

NEXT GENERATION WIRELESS THAT WORKS FOR ALL OF US:

What to Know About 5G and “Small Cell” Technology

THE PROBLEM

Large telecommunications companies are seeking to strengthen their wireless networks—densifying existing 4G networks and deploying new 5G networks—by installing “small cell” antennas in our neighborhoods. Unlike traditional “macro” cell towers, which broadcast signals long distances and tend to be built outside city centers, these new small cell antennas provide a much smaller coverage radius. In order to blanket an area like a downtown core, companies need to install small cells every few blocks, and this means companies want access to city-owned property, like light poles and utility poles, to install equipment. The problem is that they don’t want to work with local governments and do it the right way, opting instead for unfair deals that drain public coffers, ignore worker and public safety, and do nothing to bridge the digital divide.

5G HYPE: MISLEADING MESSAGING AND MISINFORMATION

The telecommunications industry has used misleading messaging about 5G to push its policy agenda. Industry talking points emphasize “the race to 5G” and suggest that cities must act fast or risk being left behind. The industry implies that 5G will somehow bridge the digital divide.

The reality is that many small cells don’t provide 5G service—instead strengthening 4G service—and small cells are only one part of 5G deployment. Unlike large macro towers, 5G small cell antennas use a high frequency wavelength (“millimeter wave”). This wavelength provides increased bandwidth, but also means signals can only travel short distances—under 1,000 feet, according to experts—and are “line of sight,” meaning they are typically blocked by obstructions like buildings and trees.¹ The industry itself has stated that small cells are not for “coverage” and are instead for “small pockets of 5G hotspots” in “dense urban areas.”²

Nationwide 5G coverage relies on “midband spectrum,” which can travel further while maintaining high speeds, and does not rely on small cells. This spectrum is not currently available to all carriers, and a true nationwide 5G network will likely not be available to consumers

until 2022 or 2023 at the earliest.³ Speedy and efficient network deployment is completely compatible with cities and counties regulating small cells. The only “race” is for companies to lock in cheap access to public property as quickly as they can.

UNSAFE DEPLOYMENT: RISKING PUBLIC AND WORKER SAFETY

The rush for cheap and speedy deployment can put public and worker safety at risk. It’s common practice in the telecommunications industry to engage in multiple levels of subcontracting. These arrangements mean localities often do not know who is working in their public rights-of-way. Accountability can erode and create serious safety risks. In July 2018, a Verizon subcontractor in Wisconsin hit a gas line and caused an explosion that leveled half a city block, killing a volunteer firefighter and critically injuring another.⁴ Similar gas line hits and explosions have happened in North Carolina, Colorado, New York, and California.⁵ In **Miami**, the rushed deployment leading up to the 2020 Super Bowl led to stray wires in walkways and obstacles that make sidewalks inaccessible—what one County Commissioner calls an “absolute mess.”⁶

PREEMPTION: THE INDUSTRY HAS LOBBIED TO SEIZE LOCAL POWER

After aggressive industry lobbying, the Federal Communications Commission (FCC) published an order in 2018 that drastically limits the power of local governments to regulate small cells and prevents local governments from charging fair rates for access to public property. Dozens of cities and localities have sued the FCC over the order.⁷ The telecommunications industry has also successfully moved state preemption bills in at least 29 states⁸ and it isn’t stopping there, with efforts continuing this past year including in New York and Pennsylvania. Many of these state laws set lower standards than the FCC’s 2018 order, further constraining local governments from fulfilling their responsibility to protect public safety and regulate deployment. Effectively these laws have forced localities to hand property over to big business. These laws often include “deemed approved” remedies that set strict deadlines for

local governments to respond to applications. If the government misses a deadline, companies can go ahead and install equipment on city streets without local approval, which can lead to unsafe conditions like inaccessible sidewalks or overburdened poles.

