

LaGuardia Airport (LGA)

Venue Network Intelligence Report

Rev 1, first issue, 2026-09-15

T-Mobile leads 5G at the gates: healthy at 56 of 80 gates and the strongest 5G carrier at 76 of 80. Verizon and AT&T tie at a 5G gate median below the healthy line (-98.3 and -98.6 dBm, 0.3 dB apart) while both carry healthy LTE at 77 and 75 of 80 gates. Boingo Wireless is the Port Authority's neutral-host cellular (DAS) and Wi-Fi provider at LGA under the agreement announced October 14, 2025 (2026 to 2038, option to 2043; Boingo has operated the Port Authority's airport wireless since the 1999 New York Telecom Partners agreement). This baseline measures 80 gates, 108 mapped venue points, 34,844 RF tiles, and 16,970 usage tiles over a 12-month window.

Prepared by the Imagine Wireless Network Intelligence Platform

Data window: 2025-09-01 to 2026-08-31 · Issued: 2026-09-15 · Freshness: 15 days (within the 90-day policy)
Primary sources: Ookla Cell Analytics (per-carrier RF tiles; All Networks usage and density tiles) · OpenStreetMap gates, terminal polygons, and tenant points (pinned 2026-09-15)

Reference sources: Port Authority of New York and New Jersey releases and terminal pages · Boingo Wireless press release (held) · design-firm records · FAA enplanement statistics · public press

CONFIDENTIAL. Prepared for Port Authority of New York and New Jersey stakeholder review

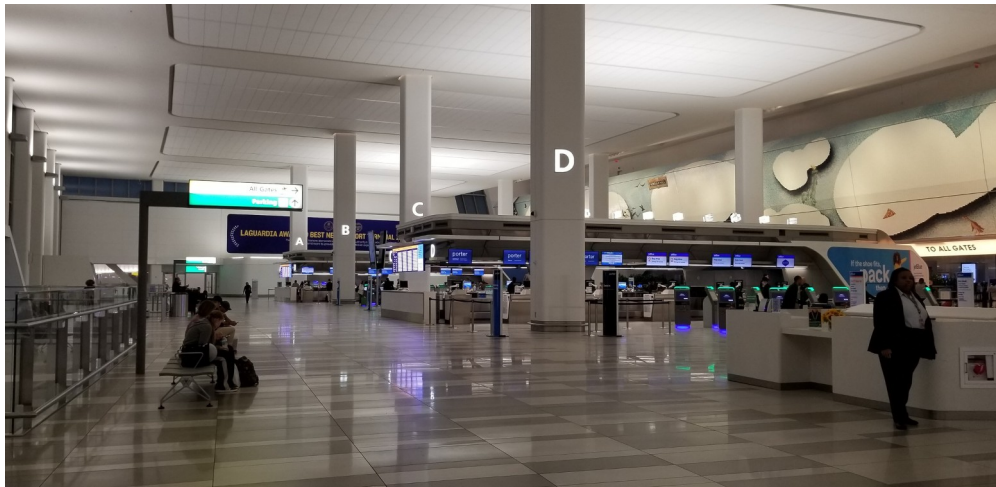


PHOTO. Terminal B Level 3 ticketing and check-in hall, October 2025. · Photo: Silver Dovelet, CC BY-SA 4.0, via Wikimedia Commons

Best 5G at the gates	Cleanest signal quality	Critical 5G signal (below -110 dBm)	Terminal-zone Wi-Fi offload
T-Mobile · median -90.8 dBm (7.5 dB ahead of Verizon and 7.8 dB ahead of AT&T; n=80 gates)	T-Mobile · median SINR +13.3 dB	0 of 240 gate-carrier pairs	58.6% of observed MB on tiles assigned to a terminal zone (n=15,326); 60.9% over the whole clip (n=16,970)

Contents

- 1. Executive readout
- 2. Venue snapshot and asset inventory
- 3. Carrier findings (3.0 carrier summary · 3.1 T-Mobile results · 3.2 Verizon results · 3.3 AT&T results · 3.4 5G footprint and coverage-band attachment · 3.5 RSRQ, CQI, and optimization priority · 3.6 serving-cell volatility)
- 4. The view by terminal zone (4.1 healthy share and medians · 4.2 coverage class and PCI diversity · 4.3 cross-carrier concordance by gate · 4.4 Terminal B · 4.5 Terminal C · 4.6 Terminal A (Marine Air Terminal) · 4.7 building-masked view)
- 5. Tenant level (5.1 category RSRP and SINR · 5.2 terminal vs periphery proxy · 5.3 airline clusters · 5.4 retail and food brands · 5.5 lounges)
- 6. Load and density
- 7. Wi-Fi as an augmentation layer
- 8. Private wireless
- 9. Spectrum and service availability
- 10. Carrier-asymmetry atlas
- 11. Federal and operational-critical tenants
- 12. Passenger-impact translation
- 13. Prioritized recommendations
- 14. Post-deployment monitoring criteria and re-measurement plan
- 15. Next layers to add
- 16. Method, thresholds, confidence, and caveats
- Appendix A. Lowest-reading mapped points per carrier ($n \geq 30$ tiles only)
- Appendix B. Strongest-serving band tables per carrier (with footprint share)
- Appendix C. Full gate table

1. Executive readout

Provenance legend: measured values compute from the Ookla exports at build time. Facts marked "cited" come from public records (Port Authority releases and terminal pages, design-firm records, FAA statistics, press) and are not measurements. The Boingo Wireless agreement is a held source. Section 16 defines every threshold and basis.

LaGuardia Airport is operated by the Port Authority of New York and New Jersey (PANYNJ). Terminal B is operated by LaGuardia Gateway Partners (Vantage Group and Meridiam) under a public-private lease with PANYNJ and Terminal C by Delta Air Lines under a lease with PANYNJ (cited). Boingo Wireless is the Port Authority's neutral-host cellular (DAS) and Wi-Fi provider at LGA under the agreement announced October 14, 2025 (2026 to 2038, option to 2043; Boingo has operated the Port Authority's airport wireless since the 1999 New York Telecom Partners agreement). Boingo's Terminal B neutral-host DAS and Wi-Fi system was designed for the headhouse and the 18-gate eastern concourse (engineering-firm design record; the Western Concourse is not stated in that record). This report is a baseline of the terminal area as measured in the window. It measures 80 gates, 108 mapped venue points, 34,844 radio-frequency (RF) tiles, and 16,970 usage tiles over the 12-month window ending 2026-08-31.

T-Mobile: leads 5G at the gates and in Terminal B and Terminal C; Terminal A is a three-way tie.

T-Mobile holds healthy 5G reference signal received power (RSRP) at 56 of 80 gates (70.0%; 14 gates within 1 dB of the line). Its venue gate median is -90.8 dBm, 7.5 dB ahead of Verizon and 7.8 dB ahead of AT&T. It is the strongest 5G carrier at 76 of 80 gates (Terminal A 6 of 6, Terminal B 32 of 36, Terminal C 38 of 38, counts) and reports 5G on 91% of its on-airport tiles, the widest footprint of the three. Its signal quality median is +13.3 dB (58 of 80 gates healthy). On the tile basis it leads Terminal B and Terminal C; Terminal A (Marine Air Terminal) is a three-way tie (medians -98.0, -98.0, -98.0 dBm; healthy shares 39%, 38%, 38%), and it is T-Mobile's lowest zone. Its LTE layer is the weakest of the three (gate median -95.0 dBm, 40 of 80 gates healthy).

Verizon: the LTE network of record, with a 5G layer that does not reach the gates.

Verizon is the strongest LTE carrier at 56 of 80 gates with an LTE gate median of -86.8 dBm (77 of 80 gates healthy). Its 5G gate median is -98.3 dBm, 3.3 dB below the healthy line, with 6 of 80 gates (7.5%; 11 gates within 1 dB of the line) healthy and a 5G signal-quality median of +5.5 dB (3 of 80 gates healthy), the lowest of the three. Verizon is the weakest carrier at 41 of 80 ranked asymmetry gates. Its weakest zone on the tile basis is Terminal B (32% of tiles healthy); its strongest is Terminal C (58%).

AT&T: tied with Verizon at the 5G gate median, with the smallest 5G footprint.

AT&T's 5G gate median is -98.6 dBm, 0.3 dB from Verizon's and inside the 1 dB noise floor, so the two are reported as tied at the gate median. 14 of 80 gates (17.5%; 11 gates within 1 dB of the line) are healthy, 66 are at risk, and 0 are critical. AT&T reports 5G on 59% of its on-airport tiles, the smallest footprint; the other 41% carry LTE only. Its LTE layer is healthy (gate median -87.8 dBm, 75 of 80 gates). On the tile basis AT&T is ahead of Verizon in Terminal B and Terminal C (Terminal A 38% vs 38%, Terminal B 58% vs 32%, Terminal C 70% vs 58%). AT&T is the weakest carrier at 35 of 80 ranked asymmetry gates.

Per terminal, for the two trailing carriers.

Terminal C gate medians: T-Mobile -84.8, Verizon -98.8, AT&T -101.3 dBm (n=38 gates). AT&T trails Verizon by 2.5 dB on the Terminal C gate median, and across gates 81 to 89B its per-gate means run -105.2 to -101.4 dBm (n=11 gates), within 8.6 dB or less of the critical line. Terminal B gate medians: T-Mobile -93.2, AT&T -96.3, Verizon -97.3 dBm (n=36 gates), with healthy 5G at 12 of 36 gates (33%) for AT&T against 4 of 36 gates (11%) for Verizon: in Terminal B the order of the two trailing carriers flips, AT&T ahead of Verizon.

How the order holds

Gate-median order: T-Mobile, then Verizon and AT&T. T-Mobile's margin is 7.5 dB over Verizon and 7.8 dB over AT&T, with T-Mobile healthy at 56 of 80 gates against 6 and 14. The Verizon-to-AT&T margin is 0.3 dB, under the 1 dB noise floor set in section 16, so Verizon and AT&T are tied at the gate median and this report never ranks one above the other on that figure. Verizon is listed second only because its median is numerically higher. The order reproduces from the tile export alone.

Why the baseline matters

Boingo Wireless is the Port Authority's neutral-host cellular (DAS) and Wi-Fi provider at LGA under the agreement announced October 14, 2025 (2026 to 2038, option to 2043; Boingo has operated the Port Authority's airport wireless since the 1999 New York Telecom Partners agreement). Boingo's Terminal B neutral-host DAS and Wi-Fi system was designed for the headhouse and the 18-gate eastern concourse (engineering-firm design record; the Western Concourse is not stated in that record), and the reconciled Airport DAS Master (2026-07-28) records the same arrangement and adds its shape: DAS yes, self-owned no, neutral host yes, contract 2026 to 2038 with a 10+3 term structure, awarded through an RFP in 2025, alongside an active Boingo Passport deployment (KG record on the DAS Master row). The 2026 to 2035 Port Authority capital plan (approved December 2025) funds a rebuild of the non-landmarked gate areas of the Marine Air Terminal; the dollar figure and schedule are not published (cited). As Boingo's in-building systems are extended and the Marine Air Terminal is rebuilt, this baseline is the design input and the before reading for section 14.

What the pattern is consistent with (inference)

Band first. Verizon's strongest-serving 5G band is NR3700 (C-band) on 70% of its 4,253 band-reporting 5G tiles; AT&T's is NR3700 or NR3500 on 87% of 319 (a small cell-resolved sample, section 9.1); T-Mobile's is NR2500 or NR1900 on 75% of 12,120. Strong LTE with weak C-band 5G over the same buildings (Verizon and AT&T LTE healthy at 77 and 75 of 80 gates; their 5G at 6 and 14) is the expected macro propagation picture for a large building: 3.5 to 3.7 GHz penetrates less than the 1.9 to 2.5 GHz that carries T-Mobile's 5G, which is healthy over 95% of the Terminal B headhouse tiles and 86% of the Terminal C tiles (section 4.7). The second hypothesis, which the Recommendation 1 attestation will test, is Boingo's in-building infrastructure carrying LTE for all three carriers but 5G NR for T-Mobile only. The export cannot separate the two; which carriers are on the DAS in each building is what Recommendation 1 asks the operators to attest.

How to read the order

Every ranking in this report is signal-layer: RSRP and signal-to-interference-plus-noise ratio (SINR) from an Android crowdsource panel. The export contains no throughput or latency, so it measures where signal is. It does not measure whether a call or app fails, and a strong-signal network can still be congested. The panel's composition differs by carrier and is Android-only, and handset vintage decides which devices can report C-band 5G (Verizon, AT&T) versus n41 (T-Mobile) at all, so cross-carrier comparisons inherit a device-population bias the export cannot correct. Nothing in this report is measured indoors; gate and tenant values are tiles within 80 m of a point (section 16).

2. Venue snapshot and asset inventory

Element	Value	Notes
Airport / IATA / ICAO	LaGuardia Airport / LGA / KLGA	FAA large hub; 32,800,000 total passengers in 2025, -2.2% versus 2024 (Port Authority; passengers in both directions, a different basis from the FAA enplanement figure used in section 12). All cited
Operating authority	Port Authority of New York and New Jersey (PANYNJ)	Terminal B under a public-private lease to LaGuardia Gateway Partners (Vantage Group and Meridiam); Terminal C under a lease to Delta Air Lines (cited)
Terminals analyzed	3	Terminal A (Marine Air Terminal): Spirit Airlines was the sole commercial lessee of the six gates until Spirit Airlines ceased all operations on 2026-05-02; the terminal then closed to the public for the rest of the window (cited). Terminal B: Air Canada, American Airlines, Frontier Airlines, JetBlue, Porter Airlines, Southwest Airlines, and United Airlines; headhouse plus the Eastern and Western concourses linked by two pedestrian bridges (cited). Terminal C: Delta Air Lines (the only airline listed by PANYNJ); the former Terminal D is part of the consolidated Terminal C; four concourses, completed December 2024 (cited)
Zones for tile assignment	3	Terminal A · Terminal B · Terminal C (nearest gate or tenant point within 500 m)
Gates analyzed	80	Terminal A 6, Terminal B 36, Terminal C 38 (OpenStreetMap inventory pinned 2026-09-15, zoned by terminal footprint). PANYNJ publishes 35 gates at Terminal B (gates 11 to 31 in the Western Concourse, 40 to 59 in the Eastern Concourse) and 37 to 38 gates at Terminal C (gates 60 to 98); the Marine Air Terminal has six gates (cited); the OpenStreetMap inventory is used as measured and the delta is disclosed in section 16. The design record's 18-gate eastern concourse corresponds to 19 Eastern Concourse gates in the inventory (gates 40 to 59)
Mapped venue points	108	48 food · 30 retail · 9 other · 9 services · 7 transport_admin · 5 lodging. Zone attribution: A 6, B 58, C 35, outside zones 9. OpenStreetMap capture, pinned 2026-09-15 (transcribed points only)
Carriers measured	3	T-Mobile · Verizon · AT&T (34,844 RF tiles; 16,970 All Networks usage tiles)
In-building cellular	Boingo Wireless neutral-host DAS and Wi-Fi	Boingo Wireless is the Port Authority's neutral-host cellular (DAS) and Wi-Fi provider at LGA under the agreement announced October 14, 2025 (2026 to 2038, option to 2043; Boingo has operated the Port Authority's airport wireless since the 1999 New York Telecom Partners agreement). Boingo's Terminal B

		neutral-host DAS and Wi-Fi system was designed for the headhouse and the 18-gate eastern concourse (engineering-firm design record; the Western Concourse is not stated in that record) (undated engineering-firm page; project images dated November 2022). The reconciled Airport DAS Master (2026-07-28) records the same arrangement and adds its shape: DAS yes, self-owned no, neutral host yes, contract 2026 to 2038 with a 10+3 term structure, awarded through an RFP in 2025, alongside an active Boingo Passpoint deployment. Per-building carrier loading is the Recommendation 1 attestation
Knowledge-graph coverage	Profile, deployments, capital-plan and benchmark evidence	Profile: large hub, 16,278,532 enplanements (KG record; year not recorded in the graph; the FAA calendar-2024 figure in section 12 is a different record and the two are never presented as the same quantity). Deployments recorded for Boingo Wireless: Passpoint, DAS, consistent with the agreement. Contracts query not available; no vendor rows beyond Boingo Wireless
Public Wi-Fi	SSID_Free LGA WiFi	Free; Boingo Wireless operates it under the Port Authority agreement
Capital program	The \$8 billion LaGuardia redevelopment (two public-private terminal programs)	Terminal B completed January 2022; Terminal C headhouse opened June 2022 and its consolidation was completed December 2024; the 2026 to 2035 Port Authority capital plan (approved December 2025) funds a rebuild of the non-landmarked gate areas of the Marine Air Terminal; the dollar figure and schedule are not published; the AirTrain LGA project was cancelled in March 2023; a \$160 million LaGuardia Link Q70 bus upgrade was announced in March 2025 with an on-airport stop near Terminal C (cited)
Recognition	Airports Council International ASQ 2025 best North American airport in the 25 to 40 million passenger class (third consecutive year); Skytrax best airport in North America 2025; Terminal B Skytrax 5-Star rating (2023 and 2025)	Context only (cited)



PHOTO. Apron-level night view of the Terminal C concourse from a taxiing aircraft, October 2023. Illustrative only. · Photo: DiscoA340, CC BY-SA 4.0, via Wikimedia Commons

How to read the measurement

Every cellular number in this report is an aggregate of crowdsourced background scans from consumer Android devices (about 3% of handsets; iOS devices are not sampled), binned by Ookla to map tiles of about 8 m by 11 m, then joined to gate and tenant points. The numbers describe where devices were over a 12-month window. They are not drive-test measurements. Every n counts tiles, and every table carries its n so thin cells are visible.

