 (6 Mbps) and the upper tier of Microsoft Teams group video, while remaining achievable across most measured areas.
- **Latency of 50 milliseconds or less.** The Strong tier holds Ofcom's 50 ms ceiling, the bar at which interactive applications such as group video conferencing, collaborative tools and conversational artificial intelligence remain comfortably responsive. Areas above this ceiling experience perceptible delay even when raw speeds are strong; the Forward-looking tier sets a tighter 30 ms target for the next decade of services.
- **Signal strength of -95 dBm or stronger.** Aligns with Ofcom's 'good outdoor' boundary and helps identify places where service is present but fragile.

Tier 3: Forward-looking (what the next decade will need)

The Forward-looking tier looks ahead. It is anchored against international engineering standards and the published performance requirements of next-generation services that are already routine for many businesses and increasingly for consumers: artificial intelligence voice assistants, real-time enterprise tools, immersive video, collaborative design and editing platforms and emerging interactive applications. The tier is deliberately ambitious. It is the bar London should aim for over the next several years, not the bar London is expected to clear today.

- **Download speed of 100 Mbps or more.** Anchored to the user-experienced data rate of 100 Mbps specified for Dense Urban enhanced mobile broadband in the International Telecommunication Union's IMT-2020 standard, and to the per-state household commitment of 100 Mbps in the German federal regulator's licence obligations.
- **Upload speed of 25 Mbps or more.** Aligned with the 25 Mbps split-rendering uplink specified in 3rd Generation Partnership Project Technical Specification 22.261 for cloud and edge rendering of immersive content, and consistent with the 20 Mbps fixed broadband upload benchmark adopted by the United States Federal Communications Commission in 2024.

- **Latency of 30 milliseconds or less.** Aligned with the network share of the conversational artificial intelligence response budget when a large language model can consume 200 to 500 milliseconds of the natural turn-taking window, and with the operating envelope of modern collaborative tools and real-time enterprise applications.
- **Signal strength of -85 dBm or stronger.** Matches the anchor used in the Australian Mobile Black Spot Program for ‘strong signal with good data speeds’.

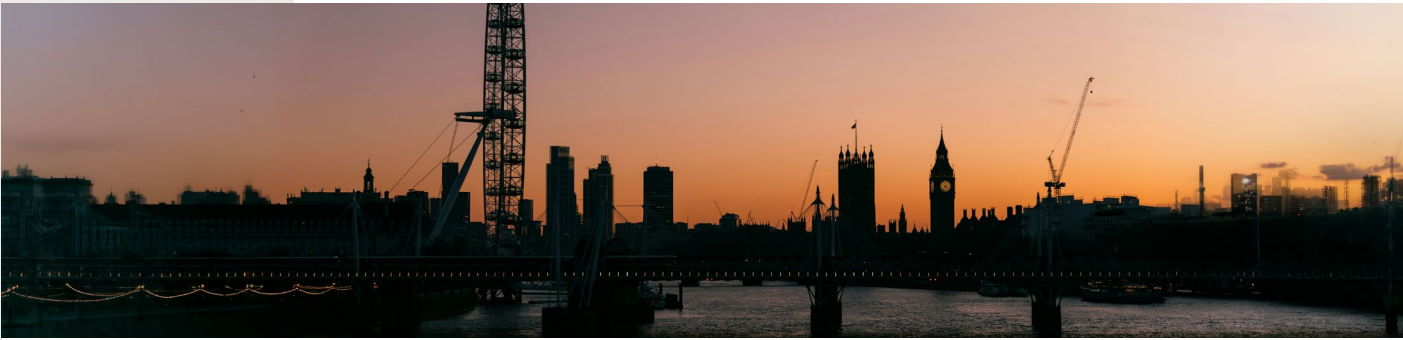
How the framework should be read

The Capital Connectivity Standard is intentionally not a single score. It assesses each metric independently, so that the specific shape of a network’s strengths and weaknesses is visible. An area that delivers Forward-looking download speeds but Strong latency is a different proposition for city planning than an area with the opposite profile.

The framework is also intentionally not exhaustive. It does not yet include jitter, packet loss, video quality of experience or voice quality. These are important secondary measures that the partnership will add

to subsequent editions as consistent measurement data becomes available. The four metrics in the framework today are those for which there is a mature international evidence base and reliable measurement at the scale of a city.

Most importantly, the framework is replicable. Any city authority can apply the same three tiers to its own data, regardless of which regulator’s coverage map it operates under. In that sense the Capital Connectivity Standard is designed to function as a city-level blueprint as well as a London-specific instrument.



5 | London’s mobile performance: the overall picture

How London performs

Across all 19 areas and all four operators, London’s mobile network performance is strong on speed against the national minimum, but more challenging when assessed against the bar a global capital

should set itself. The following table shows London’s area-median averages, alongside Ofcom’s national thresholds and the Strong tier of the Capital Connectivity Standard.

Metric	Mean area median	Against Ofcom successful	Against strong	What it means
Download speed	21.89 Mbps	≥ 5 Mbps (passes)	≥ 25 Mbps (does not pass)	Comfortably above the national floor; below the level expected of a global capital.
Upload speed	9.41 Mbps	≥ 1.5 Mbps (passes)	≥ 8 Mbps (passes)	Clears the Strong tier on aggregate, with two areas below.
Latency	72.71 ms	≤ 50 ms (does not pass)	≤ 50 ms (does not pass)	London-wide average is above the 50 ms ceiling that Ofcom and the Strong tier share. Every measured area fails this check.
Signal strength	-93.0 dBm	≥ -95 dBm (passes)	≥ -95 dBm (passes)	Within Ofcom’s ‘good outdoor’ tier on average, with several areas at the boundary.

Table 4. London’s area-median averages against Ofcom Successful and Strong thresholds.

London comfortably exceeds Ofcom’s minimum speed targets. Download speeds are 4.4 times the minimum required for a successful connection, and upload speeds are 6.3 times the national threshold. Against the Strong tier, the picture is more demanding: London’s average download result sits 12 per cent below the 25 Mbps benchmark, and only three areas in the city achieve Strong download performance individually.

Latency is the headline finding. London’s average latency of 72.71 milliseconds is above the 50 millisecond threshold that Ofcom and the Strong tier of the Capital Connectivity Standard share, and every

one of the 19 areas measured fails this check. This is not a problem with any one operator. It likely reflects a combination of dense urban conditions, backhaul constraints, radio and network configuration, and core-network routing; the data does not attribute causality to a single factor. The implications are concrete: the latency gap is the difference between a video call that feels natural and one that feels lagging, between an interactive map or collaborative document that responds instantly and one that drags, and between an artificial intelligence voice assistant that holds a natural conversation and one that interrupts itself.

How London's areas perform against the framework

Figure 1 below shows what share of London's 19 measured areas achieves each tier of the Capital Connectivity Standard on each metric. The pattern is clear: every area clears Ofcom's minimum on speeds,

no area reaches the 50 ms latency check shared by Ofcom Successful and Strong, and no area reaches Forward-looking on any throughput metric.

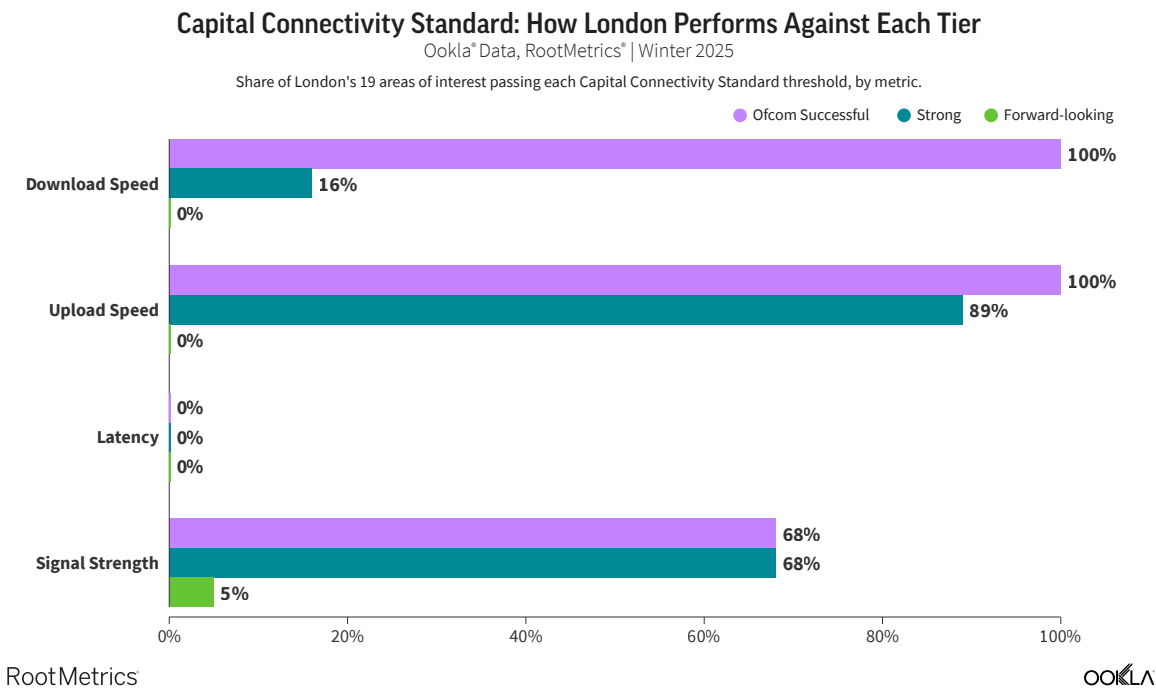
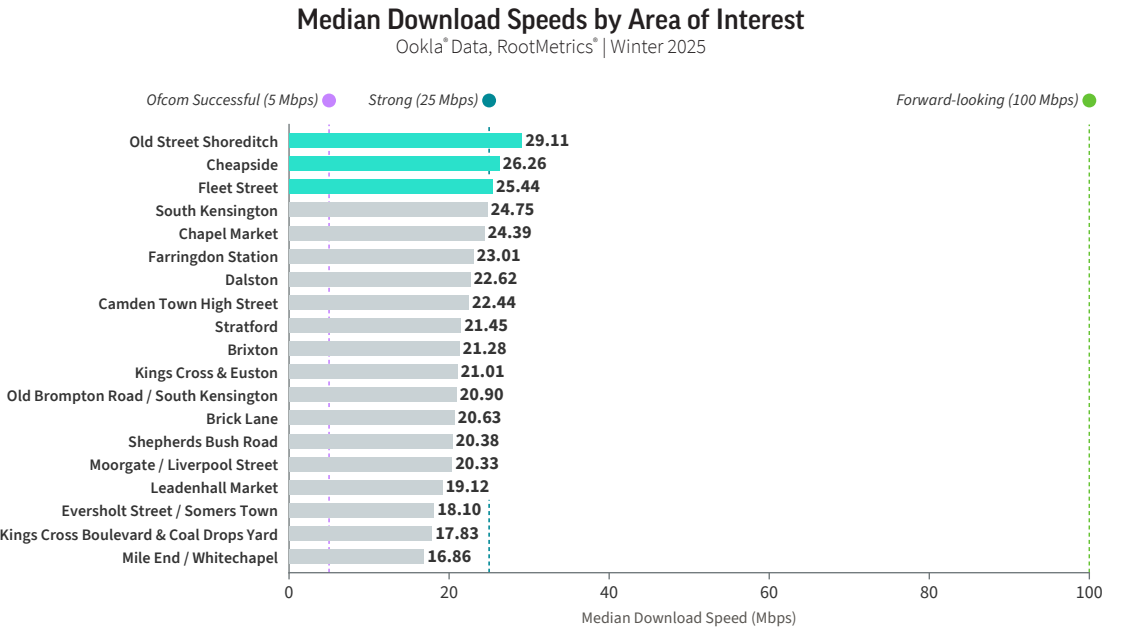


Figure 1. Share of London's 19 Areas of Interest passing each Capital Connectivity Standard threshold, by metric.

Download speeds across the city



RootMetrics®

OOKLA®

Figure 2. Median download speeds by Area of Interest. Three areas (Old Street, Cheapside and Fleet Street) achieve Strong performance.

Signal quality distribution

Across all measurements, 56.8 per cent of signal-strength readings fell into Ofcom’s ‘Good Outdoor’ band, 41.1 per cent into ‘Variable’ (between -95 and -105 dBm) and 1.1 per cent into ‘Poor’ (below -105 dBm); figures are rounded to one decimal place. At the all-operator AoI median, 13 of the 19 areas pass the -95 dBm threshold; all six that do not are in the inner-north-east borough cluster discussed in Section 11.

5G is the dominant technology. Nearly 90 per cent of tests detected 5G capability, and where 5G was available it delivered speeds 4 to 9 times faster than 4G. However, this transformation is uneven across operators and areas, and 5G availability does not yet consistently translate into Strong or Forward-looking performance.