PENNIES ON THE DOLLAR: LOW RENTS AND SWEETHEART DEALS

Through federal and state preemption, the wireless industry has forced localities to give private parties access to public property for pennies on the dollar. But some cities have also voluntarily entered into short-sighted “private-public partnerships” with telecommunications companies that look like corporate giveaways. For example, one city entered into a private-public partnership with Verizon that locked in artificially low rates for a decade and Verizon-promised community benefits like WiFi in parks. But key benefits were delayed or dropped completely. Most of the parks are still without WiFi and the city has yet to receive 5G service.⁹ These agreements can lock a locality into low fees and high administrative costs, with little benefit to the local community.¹⁰

WORSENING THE DIGITAL DIVIDE

As the COVID-19 pandemic has made obvious, broadband is essential infrastructure, but more than 21 million Americans still lack access.¹¹ Digital equity is a racial justice issue: areas with a higher proportion of people of color have fewer wired internet service providers and are more likely to be completely unserved,¹² a practice many advocates refer to as “digital redlining.”¹³ A recent study found that as many as half of the children in some parts of Chicago lack the access to broadband needed to fully engage in online education during the COVID-19 pandemic.¹⁴ Nationwide, 12 million children lack connectivity and are being left behind.¹⁵ Without local government and stakeholder involvement, new network deployment only exacerbates the digital divide. Small cells tend to be first deployed in densely populated, high-income areas and commercial districts, as opposed to rural or low-income areas.¹⁶ Companies are able to profit off of public resources while children and families don’t see any of the benefits.

THE SOLUTION/KEY POLICY CONSIDERATIONS

ROBUST DEMANDS AND MASTER LICENSE AGREEMENTS

Local governments should invest the resources to understand small cell infrastructure and set clear objectives to protect the public interest by defining parameters for small cell deployment. When companies frame the conversation, it can lead to unfair terms. Many cities have not evaluated their right-of-way policies or the costs involved in permitting for many years. Although federal and state preemption present major roadblocks today, localities still have the ability to update policies, enter master license agreements that protect the public, and negotiate

provisions allowing renegotiation in the event preemption is overturned.¹⁷ Master license agreements can also address digital divide issues. In **New York City**, the city has a tiered pricing system to incentivize deployment in low-income areas.¹⁸ In **San Jose**, agreements provide for up-front funding to support the administrative costs of processing permits and include contributions to a Digital Inclusion Fund, which supports digital divide initiatives in the city.¹⁹

PROVISIONS TO ENSURE SAFETY IN THE RIGHT-OF-WAY

There are immediate actions cities and counties can take to promote safety when infrastructure is installed in the right-of-way, including safety reporting requirements, compliance with existing labor laws, and subcontractor transparency. Local governments can require that providers report to the city the identities of each entity performing work in the public right-of-way, including when the entity is a subcontractor. **New York City** has included subcontractor transparency terms in its most recent franchise agreements.²⁰

STAND UP AGAINST PREEMPTION

Local governments are fighting to defend local power. Cities and counties must join together to make sure that their voices are heard at the state capital, in Congress, at the FCC, and in the courts. In states where preemption bills have been defeated, coalitions of local governments have been key. Dozens of localities are working together to challenge the FCC’s small cell order in federal court.²¹ Organizations like the National League of Cities, National Association of Counties, and National Association of Telecommunications Officers and Advisors are supporting local governments in their fight against preemption.

RESOURCES

- For more information, visit Fair5g.org or email fair5G@cwa-union.org.
- Additional resources are available from the **National Association of Telecommunications Officers and Advisors** at www.natoa.org, and the **National League of Cities** at www.nlc.org.