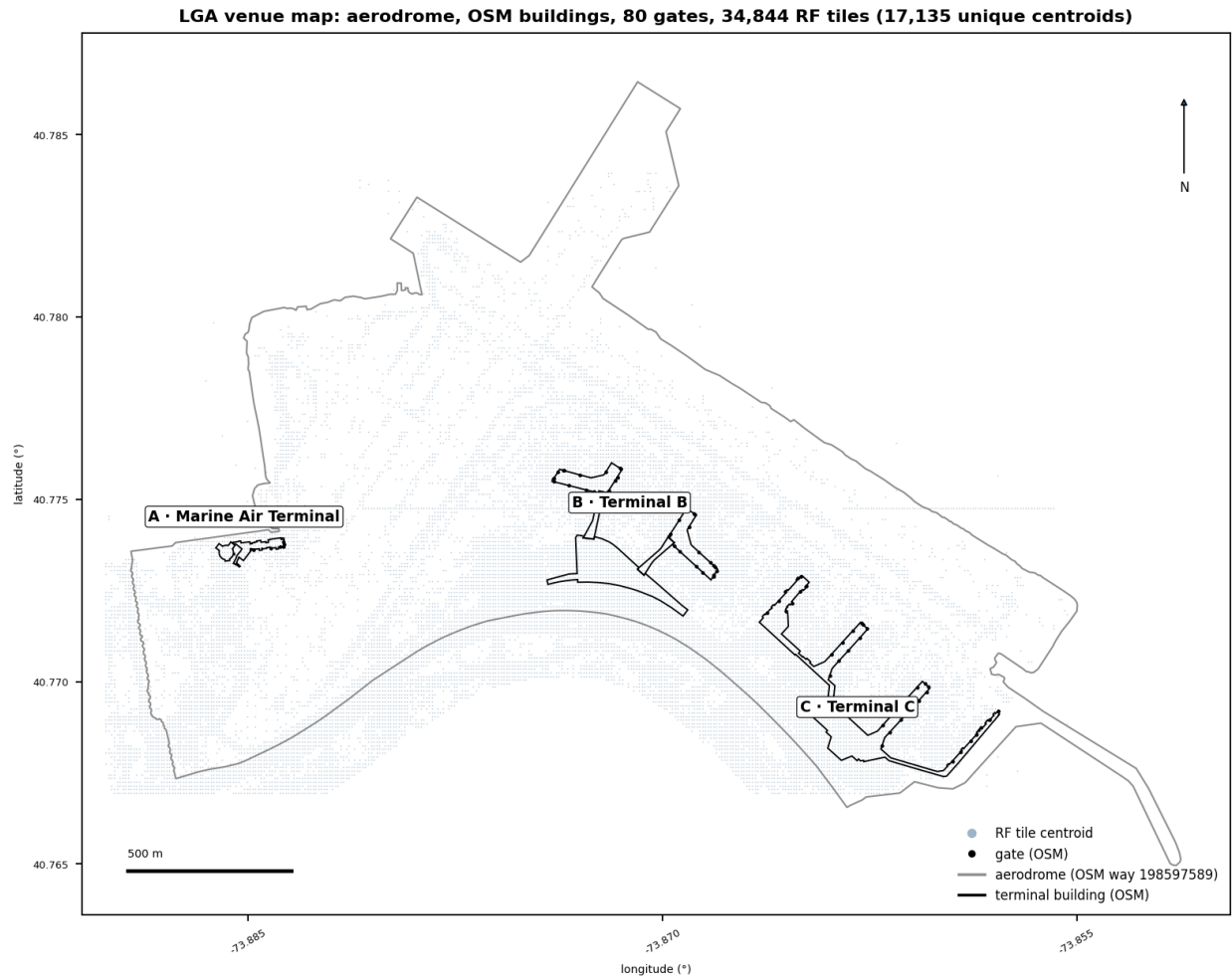


FIG. 1. Venue map: aerodrome outline, OSM terminal buildings, 80 gates, and the 34,844 on-airport RF tile centroids. North up; scale bar in meters. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

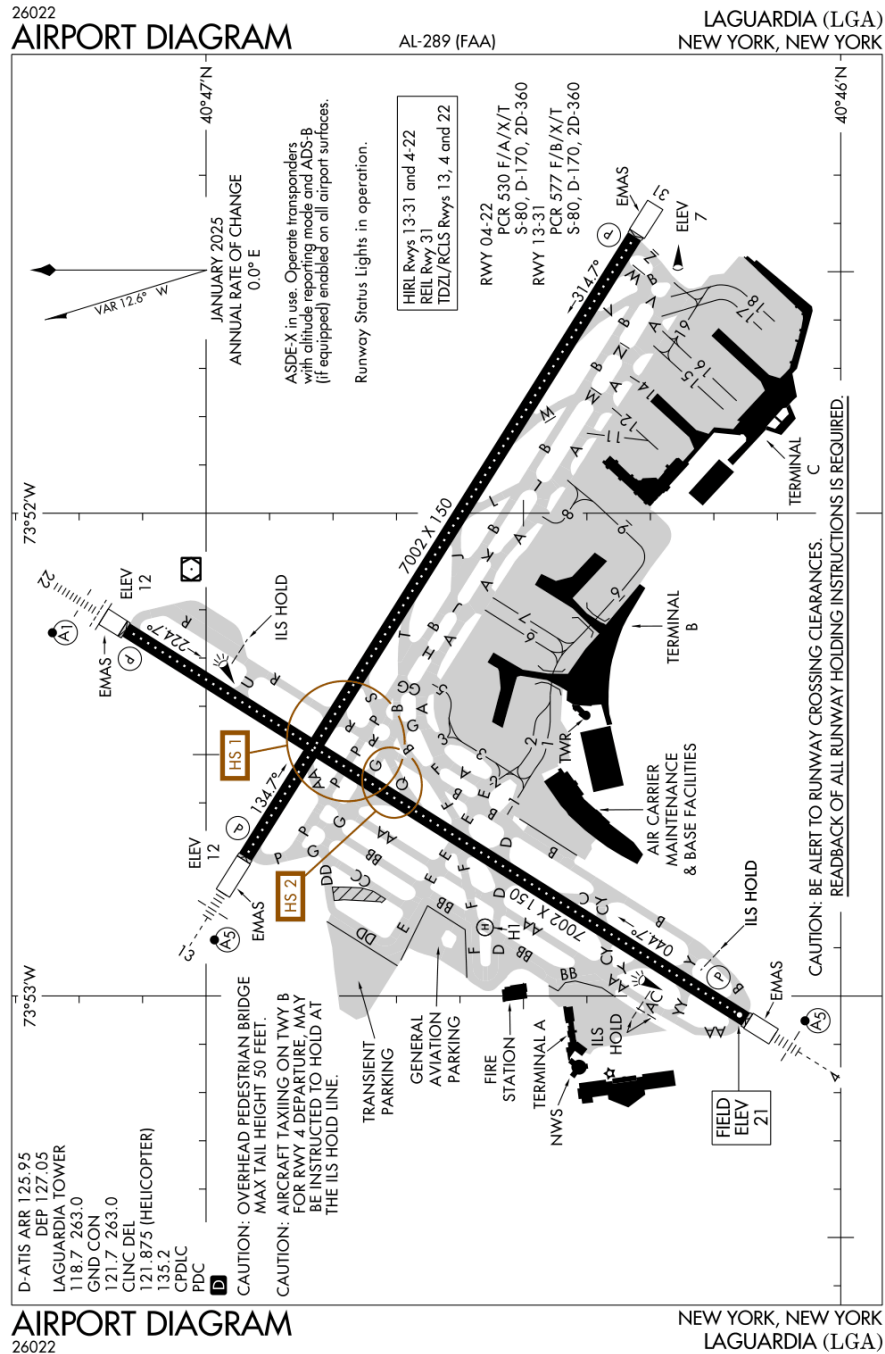


PHOTO. FAA airport diagram for LGA (January 2025 edition), reproduced for orientation. It is the FAA's drawing, not this report's geometry; runway and taxiway labels come from the FAA. · Photo: Federal Aviation Administration, Public domain, via Wikimedia Commons

3. Carrier findings

3.0 Carrier summary

Carrier	5G RSRP median	5G SINR median (dB)	LTE RSRP median	Healthy 5G gates	n (gates / RF tiles)
---------	----------------	---------------------	-----------------	------------------	----------------------

	(dBm)		(dBm)		
T-Mobile	-90.8	+13.3	-95.0	56 of 80	80 / 14,024
Verizon	-98.3	+5.5	-86.8	6 of 80	80 / 11,138
AT&T	-98.6	+8.4	-87.8	14 of 80	80 / 9,682

5G footprint and conditional medians (tile basis). Each 5G median is conditional on the tile reporting a 5G reading; the last column combines presence and level.

Carrier	5G footprint (% of tiles)	5G RSRP median over reporting tiles (dBm)	LTE RSRP median (dBm)	LTE-only tiles (%)	5G present and healthy (% of all tiles)	n (tiles)
T-Mobile	91%	-89.0	-93.0	8%	62%	14,024
Verizon	68%	-97.0	-85.0	30%	29%	11,138
AT&T	59%	-94.0	-88.0	39%	33%	9,682

LGA: venue-wide carrier medians (80 gates)

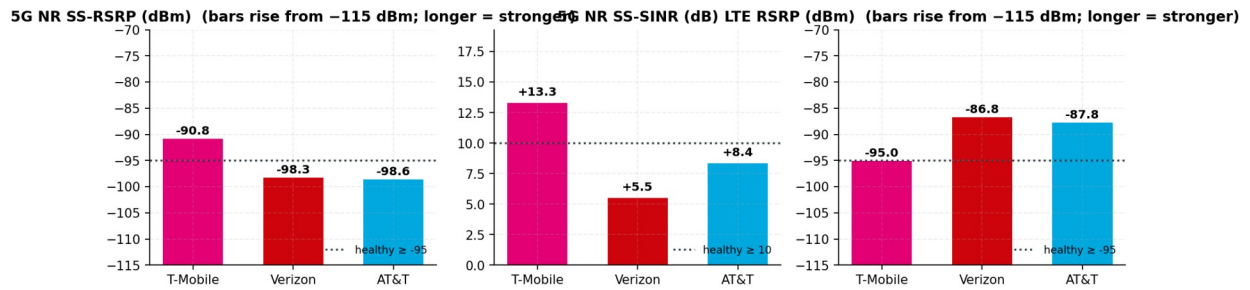


FIG. 2. Venue medians across 80 gates against the locked threshold ladder (section 16). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

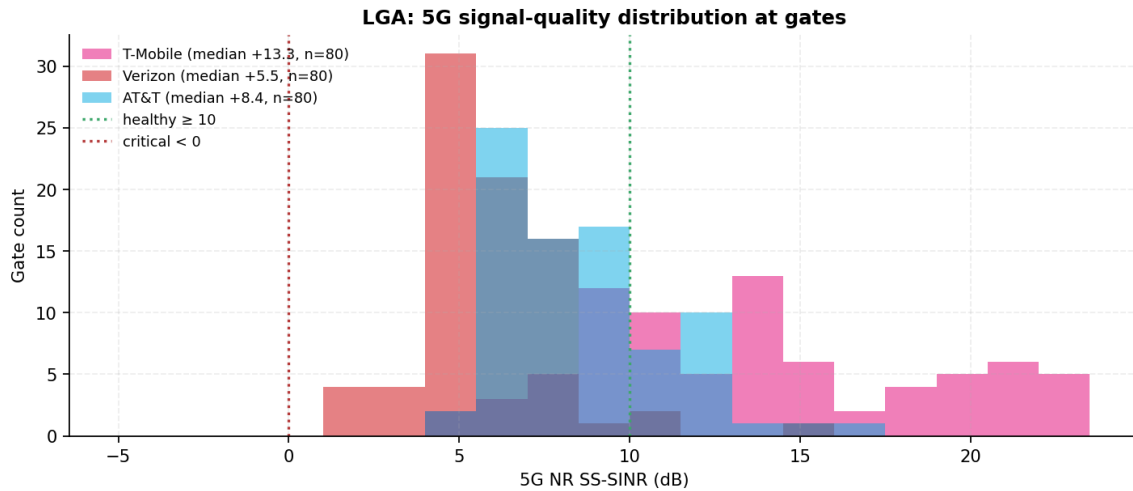


FIG. 3. SINR distribution per carrier at gate level. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

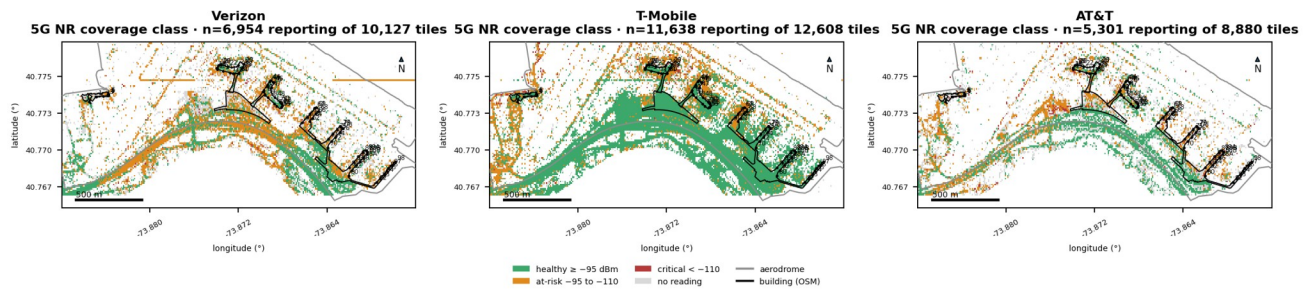


FIG. 4. Terminal-area map of 5G NR RSRP by tile and carrier, colored by the locked coverage class. Grey tiles carry no 5G reading. Each tile is about 8 m by 11 m; n is the tile count per panel. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

3.1 T-Mobile results

T-Mobile delivers the strongest 5G at the gates: 56 of 80 gates (70.0%; 14 gates within 1 dB of the line) in the healthy band, a venue gate median of -90.8 dBm, and the strongest 5G reading at 76 of 80 gates. SINR is $+13.3$ dB at the median (58 of 80 gates healthy). It reports 5G on 91% of its on-airport tiles (12,733 of 14,024); Verizon reports 5G on 68% and AT&T on 59%. Its LTE layer is the weakest of the three: LTE gate median -95.0 dBm, healthy at 40 of 80 gates, and the strongest LTE reading at 0 gates.

On the tile basis T-Mobile leads Terminal B and Terminal C: healthy on 71% of Terminal B tiles ($n=5,437$) and 83% of Terminal C tiles ($n=3,746$). Terminal A is a three-way tie at 39%, 38% and 38% healthy ($n=2,449$ T-Mobile tiles), inside the noise floor. Inside the pinned building footprints (section 4.7) it is healthy on 95% of Terminal B headhouse tiles and 86% of Terminal C tiles. FIG. 4 shows the pattern: green across the Terminal B headhouse and concourses, Terminal C, and the roadway spine. Its terminal-vs-periphery proxy is $+5.0$ dB (section 5.2), which the export cannot resolve between close-in coverage and an in-building or small-cell source. Boingo Wireless operates the Terminal B neutral-host system; which carriers ride on it per building is the Recommendation 1 attestation.

T-Mobile framed finding

Gate-median rank 1 of 3 on 5G, 7.5 dB ahead of Verizon and 7.8 dB ahead of AT&T; first on 5G reach; leads Terminals B and C on the tile basis with Terminal A a three-way tie; weakest on LTE. This is the parity bar Boingo's in-building systems must hold for T-Mobile while they lift Verizon and AT&T 5G.

3.2 Verizon results

Verizon's 5G gate median is -98.3 dBm, 3.3 dB below the healthy threshold and 7.5 dB behind T-Mobile. 6 of 80 gates (7.5%; 11 gates within 1 dB of the line) are healthy, 74 are at risk, and 0 are critical. Its 5G signal quality is the lowest of the three: SINR median $+5.5$ dB, healthy at 3 of 80 gates. It reports 5G on 68% of its on-airport tiles (7,535 of 11,138). Verizon is the weakest carrier at 41 of 80 ranked asymmetry gates (section 10).

Verizon's LTE layer is the network of record. It is the strongest LTE carrier at 56 of 80 gates with an LTE gate median of -86.8 dBm (77 of 80 gates healthy). On the tile basis Verizon is healthy on 58% of Terminal C tiles, 38% of Terminal A tiles, and 32% of Terminal B tiles; Terminal B is its weakest zone. Inside the footprints, Verizon's 5G is healthy on 24% of Terminal B headhouse tiles and 37% of Terminal C tiles, against 72% in the Eastern Concourse (section 4.7). Verizon's 5G is C-band (NR3700 on 70% of its band-reporting 5G tiles), so strong LTE with weak 5G over the same buildings is first the expected macro propagation picture for a large building (section 1); the second hypothesis, Boingo's in-

building system carrying Verizon LTE but not Verizon 5G, is what the Recommendation 1 attestation tests. The export cannot separate the two. Its terminal-vs-periphery proxy is +5.0 dB (section 5.2).

Verizon framed finding

Gate-median rank 2 of 3 on 5G only by 0.3 dB over AT&T, inside the noise floor, so tied with AT&T; first on LTE at 56 of 80 gates. The 5G gap is the largest at the Terminal B headhouse and Terminal C footprints, where its LTE is healthy. Verizon 5G NR onto Boingo's in-building systems is the first lift section 13 names, subject to the Recommendation 1 attestation of per-building carrier loading.

3.3 AT&T results

AT&T's 5G gate median is -98.6 dBm, 3.6 dB below the healthy threshold, 7.8 dB behind T-Mobile, and 0.3 dB from Verizon (a tie under the noise floor). 14 of 80 gates (17.5%; 11 gates within 1 dB of the line) are healthy, 66 are at risk, and 0 are critical. SINR is +8.4 dB at the median (20 of 80 gates healthy). AT&T is the weakest carrier at 35 of 80 ranked asymmetry gates.

The 5G footprint is the smallest of the three: AT&T reports 5G on 59% of its on-airport tiles (5,687 of 9,682); tiles with an LTE reading but no 5G reading are 39% of its tiles. The LTE layer is healthy: LTE gate median -87.8 dBm, healthy at 75 of 80 gates, strongest LTE reading at 24 gates. On the tile basis AT&T is healthy on 70% of Terminal C tiles, 58% of Terminal B tiles, and 38% of Terminal A tiles, ahead of Verizon in Terminals B and C and behind T-Mobile in Terminals B and C and tied in Terminal A; Terminal A (Marine Air Terminal) is its lowest zone. AT&T's 5G is C-band and 3.45 GHz (NR3700 or NR3500 on 87% of 319 band-reporting 5G tiles, a small cell-resolved sample), so the same macro propagation reading as Verizon's applies first, with the in-building hypothesis second. On FIG. 4, AT&T's panel shows amber and grey across the Terminal B headhouse and the Terminal C piers; the building-masked view (section 4.7) quantifies it per building.

AT&T framed finding

Tied with Verizon at the 5G gate median (0.3 dB apart), 7.8 dB behind T-Mobile, with the smallest 5G footprint (59%) and a healthy LTE layer. AT&T 5G NR onto Boingo's in-building systems is the second lift section 13 names, and section 14 monitors both Verizon and AT&T first.