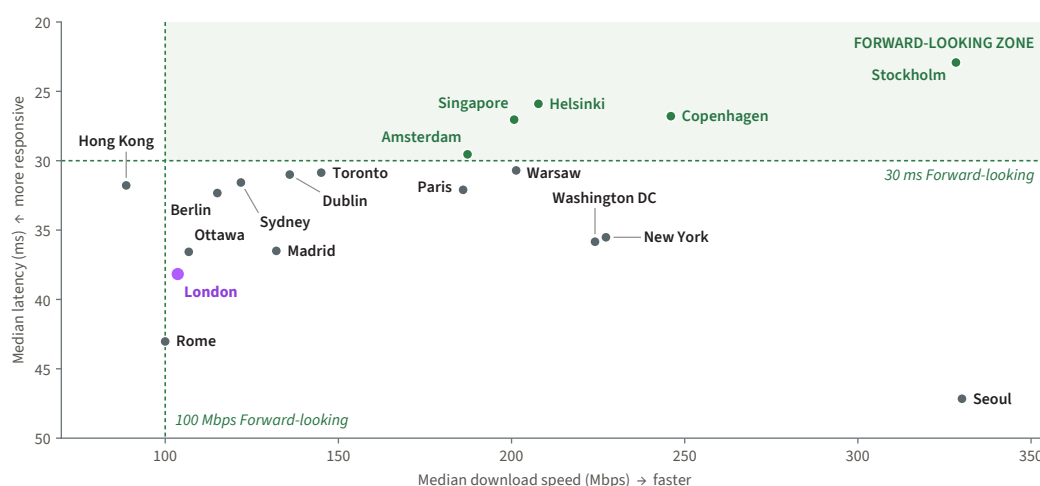


6 | London in international context

London Sits in the Slow, Less-responsive Corner of the Global Comparison

Speedtest® Data | Q1 2026

Each dot is one of 19 cities. Stockholm, Copenhagen, Helsinki, Singapore and Amsterdam clear both forward-looking tiers shown here, on download speed and latency. London clears download but not latency.



SPEEDTEST

OOKLA

Why an international comparison, and how to read it

The previous sections compare London's 19 measured Areas of Interest against each other and against the Capital Connectivity Standard. This section adds international context: how London compares with 18 other major cities on the same framework. The comparison is not intended to replace the area-by-area picture; it is a complementary view that places the headline London numbers alongside what is being delivered today in peer capitals.

A note on methodology. The headline London figures elsewhere in this report are based on the controlled walk-test campaign across 19 specific Areas of Interest, conducted on standardised equipment along outdoor pedestrian routes during business hours. That methodology is the right tool for street-level city planning and for tracking the same locations over time. It is not, however, available for international

comparison: walk-test programmes of equivalent scope and rigour have not been carried out in the comparator cities.

The international comparison in this section therefore uses Ookla's Speedtest crowdsourced data (user-initiated tests on consumer devices) for all 19 cities including London. Speedtest figures are systematically higher on speed and lower on latency than walk-test figures, for reasons of test environment, time-of-day mix, device mix and user-initiation patterns. Within a single methodology applied consistently to all 19 cities, the comparison is valid and meaningful. Across the two methodologies, it is not. The London Speedtest figures cited in this section should not be substituted for the headline London walk-test figures elsewhere in the report.

The peer city set

The 19-city comparator set is drawn from G7 and OECD capitals, comparator cities named in earlier sections of the report (Dublin, Singapore, Seoul), the regulators whose thresholds the Capital Connectivity Standard draws on (United States Federal Communications Commission, ARCEP France, Bundesnetzagentur Germany, IMDA Singapore, Ministry of Science and ICT South Korea, Australian Communications and Media Authority),

the cities most often cited as 5G performance leaders (Stockholm, Helsinki, Seoul) and a selection of European peers (Madrid, Amsterdam, Warsaw, Copenhagen, Berlin, Rome). Brussels and Tokyo are not included in this edition; their Q1 2026 Speedtest sample size fell below the threshold for confident inclusion. The dataset covers Q1 2026 (1 January to 31 March 2026), filtered to non-roaming traffic on Android and iOS devices.

London against the Forward-looking tier of the framework

Three of the 19 cities (Stockholm, Copenhagen and Helsinki) clear all three Forward-looking core checks (download speed of 100 Mbps or more, upload speed of 25 Mbps or more, multi-server latency of 30 ms or less) on the Q1 2026 Speedtest data. London clears

one, on download speed alone. The comparison is informative not as a ranking, but because it shows that the Forward-looking tier is not a future hypothetical: it is being delivered today, in three European capitals, on consumer devices in real-world conditions.

Forward-looking Scorecard Across 19 Peer Cities

Speedtest® Data | Q1 2026

Forward-looking checks achieved (of 3: download, upload, latency). 3 of 3 Clears Forward-looking on all metrics.

	Download ≥ 100 Mbps	Upload ≥ 25 Mbps	Latency ≤ 30 ms	Checks cleared
Stockholm	●	●	●	3 of 3
Copenhagen	●	●	●	3 of 3
Helsinki	●	●	●	3 of 3
Seoul	●	●	○	2 of 3
Singapore	●	○	●	2 of 3
Amsterdam	●	○	●	2 of 3
New York	●	○	○	1 of 3
Washington D.C.	●	○	○	1 of 3
Warsaw	●	○	○	1 of 3
Paris	●	○	○	1 of 3
Toronto	●	○	○	1 of 3
Dublin	●	○	○	1 of 3
Madrid	●	○	○	1 of 3
Sydney	●	○	○	1 of 3
Berlin	●	○	○	1 of 3
Ottawa	●	○	○	1 of 3
London	●	○	○	1 of 3
Rome	○	○	○	0 of 3
Hong Kong	○	○	○	0 of 3
Cities clearing	17 of 19	4 of 19	5 of 19	

 SPEEDTEST

 OOKLA

Figure A. Which Forward-looking checks each of the 19 capitals clears on Q1 2026 Speedtest medians. Download is close to universal. Upload is where almost every capital falls short.

Rome's median download of 99.98 Mbps sits fractionally below the 100 Mbps line and is shown as not clearing it.

Headline rankings against the peer set

Metric	London median	London rank	Best in set
Median download speed	103.6 Mbps	17 of 19	Seoul 330.1 Mbps
Median upload speed	11.0 Mbps	19 of 19	Stockholm 49.9 Mbps
Median multi-server latency	38.2 ms	17 of 19	Stockholm 22.9 ms
Median multi-server jitter	10.2 ms	17 of 19	Stockholm 5.2 ms
90th-percentile download-loaded latency	2,908 ms	19 of 19	Stockholm 736 ms
Share of tests on 5G	75.5%	10 of 19	Stockholm 89.1%

Table 5. London’s Q1 2026 Speedtest position across the 19-city comparator set. The figures in this table use Speedtest crowdsourced data and should not be combined with the walk-test London figures used elsewhere in the report.

London’s median download speed is below 16 of the 18 other capitals in the dataset, closer to Rome (100.0 Mbps) than to New York (227.3 Mbps). Median upload speed sits at the back of the field. The single most striking finding is on the latency tail under load:

London’s 90th-percentile download-loaded latency is the worst of all 19 cities at 2,908 milliseconds. One in ten download-test moments in London runs close to three seconds of loaded latency. The same measure in Stockholm is 736 ms, nearly four times faster.

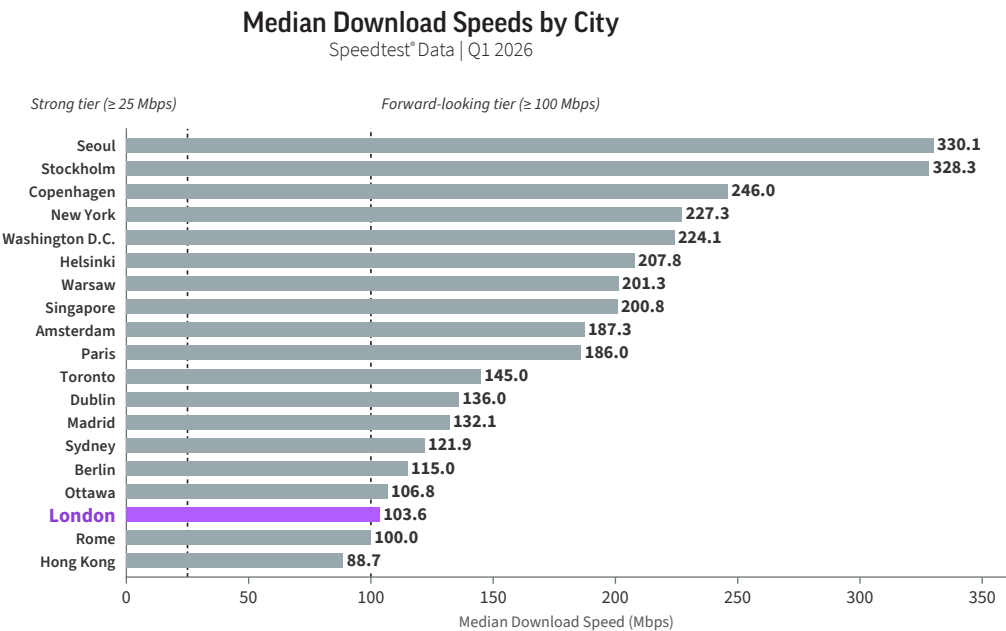


Figure B. Median download speed by city, Q1 2026 Speedtest data. London is highlighted in purple.

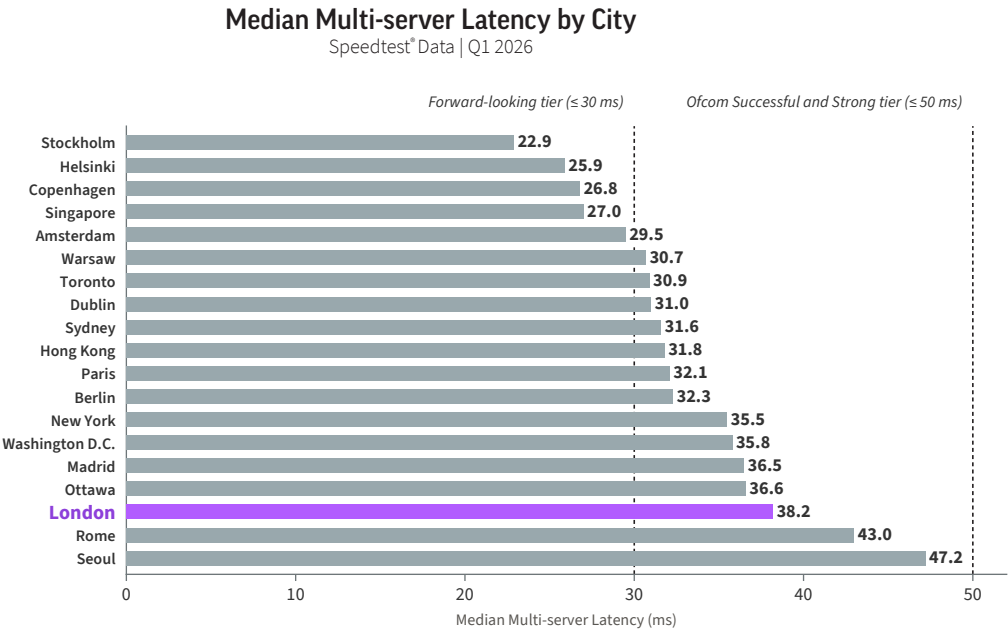


Figure C. Median multi-server latency by city, Q1 2026 Speedtest data. London is highlighted in purple. Stockholm is the latency leader.

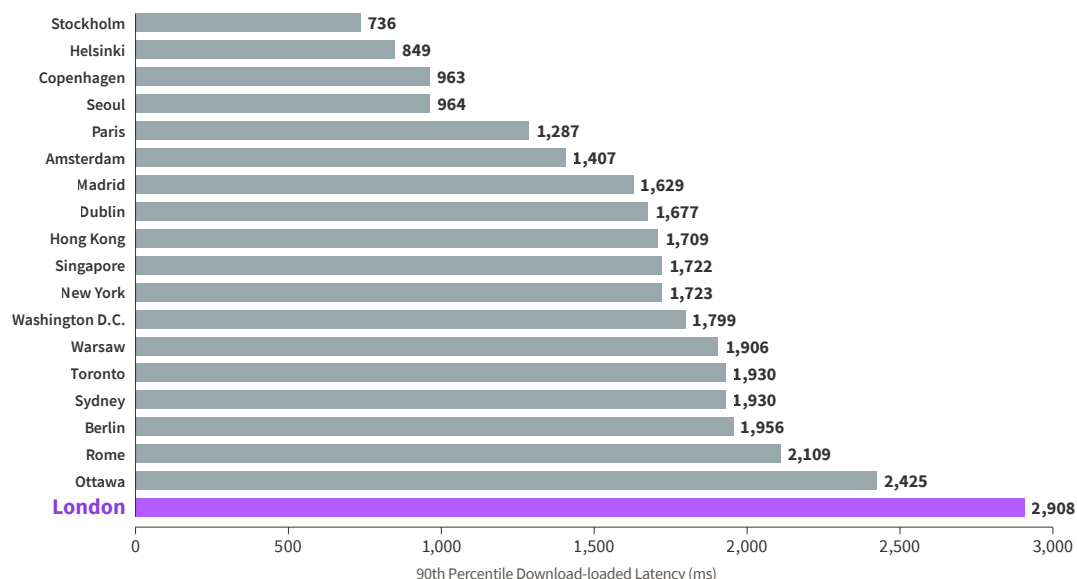
The latency tail and what it tells us

Median latency captures the typical experience. For interactive applications (video conferencing, collaborative tools, voice-driven artificial intelligence assistants), the experience under load is what

determines whether the network feels responsive. The 90th-percentile download-loaded latency captures the experience in the moments that matter most: when the connection is busy.

The Latency Tail Under Load

Speedtest® Data | Q1 2026



SPEEDTEST

OOKLA

Figure D. The 90th-percentile download-loaded latency tail across 19 capitals. London ranks 19 of 19 on this measure, the slowest 'busy moment' tail in the dataset.

One city frames the lesson. Stockholm leads the peer set on three measures at once: the lowest multi-server latency at 22.9 ms, the best performance under load at 736 ms, and a median download speed second only to Seoul. It is one of only three cities in the comparison to clear every Forward-looking check. What separates it from London sits in the infrastructure underneath the city rather than in consumer demand or handset mix.