3.4 5G footprint and coverage-band attachment

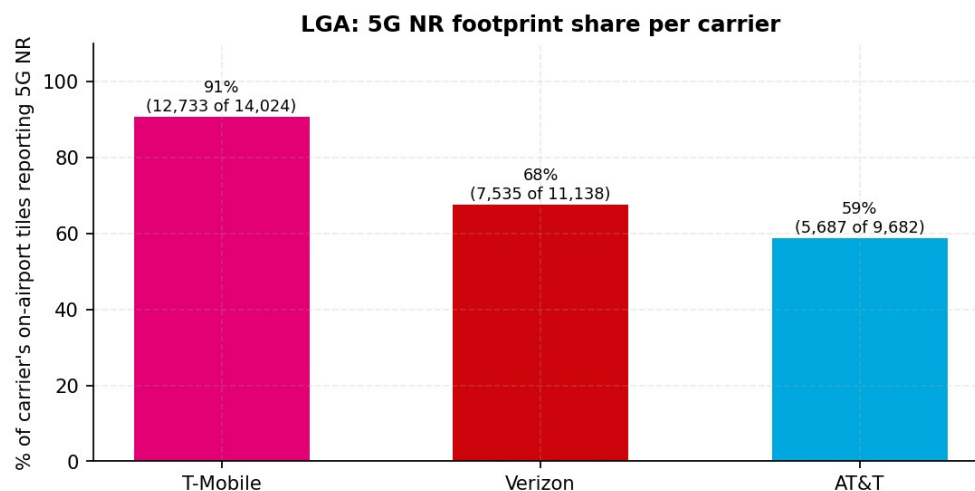


FIG. 5. Share of each carrier's on-airport tiles that report a 5G NR reading (5G footprint). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

LGA: sub-1 GHz LTE reliance per carrier (higher = more coverage-band dependence)

Carrier	n (tiles)	Mean percent low band	Tiles above zero	p90 percent low band
T-Mobile	13,924	4.8%	24%	19%
Verizon	10,916	4.2%	24%	15%
AT&T	9,513	10.3%	37%	30%

FIG. 6. LTE percent-low-band per carrier: mean, share of tiles above zero, and p90. Higher means more attachment to sub-1 GHz coverage bands. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

The percent-low-band statistic describes LTE coverage-band attachment. A tile that attaches to sub-1 GHz spectrum is using a coverage-grade band, which propagation, carrier idle-mode priorities, and site geometry all drive. T-Mobile mean 4.8% (tiles above zero: 24% of n=13,924; p90 19%) · Verizon mean 4.2% (tiles above zero: 24% of n=10,916; p90 15%) · AT&T mean 10.3% (tiles above zero: 37% of n=9,513; p90 30%).

The LTE metric does not see 5G low band. On the 5G side: T-Mobile: NR600 on 1,688 tiles, 13.9% of its 12,120 band-reporting NR tiles. Verizon: NR850 on 875 tiles, 20.6% of its 4,253 band-reporting NR tiles. AT&T: NR850 on 37 tiles, 11.6% of its 319 band-reporting NR tiles. Section 9.1 lists the bands.

3.5 RSRQ, channel quality (CQI), and optimization priority

LGA: reference signal received quality (RSRQ) distribution

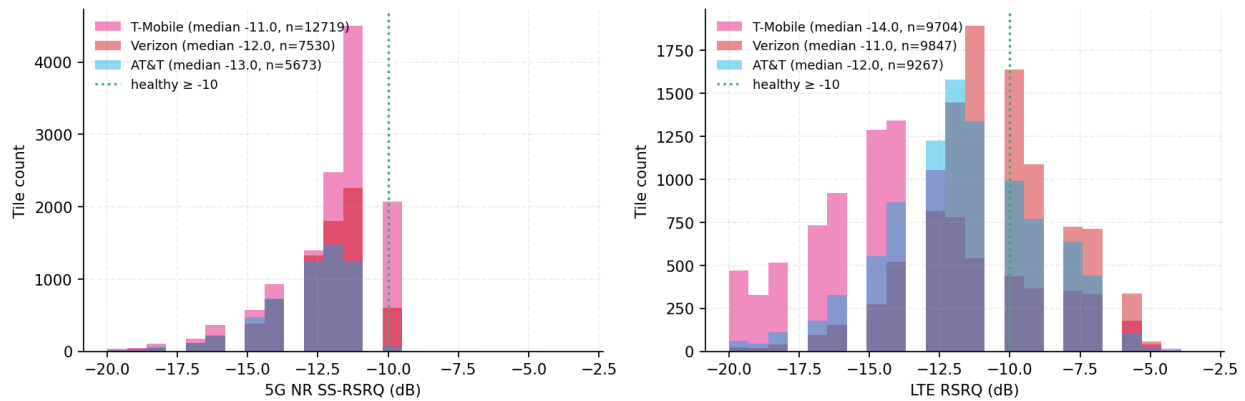


FIG. 7. 5G NR and LTE reference signal received quality (RSRQ) distributions per carrier. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

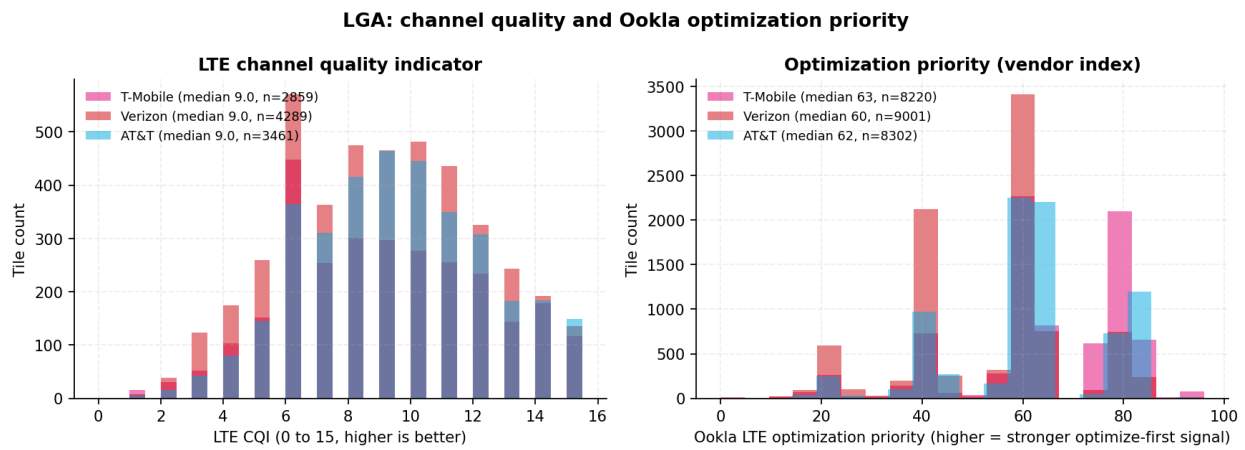


FIG. 8. LTE channel quality indicator (CQI) distribution and Ookla's LTE optimization priority index (vendor layer). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

RSRQ medians: T-Mobile NR -11.0 / LTE -14.0 dB; Verizon NR -12.0 / LTE -11.0 dB; AT&T NR -13.0 / LTE -12.0 dB. Every carrier's median sits below the -10 dB line on both technologies. Medians of -11 to -14 dB are ordinary loaded-network values, and the line is a generic reference, not a venue-specified threshold, so this is a venue-wide observation to read together with SINR, not a failure call. RSRQ degrades as subframe utilization rises, so a weak RSRQ on a strong-RSRP network is consistent with a loaded serving layer. This is an inference; the export carries no load field (section 16).

CQI medians: T-Mobile median 9.0 (n=2,859); Verizon median 9.0 (n=4,289); AT&T median 9.0 (n=3,461). CQI is the closest throughput proxy in an export that carries no throughput fields. Ookla's LTE optimization priority is the vendor's own index for tiles where signal is strong but quality is poor. Venue medians: T-Mobile median 63 (n=8,220); Verizon median 60 (n=9,001); AT&T median 62 (n=8,302). The discriminating signal is in the distribution tails.

3.6 Serving-cell volatility (handover-churn proxy)

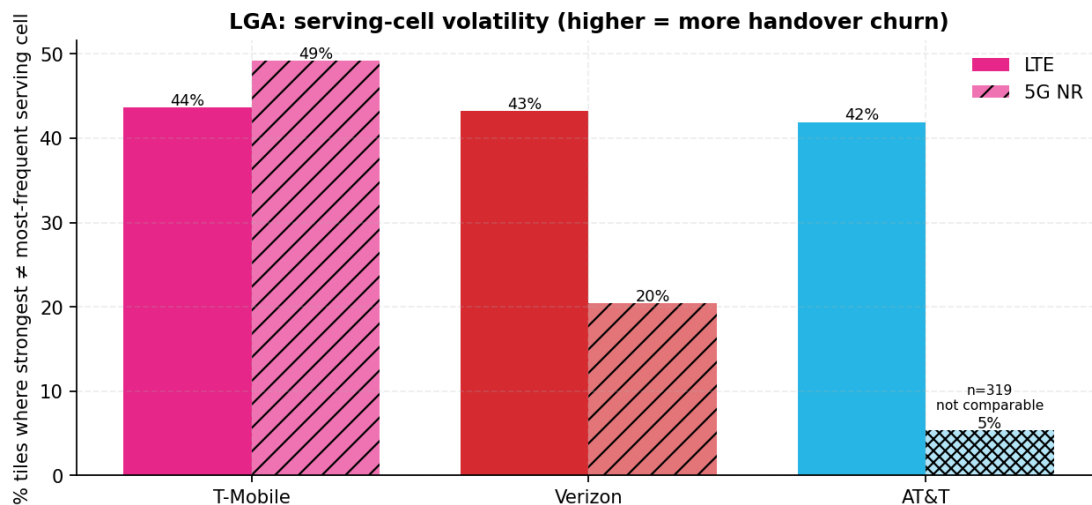


FIG. 9. Share of tiles where the strongest observed cell differs from the most-frequent serving cell. Proxy for handover instability and dominance conflict. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Where the strongest cell at a tile is not the most-frequent serving cell, the network is handing over between competing cells. Measured churn: T-Mobile LTE 44% (n=9,727) / 5G 49% (n=12,119); Verizon

LTE 43% (n=9,852) / 5G 20% (n=4,252); AT&T LTE 42% (n=9,276) / 5G 5% (n=319). Cell, PCI, and band fields populate only where Ookla resolved a serving cell, which is why AT&T's 5G n is 319 here against 5,687 for RSRP (field population table, section 16). AT&T's 5G churn therefore rests on 319 cell-resolved tiles and is not representative; its bar is hatched and is not compared with the other two. Churn blends macro-sector overlap with any in-building system's handoff to the macro layer. This is a proxy; the export carries no handover trace.

4. The view by terminal zone

Terminal zone gate counts (Terminal A 6, Terminal B 36, Terminal C 38): Terminal A holds 6 gates, below the 30-point floor, so its gate tallies appear as counts and are never ranked. Terminals B and C clear the floor, so their gate shares are shown as percentages. For one consistent basis, every zone comparison in this section runs on the tile basis: a tile belongs to the zone of its nearest gate or tenant point within 500 m, which gives hundreds of tiles per carrier per zone.

4.1 Healthy share and median RSRP by zone

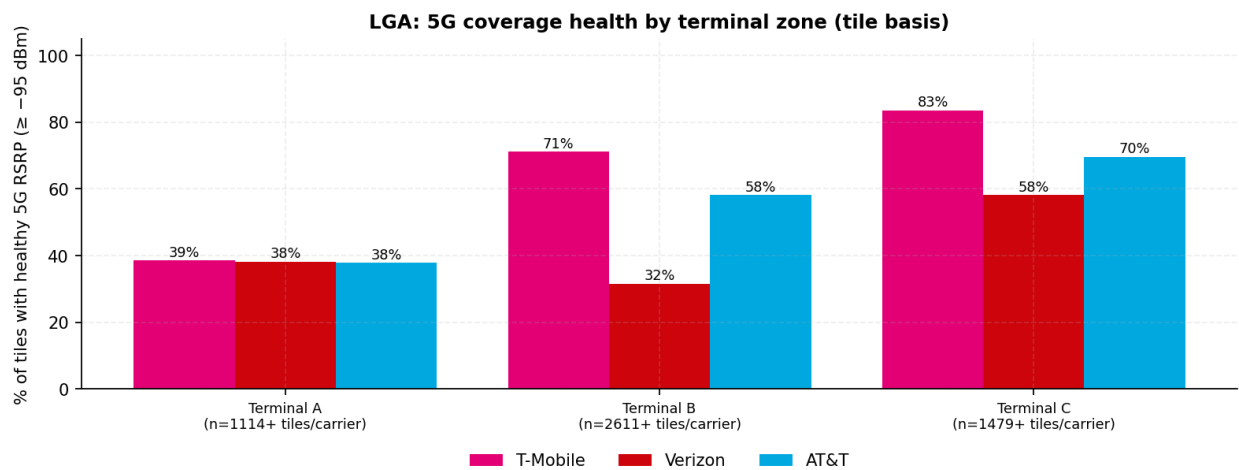


FIG. 10. Share of zone tiles with healthy 5G RSRP by carrier (tile basis; minimum n per carrier on the axis). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

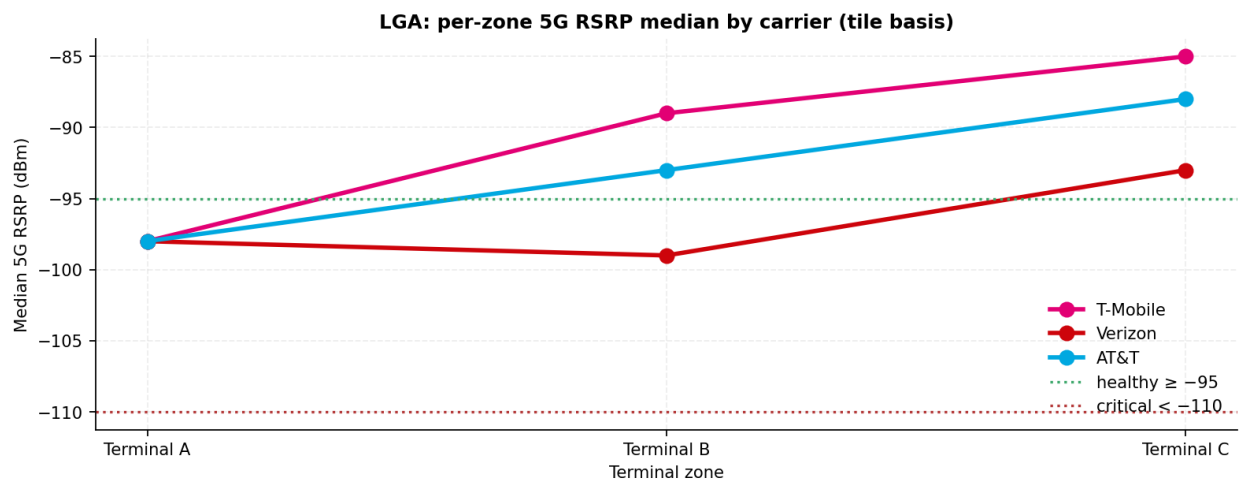


FIG. 11. Per-zone median 5G RSRP per carrier (tile basis). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

LGA terminal area, LTE RSRP by tile in the locked coverage classes (2025-09-01 to 2026-08-31)

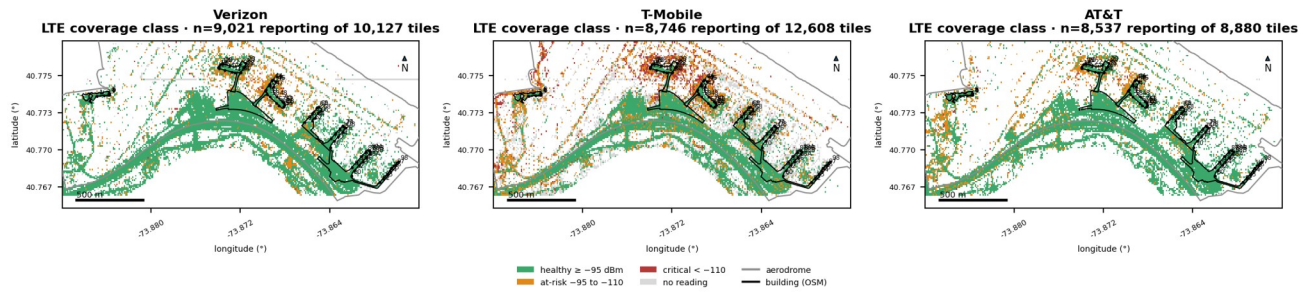


FIG. 12. Terminal-area map of LTE RSRP by tile and carrier, colored by the locked coverage class. Grey tiles carry no LTE reading.
 Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Zone	T-Mobile healthy tiles	Verizon healthy tiles	AT&T healthy tiles	Median 5G RSRP (dBm)
Terminal A	39% (n=2,449)	38% (n=1,211)	38% (n=1,114)	T-Mobile -98.0 / Verizon -98.0 / AT&T -98.0
Terminal B	71% (n=5,437)	32% (n=3,349)	58% (n=2,611)	T-Mobile -89.0 / Verizon -99.0 / AT&T -93.0
Terminal C	83% (n=3,746)	58% (n=2,212)	70% (n=1,479)	T-Mobile -85.0 / Verizon -93.0 / AT&T -88.0

Zone leader on the tile basis (a lead under 1 dB on the median or under 1 point on the healthy share is a tie): Terminal A three-way tie (AT&T, T-Mobile, Verizon), Terminal B T-Mobile, Terminal C T-Mobile. Second place where there is a leader: Terminal B AT&T (-93.0 dBm, 58% healthy); Terminal C AT&T (-88.0 dBm, 70% healthy). Lowest zone per carrier on the healthy tile share: T-Mobile in Terminal A (39%), Verizon in Terminal B (32%), AT&T in Terminal A (38%). The lowest zone differs by carrier: Terminal A is the low zone for T-Mobile and AT&T while Verizon's low zone is Terminal B.

4.2 Coverage class and PCI diversity

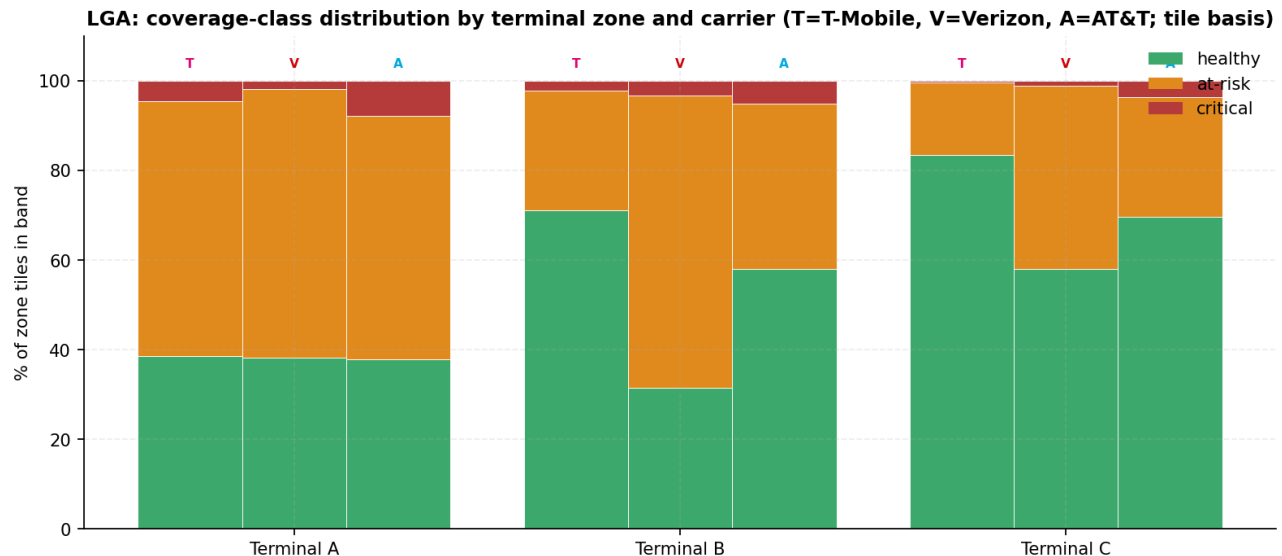


FIG. 13. Coverage-class distribution by terminal zone and carrier (tile basis; T=T-Mobile, V=Verizon, A=AT&T). Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Critical-band gates (below -110 dBm) by carrier: T-Mobile 0, Verizon 0, AT&T 0 of 80 gates (counts). On the tile basis the critical share peaks at T-Mobile 4% in Terminal A (n=2,449); Verizon 3% in Terminal B

(n=3,349); AT&T 8% in Terminal A (n=1,114). T-Mobile's healthy share does not drop below 39% in any zone.

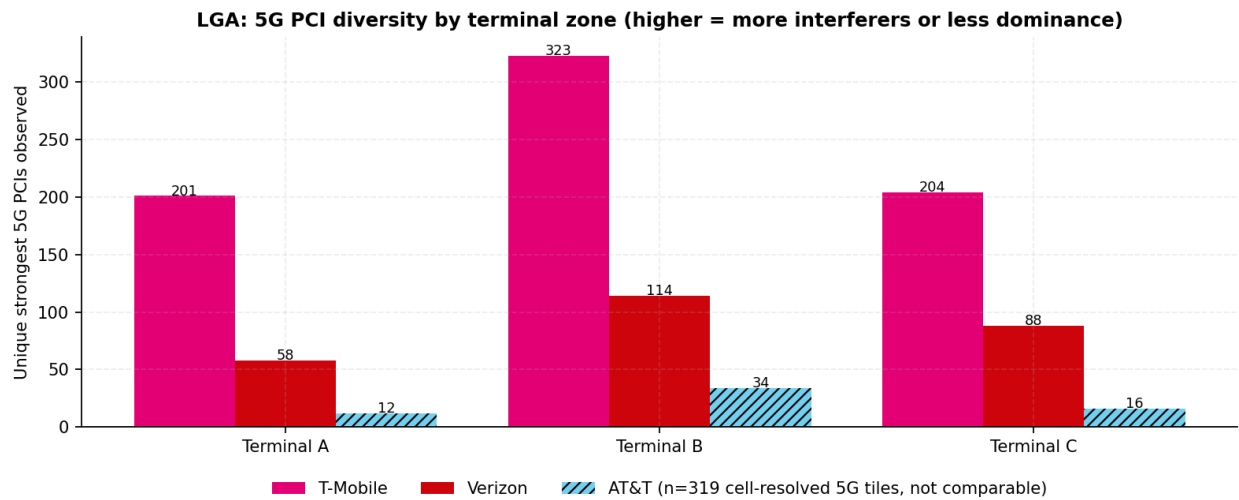


FIG. 14. Unique strongest-serving physical cell identities (PCIs) per zone per carrier. Reads in both directions; always pair with SINR (section 16). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

The PCI picture in each zone reflects which sectors reach it, macro or in-building. Higher diversity with healthy SINR means several sectors serve the zone cleanly. Higher diversity with poor SINR means they compete. Verizon's low 5G SINR median (+5.5 dB) alongside its PCI count is the pairing to read here. AT&T's 5G PCI counts rest on 319 cell-resolved tiles and are not representative (hatched). PCI counts accumulate over 12 months across every 5G carrier layer, so PCI reassignment and multi-carrier layers inflate them.

4.3 Cross-carrier concordance by gate

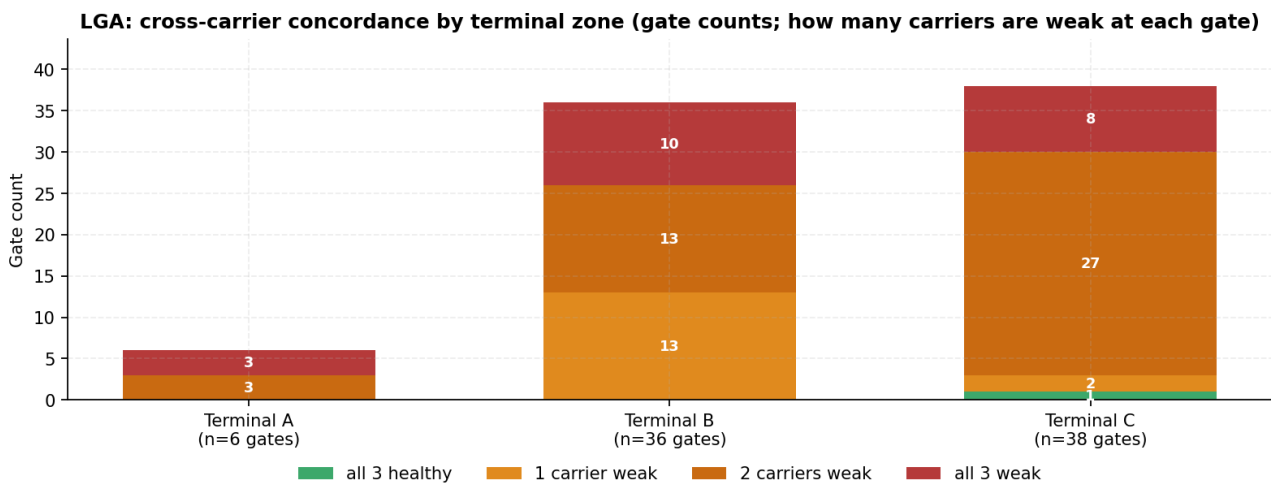


FIG. 15. Per terminal zone: how many of the three carriers are below the healthy line at each gate (gate counts). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

This split shapes the infrastructure question. A gate weak for all three carriers points to a gate-area problem for that gate's 80 m circle, which can include apron. A gate weak for exactly one carrier points to that carrier's path. Counts across 80 gates: 1 healthy for all three, 15 weak for one carrier, 43 weak

for two, and 21 weak for all three. Where one carrier is weak it is T-Mobile 2, Verizon 11, AT&T 2. Where two are weak the pair is Verizon and AT&T at 42; T-Mobile and AT&T at 1. The 21 all-weak gates sit in Terminal A 3, Terminal B 10, Terminal C 8.

This is not a single-carrier path problem. Two carriers are below the healthy 5G line at 64 of 80 gates, and the pair is almost always Verizon and AT&T. Read with the LTE result (both healthy at the same gates), the gap is a 5G NR layer gap for two carriers over the same buildings, which is what Boingo's in-building systems carrying 5G NR for every carrier would address. The concordance does not by itself say whether Boingo's Terminal B system carries those carriers' 5G; Recommendation 1 asks for that attestation.

4.4 Terminal B

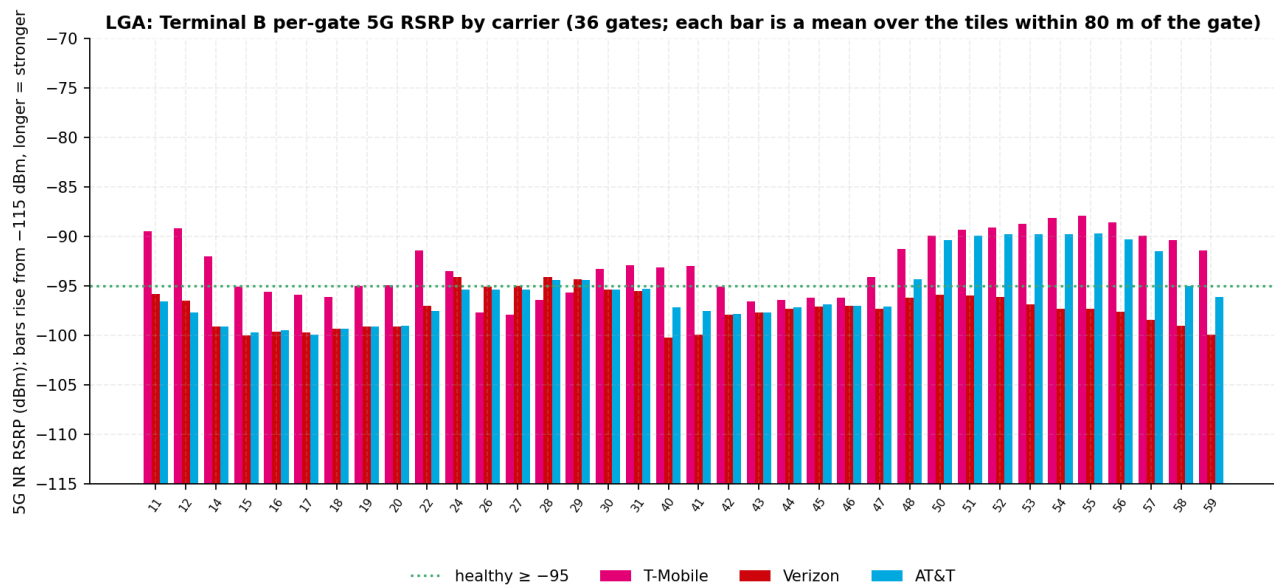


FIG. 16. Per-gate 5G RSRP across the 36 Terminal B gates (OpenStreetMap inventory). Each bar is a mean over the tiles within 80 m of the gate. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Terminal B is operated by LaGuardia Gateway Partners (Vantage Group and Meridiam) under a public-private lease with PANYNJ and hosts Air Canada, American Airlines, Frontier Airlines, JetBlue, Porter Airlines, Southwest Airlines, and United Airlines (cited). It holds 36 of the 80 measured gates across headhouse plus the Eastern and Western concourses linked by two pedestrian bridges. Best-5G counts: T-Mobile 32, Verizon 4. Healthy 5G gates: T-Mobile 23 of 36 gates (64%), Verizon 4 of 36 gates (11%), AT&T 12 of 36 gates (33%). Gate-basis 5G medians: T-Mobile -93.2, Verizon -97.3, AT&T -96.3 dBm. Tile-basis healthy shares: T-Mobile 71%, Verizon 32%, AT&T 58% ($n \geq 2,611$ tiles per carrier). Boingo's Terminal B neutral-host DAS and Wi-Fi system was designed for the headhouse and the 18-gate eastern concourse (engineering-firm design record; the Western Concourse is not stated in that record). The design record's 18-gate eastern concourse corresponds to 19 Eastern Concourse gates in the OpenStreetMap inventory (gates 40 to 59), one more than the record states. The measured split between the headhouse and the two concourses is in section 4.7.



PHOTO. Terminal B food hall, October 2024. · Photo: Jim.henderson, CC BY-SA 4.0, via Wikimedia Commons

4.5 Terminal C

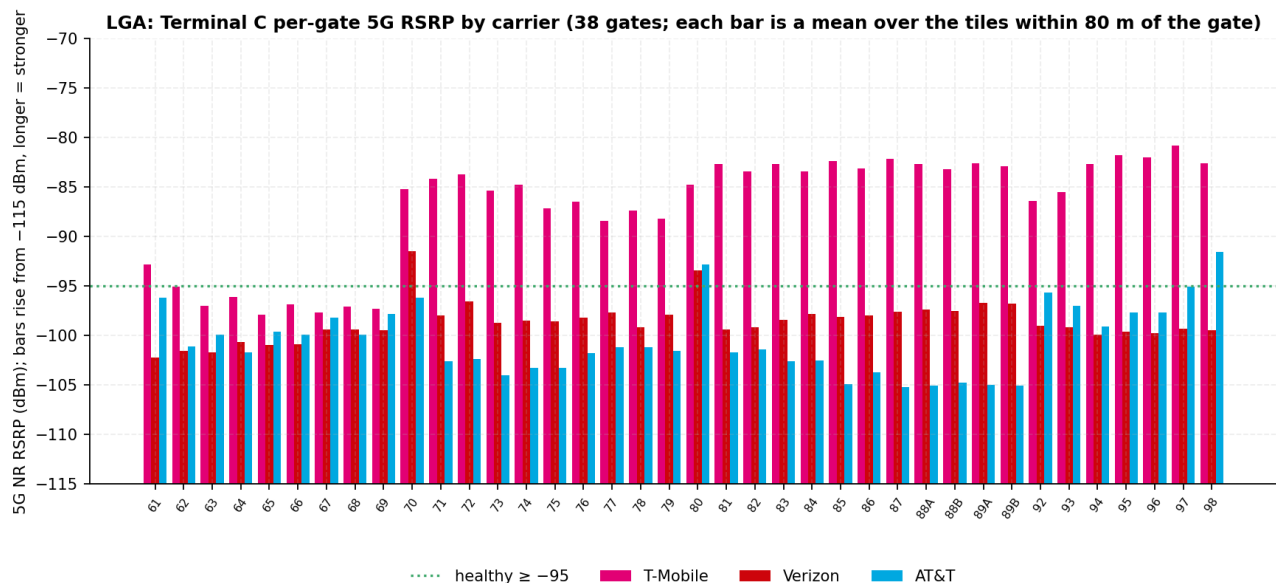


FIG. 17. Per-gate 5G RSRP across the 38 Terminal C gates (OpenStreetMap inventory). Each bar is a mean over the tiles within 80 m of the gate. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Terminal C is operated by Delta Air Lines under a lease with PANYNJ and hosts Delta Air Lines (the only airline listed by PANYNJ); the former Terminal D is part of the consolidated Terminal C (cited). It holds

38 of the 80 measured gates. Best-5G counts: T-Mobile 38. Healthy 5G gates: T-Mobile 30 of 38 gates (79%), Verizon 2 of 38 gates (5%), AT&T 2 of 38 gates (5%). Gate-basis 5G medians: T-Mobile -84.8, Verizon -98.8, AT&T -101.3 dBm. Tile-basis healthy shares: T-Mobile 83%, Verizon 58%, AT&T 70% ($n \geq 1,479$ tiles per carrier). The top of the asymmetry atlas (section 10) sits here: the 5 largest carrier spreads of the top five are Terminal C gates. Boingo Wireless is the Port Authority's neutral-host provider at LGA; Terminal C's per-building carrier loading is part of the Recommendation 1 attestation.



PHOTO. Apron side of Terminal C at gate 86 with a Delta A321, September 2025. · Photo: Nielsoncaetanosalmeron, CC BY 4.0, via Wikimedia Commons



PHOTO. Terminal C gate 89A hold room, October 2023. · Photo: DiscoA340, CC BY-SA 4.0, via Wikimedia Commons



PHOTO. Terminal C concourse at the Delta gates 70 to 79, May 2024. · Photo: Myotus, CC0, via Wikimedia Commons

4.6 Terminal A (Marine Air Terminal)

Terminal A holds 6 gates, below the 30-point floor, so its gate figures are counts. Spirit Airlines was the sole commercial lessee of the six gates until Spirit Airlines ceased all operations on 2026-05-02; the terminal then closed to the public for the rest of the window (cited); the window therefore blends eight months of scheduled operation with four months of closure. JetBlue acquired Spirit's LGA operating authorizations at auction in July 2026 and has said it wants to use the Marine Air Terminal, not before 2027 and subject to approvals (intent, not an operation in the window) (cited). On the tile basis Terminal A is a three-way tie inside the noise floor. Healthy 5G gates (counts): T-Mobile 3 of 6 gates (count), Verizon 0 of 6 gates (count), AT&T 0 of 6 gates (count). Tile-basis healthy shares: T-Mobile 39%, Verizon 38%, AT&T 38% ($n \geq 1,114$ tiles per carrier); medians T-Mobile -98.0 , Verizon -98.0 , AT&T -98.0 dBm. Terminal A is the low zone for T-Mobile and AT&T on the tile basis. The zone's 2,449-tile pool includes parking and roadway; the Marine Air Terminal building footprint itself holds 25 Verizon and 24 AT&T 5G-reporting tiles, below the 30-tile floor (section 4.7). The 2026 to 2035 Port Authority capital plan (approved December 2025) funds a rebuild of the non-landmarked gate areas of the Marine Air Terminal; the dollar figure and schedule are not published (cited), which makes this zone the acceptance zone for whatever comes next: section 14 writes its criteria as at-reopening criteria on the rebuilt gate-area footprint.



PHOTO. The Marine Air Terminal, November 2025, during the final months of Spirit Airlines' scheduled service; the terminal closed to the public after Spirit Airlines ceased all operations on 2026-05-02. · Photo: Epicgenius, CC BY-SA 4.0, via Wikimedia Commons

4.7 Building-masked view (OSM polygons)

LGA building-masked view using the OSM building-polygon mask (2025-09-01 to 2026-08-31)

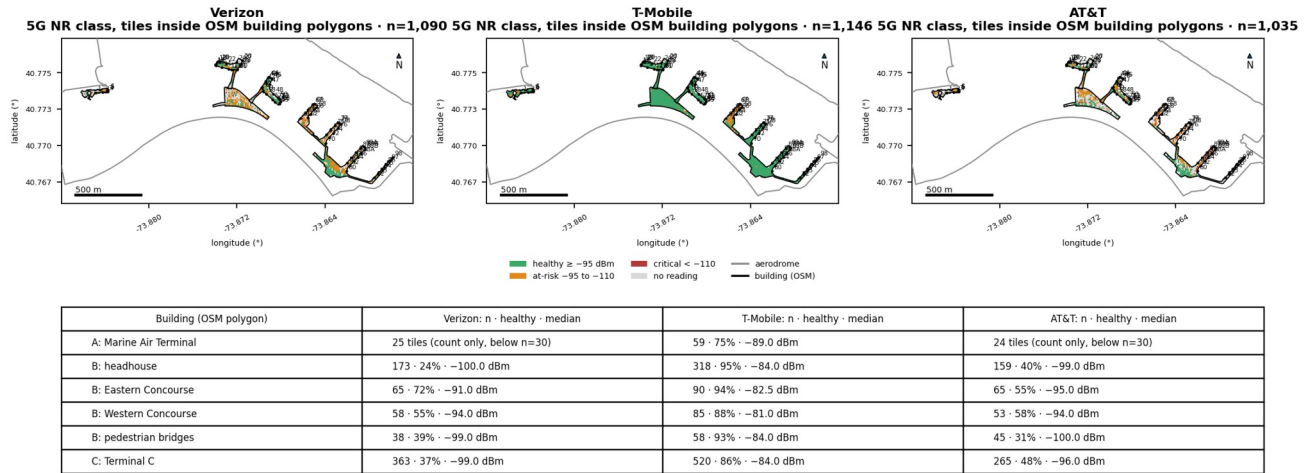


FIG. 18. Tiles whose centroid falls inside a pinned OSM building polygon (Marine Air Terminal, Terminal B headhouse, Eastern and Western concourses, pedestrian bridges, Terminal C), colored by 5G NR class, with the per-building per-carrier table. This is our OSM building-polygon mask, not Ookla's Indoor layer. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Building (OSM polygon)	T-Mobile: n · healthy · median 5G RSRP	Verizon: n · healthy · median 5G RSRP	AT&T: n · healthy · median 5G RSRP
A: Marine Air Terminal	59 · 75% · -89.0 dBm	25 tiles (count only, below n=30)	24 tiles (count only, below n=30)
B: headhouse	318 · 95% · -84.0 dBm	173 · 24% · -100.0 dBm	159 · 40% · -99.0 dBm
B: Eastern Concourse	90 · 94% · -82.5 dBm	65 · 72% · -91.0 dBm	65 · 55% · -95.0 dBm
B: Western Concourse	85 · 88% · -81.0 dBm	58 · 55% · -94.0 dBm	53 · 58% · -94.0 dBm
B: pedestrian bridges	58 · 93% · -84.0 dBm	38 · 39% · -99.0 dBm	45 · 31% · -100.0 dBm
C: Terminal C	520 · 86% · -84.0 dBm	363 · 37% · -99.0 dBm	265 · 48% · -96.0 dBm

The mask is a point-in-polygon test of tile centroids against the pinned OpenStreetMap footprints, so it selects tiles over the buildings rather than tiles measured inside them (section 16). It replaces nothing in the ranking; every ranked cell clears the 30-tile floor and agrees with the zone view. Inside the footprints, T-Mobile is healthy on 95% of headhouse tiles and 86% of Terminal C tiles. Verizon's healthy share is lowest over B: headhouse (24% of n=173) and highest over B: Eastern Concourse (72%); AT&T's is lowest over B: pedestrian bridges (31% of n=45). Boingo's Terminal B design record names the headhouse and the eastern concourse; the measured Verizon contrast between the Eastern Concourse (72%) and the headhouse (24%) is a question for that attestation, not a finding about the system. Ookla's own Indoor layer is not used here (section 15).