The Nordic frontier points to two structural levers London does not currently have at scale. The first is the consolidation of capital expenditure into denser, fewer, better-engineered radio sites through formal radio access network sharing arrangements. Sweden's Net4Mobility joint venture between Tele2 and Telenor has covered around 99.9 per cent of the population since 2009, with a comparable arrangement in Denmark since 2012. The second is the existence

of an open, neutral, passive fibre layer beneath the city: Stockholm's Stokab infrastructure spans more than two million fibre kilometres and over a hundred connected operators, providing cheap, neutral, abundant backhaul to every macro and small-cell site. London's mobile networks share fibre from a more competitive, less-coordinated wholesale market.

The 5G availability picture sharpens the diagnosis. London's share of tests detecting 5G, at 75.5 per cent, is mid-pack among the 19 cities, not a 5G availability gap. The gap to the global frontier is on the dimensions that 5G is supposed to deliver: throughput, responsiveness and the consistency of both under load. This is consistent with the finding in Section 10 that 5G availability does not yet consistently translate into Strong or Forward-looking performance at the Area of Interest level. It is the same lesson at a city scale.

London in UK context

Among major UK cities in Q1 2026, London ranks fifth of ten on median mobile download speed at 103.6 Mbps in Speedtest data. Glasgow leads at 114.2 Mbps, followed by Manchester (113.1 Mbps), Liverpool (112.2 Mbps) and Birmingham (109.1 Mbps). Edinburgh (85.1 Mbps) and Bristol (93.6 Mbps) sit at the bottom of the group, reflecting lower 5G penetration.

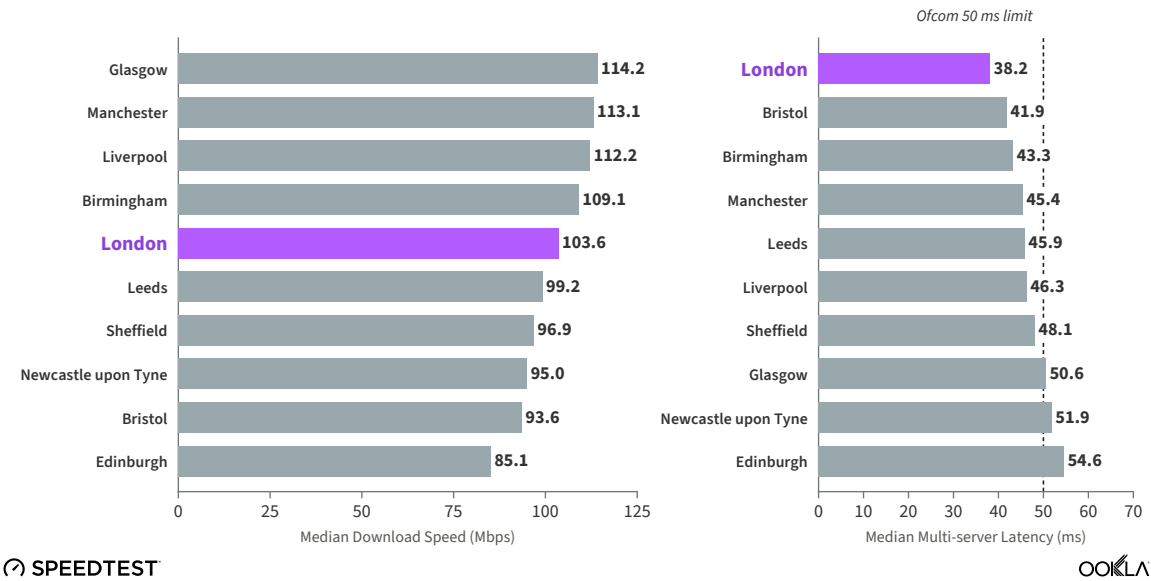
On upload speed, Glasgow leads among UK cities at 13.4 Mbps, with London (11.0 Mbps) broadly mid-pack. Latency tells a sharper story: London is the only major UK city with a median multi-server latency below 40 ms in Q1 2026, at 38.2 ms. Bristol (41.9 ms) and Birmingham (43.3 ms) also perform well. Edinburgh (54.6 ms), Newcastle (51.9 ms) and Glasgow (50.6 ms) sit above the 50 ms threshold. London’s latency advantage over peer UK cities is not

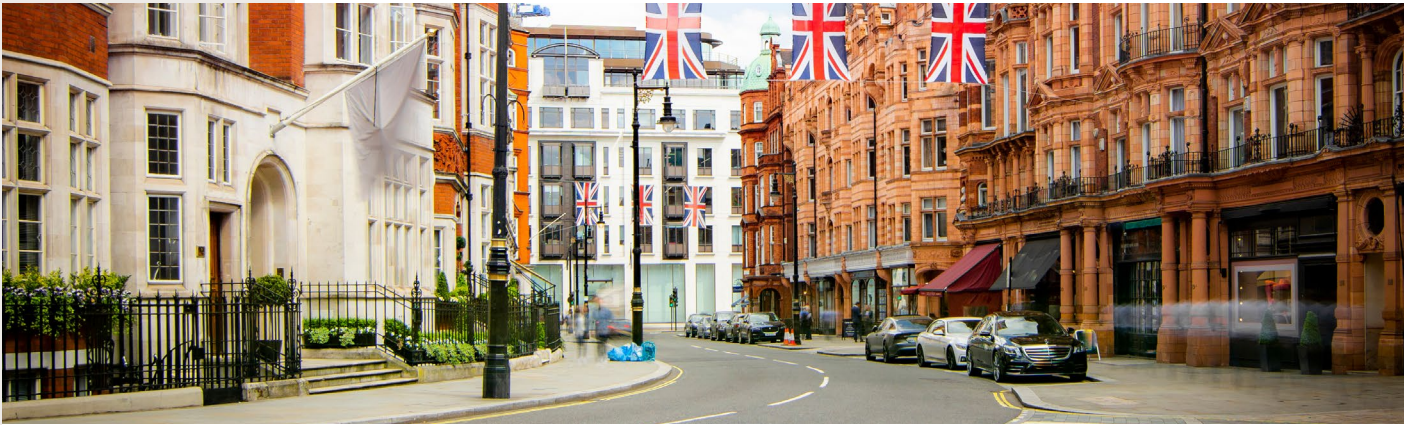
surprising, and reflects a structural advantage from being physically located closest to where most traffic routing and egress takes place in the UK.

These findings have a direct policy relevance. The fact that London has the best crowdsourced latency of any major UK city in Speedtest Intelligence data confirms that London’s latency challenge identified in the walk-test data (Section 5) is not a function of operator under-investment relative to UK peers, but reflects the specific difficulty of consistent outdoor delivery at scale across London’s dispersed geography and complex planning environment. The Capital Connectivity Standard is designed to be replicable by any UK city authority: the peer data here provides the comparative baseline against which any future city can benchmark its own programme.

London Leads the UK on Mobile Latency but Ranks Fifth for Download Speed

Speedtest® Data | Q1 2026
Major UK cities ranked.



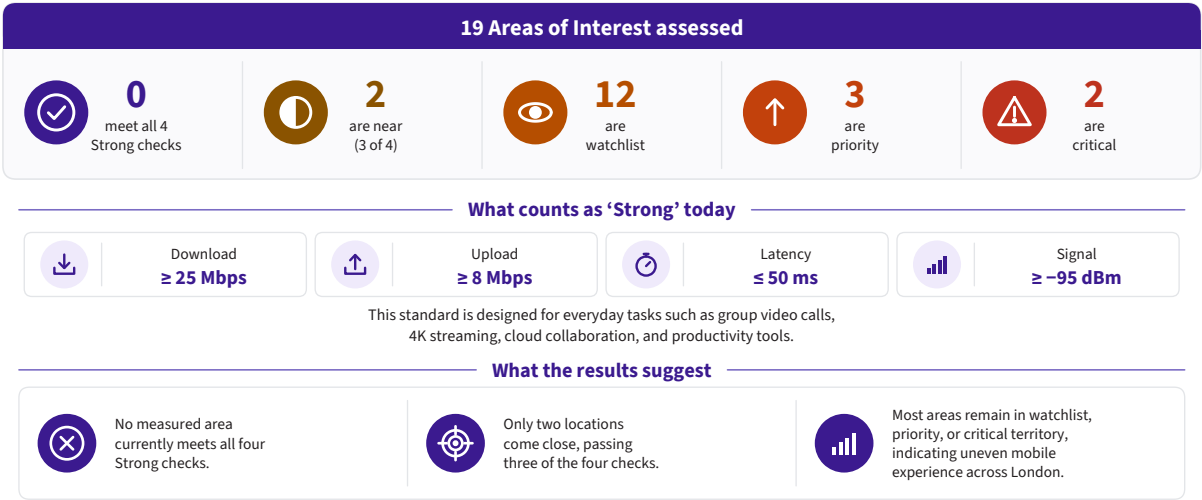


7 | Area performance under the Capital Connectivity Standard

London Mostly Falls Short of the ‘Strong’ Connectivity Standard

Greater London Authority, RootMetrics® and Ookla® Walk-test Campaign | H2 2025

A forensic view of 19 Areas of Interest shows that most locations still miss at least one of the four checks needed for a strong everyday mobile experience.



How London's areas compare

To rank areas comprehensively, we created a combined performance score giving equal weight (25 per cent each) to download speed, upload speed, latency and signal strength. We retain this composite

for continuity, but it should be read alongside the Capital Connectivity Standard. The composite shows relative position; the framework shows whether an area meets specific city-grade thresholds.

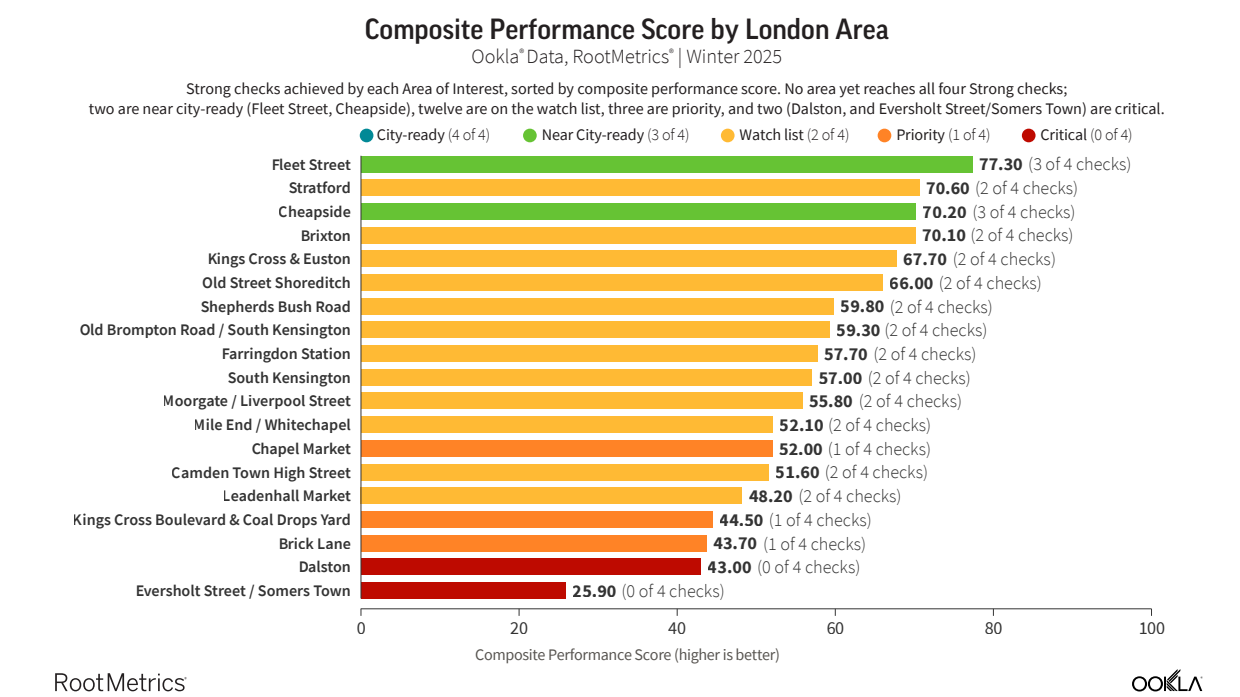


Figure 3. Strong checks achieved by each Area of Interest, sorted by composite performance score. No area yet reaches all four Strong checks; two are near city-ready (Fleet Street, Cheapside), twelve are on the watchlist, three are priority, and two (Dalston, and Eversholt Street/Somers Town) are critical.

Top five performing areas

Rank	Area	Score	Download	Upload	Latency	Signal	Borough	Tier
1	Fleet Street	77.3	25.44 Mbps	12.20 Mbps	74 ms	-85 dBm	City of London	Near (3 of 4)
2	Stratford	70.6	21.45 Mbps	10.82 Mbps	70 ms	-86 dBm	Newham	Watchlist
3	Cheapside	70.2	26.26 Mbps	12.34 Mbps	75 ms	-90 dBm	City of London	Near (3 of 4)
4	Brixton	70.1	21.28 Mbps	10.18 Mbps	66 ms	-86 dBm	Lambeth	Watchlist
5	Kings Cross & Euston	67.7	21.01 Mbps	11.01 Mbps	75 ms	-87 dBm	Camden / Islington	Watchlist

Table 6. Top five areas by composite score, with Capital Connectivity Standard tier classification.