5. Tenant level

The 108 mapped points come from an OpenStreetMap capture pinned 2026-09-15 (points only). Category point counts sit below the 30-point floor. Category comparisons therefore run on the tile basis behind each category's points: tiles within 80 m of any point, deduplicated. Point counts appear on every axis.

5.1 Category signal strength and quality

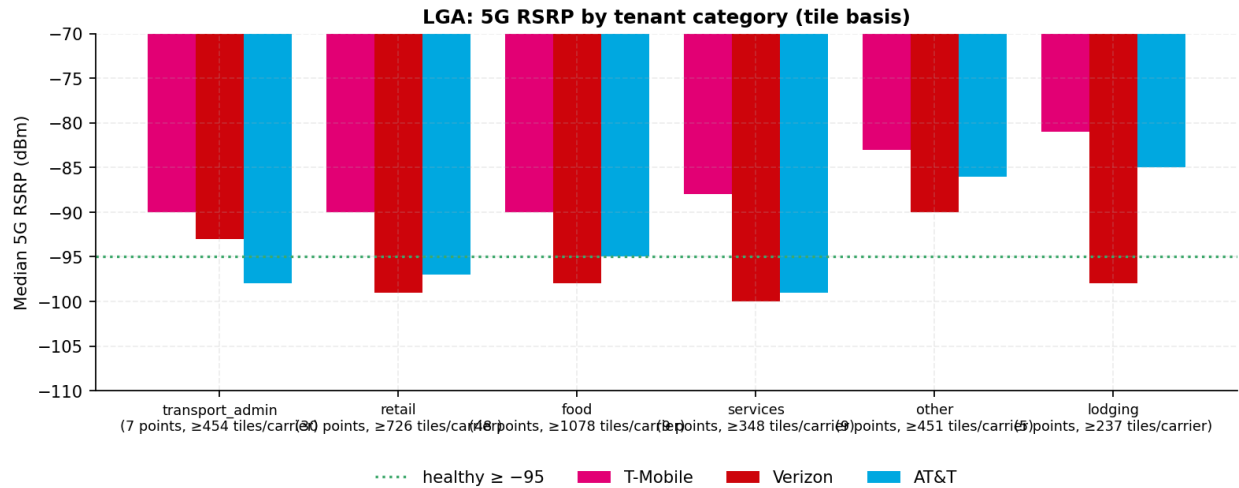


FIG. 19. Median 5G RSRP by tenant category (tile basis; points and minimum tiles per carrier on the axis). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

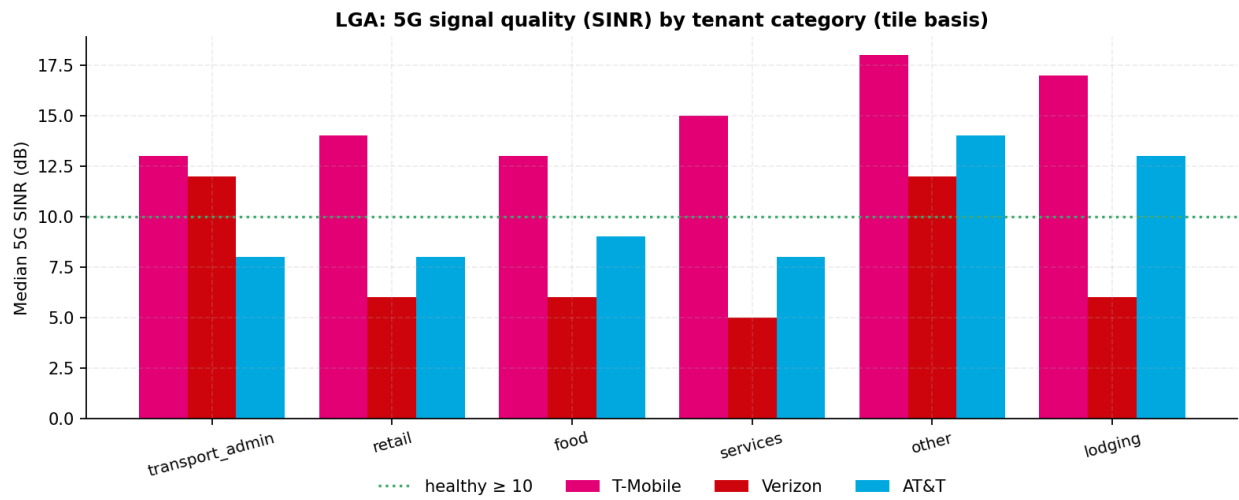


FIG. 20. Median 5G SINR by tenant category (tile basis). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Ranked categories clear the floor for every carrier: transport_admin, retail, food, services, other, lodging. Leader by category on the tile median: transport_admin T-Mobile, retail T-Mobile, food T-Mobile, services T-Mobile, other T-Mobile, lodging T-Mobile; trailing carrier: transport_admin AT&T, retail Verizon, food Verizon, services Verizon, other Verizon, lodging Verizon. Read the chart as a pattern; the point counts are small.

5.2 Terminal vs periphery RSRP proxy

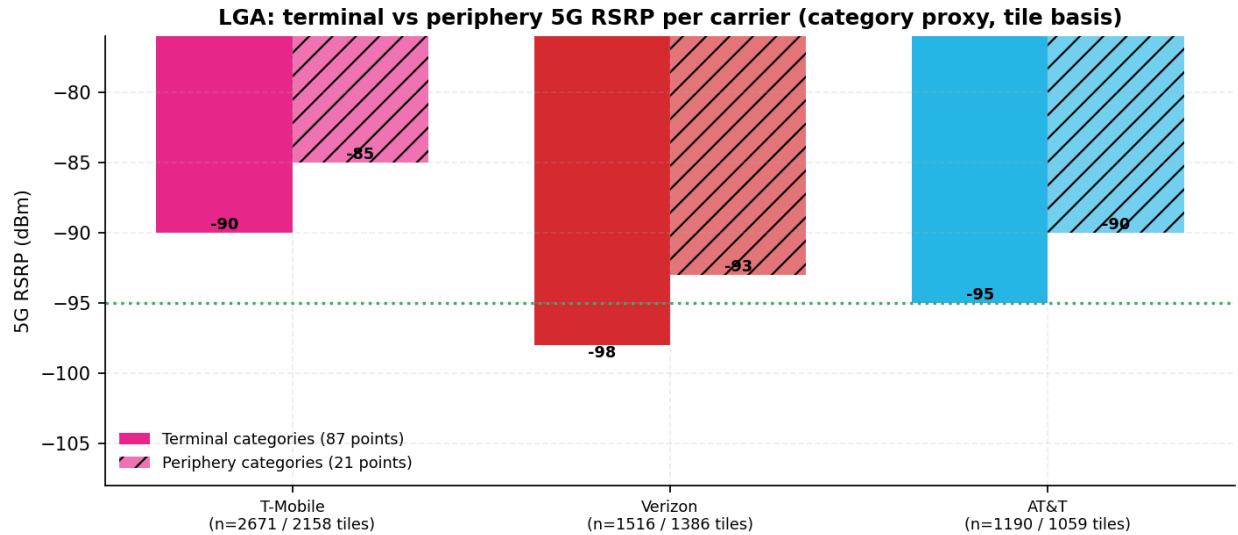


FIG. 21. Per-carrier median 5G RSRP, terminal tenant categories vs periphery categories, on the tile basis. Proxy: category-based masking, not Ookla's building-polygon indoor mask (queued, section 15). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

- T-Mobile: periphery -85.0 dBm (n=2,158 tiles behind 21 points), terminal -90.0 dBm (n=2,671 tiles behind 87 points), periphery minus terminal +5.0 dB
- Verizon: periphery -93.0 dBm (n=1,386 tiles behind 21 points), terminal -98.0 dBm (n=1,516 tiles behind 87 points), periphery minus terminal +5.0 dB
- AT&T: periphery -90.0 dBm (n=1,059 tiles behind 21 points), terminal -95.0 dBm (n=1,190 tiles behind 87 points), periphery minus terminal +5.0 dB

Terminal categories cover the concessions and services inside the terminal footprints; periphery categories cover the parking structures, the hotel and lodging points, and roadside businesses. A large positive periphery-minus-terminal delta is consistent with macro spillover. A flat or negative delta is ambiguous between close-in macro coverage and an in-building source. Distance to macro sites confounds both readings, and the Site Finder layer (section 15) is queued to resolve it. Deltas: T-Mobile +5.0 dB, Verizon +5.0 dB, AT&T +5.0 dB. Tile RSRP is integer-valued, so medians and deltas quantize to whole dB.

5.3 Airline gate clusters

Terminal: airlines (transcribed)	Gates (n)	T-Mobile median 5G RSRP, dBm (tile n)	Verizon median 5G RSRP, dBm (tile n)	AT&T median 5G RSRP, dBm (tile n)
Terminal A: Spirit Airlines	6	-98.0 (n=2449)	-98.0 (n=1211)	-98.0 (n=1114)
Terminal B: Air Canada, American Airlines, Frontier Airlines, JetBlue, Porter Airlines, Southwest Airlines, and United Airlines	36	-89.0 (n=5437)	-99.0 (n=3349)	-93.0 (n=2611)
Terminal C: Delta Air Lines (the only airline listed by PANYNJ)	38	-85.0 (n=3746)	-93.0 (n=2212)	-88.0 (n=1479)

An airline reads its exposure through its terminal and the passenger's carrier. In this window T-Mobile leads the Terminal B and Terminal C clusters on the tile median and the Terminal A cluster is a three-way tie; the Verizon and AT&T order within a cluster is read from the table with the margins shown.

5.4 Retail and food brand coverage

Brand	Points (n)	T-Mobile median 5G RSRP (dBm)	Verizon median 5G RSRP (dBm)	AT&T median 5G RSRP (dBm)
Hudson	1	-94.6	-98.2	-97.4
Shake Shack	1	-93.3	-98.9	-97.8
Dunkin'	4	-83.4	-96.9	-85.9
Cibo	3	-91.8	-101.0	-94.3
Junior's	1	-85.0	-101.0	-101.1
Mulberry	1	-84.7	-100.3	-98.9

Multi-location brands are a cross-zone consistency check. Point counts are small (4 at most), so this table is a count-only view. Each point value is a mean over the tiles within 80 m of the point (per-point tile n in Appendix A).

5.5 Airline lounges present in the OpenStreetMap capture

Lounge point	Zone	T-Mobile 5G RSRP (class, n tiles)	Verizon 5G RSRP (class, n tiles)	AT&T 5G RSRP (class, n tiles)
Centurion Lounge	Terminal B	-87.9 dBm (healthy, n=207)	-98.9 dBm (at-risk, n=181)	-89.3 dBm (healthy, n=171)
Sapphire Lounge	Terminal B	-88.3 dBm (healthy, n=201)	-99.3 dBm (at-risk, n=172)	-89.6 dBm (healthy, n=159)
Delta Sky Club	Terminal C	-82.8 dBm (healthy, n=215)	-85.5 dBm (healthy, n=208)	-85.8 dBm (healthy, n=201)

3 lounge points are in the pinned capture: Centurion Lounge, Sapphire Lounge, Delta Sky Club. These are single-point aggregates over the tiles within 80 m of each point, reported for scope and not ranked.

6. Load and density

LGA: load and density (User_Density = unique devices over the window)

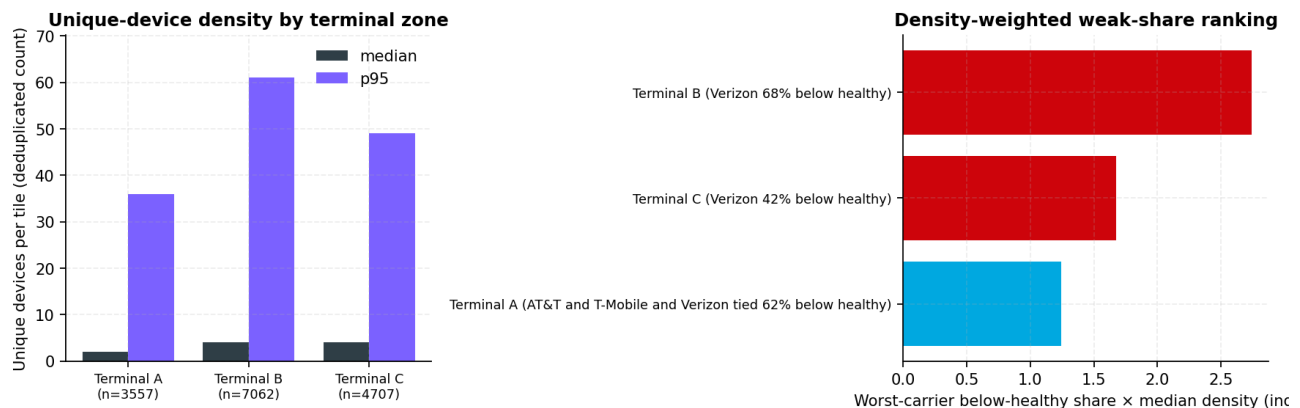


FIG. 22. Unique-device density by terminal zone (median and p95 per tile) and the density-weighted weak-share ranking (tile basis). User_Density = unique devices over the window, deduplicated. · Source: Ookla Cell Analytics All Networks usage export, 2025-09-01 to 2026-08-31

Density is this dataset's demand signal. Ookla's User_Density field counts the unique Android devices observed per tile over the window, deduplicated. It does not count simultaneous users and it does not measure time spent. Zone medians: Terminal A 2 (p95 36, n=3,557), Terminal B 4 (p95 61, n=7,062), Terminal C 4 (p95 49, n=4,707). The on-airport median is 3 devices per tile across 16,970 usage tiles.

The density-weighted ranking multiplies each zone's worst-carrier below-healthy 5G tile share by its median density, so it points to where weak signal meets the most devices. Terminal B leads the ranking

(Verizon below healthy on 68% of tiles, median density 4). The worst carrier is Verizon in Terminal B; Verizon in Terminal C; AT&T and T-Mobile and Verizon tied in Terminal A (a below-healthy margin under 1 point is a tie).

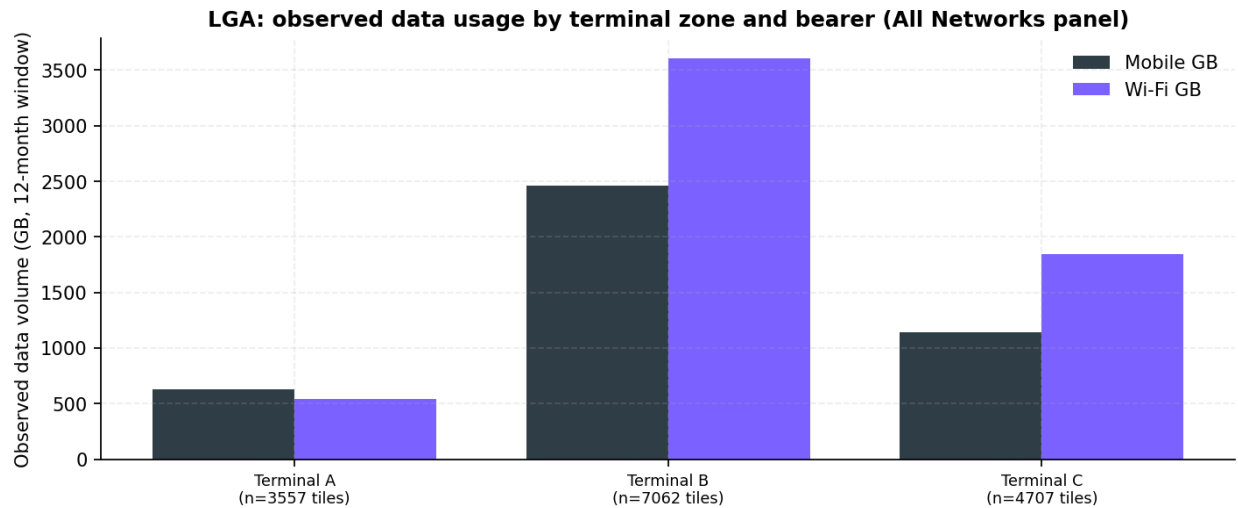


FIG. 23. Observed data volume by terminal zone and bearer (GB over the 12-month window). · Source: Ookla Cell Analytics All Networks usage export, 2025-09-01 to 2026-08-31

Usage volume shows where bandwidth is consumed, by bearer and by zone. It is observed sample volume from the crowdsourcing panel. It is not total traffic.