Bottom five performing areas

Rank	Area	Score	Download	Upload	Latency	Signal	Borough	Tier
15	Leadenhall Market	48.2	19.12 Mbps	8.98 Mbps	80 ms	-95 dBm	City of London	Watchlist
16	Kings Cross Boulevard	44.5	17.83 Mbps	8.48 Mbps	80 ms	-96 dBm	Camden	Priority
17	Brick Lane	43.7	20.63 Mbps	8.08 Mbps	83 ms	-97 dBm	Tower Hamlets	Priority
18	Dalston	43.0	22.62 Mbps	7.28 Mbps	62 ms	-101 dBm	Hackney	Critical
19	Eversholt Street	25.9	18.10 Mbps	5.11 Mbps	96 ms	-101 dBm	Camden	Critical

Table 7. Bottom five areas by composite score. Eversholt Street and Dalston both score 0 of 4 on Strong; Eversholt Street's 5.11 Mbps median upload is the only one in the dataset that falls below the Strong upload threshold by more than a small margin (Dalston's 7.28 Mbps is just below).

Where the framework reveals what the composite score hides

Reading the same data through the Capital Connectivity Standard surfaces patterns that the composite score alone does not. Three are worth highlighting:

- Old Street is ranked sixth on the composite score, but is the best area in London on download speed (29.11 Mbps) and on latency (51 ms). Its weak signal strength (-97 dBm) drags the composite down. From a user-experience perspective, Old Street is one of the very best areas in the city.
- Chapel Market is ranked thirteenth, but has the second-best latency in London (55 ms) and a strong all-operator download median (24.39 Mbps, just below the Strong tier). The composite is dragged by weak signal (-99 dBm).
- Dalston is ranked eighteenth, yet its median latency (62 ms) and median download (22.62 Mbps) both sit comfortably above many higher-ranked areas. Dalston's weak signal (-101 dBm) and weak upload (7.28 Mbps) drag the composite. The user-experience reality is more nuanced than the rank suggests.

These cases illustrate why the Capital Connectivity Standard treats each metric independently. They are also consistent with a broader pattern: where small-cell density and 5G investment are present, they can deliver strong real-world experience even where macro signal is weak.



8 | The operator landscape

How London's operators compare

To protect commercial confidentiality and focus this report on system-wide patterns rather than brand performance, operator identities are concealed. The four major UK mobile operators are referred to as Operator A, B, C and D. The analysis below summarises each operator's profile based on their

combined performance across all measured areas. The report does not recommend any particular operator. As the asymmetry analysis in the next section shows, no single network is best everywhere, and the same network may be the strongest in one part of the city and the weakest in another.

Operator	Download	Upload	Latency	Signal	5G Availability	Strong tier (London-wide)
Operator A	18.91 Mbps	12.07 Mbps	66.99 ms	-92.2 dBm	89%	Watchlist (2 of 4)
Operator B	23.96 Mbps	6.35 Mbps	81.66 ms	-89.9 dBm	84%	Priority (1 of 4)
Operator C	26.94 Mbps	9.74 Mbps	71.47 ms	-94.5 dBm	61%	Near city-ready (3 of 4)
Operator D	28.78 Mbps	8.88 Mbps	83.88 ms	-95.1 dBm	60%	Watchlist (2 of 4)

Table 8. Operator performance at London-wide aggregate, scored against the Strong tier of the Capital Connectivity Standard.

Operator A has the lowest delays across the city (66.99 ms average latency) and the fastest upload speed (12.07 Mbps), meaning it is the most responsive network for real-time activities like video calls. However, its average download result (18.91 Mbps) is the lowest of the four. Operator A has the broadest 5G footprint of the four, with 89 per cent of tests detecting 5G, a posture consistent with an operator that has invested early and broadly in the technology.

Operator B has the strongest signal strength (-89.9 dBm), indicating the most comprehensive outdoor coverage and a strong network of large masts (macro cells). However, its upload speed (6.35 Mbps) is the weakest of all four operators, more than 20 per cent below the Strong tier. On the four-metric Strong scorecard, Operator B is currently the lowest of the four operators (1 of 4 checks). This limitation may be

driven by how the operator's available radio frequencies are allocated, or by constraints in the connections between its masts and the wider network.

Operator C is the closest of the four to the Strong tier at the London-wide aggregate level, clearing three of the four checks. It combines the second-best download speed (26.94 Mbps), an upload speed above the Strong tier (9.74 Mbps) and signal strength at -94.5 dBm. The metric it misses is the same one every operator misses: latency at 71.47 milliseconds is above the 50 ms ceiling that Ofcom and the Strong tier share. Operator C's 5G coverage also trails the other measured operators, with only 61 per cent of tests detecting 5G and roughly 28 per cent of tests still on 4G LTE. As more services and applications are designed to rely on 5G, this gap could become more significant over time.

Operator D delivers the highest download speed in the dataset (28.78 Mbps) and is the operator most often responsible for the highest single-area peaks measured (more than 40 Mbps in some areas), but its average latency (83.88 ms) and signal strength (-95.1 dBm, just outside the Strong threshold by 0.1 dB and within measurement noise) sit at the back of the pack. Operator D's profile points to a capacity-led pattern in the locations where its stronger 5G performance is present, alongside weaker average signal and latency at the city-wide aggregate level. That combination produces the highest variance

across areas of any of the four operators. It is the strongest network in six of the 19 areas and the weakest in two.

These profiles should not be read as an overall recommendation. No single operator is best everywhere or across every metric. One operator may be strongest for upload and latency in many places, another may lead for download speed, and another may provide the strongest signal. The right interpretation is that London's mobile experience is highly local and metric-specific.





9 | The asymmetry challenge: location-dependent performance

Why your experience depends on where you are, not only on which network you use

This section presents one of the most significant patterns in the data: the quality of mobile network performance varies enormously between operators in the same location. We refer to this as the ‘asymmetry challenge’, meaning the performance is uneven and location-specific rather than consistent across the city.

In 14 of the 19 areas we tested, the gap between the best-performing and worst-performing network

exceeded 75 per cent. Importantly, the strongest network is not the same everywhere. In some areas Operator A performs best while Operator D lags; in others, the positions are reversed. The implication is that performance is location-dependent: the experience a customer has in any given location reflects both the network they happen to be on and the choices that have been made about infrastructure in that specific place.

Mobile Performance Gaps Reflect Shared Infrastructure Factors

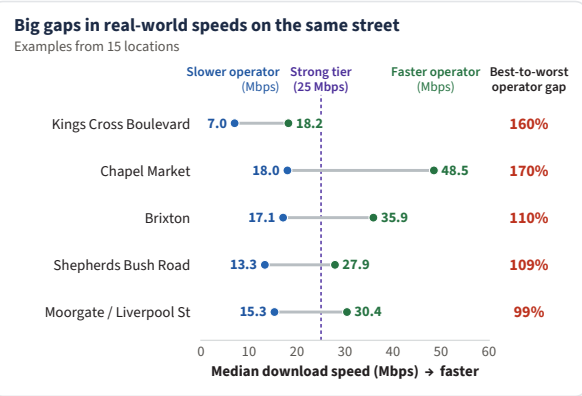
RootMetrics® and Ookla® Walk-test Campaign | H2 2025

The same street can deliver very different experiences depending on the network.



Large performance gaps on the same street point to structural factors, not user choice.

City context, site access, planning processes and operator deployment choices all shape outcomes.



Why gaps persist on the same street

Common structural factors

- Site availability**
Limited access to suitable sites and timely permissions constrain network density.
- Planning & coordination**
Uncoordinated works and inconsistent standards slow deployments.
- Backhaul & infrastructure**
Insufficient backhaul capacity and duct access limit performance potential.
- Spectrum access**
Fragmented or delayed access to spectrum limits capacity and coverage.



Shared local evidence. Clearer infrastructure context. More consistent mobile experiences.

Results shown are median download speeds. Operators anonymised.

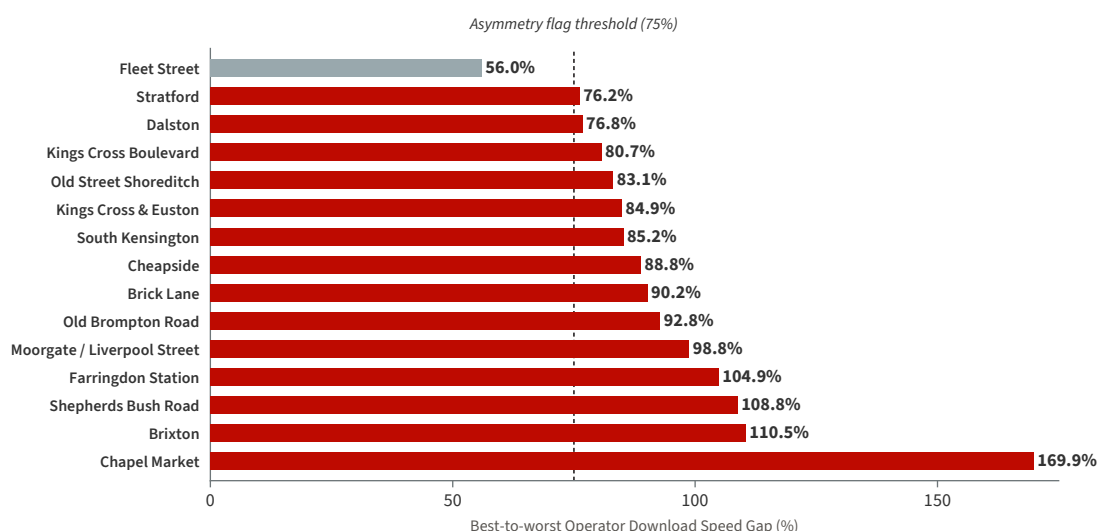
RootMetrics

OOKLA

Operator Asymmetry by Area of Interest

Ookla® Data, RootMetrics® | Winter 2025

Operator best-to-worst download gap by Area of Interest. The 75 per cent line marks the asymmetry flag threshold used in this report.



RootMetrics

OOKLA

Figure 4. Operator best-to-worst download gap by Area of Interest. The 75 per cent line marks the asymmetry flag threshold used in this report.

A taxonomy of failure modes

The asymmetry data point to three distinct types of infrastructure pattern, each with different implications for interpretation:

- **Operator-specific gaps:** areas where one or two operators significantly underperform peers in an otherwise reasonable area. Example: at Chapel Market the worst operator delivers around 18 Mbps while the best delivers around 48 Mbps in the same street. These cases can reflect differences in small-cell deployment, spectrum allocation, site access, rooftop availability or backhaul, and are best investigated operator by operator.
- **Macro coverage gaps:** areas where all four operators show weak performance, indicating a shared infrastructure condition. Examples: Brick Lane, Eversholt Street, Dalston and Kings Cross Boulevard. These cases point to planning, hosting and asset-availability factors that sit alongside operator-by-operator investment decisions.
- **Capacity and backhaul bottlenecks:** areas where signal strength is good but throughput and latency are below expectations. Examples include Stratford and Kings Cross and Euston, both major transport hubs with strong macro signal but more limited speed and latency performance. These cases may indicate capacity or backhaul constraints alongside radio configuration, site density and core-network factors; additional radio sites alone may not resolve them.

Where best-operator performance also fails the framework

Two areas in the dataset deserve particular attention because even their best-performing network falls below the Strong download threshold of 25 Mbps. At Kings Cross Boulevard, the strongest operator delivers around 18 Mbps and the weakest around 7 Mbps,

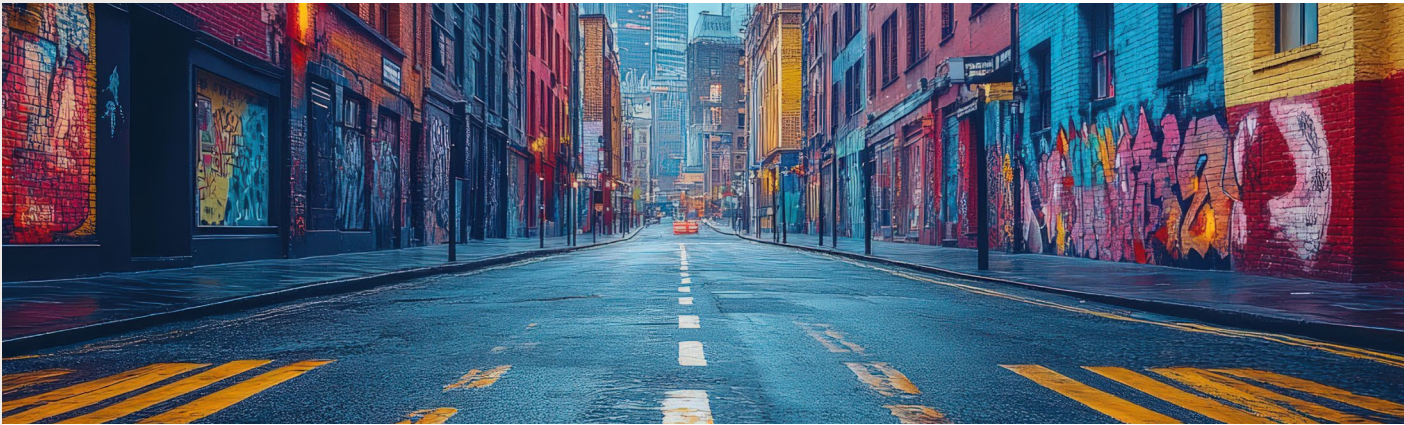
meaning that no choice of network can rescue the experience without infrastructure investment. The same applies at Eversholt Street and Somers Town. In these locations, asymmetry is not the central policy challenge: the absence of city-grade infrastructure is.

Why this matters for the user, and for the city

When performance is this uneven between operators, reporting averages can hide real problems. If three quarters of areas show a gap of 75 per cent or more between the best and worst network, then a customer's experience depends almost entirely on whether the operator they happen to be on has invested in that specific location.