7. Wi-Fi as an augmentation layer

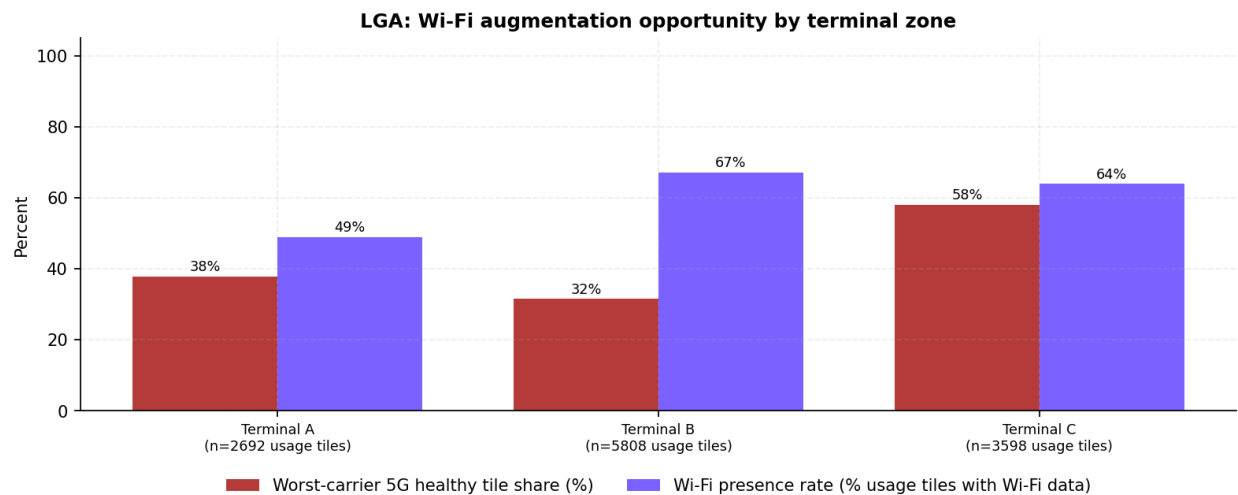


FIG. 24. Worst-carrier 5G healthy tile share vs Wi-Fi presence rate by terminal zone. Zone n counts usage tiles that report the Wi-Fi field, so it is smaller than the density n in FIG. 22. · Source: Ookla Cell Analytics All Networks usage export, 2025-09-01 to 2026-08-31

Wi-Fi presence (a different figure from the offload share): Wi-Fi usage is observed on 62.1% of the 13,363 on-airport usage tiles that report the Wi-Fi field. A non-reporting tile means no measurement and is excluded from the denominator; it is not evidence of no Wi-Fi. The augmentation opportunity is largest where the worst-served carrier is weakest and Wi-Fi presence is high.

7.1 Offload share (venue and zone level only)

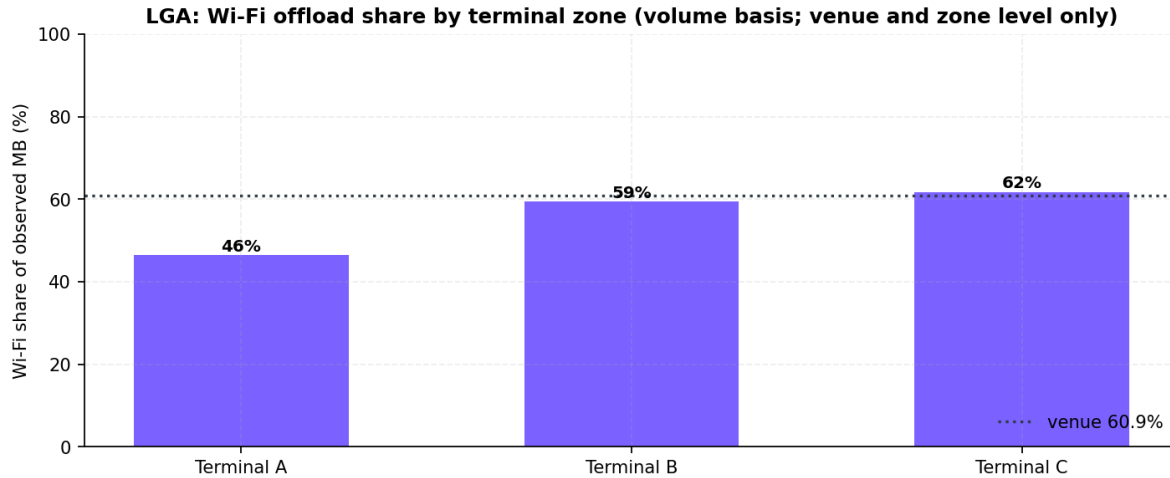


FIG. 25. Wi-Fi share of observed data volume by terminal zone, with the venue reference line. · Source: Ookla Cell Analytics All Networks usage export, 2025-09-01 to 2026-08-31

On tiles assigned to a terminal zone, 58.6% of observed data volume moves over Wi-Fi (Σ Wi-Fi MB $\div$ Σ all MB on the All Networks panel, $n=15,326$ tiles); over the whole clip the figure is 60.9% ($n=16,970$). Locked rule (section 16): offload is computed at venue and zone level only. The export does not attribute Wi-Fi usage to any cellular carrier's subscribers, so per-carrier offload is not derivable and not implied. The figure blends the public network with tenant, airline lounge, hotel, and personal networks.

Scope decomposition: the 1,644 usage tiles outside every zone run 81.0% Wi-Fi and lift the whole-clip figure above the terminal-zone figure. The 200 m buffer around the aerodrome captures curbside, roadway, and some roadside property across the Grand Central Parkway (hotel and rental lots); those are not terminal tiles, which is why the terminal-zone figure is the one on the cover. The clip itself is unchanged in this issue.

7.2 Tenant-level Wi-Fi footprint

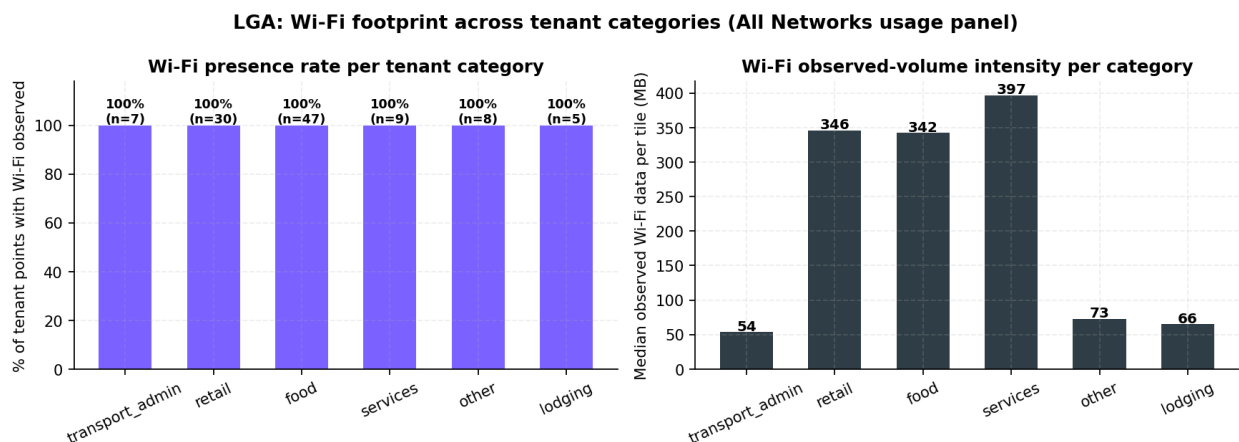


FIG. 26. Wi-Fi observation rate and intensity across tenant categories (point counts on the axis). · Source: Ookla Cell Analytics All Networks usage export, 2025-09-01 to 2026-08-31

Wi-Fi presence and observed volume peak where passengers spend time. The public network is _Free LGA WiFi, operated by Boingo Wireless; the Wi-Fi figures here come solely from the Ookla usage layer. Controller telemetry (section 15) would convert presence into capacity.

8. Private wireless

Boingo Wireless is the Port Authority's neutral-host cellular (DAS) and Wi-Fi provider at LGA under the agreement announced October 14, 2025 (2026 to 2038, option to 2043; Boingo has operated the Port Authority's airport wireless since the 1999 New York Telecom Partners agreement); the agreement contemplates private network infrastructure across Port Authority facilities, and no LGA-specific private LTE, 5G, CBRS, or public-safety radio project is public (cited). The public Ookla layer does not characterize private networks. Whether a Citizens Broadband Radio Service (CBRS) private-network layer is scoped for LGA under the agreement is a design question for the Port Authority and its terminal operators. The one open item on the cellular side is the Recommendation 1 attestation of which terminal buildings ride on Boingo's network and which carriers are on the DAS in each building. On the public-safety side, the Port Authority 2026 to 2035 Capital Plan lists LGA public-safety radio lines: PAPD Radio Network Backhaul Infrastructure Upgrade CA02-606 (\$2.5 million, design), Relocation of P25 Network Switching Center Equipment CA02-605 (\$1.5 million, construction), and Building 137 Radio Coverage CA02-X03; no LGA-specific DAS or Wi-Fi capital line appears at FY-2026 grain (KG record). Typical large-hub workloads:

Workload	Why a private network fits	Coordination required
Baggage handling system instrumentation	Deterministic latency, contained RF, isolation from passenger traffic	Terminal operators, baggage system vendors
Ramp and ground-service vehicle telematics	Outdoor airside coverage with controlled SIM provisioning	Airside operations
Push-to-talk and operational voice	Guaranteed-quality voice independent of public carriers	Port Authority Police, ground handlers
Fixed cameras and IoT in non-public areas	Bandwidth without consuming public-carrier capacity	Facilities maintenance
Construction-phase connectivity (Marine Air Terminal rebuild)	Coverage that survives demolition and rebuild sequencing	Program management, contractors

9. Spectrum and service availability

9.1 Band distribution

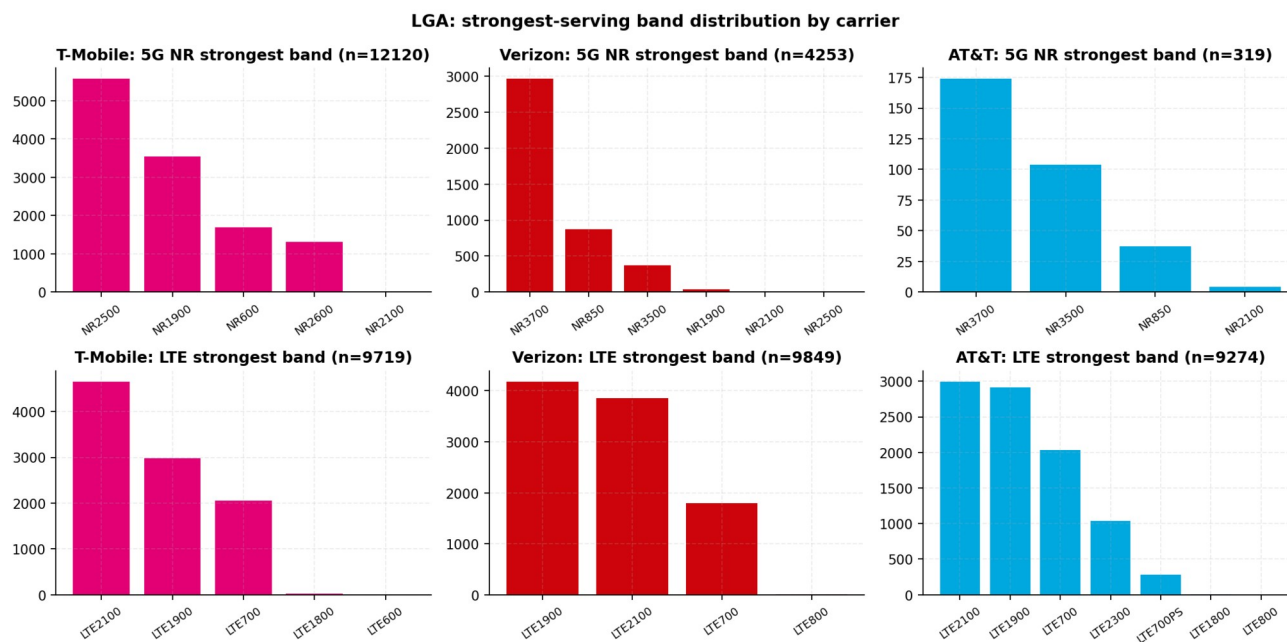


FIG. 27. Strongest-serving band distribution per carrier, 5G NR and LTE (n on each panel). · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

Legend: Ookla band labels are technology plus approximate frequency in MHz, printed verbatim from the export. For example, NR2500 and NR2600 are both 2.5 GHz spectrum, and LTE800 and NR850 are both 850 MHz cellular spectrum. LTE700PS is FirstNet Band 14, the public-safety broadband band. Cell, PCI, and band fields populate only where Ookla resolved a serving cell, so band n is smaller than RSRP n (section 16).

The bands a tile attaches to most often show which spectrum each carrier puts to work at the venue. Sub-1 GHz attachment implies coverage-grade bands. Mid-band attachment implies strong penetration or an in-building source. AT&T's 5G band mix rests on 319 cell-resolved tiles and is not representative of its 5,687 5G-reporting tiles. LTE1800 rows are an Ookla band label as exported, not a United States band allocation.

T-Mobile (n = 12,120 NR tiles, 9,719 LTE tiles):

NR band	Tiles (n)	LTE band	Tiles (n)
NR2500	5577	LTE2100	4656
NR1900	3544	LTE1900	2986
NR600	1688	LTE700	2048
NR2600	1308	LTE1800	27
NR2100	3	LTE600	2

Verizon (n = 4,253 NR tiles, 9,849 LTE tiles):

NR band	Tiles (n)	LTE band	Tiles (n)
NR3700	2966	LTE1900	4184
NR850	875	LTE2100	3855
NR3500	374	LTE700	1797
NR1900	36	LTE800	13

AT&T (n = 319 NR tiles, 9,274 LTE tiles):

NR band	Tiles (n)	LTE band	Tiles (n)
NR3700	174	LTE2100	2997
NR3500	104	LTE1900	2918
NR850	37	LTE700	2035
NR2100	4	LTE2300	1034

9.2 Service availability

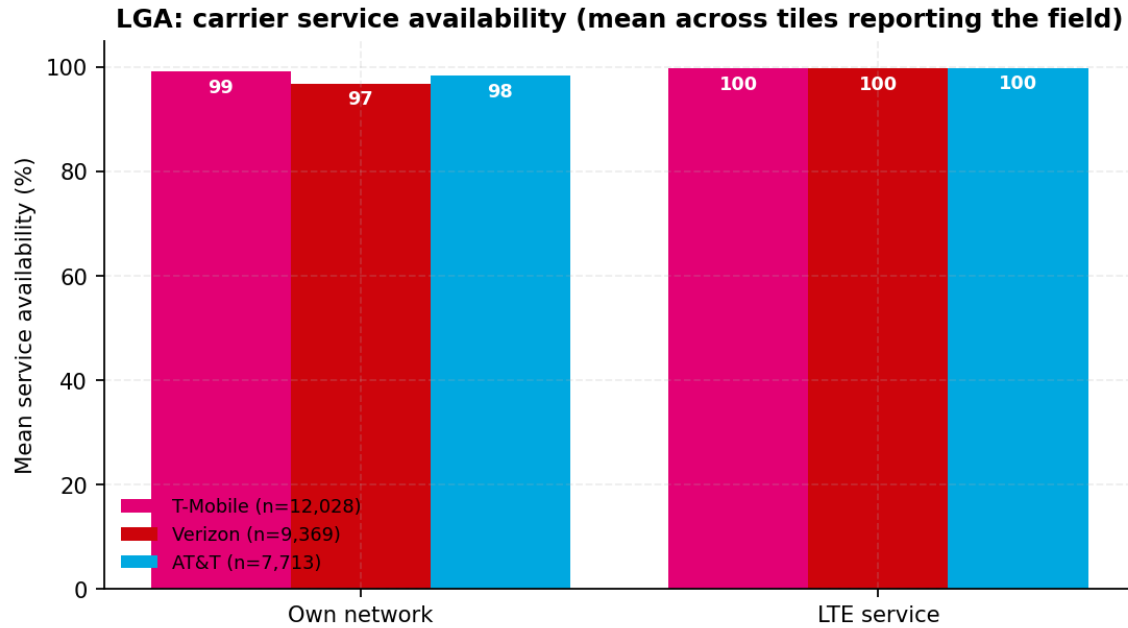


FIG. 28. Service availability (own network, general LTE), mean across tiles reporting the field. The general-service field reads 100% for every carrier and is not drawn. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

On reporting tiles, all three carriers show near-universal LTE service availability, the graceful-degradation floor. Basis disclosure: availability fields are not populated on every tile (general-LTE reporting share: T-Mobile 86%, Verizon 84%, AT&T 80%). The mean is over reporting tiles only.

10. Carrier-asymmetry atlas

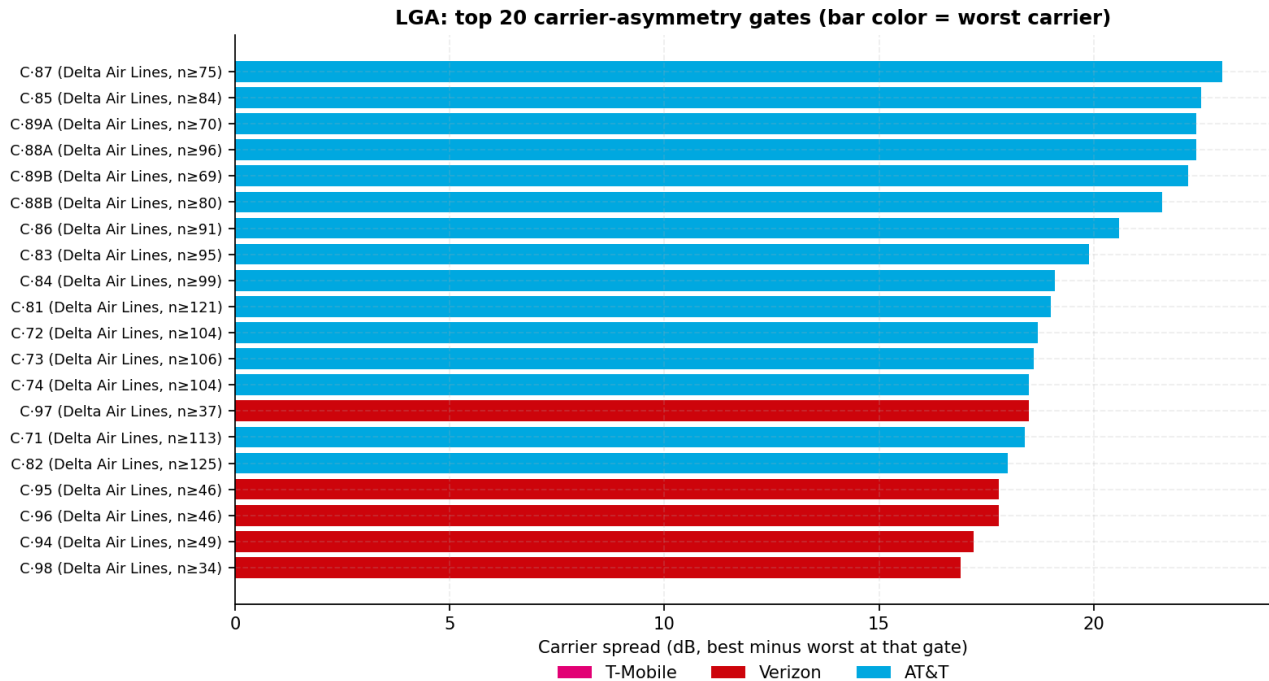


FIG. 29. Top 20 gates by best-minus-worst carrier 5G RSRP spread, among the 80 gates where every carrier's per-gate n is at least 30 tiles. Bar color is the worst carrier at that gate. Gate refs follow the OpenStreetMap inventory. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31

These 20 gates are where a passenger's experience varies most by carrier (spreads of 17 to 23 dB). The best carrier at every one of the top 20 is T-Mobile. Worst-carrier tally across all 80 ranked gates: Verizon 41, AT&T 35, T-Mobile 4. The top five sit in Terminal C (5): gates 87, 85, 89A, 88A, 89B. They serve two purposes: worst-case examples for the stakeholder narrative, and the validation-point list for post-deployment monitoring (section 14). Verizon and AT&T 5G on an in-building path should compress this spread.