This report does not recommend that customers switch networks. Publicly available consumer information generally does not reveal fine-grained, street-level comparative performance, contracts have associated costs, and the best network changes depending on where the customer is. Switching may help in one area and hurt in another. The better use of the evidence base is to understand and reduce the asymmetry itself, so that the experience in any given area is more consistent across networks rather than dependent on a fortunate coincidence between location and provider.





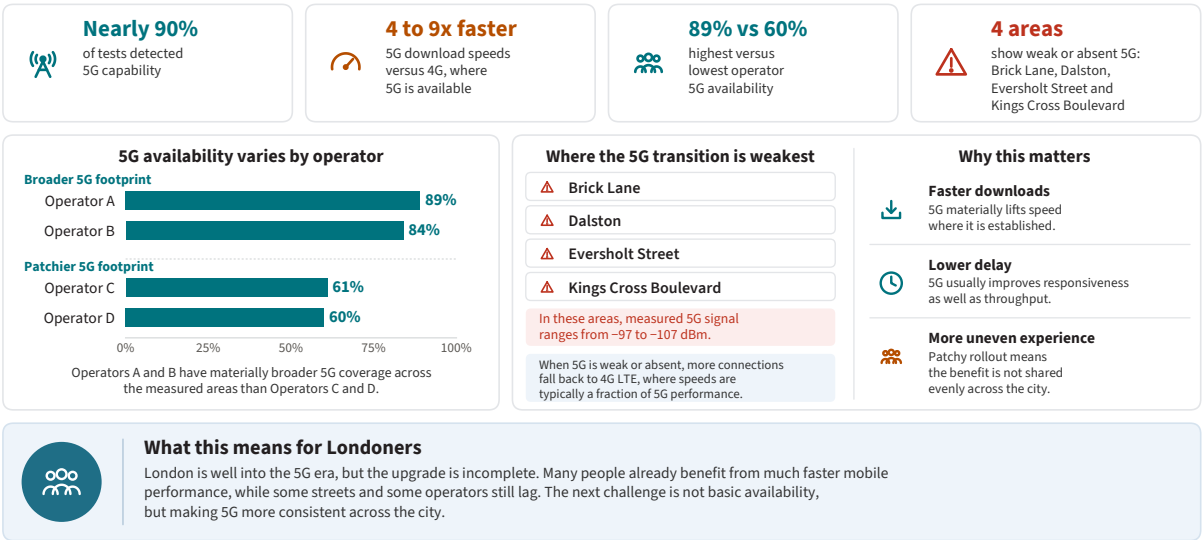
10 | 5G: the transformation underway

5G is changing the experience, but not everywhere

5G Is Reshaping London, But the Rollout Is Uneven

RootMetrics® and Ookla® Walk-test Campaign | H2 2025

Nearly 90% of tests detected 5G, but coverage still varies sharply by operator and area.



RootMetrics

Around 10,900 tests across 19 London areas. 5G findings reflect the report's measured London dataset.

Ookla

Nearly 90 per cent of tests detected 5G capability. This is a remarkable figure that shows how quickly 5G has become the main mobile technology in London. The benefits are substantial: 5G delivers download speeds 4 to 9 times faster than 4G. In areas where 5G is well established, the user experience is noticeably better.

The distinction between 5G today and 5G standalone matters: much of the consumer 5G experience still depends on non-standalone architecture, so speed gains do not automatically translate into the very low latency associated with mature standalone 5G.

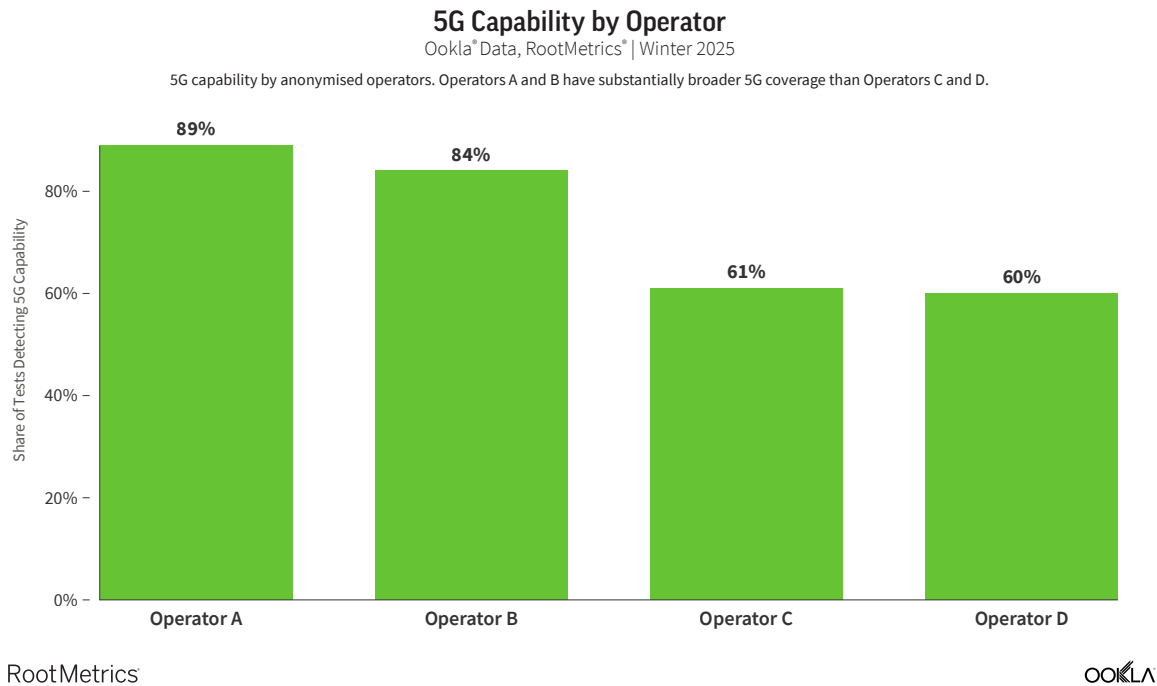


Figure 5. 5G capability by operator. Operators A and B have substantially broader 5G coverage than Operators C and D.

However, 5G rollout is uneven. Operators A and B have achieved 84 to 89 per cent 5G coverage across the areas we tested, while Operators C and D lag at 60 to 61 per cent. This gap is likely to become more significant over time as new applications and services are designed to take advantage of 5G speeds.

Some areas also show materially weaker 5G performance. Brick Lane, Dalston, Eversholt Street

and Kings Cross Boulevard show weak or absent 5G signals (with 5G signal strengths between -97 and -107 dBm), even though older 4G service is available. In those locations, connections on operators with patchier 5G coverage are more likely to fall back to 4G LTE, where speeds are typically a fraction of 5G performance. These are the locations where the operator-by-area combination matters most for end users.



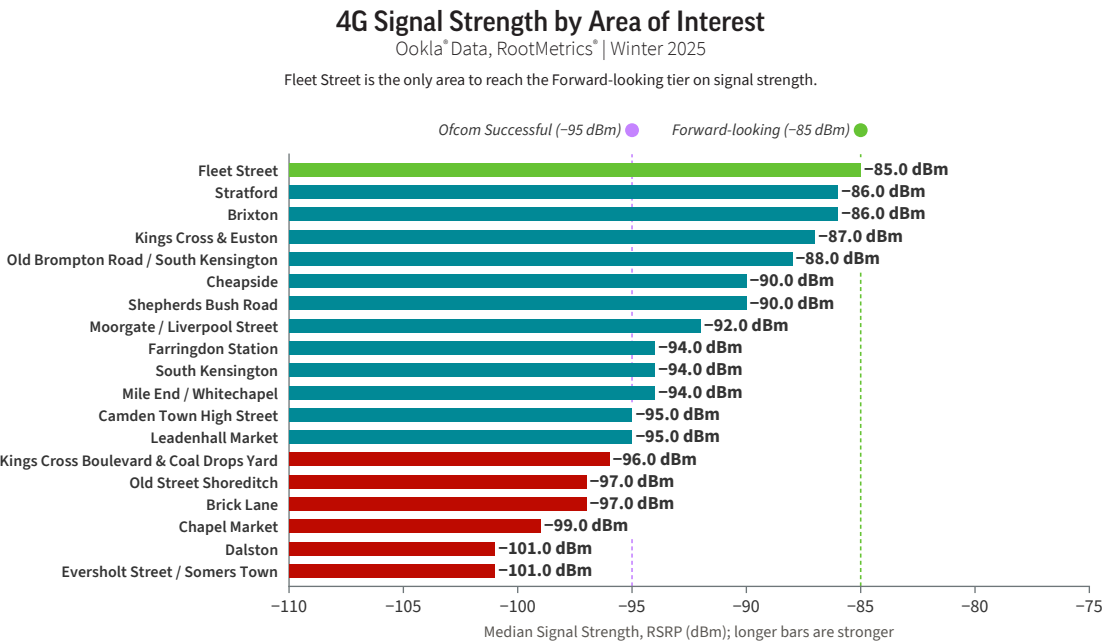
11 | Signal quality and infrastructure gaps

Where signals are weakest

Signal strength is a key indicator of how stable and capable a mobile connection will be. When signal is poor, phones must use less efficient methods to encode data, which reduces speed. Poor signal also increases the chance that connections will drop or that the phone will fail to switch smoothly between masts as you move (a handover failure).

Eight of the 19 areas we tested were at or below the rounded boundary between ‘Good outdoor’ and

‘Variable’ signal under Ofcom’s outdoor thresholds. While connections are still possible in these areas, they are more vulnerable to weak indoor reach, congestion and local reliability problems. The affected areas fall into two categories: places where all operators have weak signal, suggesting an area-wide infrastructure gap, and places where one or two operators lag materially behind the rest.



RootMetrics

OOKLA

Figure 6. Median signal strength by Area of Interest. Fleet Street is the only area to reach the Forward-looking tier on signal strength.

The inner-north and east London cluster

The geographic pattern of weak signal is not random. Looking at the data borough by borough, the four boroughs of Camden, Islington, Hackney and Tower Hamlets contain a clear concentration of areas that sit at or below the -95 dBm Strong signal threshold. Of the 10 measured Areas of Interest in these four

boroughs, seven sit at or below the threshold; the three that clear it (Kings Cross & Euston Road at -87 dBm, Farringdon Station and Mile End Road / Whitechapel both at -94 dBm) do so only narrowly. The table below makes the cluster visible:

Borough	Area measured	Signal performance	Failure rate (strong -95 dBm)
Camden	3	2 of 3 fail (-96 and -101 dBm); Camden Town High Street at -95 dBm sits at the boundary	67% (+1 at boundary)
Islington	4	2 of 4 fail (-97 and -99 dBm); Farringdon Station at -94 dBm and Kings Cross & Euston Road at -87 dBm clear the threshold	50%
Hackney	1	1 of 1 fails (-101 dBm)	100%
Tower Hamlets	2	1 of 2 fails (-97 dBm); Mile End Road / Whitechapel at -94 dBm clears the threshold	50%
City of London	4	0 of 4 fail; Leadenhall Market at -95 dBm sits at the boundary	0% (+1 at boundary)
Kensington & Chelsea	2	0 of 2 fails	0%
Newham	1	0 of 1 fails (-86 dBm)	0%
Lambeth	1	0 of 1 fails (-86 dBm)	0%
Hammersmith & Fulham	1	0 of 1 fails (-90 dBm)	0%

Table 9. Borough-level signal performance against the Strong -95 dBm threshold. Failing areas are concentrated in the four-borough cluster of Camden, Islington, Hackney and Tower Hamlets; the four other inner and outer boroughs measured pass uniformly, with one boundary case (Leadenhall Market) in the City of London.

This is a 'doughnut hole' of weak coverage in inner north and east London. The pattern is consistent with what mobile industry trade body Mobile UK has reported about London's mast planning environment overall: Greater London approves fewer than 40 per cent of new mast applications, compared with more than 80 per cent in Greater Manchester, Leeds and Edinburgh. Mobile UK also reports that around 7 per cent of London's strategic rooftop sites are out of action at any given time because of Notices to Quit, driven in part by the 270 tall-building developments completed across London in the last decade.

Publicly available borough strategies and asset-hosting approaches vary across this cluster. Some boroughs publish dedicated connectivity or digital-inclusion plans; others focus on fibre, rooftop hosting or area-specific regeneration policies. The important evidence point for this report is not to grade individual boroughs, but to show that the weak-signal pattern cuts across borough boundaries and is therefore best understood as a cross-borough infrastructure condition.

Why some areas with weak signal still perform well

A striking pattern emerged at Old Street. The area has weak 4G signal (-97 dBm) but delivered the highest download speed of all 19 areas (29.11 Mbps) and the lowest latency (51 ms). This happened because operators have installed a dense network of small cells (compact equipment attached to lamp posts, bus shelters and building walls) in the area, reflecting its status as a major technology hub. These small cells compensate for the weakness of the larger masts.

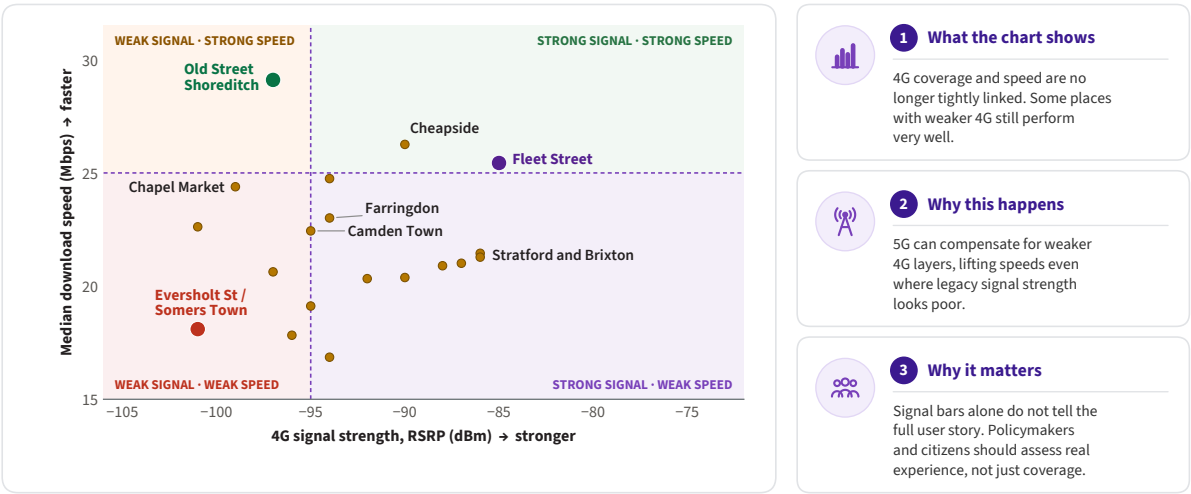
Old Street is not the only area where weak macro signal coexists with strong real-world experience. Chapel Market (-99 dBm signal but 24 Mbps download and 55 ms latency) and Dalston (-101 dBm but 22 Mbps download and 62 ms latency) both exhibit similar small-cell-driven compensation. These cases show that small-cell infrastructure can materially change user experience even where macro signal is

weak. The City of London Corporation’s pioneering small-cell pilot, designed under a concession with Cornerstone and delivered by Freshwave, is the clearest London example of this approach in practice. The pilot started with a 10-site, multi-operator deployment along Queen Victoria Street in December 2022, with two operators live within weeks of each other (the third joining subsequently). It has since expanded materially: a further tranche of 25 small cells across City landmarks including Cannon Street, the Bank of England on Threadneedle Street and the area around St Paul’s Cathedral was reported live in 2025, with dozens more in build under an extended Freshwave partnership. The City of London Corporation’s published Digital, Data and Technology Strategy 2024 to 2029 commits to expanding the programme across the wider Square Mile.

Weak 4G Doesn’t Always Mean Slow

RootMetrics® and Ookla® Walk-test Campaign | H2 2025

Across 19 London Areas of Interest, 4G signal strength alone no longer explains download speed. 5G is helping some weak-4G locations perform much better than expected.



RootMetrics®

OOKLA®



12 | Indoor cellular connectivity: the gap behind the front door

What the outdoor picture does not show

London's walk-test results tell a story of outdoor street-level performance. A complementary body of evidence, derived from Ookla Speedtest Intelligence's indoor observation dataset, which identifies measurements conducted inside buildings using

patented indoor confidence filters, reveals a different picture. Where outdoor measurements show London broadly competitive on download speed, the indoor data exposes a structural gap that the street-level view cannot see.

Coverage-ready floor space: London, Berlin, and New York

Ookla's indoor cellular study covers four quarters from Q2 2025 to Q1 2026 across London and Berlin, with a Q1 2026 comparative point for New York. The metric is the share of observed indoor floor area where the cellular signal meets a consistent quality threshold (see Appendix B for more detail). A building floor area meeting this threshold is described as 'coverage-ready'.

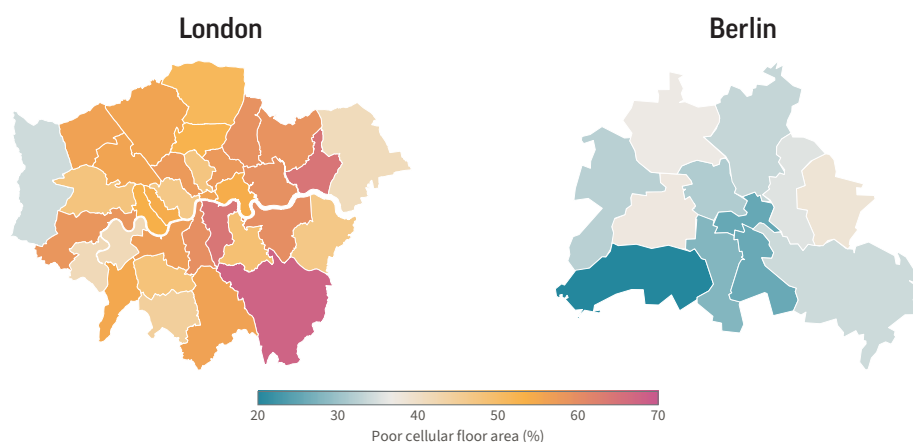
In Q1 2026, London had 46.6 per cent of measured indoor floor area meeting the coverage threshold. Berlin reached 68.4 per cent and New York

69.0 per cent. The London gap relative to both is approximately 22 percentage points on all-technology coverage, and approximately 29 percentage points on 5G specifically (where London stands at 42.7 per cent against Berlin's 71.5 per cent and New York's 65.5 per cent). Both comparator cities are thus roughly twice as far along the indoor 5G coverage journey as London. The divergence on 5G is notably wider than on blended coverage, suggesting that next-generation indoor reach is where the gap between London and its international peers is sharpest.

The Indoor Cellular Gap Now Has a Map, Not Just an Average

Ookla® Data | Q1 2026

London's indoor coverage not-spots are broader and deeper; Berlin's gaps are smaller but still locatable at borough-equivalent level.



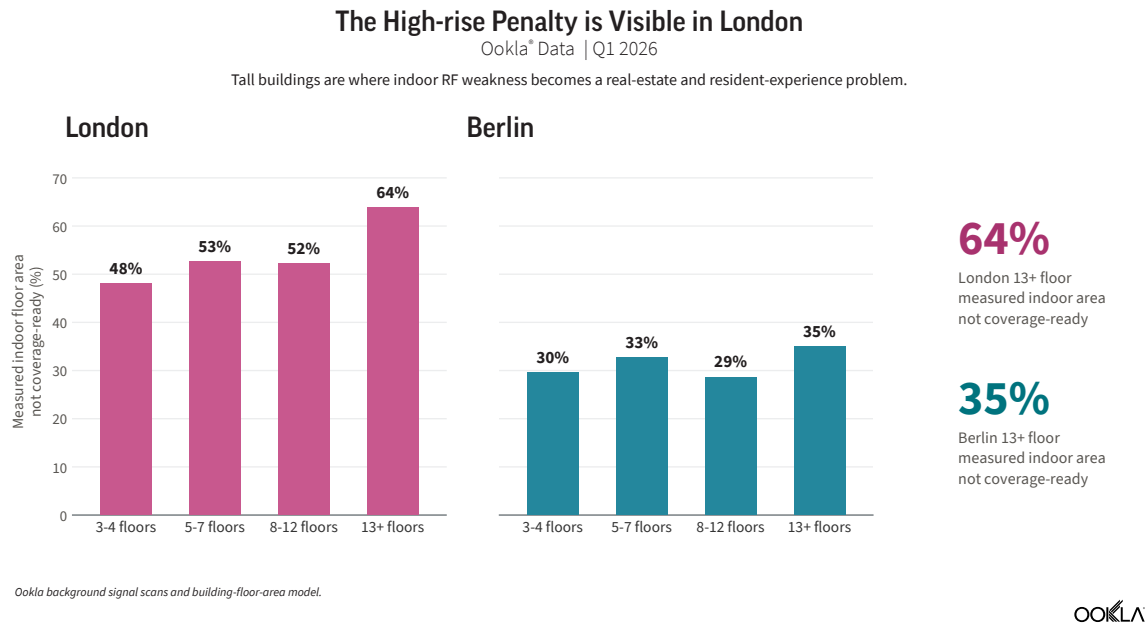
Ookla background signal scans and building-floor-area model.
Colour scale shows the share of measured indoor floor area below the RF-quality threshold.

OOKLA

What is driving the gap

London’s indoor gap is particularly acute in tall and large buildings. Across four quarters, 41.9 per cent of building observations with 13 or more floors were coverage-ready, versus 52.5 per cent with 5 to 7 floors.

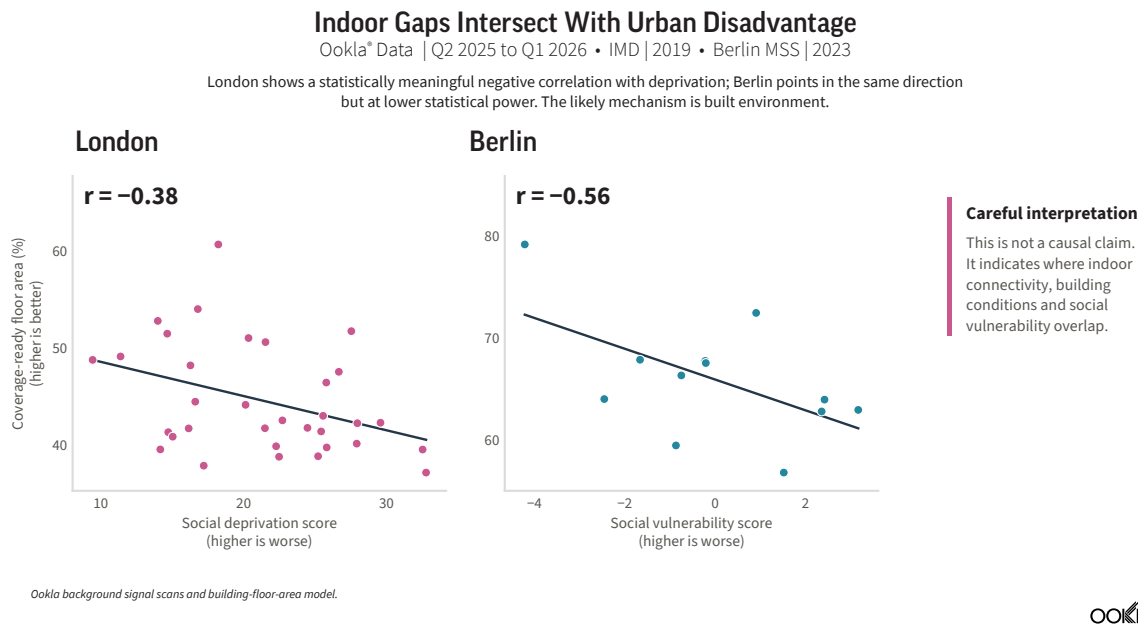
Berlin’s corresponding shares were 62.8 and 69.7 per cent: a smaller 7.0 percentage-point height penalty. These building-observation shares differ from the Q1 2026 floor-area shares shown in the chart below.



In absolute terms, London’s 13-plus floor band contains 23.2 million square metres of measured floor area (spaces that meet a stringent minimum sample size for inclusion in this study). Almost two-thirds of that is not yet coverage-ready, equivalent to roughly 15 million square metres, or about 2,100 full-size football pitches of high-rise floor space.

Across London boroughs, more deprived areas tend to have weaker indoor mobile coverage. In our analysis,

boroughs with higher deprivation were less likely to meet the indoor coverage threshold, with a statistically significant negative relationship between deprivation and coverage readiness. Areas such as Newham and Hackney appear less coverage-ready than wealthier outer London boroughs such as Richmond upon Thames and Hillingdon. This suggests that indoor connectivity investment has not yet fully aligned with where the need may be greatest.



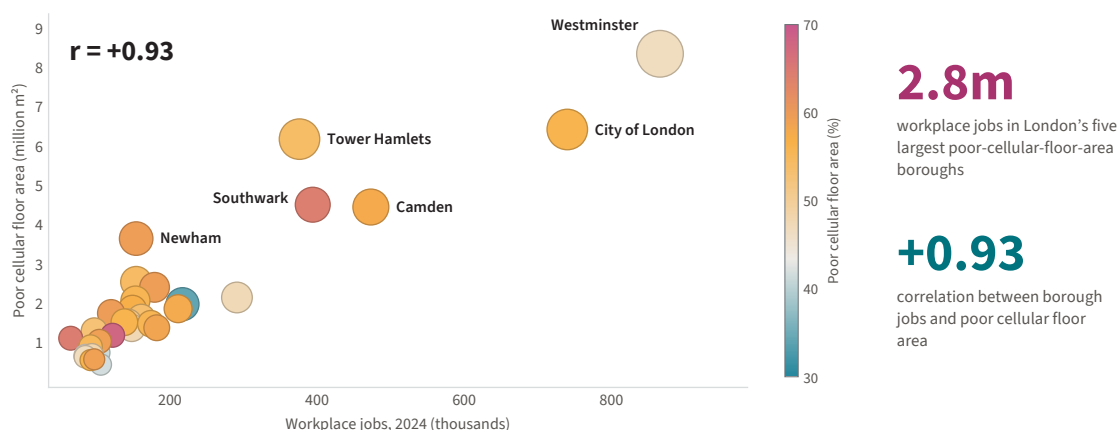
These findings also illuminate the gap between modelled and measured coverage. Ofcom's modelled 4G indoor coverage for London sits at over 98 per cent across boroughs. Across four quarters, Ookla's borough-average readiness is 44.5 per cent, a gap of over 54 percentage points. The two measures are asking very different questions: modelled coverage measures predicted signal reach at the building facade, not quality

inside the floor area. But the scale of the gap makes clear why the distinction between signal availability and indoor connectivity experience matters. Ofcom's own June 2026 discussion paper 'Connectivity You Can Count On' identifies in-building connectivity as one of its four priority work areas for 2026/27 (a recognition that predicted outdoor coverage has long overstated what users actually experience inside buildings).