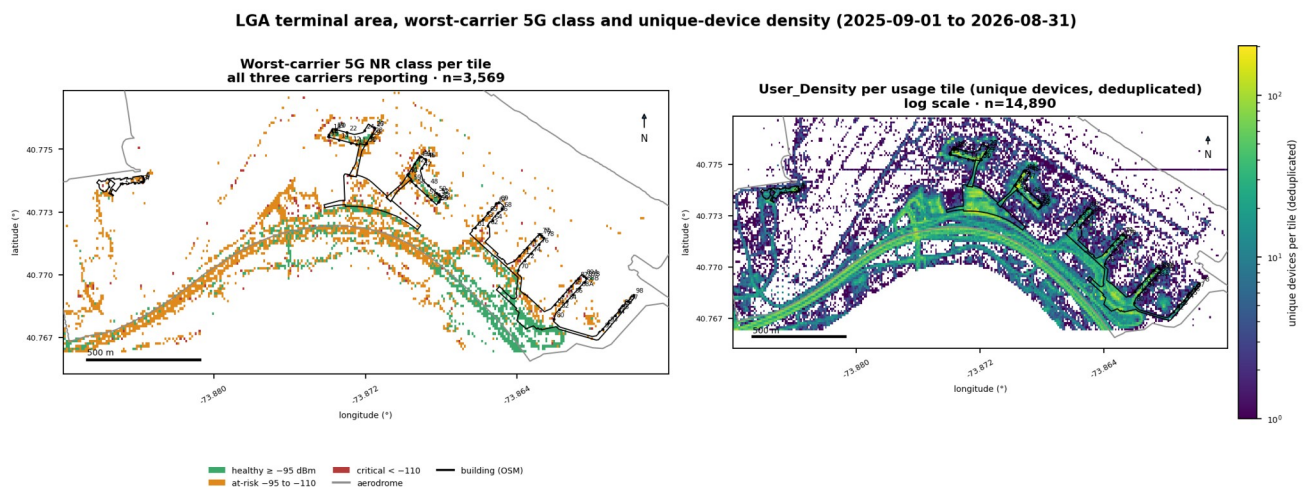


FIG. 30. Left: each terminal-area tile colored by the worst carrier's 5G NR class where all three carriers report. Right: User_Density per usage tile (unique devices, deduplicated) on a log scale over the same extent. · Source: Ookla Cell Analytics per-carrier RF tile export, 2025-09-01 to 2026-08-31; Ookla Cell Analytics All Networks usage export, 2025-09-01 to 2026-08-31

FIG. 30 pairs the two questions an operator asks first: where is the weakest carrier weak, and where are the devices. Amber covers the Terminal B headhouse, the Terminal C piers, and the roadway loop, and the density panel shows the terminal frontages and the roadway carrying the highest unique-device counts.

11. Federal and operational-critical tenants

Point	Zone	Per-carrier 5G RSRP (class, n tiles)
Port Authority Police	Terminal A	T-Mobile – 103.4 dBm (at-risk, n=45); Verizon – 103.4 dBm (at-risk, n=10); AT&T – 100.4 dBm (at-risk, n=28)

1 operational-critical point is identifiable by name in the pinned capture (Port Authority Police); no other federal or operational-critical point is identifiable by name in the capture. AT&T's FirstNet Band 14 (LTE700PS) appears on 280 AT&T LTE tiles (section 9.1); public-safety coverage posture is a section 15 layer. These readings are single-point aggregates, reported for scope and not ranked.

12. Passenger-impact translation

Carrier	Gates below healthy 5G	Share of gates	Gates within 1 dB of the line (sensitivity)
T-Mobile	24 of 80	30.0%	14
Verizon	74 of 80	92.5%	11
AT&T	66 of 80	82.5%	11

Translation method: LGA recorded 16,715,567 revenue enplanements in calendar 2024 (FAA, cited) and 32,800,000 total passengers in 2025 (Port Authority, both directions, cited); the two bases are not interchangeable and only the FAA enplanement figure belongs in any translation. Per-gate volumes are not available, so the only translation this report offers is illustrative and stays in prose: distributing annual enplanements uniformly across the 80 measured gates (including the six Terminal A gates that closed in May 2026) would place the share of gates below healthy 5G onto the same share of enplanements. It is not a measurement, it assigns every gate the same volume regardless of airline, and it is not tabulated for that reason. A gate-level passenger feed (section 15) would replace it. The point stands without it: on Verizon and AT&T, 92.5% and 82.5% of gates sit below the healthy 5G threshold in this window, with 11 and 11 of those gates within 1 dB of the line.

13. Prioritized recommendations

Ordered by dependency, each with an owner.

#	Recommendation	Owner
1	Attest the in-building inventory: which terminal buildings ride on Boingo's network and which carriers are on the DAS in each building is not held; the owners named here hold that inventory between them and should attest it. The measured pattern (Verizon and AT&T LTE healthy at 77 and 75 of 80 gates; their 5G NR healthy at 6 and 14) is consistent with more than one explanation, and the answer decides the design.	Port Authority of New York and New Jersey with LaGuardia Gateway Partners, Delta Air Lines, and Boingo Wireless
2	Bring Verizon and AT&T 5G NR onto Boingo's in-building systems, headhouse and Terminal C first, subject to the Recommendation 1 attestation of per-building carrier loading. Acceptance is the per-carrier commissioning KPI set (walk test and scanner survey); section 14 stays a monitoring plan and is not written into the scope of work.	Boingo Wireless with Verizon and AT&T; Port Authority of New York and New Jersey; LaGuardia Gateway Partners; Delta Air Lines
3	Treat the Marine Air Terminal rebuild as the acceptance zone. The capital plan funds a rebuild of the non-landmarked gate areas; specify multi-carrier 5G NR in-building coverage in the design and adopt the section 14 at-reopening criteria before the first tenant returns.	Port Authority of New York and New Jersey
4	Treat Wi-Fi as a coexisting capacity layer in the design (terminal-zone offload 59%, section	Port Authority of New

	7.1). Obtain controller telemetry for the public network to size it.	York and New Jersey, Boingo Wireless
5	Decide the CBRS and private-wireless question under the agency-wide agreement alongside the 5G NR work (section 8), not after it.	Port Authority of New York and New Jersey

14. Post-deployment monitoring criteria and re-measurement plan

These are monitoring criteria for the before-and-after comparison, not the acceptance test for any system. Acceptance itself is per-carrier commissioning (walk test and scanner survey) against the same thresholds. Thresholds are the locked ladder (section 16). Gate refs and counts come from the OpenStreetMap inventory (Terminal A 6, Terminal B 36, Terminal C 38; the Port Authority publishes 35 gates at Terminal B and 37 to 38 at Terminal C). Gate-named criteria must be reconciled against the operators' gate plans before adoption.

Zone or point	Carrier	Criterion (threshold)	Re-test
All measured gates	Every hosted carrier	5G SS-RSRP median ≥ -95 dBm per gate	Like-for-like window after go-live
All measured gates	Verizon	Healthy 5G at $\geq 90\%$ of gates (this window: 6 of 80, 8%)	Like-for-like window after go-live
Terminal B	Verizon	Healthy 5G on $\geq 90\%$ of zone tiles (this window: 32%, n=3,349)	Like-for-like window after go-live
Terminal C	Verizon	Healthy 5G on $\geq 90\%$ of zone tiles (this window: 58%, n=2,212)	Like-for-like window after go-live
Terminal A (rebuilt gate-area footprint)	Verizon	At reopening: healthy 5G on $\geq 90\%$ of tiles inside the rebuilt gate-area building footprint (this window's footprint: 25 5G-reporting tiles, below the 30-tile floor, a count only; the 1,211-tile Terminal A zone includes parking and roadway and is not the criterion)	First like-for-like window after the rebuilt gate areas reopen
All measured gates	AT&T	Healthy 5G at $\geq 90\%$ of gates (this window: 14 of 80, 18%)	Like-for-like window after go-live
Terminal B	AT&T	Healthy 5G on $\geq 90\%$ of zone tiles (this window: 58%, n=2,611)	Like-for-like window after go-live
Terminal C	AT&T	Healthy 5G on $\geq 90\%$ of zone tiles (this window: 70%, n=1,479)	Like-for-like window after go-live
Terminal A (rebuilt gate-area footprint)	AT&T	At reopening: healthy 5G on $\geq 90\%$ of tiles inside the rebuilt gate-area building footprint (this window's footprint: 24 5G-reporting tiles, below the 30-tile floor, a count only; the 1,114-tile Terminal A zone includes parking and roadway and is not the criterion)	First like-for-like window after the rebuilt gate areas reopen
Terminal A	T-Mobile	Hold parity: healthy 5G on $\geq 39\%$ of zone tiles (this window's share in this zone, n=2,449)	Like-for-like window after go-live (at reopening for Terminal A)
Terminal B	T-Mobile	Hold parity: healthy 5G on $\geq 71\%$ of zone tiles (this window's share in this zone, n=5,437)	Like-for-like window after go-live
Terminal C	T-Mobile	Hold parity: healthy 5G on $\geq 83\%$ of zone tiles (this window's share in this zone, n=3,746)	Like-for-like window after go-live
Terminals B and C	T-Mobile	LTE tile median ≥ -95 dBm per zone (this window: B -93.0 dBm, n=4,472; C -87.0 dBm, n=2,536)	Like-for-like window after go-live
Gate C-87 (OSM ref)	worst this window: AT&T	Best-minus-worst carrier spread ≤ 10 dB (this window 23 dB)	Like-for-like window after go-live
Gate C-85 (OSM ref)	worst this window: AT&T	Best-minus-worst carrier spread ≤ 10 dB (this window 22 dB)	Like-for-like window after go-live
Gate C-89A (OSM ref)	worst this window: AT&T	Best-minus-worst carrier spread ≤ 10 dB (this window 22 dB)	Like-for-like window after go-live
Gate C-88A (OSM ref)	worst this window: AT&T	Best-minus-worst carrier spread ≤ 10 dB (this window 22 dB)	Like-for-like window after go-live
Gate C-89B (OSM ref)	worst this window: AT&T	Best-minus-worst carrier spread ≤ 10 dB (this window 22 dB)	Like-for-like window after go-live

Re-measurement uses the same instrument as this baseline (Ookla Cell Analytics, identical thresholds). The window is like for like: the same 12-month length, or a matched shorter window that is disclosed

alongside the result. Ookla's date-range comparison renders the before and after directly. Imagine Wireless re-measures over that window after any in-building change goes live; the crowdsourced tiles serve as the before-and-after comparison and acceptance itself is per-carrier commissioning.

15. Next layers to add

Layer	What it resolves	Source
Ookla Site Finder centroids (LTE and 5G)	Macro-site geometry behind the section 3 and 5.2 readings; this issue publishes no site figure, so those readings rest on the RF tiles alone; queued for the next issue	Ookla portal pull (Imagine Wireless)
In-building inventory attestation	Per-building carrier and band loading on Boingo's Terminal B, Terminal C, and Marine Air Terminal systems (Recommendation 1)	Port Authority, terminal operators, Boingo Wireless
Google Places tenant capture	Adds admin, services, and lounge points to the OpenStreetMap list and thickens the category cells	Google Places (New) pull (Imagine Wireless)
Indoor mask	OSM building-polygon mask shipped in this issue (section 4.7); Ookla native Indoor layer to be pinned as portal captures	Ookla portal captures (Imagine Wireless)
Date-range comparison	Before and after for any in-building change; converts this snapshot into a trend	Ookla portal pull
Poor multi-network coverage	Vendor-ranked building-versus-carrier problem split; corroborates section 4.3	Ookla portal pull
3D Z-axis view	15 m vertical bands; the export is flat but the portal is not	Ookla portal pull
Per-gate passenger counts	Replaces the section 12 uniform-distribution proxy with measured exposure	Port Authority, terminal operators, airline schedules
Gate plan reconciliation	Aligns OpenStreetMap gate refs with the operators' gate lists before gate-named criteria are adopted	LaGuardia Gateway Partners, Delta Air Lines
Marine Air Terminal rebuild design documents	Zones, hosted carriers, and commissioning criteria for the section 14 at-reopening plan	Port Authority
Wi-Fi controller telemetry	Airtime, retries, client density; converts presence into capacity	Boingo Wireless, Port Authority
Contract records for LGA	The knowledge graph's contracts query was not available at this issue	Imagine knowledge graph
Public-safety (NFPA 1221) coverage	Emergency responder radio coverage posture; FirstNet Band 14 is present in the data	Authority having jurisdiction, integrator; Port Authority 2026 to 2035 Capital Plan lines CA02-606, CA02-605, CA02-X03 (KG record)
Published speed benchmark	Ookla's published Speedtest Intelligence 1H 2025 airport benchmark reports LGA mobile median downloads of T-Mobile 225.54, Verizon 193.65, and AT&T 161.96 Mbps and airport Wi-Fi 165.74 Mbps (KG record, cited); a different instrument and panel from this report's tiles, which carry no throughput	Ookla public article via the knowledge graph
Walk test: jet bridges, baggage corridors, construction zones	Areas crowdsource cannot reach; the acceptance instrument	Scanner survey

16. Method, thresholds, confidence, and caveats

Measurement source: Ookla Cell Analytics per-carrier RF tile exports and the All Networks usage export for LGA, 12-month window 2025-09-01 through 2026-08-31, clipped to the KLGA aerodrome polygon (OpenStreetMap way 198597589) plus a 200 m buffer, intersected with the export rectangle common to all four files (latitude 40.7669 to 40.784, longitude -73.8902 to -73.8552; the Verizon export was drawn on a wider rectangle that fully contains it, so every carrier shares one footprint). 34,844 on-airport RF tiles are retained from 67,926 exported; 16,970 usage tiles from 19,221. The aerodrome's northern

apron and Runway 4/22 end and its far western edge lie outside the common rectangle and hold no tiles; no terminal is affected. Measurement freshness at issue is 15 days, within the platform's 90-day policy. Join: tiles to gate and tenant points within an 80 m radius. Gates and gate refs come from a pinned OpenStreetMap inventory (80 gates: Terminal A 6, Terminal B 36, Terminal C 38; refs are bare numbers, zoned by point-in-polygon against the pinned terminal footprints with a 150 m nearest-footprint fallback; the Port Authority publishes 35 gates at Terminal B and 37 to 38 at Terminal C), so gate-named criteria must be reconciled against the operators' gate plans before adoption. Tenants come from a pinned OpenStreetMap capture (108 points, no polygons, no Z-axis). Tile-to-zone assignment: nearest gate or tenant point within 500 m (disclosed proxy). Building mask (section 4.7): point-in-polygon of tile centroids against the pinned OSM footprints, so it selects tiles over a building, not tiles measured inside it. Tenant zone attribution: point-in-polygon against the same footprints, then the nearest gate's zone within 400 m, so points across the Grand Central Parkway can be attributed to Terminal B through that fallback (disclosed proxy). Maps: equirectangular axes in degrees, north up, no basemap tiles, rebuilt from the pinned CSVs. Central tendency: median for every headline figure; means only where labeled. Carrier mapping: the export's T-Mobile US, Verizon, and AT&T US operators are printed as T-Mobile, Verizon, and AT&T. Carrier ordering throughout: strongest at the gates first (T-Mobile, then Verizon and AT&T, which are tied), asserted against the data at build time.

Tile geometry and sample basis: each RF tile is 0.0001° by 0.0001°, about 8 m by 11 m at 40.8° N. The three carrier panels cover 17,135 unique tile centroids on the airport, 6,912 of them seen by all three carriers. The export carries no per-tile scan count, so every n in this report counts tiles, not scans. The 30-tile floor guards spatial support, not scan volume. Ookla aggregates each tile from its panel over the window.

Field population: cell, PCI, and band fields populate only where Ookla resolved a serving cell, so their n is smaller than the RSRP n for the same carrier. The table shows the number of on-airport tiles that populate each field.

Field	T-Mobile	Verizon	AT&T
NR_SS_RSRP	12,733	7,535	5,687
NR_Strongest_Cell	12,119	4,252	319
NR_Strongest_PCI	12,120	4,253	319
NR_Strongest_Band	12,120	4,253	319
LTE_RSRP	9,721	9,849	9,274
LTE_Strongest_Cell	9,727	9,852	9,276
LTE_CQI	2,859	4,289	3,461
Optimization_Priority	8,220	9,001	8,302
General_LTE_Service	12,033	9,383	7,721
All on-airport tiles	14,024	11,138	9,682

Threshold ladder (locked, one ladder everywhere): 5G NR SS-RSRP and LTE RSRP healthy ≥ -95 dBm, at risk -95 to -110 , critical < -110 . 5G SS-SINR healthy ≥ 10 dB, at risk 0 to 10, critical < 0 . RSRQ healthy ≥ -10 dB. No venue-specified threshold was provided. Noise floor: margins under 1 dB are not rankings; every rank statement in this report prints its margin, and the Verizon-to-AT&T gate-median margin of 0.3 dB is reported as a tie. Minimum-sample rule: no chart or comparative claim ships on fewer than 30 underlying tiles or points. Terminal A holds 6 gates and every tenant category fewer than 30 points, so those tallies appear as counts with n visible and are not ranked; Terminals B and C clear the gate floor and their gate shares are printed as percentages; zone and category comparisons run on the tile basis for one consistent basis (applied: sections 4.3, 4.4, 4.5, 4.6, 5.4, 5.5, 10, 11).

Units rule: Ookla User_Density is the count of unique Android devices observed per tile over the measurement window, deduplicated. It does not count simultaneous users and it does not measure time

spent, and neither reading appears anywhere in this report. Wi-Fi offload = $\sum \text{Wi-Fi MB} \div \sum (\text{Wi-Fi} + \text{Mobile}) \text{ MB}$ by volume, computed at venue and zone level only on the All Networks panel. Per-carrier offload is not derivable from this dataset and is not implied. The offload figure cannot separate the public network from tenant or personal networks.

Sample basis and inference limits: crowdsourced background scans from consumer Android handsets (a panel Ookla characterizes as about 3% of devices; iOS devices are not sampled), aggregated per tile over 12 months. The panel's composition differs by carrier, so cross-carrier comparisons inherit a device-population bias this export cannot correct. Supported: medians, shares, and distributions at venue, zone, gate-cluster, and tenant-category level with n disclosed. Not supported: throughput, latency, or jitter (not in this export), per-carrier Wi-Fi offload, sub-tile positioning, and floor separation. Nothing in this report is measured indoors: there is no indoor mask beyond the building-polygon selection and no Z-axis, and gate values are tiles within 80 m of a point that can straddle the apron. The Terminal A window blends eight months of scheduled operation with four months of closure.