The Largest Gaps Sit Where London Works

Ookla® Data | Q1 2026 • GLA/ONS Jobs and Job Density • Borough | 2024

Overlaying GLA/ONS workplace jobs shows that poor cellular indoor floor area is concentrated in the city's highest-employment boroughs.



Ookla background signal scans and building-floor-area model.

OOKLA

Implications for London's connectivity standard

Indoor connectivity has direct policy relevance for London. The Mayor's London Plan Policy SI 6 requires major development proposals to demonstrate that appropriate digital connectivity, including mobile, will be available throughout the development. This is a planning lever that can require developers to install in-building infrastructure (such as distributed antenna systems or passive cable routes) before occupation.

The indoor data in this study provides an evidence base to prioritise where that intervention is most needed: specifically, in large commercial and residential developments in inner north and east London, where both outdoor signal and indoor coverage are weakest, and where deprivation adds an equity imperative to the infrastructure case.



13 | Spotlight: four examples where infrastructure choices shape performance

Spotlight 1: where new development meets old infrastructure (Kings Cross Boulevard and Coal Drops Yard)

Kings Cross Boulevard, the spine of the 67-acre Argent-led King's Cross Central regeneration scheme that began in 2001, is now home to anchor tenants including Google's 11-storey, 330-metre King's Cross headquarters (often referred to as the 'landscaper') and Meta's 11-21 Canal Reach building. Coal Drops Yard, the retail anchor designed by Heatherwick Studio, opened in October 2018 in the converted Grade II Victorian coal sheds. The wider area contains the King's Cross / St Pancras Conservation Area (designated 2003), the Regent's Canal Conservation Area (designated 1974) and a high concentration of Grade I and Grade II listed buildings, including the Granary Complex and Eastern Coal Drops.

Yet the area scores near the bottom of our rankings (rank 16, score 44.5), failing the Strong tier on three of four metrics, and even the operator with the strongest performance here delivers only around 18 Mbps. Coverage appears weaker than would be expected for such a prominent location. This is consistent with a common regeneration challenge:

new buildings can block lines of sight to existing large masts, while local small-cell provision does not always keep pace with new demand. The King's Cross / St Pancras Underground station saw 77.13 million entries and exits in 2024 (London's second-busiest Tube station), and St Pancras International is one of Europe's principal high-speed rail gateways. The boulevard between St Pancras International, Coal Drops Yard and Granary Square is precisely the kind of glass-and-concrete corridor where macro signal can degrade and small-cell density becomes important.

King's Cross sits inside the Mayor's King's Cross Opportunity Area, which targets 1,000 homes and 25,000 jobs by 2041. The contrast between that ambition and the area's current measured performance is one of the clearer signals in the dataset that connectivity in major regeneration sites is relevant to the Greater London Authority, the local boroughs, operators, Transport for London and major property owners.

Spotlight 2: where small cells are working (Old Street and Shoreditch)

Old Street and Shoreditch present a striking contrast: weak 4G signal (-97 dBm) but the highest download speed (29.11 Mbps) and lowest latency (51 ms) of all areas tested. The 51 ms latency is just one millisecond above the Strong tier's 50 ms ceiling, the closest any London area comes to that threshold. Old Street's measured profile is consistent with a network being served from dense, fibre-fed small cells rather than from distant macro masts, which is the technical reason download and latency look this strong despite weak macro signal. The £132 million transformation of the Old Street roundabout, opened in stages from late 2023 into 2024 after a multi-year delay, rebuilt the carriageway

and associated ducting and provided the very ducting that subsequent small-cell deployments, including Boldyn Networks' multi-site programme that has named Old Street alongside King's Cross, Waterloo and London Bridge as a deployment location, have used.

The Old Street evidence is useful because it shows that weak macro signal does not automatically translate into poor user experience where dense, fibre-fed small cells are present. It offers a comparator for other areas with weak signal and high footfall, including Brick Lane and Dalston, without implying that the same delivery model will fit every location.

Spotlight 3: where everyone struggles (Brick Lane)

Brick Lane, in the Spitalfields and Banglatown ward of the London Borough of Tower Hamlets, sits inside the Brick Lane and Fournier Street Conservation Area, one of 58 conservation areas in the borough. It contains numerous Grade I and Grade II listed assets including Nicholas Hawksmoor's Christ Church Spitalfields, the former Truman Brewery's Director's House and Brewmaster's House, and the Brick Lane Jamme Masjid. Tower Hamlets has imposed an Article 4 Direction across the ward removing permitted development rights for office-to-residential conversions, reflecting the area's particular planning sensitivity.

Brick Lane is the textbook case of a concentrated infrastructure gap. All four operators show weak signal (-97 dBm), and performance is poor across the board. Under the Capital Connectivity Standard, Brick Lane fails the Strong tier on three of four metrics: download (20.63 Mbps versus 25 Mbps), latency (83 ms versus 50 ms) and signal (-97 dBm versus -95 dBm). Brick Lane is a major

tourism, retail and night-time-economy district, making poor connectivity particularly damaging: visitors expect reliable mobile connections, businesses can lose sales when contactless payment systems fail, and the curry-house and Sunday-market economy depends heavily on weekend tourist footfall.

The recent planning controversy around the Old Truman Brewery applications illustrates the wider challenge. Three redevelopment applications submitted in August 2024 were unanimously refused by Tower Hamlets Council in July 2025, subsequently recovered by the Secretary of State, and are the subject of a Public Inquiry that began in October 2025. Multi-year landlord and tenant uncertainty in conservation areas can increase Notice-to-Quit risk for mobile rooftop tenancies and make operator investment more complex. The evidence suggests that the Brick Lane connectivity challenge should be considered alongside the area's heritage status, land ownership, street-furniture availability and redevelopment pipeline.

Spotlight 4: The Boldyn-TfL concession, small cells on streets and below ground

Transport for London's Boldyn Networks concession is the most instructive single example in our dataset of what neutral host infrastructure can achieve at scale. Boldyn holds a 20-year exclusive agreement with TfL that grants access to over 80,000 fibre-connected street assets (lamp posts, CCTV poles, traffic signals and bus stops) across Zones 1 and 2, together with 2,000 km of TfL ducting and 400 km of underground fibre. No new planning permissions are required: the TfL asset base provides a ready-made mounting and backhaul platform for rapid, low-friction deployment.

By October 2025, Boldyn had deployed over 200 5G-capable small cells on TfL street assets in central London, operating as a neutral host network to which all four major UK operators (EE, Vodafone, Three and Virgin Media O2) can connect.

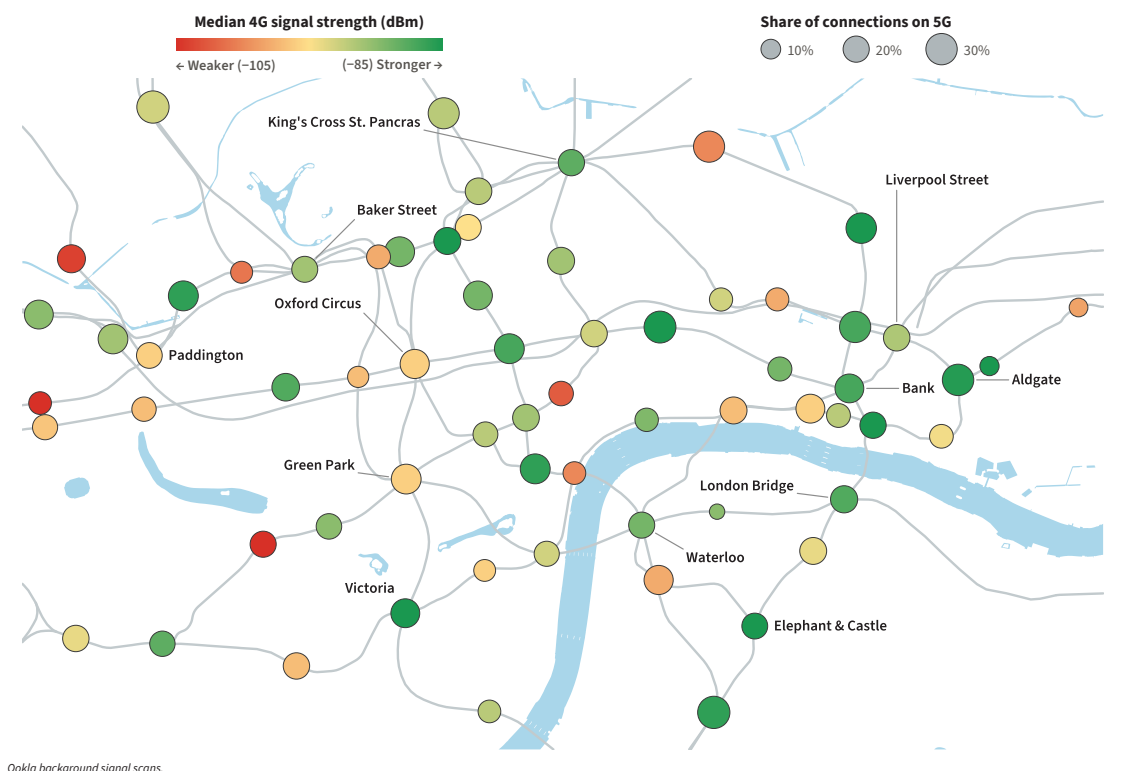
Locations confirmed as live include King's Cross, Waterloo, London Bridge, Old Street, Hyde Park Corner and the Shard. The deployment model achieves order-to-activation in approximately three months, far below typical industry timescales (because ducting, power and backhaul are pre-existing). Boldyn has cited up to 300 Mbps download and up to ten times faster speeds in high-demand locations as headline performance outcomes.

The same concession simultaneously delivers the long-awaited upgrade to mobile coverage across the deep-level Underground network. From June 2021, Boldyn began threading 4G and 5G infrastructure through tunnels serving the Elizabeth line, Northern, Metropolitan and other lines. By early 2026, 62 of 121 subterranean stations were live with high-speed coverage.



5G Has Reached the Heart of the London Underground

Ookla® Data | Below-ground Zone 1 Stations, 25 March to 30 April 2026



OOKLA

Ookla's own crowdsourced scan data from London's Underground network, collected between March and April 2026, provides an independent read of the rollout's progress. Measurements captured across approximately 96 below-ground station zones show that around one in five connections below ground is already on 5G, and that signal strength in covered tunnels is broadly comparable to the street directly above, holding within 2 to 3 dB of surface levels even at depths below 20 metres. This is a direct consequence of the distributed antenna design, which places radiating elements within the tunnels themselves rather than relying on signal penetration from the surface.

This report's walk-test data adds an instructive comparison. Old Street, named by Boldyn as one of its first street-asset small-cell deployment areas alongside King's Cross, Waterloo and London Bridge, ranks first of all 19 London areas tested for download speed (29.11 Mbps) and has the lowest latency in the dataset (51 ms), despite having weak 4G macro signal (-97 dBm). This is consistent with small-cell infrastructure supporting performance.

The Boldyn-TfL model illustrates a broader principle: where neutral-host infrastructure is deployed on publicly accessible street assets with pre-existing power and backhaul, barriers to deployment are substantially lower, speed to market is faster, and the benefit is shared by all operators equally rather than accruing to whichever operator controls the asset.



14 | Looking ahead

What comes next

Ookla's Speedtest crowdsourced data is increasingly being used alongside the controlled walk-test findings, providing city-wide trend data that complements the precision of the walk-test results. The two sources work together: controlled tests give precise, comparable measurements at named locations, while crowdsourced data captures the breadth of real-world user experience. Section 6 of this report draws on Speedtest data for the international comparison.

An ongoing measurement programme would create a shared, transparent picture: operators, the Greater London Authority and central government will be able to see how the city is moving over time, and the framework will be available for other city authorities to apply to their own data.

Any future editions of the programme may broaden the framework over time. The set of measures may be extended as consistent data becomes available at scale, drawing on additional indicators such as jitter, packet loss, video quality of experience and voice quality. The geographic coverage may also broaden, with areas currently under-represented in the dataset progressively included.

Over time, the value of this programme may extend beyond telecommunications policy. By tracking conditions in commercial centres, town centres, transport hubs and growth areas, the Greater London Authority can begin to use mobile performance as one indicator of whether London's broader growth ambitions are being supported in practice. That would align future reports with the London Growth Plan's emphasis on productivity, inclusive growth, thriving high streets, housing and infrastructure, and support for innovation, and with the Mayor's London Infrastructure Framework target of addressing the 390,000 premises in London still without gigabit access.

Finally, future reports may compare measured London outcomes against other major cities, including Dublin, Singapore, Seoul and other global centres that publish or support independent mobile-quality evidence, and may add UK city comparators where consistent samples are available. The Capital Connectivity Standard provides a transparent, replicable framework for this comparison, and the partnership invites other city authorities to apply it to their own data.

Appendix A | Per-area Capital Connectivity Standard scoring

The table below shows how each of the 19 measured areas scores against the four Strong checks of the Capital Connectivity Standard, plus the operator asymmetry flag. An area is classified as city-ready if it passes all four checks; near city-ready (3 of 4);

watchlist (2 of 4); priority (1 of 4); or critical (0 of 4). The asymmetry flag is applied separately, based on whether the best-to-worst operator download gap exceeds 75 per cent. It is used to identify local unevenness, not to recommend an operator.

Area	Checks Met	Download (≥25)	Upload (≥8)	Latency (≤50)	Signal (≥-95)	Asymmetry (>75% gap)	Tier
Fleet Street	3 of 4	Yes	Yes	No	Yes	Not flagged	Near city-ready
Cheapside	3 of 4	Yes	Yes	No	Yes	Flagged	Near city-ready
Stratford	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Brixton	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Kings Cross & Euston Road	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Old Street Shoreditch	2 of 4	Yes	Yes	No	No	Flagged	Watchlist
Shepherds Bush Road	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Old Brompton Road / South Kensington	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Farringdon Station	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
South Kensington	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Moorgate / Liverpool Street	2 of 4	No	Yes	No	Yes	Flagged	Watchlist
Camden Town High Street	2 of 4	No	Yes	No	Yes	Not flagged	Watchlist
Mile End Road / Whitechapel	2 of 4	No	Yes	No	Yes	Not flagged	Watchlist
Leadenhall Market	2 of 4	No	Yes	No	Yes	Not flagged	Watchlist
Chapel Market	1 of 4	No	Yes	No	No	Flagged	Priority
Kings Cross Boulevard & Coal Drops Yard	1 of 4	No	Yes	No	No	Flagged	Priority
Brick Lane	1 of 4	No	Yes	No	No	Flagged	Priority
Dalston	0 of 4	No	No	No	No	Flagged	Critical
Eversholt Street / Somers Town	0 of 4	No	No	No	No	Not flagged	Critical

Table 10. Capital Connectivity Standard scoring for each of the 19 Areas of Interest against the Strong tier. No area currently meets all four checks. Fleet Street and Cheapside are within one (latency). Twelve areas reach two of four. Three areas (Chapel Market, Kings Cross Boulevard, Brick Lane) are at one. Dalston and Eversholt Street meet none. The asymmetry flag is applied to the 14 areas where the best-to-worst operator download gap exceeds 75 per cent.

Appendix B | Indoor connectivity

The indoor connectivity findings in Section 12 are based on Ookla Speedtest Intelligence data from background signal scans inside buildings between Q2 2025 and Q1 2026. Scans are filtered using GPS accuracy of 20 metres or better and at least 70 per cent indoor confidence. Coverage-ready requires median RSRP of -105 dBm or stronger, and either median SINR of 10 dB or better, or median RSRQ of -10 dB or better. These coverage tests follow indoor/location filtering and minimum sample qualification; they do not select the scans.

London and Berlin use the delivered all-technology coverage flags. New York's share is a derived LTE-or-NR union: either radio layer can qualify. The analysis covers observed floor area, rather than a census of every building. Because it relies on background scans from participating devices, busy commercial and mixed-use areas are better represented than quiet residential streets. Results describe measured locations and should be read with these sampling and comparability limits.

References

Ofcom, Connectivity You Can Count On: A discussion paper on achieving good, reliable mobile performance, June 2026

Department for Science, Innovation and Technology (DSIT), Draft Statement of Strategic Priorities for Telecommunications, the Management of Radio Spectrum and Postal Services, February 2026

Department for Science, Innovation and Technology (DSIT), Mobile Market Review Call for Evidence, March 2026

Department for Science, Innovation and Technology (DSIT), UK 10-Year Infrastructure Strategy, June 2025

Boldyn Networks, 200+ Small Cells to Boost London Connectivity, October 2025

Boldyn Networks and EE, partnership announcement, November 2023

Transport for London / Boldyn Networks, London Underground 4G/5G connectivity rollout

Ookla Speedtest Intelligence, Indoor Cellular Performance Study: London, Berlin and New York, 2026

Numerical thresholds, regulator positions, application requirements and London policy and infrastructure context cited in this report are drawn from the following primary sources. All sources are publicly accessible.

Ofcom (United Kingdom)

- Ofcom, Map Your Mobile coverage checker methodology, August 2025. Available at: <https://www.ofcom.org.uk/siteassets/resources/documents/phones-telecoms-and-internet/comparing-service-quality/2025/map-your-mobile-2025-threshold-methodology.pdf>
- Ofcom, Connected Nations UK Report 2024. Available at: <https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/multi-sector/infrastructure-research/connected-nations-2024/connected-nations-uk-report-2024.pdf>
- Ofcom, Connected Nations 2024 Methodology Annex. Available at: <https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/multi-sector/infrastructure-research/connected-nations-2024/connected-nations-2024-annex.pdf>
- Ofcom, Mobile Matters 2025. Available at: <https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/telecoms-research/mobile-matters/2025/mobile-matters-2025.pdf>
- Ofcom, Map Your Mobile coverage checker (consumer page). Available at: <https://www.ofcom.org.uk/phones-and-broadband/coverage-and-speeds/map-your-mobile>

International regulators and standards

- ARCEP, Mon réseau mobile (France). Available at: <https://monreseau-mobile.arcep.fr/>
- Federal Communications Commission, 2024 Section 706 Report. Available at: <https://docs.fcc.gov/public/attachments/FCC-24-27A1.pdf>
- Federal Communications Commission, 5G Fund for Rural America. Available at: <https://docs.fcc.gov/public/attachments/FCC-24-89A1.pdf>
- Canadian Radio-television and Telecommunications Commission, CRC Technical Report on Mobile Coverage Metrics 2025. Available at: <https://crtc.gc.ca/eng/publications/reports/mobile2025.htm>
- Australian Communications and Media Authority, Outcomes Paper on Mobile Coverage Mapping Standard, March 2026. Available at: https://www.acma.gov.au/sites/default/files/2026-03/outcomes_paper_-_proposal_to_make_mobile_coverage_mapping_standard.pdf
- Infocomm Media Development Authority (Singapore), Quality of Service standards. Available at: <https://www.imda.gov.sg/regulations-and-licensing-listing/dealer-and-equipment-registration-framework/compliance-to-imda-standards/quality-of-service>
- Bundesnetzagentur (Germany), spectrum extension decision, March 2025. Available at: https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2025/20250324_frequenzen.html

International regulators and standards (continued)

- Ministry of Science and ICT (Republic of Korea). Available at: <https://www.msit.go.kr/eng/index.do>
- AGCOM (Italy), Misurainternet platform. Available at: <https://www.agcom.it/node/124>
- International Telecommunication Union, Recommendation ITU-R M.2410-0: Minimum requirements for IMT-2020. Available at: https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-M.2410-2017-PDF-E.pdf
- International Telecommunication Union, Recommendation ITU-T Y.1541: Network performance objectives. Available at: <https://www.itu.int/rec/T-REC-Y.1541-201112-I>
- 3rd Generation Partnership Project, Technical Specification 22.261. Available at: <https://www.3gpp.org/DynaReport/22261.htm>

Application vendor requirements

- Microsoft, Prepare your organisation's network for Microsoft Teams. Available at: <https://learn.microsoft.com/en-us/microsoftteams/prepare-network>
- Zoom, System requirements. Available at: https://support.zoom.com/hc/en/article?id=zm_kb&sysparm_article=KB0060748
- Netflix, Internet connection speed recommendations. Available at: <https://help.netflix.com/en/node/306>
- OpenAI, Realtime API documentation. Available at: <https://platform.openai.com/docs/guides/realtime>
- Google, Gemini Live API. Available at: <https://ai.google.dev/gemini-api/docs/live-api>

Greater London Authority and London policy

- Mayor of London, Connected London programme. Available at: <https://www.london.gov.uk/programmes-strategies/business-and-economy/mayors-priorities-londons-economy-and-business/connected-london>
- Mayor of London, Half of London homes now able to access full fibre. Available at: <https://www.london.gov.uk/press-releases/mayoral/mayor-launches-plans-to-tackle-londons-not-spots>
- The London Plan 2021. Available at: <https://www.london.gov.uk/programmes-strategies/planning/london-plan/the-london-plan-2021-table-contents>
- Mayor of London, Digital Connectivity Infrastructure Guidance, October 2024. Available at: <https://www.london.gov.uk/media/107156/download>
- Mayor of London, London Growth Plan. Available at: <https://www.london.gov.uk/programmes-strategies/business-and-economy/mayors-priorities-londons-economy-and-business/london-growth-plan>
- Mayor of London, Towards a new London Plan consultation. Available at: <https://www.london.gov.uk/programmes-strategies/planning/london-plan/towards-new-london-plan-consultation>
- Mayor of London, Mayor launches plans to tackle London's not-spots. Available at: <https://www.london.gov.uk/press-releases/mayoral/mayor-launches-plans-to-tackle-londons-not-spots>
- Mayor of London, London's Opportunity Areas. Available at: <https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/londons-opportunity-areas/oa-locations>
- Theo Blackwell MBE, Chief Digital Officer for London. Available at: <https://www.london.gov.uk/who-we-are/what-mayor-does/mayor-and-his-team/theo-blackwell-mbe>

Transport for London and connectivity delivery

- Boldyn Networks, Transport for London case study. Available at: <https://www.boldyn.com/uk-ie/case-study/transport-for-london-case-study>
- Transport for London, Mobile coverage on Elizabeth line complete. Available at: <https://tfl.gov.uk/info-for/media/press-releases/2024/july/first-tunnelled-section-of-elizabeth-line-gets-high-speed-mobile-coverage>
- JCDecaux, JCDecaux wins Transport for London bus shelter advertising concession (April 2025). Available at: <https://www.jcdecaux.com/press-releases/jcdecaux-wins-transport-london-tfl-iconic-bus-shelter-advertising-concession-8-years>
- City of London Corporation, City of London Digital Connectivity Project. Available at: <https://www.cornerstone.network/casestudies/the-city-of-london-digital-connectivity-project/>
- Freshwave, City of London small cell case study. Available at: <https://freshwavegroup.com/case-studies/outdoor-small-cell-pilot-in-city-of-london/>

Borough digital strategies

- London Borough of Camden, Connecting Camden. Available at: <https://contact.camden.gov.uk/web/guest/connecting-camden>
- London Borough of Hackney, Hackney Digital Strategy 2025-28. Available at: <https://hackney.moderngov.co.uk/documents/s95304/Hackneys%20Digital%20Strategy%20October%202025.pdf>
- London Borough of Tower Hamlets, Digital Inclusion Action Plan 2025-28. Available at: <https://towerhamlets.moderngov.co.uk/mgConvert2PDF.aspx?ID=264006>
- London Borough of Hackney, Future Shoreditch Area Action Plan. Available at: https://hackney.moderngov.co.uk/documents/s95652/Appendix+1+Future+Shoreditch+Area+Action+Plan+-+Proposed+Submission+Version+2025_compressed.pdf
- Hyperoptic and London Borough of Islington, partnership announcement. Available at: <https://www.hyperoptic.com/press/posts/islington-council-signs-with-hyperoptic-to-become-leading-london-borough-for-fibre-connectivity/>

Mobile industry policy commentary

- Mobile UK, London's Digital Future: a critical juncture for mobile infrastructure in the new London Plan. Available at: <https://www.mobileuk.org/news/londons-digital-future-a-critical-juncture-for-mobile-infrastructure-in-the-new-london-plan>
- UK Parliament Commons Library, Planning rules for 5G masts in England. Available at: <https://commonslibrary.parliament.uk/planning-rules-for-5g-masts-in-england/>

Comparable city programmes

- Ookla and Dublin City Council, A Data-Driven Model for Urban Connectivity, November 2024. Available at: <https://smartdublin.ie/wp-content/uploads/2021/01/Ookla-2024-Data-Driven-Model-for-Urban-Connectivity.pdf>
- Smart Dublin, Ookla partnership launch announcement. Available at: <https://smartdublin.ie/new-partnership-with-ookla-launched-to-deliver-a-data-driven-approach-to-city-telecoms/>

About this report

Report prepared by the Greater London Authority and Ookla.

Data collection: controlled walk-test measurement campaign by RootMetrics (an Ookla company) across 19 Areas of Interest, second half of 2025. Approximately 10,900 individual network tests across all four major UK mobile operators.

Analysis date: May 2026.

Operator identities are concealed to focus on system-wide patterns. Operators A, B, C and D do not correspond to any particular alphabetical or market-share ordering. The report does not recommend any particular operator. The data shows that no single network is best everywhere, and that performance is location-dependent.

Alternative format requests. The Greater London Authority is committed to making its publications accessible to all. If you require this document in an alternative format (large print, audio, easy read or another language), please contact the Greater London Authority via the channels published on london.gov.uk.

International comparison sources (Section 6)

- Ookla Speedtest Intelligence, mobile network performance data, Q1 2026 (1 January to 31 March 2026), 19-city comparator set. Available at: <https://www.ookla.com/speedtest-intelligence>
- Ookla, Speedtest Methodology. Available at: <https://www.ookla.com/resources/guides/speedtest-methodology>
- Ookla, Speedtest Connectivity Index Methodology, 26H1 edition. Available at: <https://www.speedtest.net/global-index>
- Stokab AB, About our network. Available at: <https://stokab.se/en/stokab/about-us/what-we-do/our-network-a-city-network>
- Net4Mobility background. Available at: <https://en.wikipedia.org/wiki/Net4Mobility>
- Telia and Telenor, TT-Network 5G NR sharing announcement, March 2020. Available at: <https://www.nokia.com/about-us/news/releases/2020/03/04/nokia-telenor-and-telia-create-the-worlds-most-advanced-shared-wireless-network-in-denmark/>
- European Commission, Digital Connectivity in Spain. Available at: <https://digital-strategy.ec.europa.eu/en/policies/digital-connectivity-spain>
- Ministry of Science and ICT (Republic of Korea), 2024 Communication Service Coverage Inspection and Quality Evaluation. Available at: <https://www.msit.go.kr/eng/index.do>

Ookla is a global leader in connectivity intelligence that provides consumers, businesses, and other organisations with data-driven insights to improve networks and connected experiences. We help our customers efficiently solve their biggest connectivity challenges and drive forward innovation.



ookla.com

Copyright © 2026 Ookla, Inc. All rights reserved.