Confidence tagging: facts sourced from public records rather than measurement are tagged "cited" inline; a cited fact is cited, not held, and is never a measurement. Measured claims reproduce from the raw exports through the audit dossier that accompanies this report, which also records capture dates for transcribed values (terminal operators and airline assignments) and the public source behind every entity statement. Facts from the Imagine knowledge graph are pinned in the build's source folder and tagged "KG record" inline; the graph's contracts query was not available at this issue and its leadership rows are held, not published. The 90-day freshness policy is Imagine Wireless's reporting policy. The Port Authority's October 14, 2025 agreement release with its wireless provider is a held source.

Population key for the several n printed for one carrier: all on-airport tiles (T-Mobile 14,024, Verizon 11,138, AT&T 9,682); tiles inside the terminal extent drawn on the maps (T-Mobile 12,608, Verizon 10,127, AT&T 8,880); 5G-reporting tiles (T-Mobile 12,733, Verizon 7,535, AT&T 5,687); 5G-reporting tiles inside the map extent (T-Mobile 11,638, Verizon 6,954, AT&T 5,301). Cell, PCI, and band fields are smaller still (table above).

Caveats: the dataset is gate-area and public-corridor weighted; it does not cover jet-bridge interiors or baggage corridors. PCI diversity, serving-cell volatility, and band distributions are aggregate proxies, not active traces or carrier network-management data. The optimization priority index is Ookla's vendor-defined layer, reported as such. Engineering inferences about cause are labeled as inferences where they appear.

Provenance discipline: every numerical value in this report is computed from the cited source files at build time or carries an inline cited tag. No value is estimated or invented. Photographs are illustrative material from Wikimedia Commons under the licenses listed in the audit dossier and in each caption; they are not measurements.

Appendix A. Lowest-reading mapped points per carrier (all categories, terminal and periphery; n ≥ 30 tiles only)

The 108 mapped points blend terminal concessions with periphery businesses (parking, lodging, roadside services). That mix is deliberate: it is the periphery bucket of the section 5.2 proxy. This table is an inventory of the lowest-reading points on or near airport property. Only points whose per-carrier aggregate rides on n ≥ 30 tiles appear.

T-Mobile

RSRP (dBm)	Zone	Category	Point	n (tiles)
-103.4	Terminal A	transport_admin	Port Authority Police	45

-98.6	Terminal A	transport_admin	Terminal A Parking	139
-97.6	(outside zones)	retail	7-Eleven	146
-97.4	(outside zones)	transport_admin	Hertz	124
-97.3	Terminal C	food	Voyage	192
-97.3	Terminal A	food	Yankee Clipper Deli & Restaurant	116
-97.0	Terminal A	other	Pet Relief Area	149
-96.8	Terminal C	food	Cotto	189
-96.4	Terminal C	food	Wibar	189
-96.2	Terminal A	other	Flight	136
-95.7	Terminal B	food	La Chula	178
-95.4	Terminal C	services	Destination Board	192
-95.3	Terminal B	food	Bar Veloce	170
-94.6	Terminal B	retail	Hudson	181
-93.9	Terminal B	food	Il Viaggio	186
-93.9	Terminal A	food	Java City	124
-93.9	Terminal C	retail	Sunglass Hut	192
-93.3	Terminal B	retail	Irving Farm	184
-93.3	Terminal B	food	Shake Shack	187
-93.2	Terminal B	food	Sweetleaf Coffee Roasters	185

Verizon

RSRP (dBm)	Zone	Category	Point	n (tiles)
-103.3	Terminal B	lodging	Aloft New York LaGuardia Airport	127
-102.5	Terminal B	transport_admin	Airpark	122
-101.9	Terminal C	food	Artichoke	154
-101.6	Terminal C	services	Destination Board	146
-101.4	Terminal B	services	Cardtronics	120
-101.4	Terminal C	retail	Cibo Express	154
-101.4	Terminal C	food	World Bean	159
-101.3	Terminal B	food	Talde Noodle Bar	150
-101.2	Terminal C	food	Interwich	162
-101.2	Terminal C	food	Kombu	163
-101.2	Terminal C	retail	Sunglass Hut	154
-101.1	Terminal B	food	Hill Country	146
-101.1	Terminal B	lodging	unnamed OpenStreetMap point	134
-101.0	Terminal C	food	Cibo Express Food Hall	162
-101.0	Terminal B	food	Junior's	158
-100.9	Terminal C	food	Anglers	158
-100.9	Terminal A	food	Java City	66
-100.9	Terminal C	food	Wibar	137
-100.8	Terminal C	food	Custom Burgers	163
-100.8	Terminal B	food	Green Leaf's	151

AT&T

RSRP (dBm)	Zone	Category	Point	n (tiles)
-105.5	Terminal B	transport_admin	Terminal B Parking Garage	188
-103.1	Terminal A	food	Java City	96
-101.7	Terminal B	food	Talde Noodle Bar	131
-101.7	Terminal B	retail	The Queen's Corner	139
-101.3	Terminal B	services	Cardtronics	91
-101.3	Terminal C	food	Cotto	105
-101.3	Terminal B	retail	The Bowery Bay Shops	142
-101.1	Terminal B	food	Junior's	137
-101.1	Terminal B	food	Tony + Benny's	139
-101.0	Terminal B	food	Dos Toros	140
-101.0	Terminal B	food	NY Creperie	137
-100.8	Terminal B	food	Wendy's	139
-100.8	Terminal C	food	Wibar	109
-100.5	Terminal B	retail	Kate Spade New York	146

-100.1	Terminal B	food	Hill Country	124
-100.1	Terminal A	other	Pet Relief Area	115
-99.9	Terminal B	food	Green Leaf's	132
-99.9	Terminal A	transport_admin	Terminal A Parking	115
-99.9	Terminal C	food	Voyage	100
-99.8	Terminal A	other	Flight	111

Appendix B. Strongest-serving band tables per carrier (with footprint share)

The same top-6 bands as section 9.1, extended with each band's share of the carrier's band-reporting tile footprint. Labels are Ookla's, printed verbatim (legend in section 9.1).

T-Mobile: 5G NR strongest band (n=12,120)

Band	Tile count (n)	Share of NR footprint
NR2500	5577	46.0%
NR1900	3544	29.2%
NR600	1688	13.9%
NR2600	1308	10.8%
NR2100	3	0.0%

T-Mobile: LTE strongest band (n=9,719)

Band	Tile count (n)	Share of LTE footprint
LTE2100	4656	47.9%
LTE1900	2986	30.7%
LTE700	2048	21.1%
LTE1800	27	0.3%
LTE600	2	0.0%

Verizon: 5G NR strongest band (n=4,253)

Band	Tile count (n)	Share of NR footprint
NR3700	2966	69.7%
NR850	875	20.6%
NR3500	374	8.8%
NR1900	36	0.8%
NR2100	1	0.0%
NR2500	1	0.0%

Verizon: LTE strongest band (n=9,849)

Band	Tile count (n)	Share of LTE footprint
LTE1900	4184	42.5%
LTE2100	3855	39.1%
LTE700	1797	18.2%
LTE800	13	0.1%

AT&T: 5G NR strongest band (n=319)

Band	Tile count (n)	Share of NR footprint
NR3700	174	54.5%
NR3500	104	32.6%
NR850	37	11.6%
NR2100	4	1.3%

AT&T: LTE strongest band (n=9,274)

Band	Tile count (n)	Share of LTE footprint
LTE2100	2997	32.3%
LTE1900	2918	31.5%

LTE700	2035	21.9%
LTE2300	1034	11.1%
LTE700PS	280	3.0%
LTE1800	9	0.1%

Appendix C. Full gate table

Per-gate mean 5G NR RSRP and SINR per carrier to one decimal, with the per-carrier tile n. Healthy means RSRP ≥ -95.0 dBm. Best 5G carrier is a count. Gate refs follow the OpenStreetMap inventory; the zone is the terminal footprint the gate falls in.

Zone	Gate	T-Mobile RSRP / SINR (n)	Verizon RSRP / SINR (n)	AT&T RSRP / SINR (n)	Best 5G
A	1	-93.8 / +11.8 (132)	-95.1 / +5.7 (82)	-100.9 / +5.3 (105)	T-Mobile
A	2	-95.2 / +10.1 (138)	-102.8 / +4.9 (81)	-102.1 / +5.2 (97)	T-Mobile
A	3	-94.9 / +9.5 (141)	-102.7 / +4.8 (88)	-101.2 / +6.1 (94)	T-Mobile
A	4	-94.9 / +9.3 (140)	-102.7 / +4.8 (85)	-100.6 / +6.1 (92)	T-Mobile
A	5	-95.1 / +9.1 (145)	-102.8 / +4.9 (85)	-101.3 / +5.9 (92)	T-Mobile
A	6	-95.4 / +9.1 (143)	-102.8 / +4.9 (83)	-101.3 / +5.9 (92)	T-Mobile
B	11	-89.5 / +13.6 (180)	-95.8 / +7.9 (171)	-96.6 / +8.6 (142)	T-Mobile
B	12	-89.2 / +14.0 (177)	-96.5 / +8.1 (163)	-97.7 / +8.3 (130)	T-Mobile
B	14	-92.0 / +13.1 (168)	-99.1 / +6.2 (152)	-99.1 / +7.4 (120)	T-Mobile
B	15	-95.1 / +10.0 (171)	-100.0 / +4.6 (141)	-99.7 / +5.8 (122)	T-Mobile
B	16	-95.6 / +9.8 (177)	-99.6 / +4.9 (140)	-99.5 / +5.8 (126)	T-Mobile
B	17	-95.9 / +9.4 (178)	-99.7 / +4.9 (143)	-99.9 / +5.9 (128)	T-Mobile
B	18	-96.1 / +9.7 (184)	-99.3 / +5.0 (152)	-99.3 / +6.3 (136)	T-Mobile
B	19	-95.0 / +10.8 (171)	-99.1 / +5.5 (143)	-99.1 / +6.4 (127)	T-Mobile
B	20	-94.9 / +10.7 (178)	-99.1 / +5.6 (148)	-99.0 / +6.5 (133)	T-Mobile
B	22	-91.4 / +13.7 (172)	-97.0 / +7.4 (148)	-97.5 / +8.4 (118)	T-Mobile
B	24	-93.5 / +11.3 (174)	-94.1 / +7.4 (155)	-95.4 / +9.6 (147)	T-Mobile
B	26	-97.7 / +7.7 (173)	-95.1 / +5.6 (139)	-95.4 / +9.5 (144)	Verizon
B	27	-97.9 / +7.6 (176)	-95.0 / +5.7 (140)	-95.4 / +9.5 (144)	Verizon
B	28	-96.4 / +9.1 (186)	-94.1 / +6.8 (148)	-94.4 / +10.5 (145)	Verizon
B	29	-95.7 / +9.7 (181)	-94.3 / +7.1 (148)	-94.4 / +10.7 (140)	Verizon
B	30	-93.3 / +11.1 (187)	-95.4 / +7.4 (162)	-95.4 / +9.8 (145)	T-Mobile
B	31	-92.9 / +11.2 (187)	-95.5 / +7.4 (161)	-95.3 / +9.8 (144)	T-Mobile
B	40	-93.1 / +12.9 (174)	-100.2 / +5.0 (158)	-97.2 / +8.1 (147)	T-Mobile
B	41	-93.0 / +13.1 (176)	-99.9 / +5.2 (158)	-97.5 / +8.0 (147)	T-Mobile
B	42	-95.1 / +10.8 (172)	-97.9 / +5.8 (151)	-97.8 / +8.4 (146)	T-Mobile
B	43	-96.6 / +9.0 (165)	-97.7 / +4.9 (146)	-97.7 / +8.9 (139)	T-Mobile
B	44	-96.4 / +8.2 (163)	-97.3 / +5.2 (141)	-97.2 / +9.3 (132)	T-Mobile
B	45	-96.2 / +8.2 (168)	-97.1 / +5.1 (141)	-96.9 / +9.4 (130)	T-Mobile
B	46	-96.2 / +8.1 (169)	-97.0 / +5.2 (141)	-97.0 / +9.2 (130)	T-Mobile
B	47	-94.1 / +10.6 (185)	-97.3 / +5.9 (159)	-97.1 / +8.6 (150)	T-Mobile
B	48	-91.3 / +11.7 (195)	-96.2 / +7.3 (134)	-94.3 / +10.5 (134)	T-Mobile
B	50	-89.9 / +12.4 (208)	-95.9 / +7.2 (134)	-90.4 / +12.9 (132)	T-Mobile
B	51	-89.3 / +12.7 (206)	-96.0 / +7.3 (131)	-89.9 / +12.7 (133)	T-Mobile
B	52	-89.1 / +13.0 (208)	-96.1 / +7.3 (131)	-89.8 / +12.7 (134)	T-Mobile
B	53	-88.7 / +13.5 (205)	-96.9 / +6.9 (126)	-89.8 / +12.8 (132)	T-Mobile
B	54	-88.1 / +14.5 (208)	-97.3 / +6.8 (122)	-89.8 / +12.9 (133)	T-Mobile
B	55	-87.9 / +14.6 (206)	-97.3 / +6.9 (119)	-89.7 / +13.0 (132)	T-Mobile
B	56	-88.6 / +14.6 (206)	-97.6 / +6.7 (126)	-90.3 / +12.3 (129)	T-Mobile
B	57	-89.9 / +13.8 (201)	-98.4 / +6.4 (123)	-91.5 / +11.6 (126)	T-Mobile
B	58	-90.4 / +13.6 (190)	-99.0 / +5.7 (149)	-95.0 / +9.3 (147)	T-Mobile
B	59	-91.4 / +13.7 (184)	-99.9 / +4.9 (160)	-96.1 / +8.8 (156)	T-Mobile
C	61	-92.8 / +14.0 (170)	-102.2 / +4.4 (141)	-96.2 / +6.8 (110)	T-Mobile
C	62	-95.1 / +10.6 (191)	-101.6 / +4.4 (140)	-101.1 / +6.6 (103)	T-Mobile
C	63	-97.0 / +9.0 (181)	-101.7 / +4.6 (130)	-99.9 / +6.1 (104)	T-Mobile
C	64	-96.1 / +8.8 (191)	-100.7 / +4.2 (126)	-101.7 / +6.8 (106)	T-Mobile
C	65	-97.9 / +6.8 (185)	-101.0 / +4.7 (119)	-99.6 / +6.9 (100)	T-Mobile

C	66	-96.9 / +6.4 (187)	-100.9 / +4.4 (104)	-99.9 / +7.5 (92)	T-Mobile
C	67	-97.7 / +4.9 (169)	-99.4 / +4.1 (92)	-98.2 / +8.1 (82)	T-Mobile
C	68	-97.1 / +5.7 (166)	-99.4 / +4.2 (90)	-99.9 / +7.7 (79)	T-Mobile
C	69	-97.3 / +5.0 (159)	-99.5 / +3.6 (84)	-97.8 / +8.1 (76)	T-Mobile
C	70	-85.2 / +17.7 (192)	-91.5 / +14.6 (155)	-96.2 / +7.8 (130)	T-Mobile
C	71	-84.2 / +18.6 (191)	-98.0 / +9.0 (141)	-102.6 / +7.7 (113)	T-Mobile
C	72	-83.7 / +18.4 (181)	-96.6 / +10.0 (130)	-102.4 / +7.3 (104)	T-Mobile
C	73	-85.4 / +17.1 (172)	-98.7 / +6.9 (127)	-104.0 / +7.4 (106)	T-Mobile
C	74	-84.8 / +17.2 (178)	-98.5 / +7.0 (128)	-103.3 / +8.4 (104)	T-Mobile
C	75	-87.2 / +15.2 (154)	-98.6 / +5.3 (113)	-103.3 / +8.8 (89)	T-Mobile
C	76	-86.5 / +15.4 (157)	-98.2 / +6.3 (118)	-101.8 / +9.7 (86)	T-Mobile
C	77	-88.4 / +13.7 (134)	-97.7 / +5.5 (92)	-101.2 / +10.3 (65)	T-Mobile
C	78	-87.4 / +14.5 (138)	-99.2 / +5.6 (91)	-101.2 / +11.6 (70)	T-Mobile
C	79	-88.2 / +13.8 (138)	-97.9 / +5.2 (94)	-101.6 / +10.7 (68)	T-Mobile
C	80	-84.8 / +17.9 (202)	-93.4 / +10.9 (161)	-92.8 / +8.8 (162)	T-Mobile
C	81	-82.7 / +20.7 (173)	-99.4 / +7.3 (131)	-101.7 / +6.6 (121)	T-Mobile
C	82	-83.4 / +20.6 (186)	-99.2 / +8.1 (136)	-101.4 / +5.7 (125)	T-Mobile
C	83	-82.7 / +22.1 (155)	-98.4 / +6.8 (122)	-102.6 / +6.7 (95)	T-Mobile
C	84	-83.4 / +21.6 (174)	-97.8 / +7.7 (127)	-102.5 / +5.7 (99)	T-Mobile
C	85	-82.4 / +21.7 (157)	-98.1 / +6.0 (127)	-104.9 / +6.3 (84)	T-Mobile
C	86	-83.1 / +22.2 (160)	-98.0 / +7.0 (132)	-103.7 / +5.8 (91)	T-Mobile
C	87	-82.2 / +20.7 (139)	-97.6 / +4.3 (115)	-105.2 / +7.1 (75)	T-Mobile
C	88A	-82.7 / +21.1 (167)	-97.4 / +4.8 (139)	-105.1 / +6.8 (96)	T-Mobile
C	88B	-83.2 / +20.2 (152)	-97.5 / +4.2 (126)	-104.8 / +6.4 (80)	T-Mobile
C	89A	-82.6 / +19.7 (134)	-96.7 / +4.0 (109)	-105.0 / +6.8 (70)	T-Mobile
C	89B	-82.9 / +19.7 (136)	-96.8 / +4.0 (112)	-105.1 / +6.0 (69)	T-Mobile
C	92	-86.4 / +19.4 (108)	-99.0 / +2.9 (92)	-95.7 / +10.8 (73)	T-Mobile
C	93	-85.5 / +20.0 (108)	-99.2 / +3.1 (92)	-97.0 / +10.8 (67)	T-Mobile
C	94	-82.7 / +23.0 (86)	-99.9 / +2.2 (80)	-99.1 / +9.2 (49)	T-Mobile
C	95	-81.8 / +23.9 (75)	-99.6 / +2.5 (73)	-97.7 / +12.0 (46)	T-Mobile
C	96	-82.0 / +23.3 (75)	-99.8 / +2.2 (70)	-97.7 / +12.0 (46)	T-Mobile
C	97	-80.8 / +23.6 (53)	-99.3 / +2.1 (49)	-95.1 / +14.7 (37)	T-Mobile
C	98	-82.6 / +22.7 (34)	-99.5 / +2.1 (34)	-91.6 / +16.6 (37)	T-Mobile