Co-authored by Communication Workers of America



NOTES

NEXT GENERATION WIRELESS THAT WORKS FOR ALL OF US: WHAT TO KNOW ABOUT 5G AND “SMALL CELL” TECHNOLOGY

1. Reports by E.J.L. Wireless Research on file with Communications Workers of America.
2. Jon Brodtkin, ArsTechnica, “Millimeter-wave 5G will never scale beyond dense urban areas, T-Mobile says,” April 22, 2019, available at <https://arstechnica.com/information-technology/2019/04/millimeter-wave-5g-will-never-scale-beyond-dense-urban-areas-t-mobile-says/>; Jon Brodtkin, ArsTechnica, “Millimeter-wave 5G isn’t for widespread coverage, Verizon admits,” April 23, 2019, available at <https://arstechnica.com/information-technology/2019/04/millimeter-wave-5g-isnt-for-widespread-coverage-verizon-admits/>.
3. Federal Communications Commission, “The C-Band,” <https://docs.fcc.gov/public/attachments/DOC-362335A1.pdf> (stating under an accelerated time frame, deployments would begin in 46 economic areas in September 2021 and the rest of the United States in September 2023); Linda Hardesty, “The 5G of T-Mobile, Verizon and AT&T all rank badly for different reasons,” March 3, 2020, <https://www.fierce-wireless.com/5g/5g-t-mobile-verizon-and-at-t-all-rank-badly-for-different-reasons> (“The only way to get the large amounts of extra capacity really needed for 5G networks in the U.S. is to obtain more spectrum”); TechDirt, “Study Shows US 5G is an Overhyped Disappointment,” May 11, 2020, <https://www.techdirt.com/articles/20200506/09175944445/study-shows-us-5g-is-over-hyped-disappointment.shtml>. The nascent nationwide “5G” networks currently deployed on low-band spectrum have speeds only slightly higher than 4G.
4. Jessica Arp, Channel 3000 News, “City of Sun Prairie releases construction permits for downtown area near explosion,” July 17, 2018, available at <https://www.channel3000.com/news/city-of-sun-prairie-releases-construction-permits-for-downtown-area-near-explosion/769418541>; Bridgit Bowden, WPR, “OSHA cites 2 contractors in Sun Prairie Explosion,” January 10, 2019, available at <https://www.wpr.org/osha-cites-2-contractors-sun-prairie-explosion>; City of Sun Prairie, “Downtown Investigation Update,” December 20, 2018, available at <https://www.cityofsunprairie.com/1017/Downtown-Investigation-Update-122018>.
5. Communications Workers of America, “Subcontracting in Small Cell Deployment: Who’s Doing the Work in Our Streets?,” <https://www.fair5g.org/resources>.
6. Bloomberg, Miami’s Streets Are Awash With 5G Debris Ahead of the Super Bowl, January 30, 2020, https://www.bloomberg.com/news/articles/2020-01-30/miami-streets-are-awash-with-5g-debris-ahead-of-the-super-bowl?utm_source=sendgrid&utm_medium=email&utm_campaign=Newsletters; Connected Real Estate Magazine, “Miami-Dade Commissioner labels area 5G installation ‘absolute mess’,” January 23, 2020, <https://connectedremag.com/das-in-building-wireless/caution-cre-miami-dade-commissioner-labels-area-5g-installation-absolute-mess/>
7. Linda Hardesty, Fierce Wireless, “Mayors who are suing the FCC call its small cell rules a ‘land-grab’,” <https://www.fiercewireless.com/5g/mayors-who-are-suing-fcc-call-its-small-cell-rules-a-land-grab>. The order places artificially low limits on what cities can charge companies for use of public property, sets very quick deadlines or “shot clocks” for how quickly a city must process a company’s request to install, and limits when cities can refuse to allow companies’ access to city property. A summary of the report and order is available from the National Association of Telecommunications Officers and Advisors (NATOA). <https://www.natoa.org/documents/Infrastructure%20DR%203RandO%20Summary.pdf>.
8. Local Solutions Support Center, “What is Preemption?,” <https://www.supportdemocracy.org/preemption>, and additional legislative research on file with Communications Workers of America.
9. Communications Workers of America, “Verizon’s 5G Promise Rings Hollow in Sacramento,” https://www.fair5g.org/system/files/cwa_sacramento_verizon_june_2019_1.pdf
10. Communications Workers of America, “5G Built Wrong: Corporate Giveaways to Verizon Leave San Diegans Worse Off,” https://www.fair5g.org/system/files/san_diego_5g_built_wrong.pdf.
11. Federal Communications Commission, 2019 Broadband Deployment Report, May 29, 2019, available at <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>. See also CWA Broadband Infrastructure Proposal, March 2019, https://cwa-union.org/sites/default/files/201903_cwa_broadband_infrastructure_proposal.pdf.
12. S. Derek Turner, December 2016, Free Press, “Digital Denied: The Impact of Systemic Racial Discrimination on Home-Internet Adoption.” https://www.freepress.net/sites/default/files/legacy-policy/digital_denied_free_press_report_december_2016.pdf. See also Free Press, “The Racial Digital Divide Persists,” December 13, 2018, <https://www.freepress.net/our-response/expert-analysis/insights-opinions/racial-digital-divide-persists>; Pew Research Center, “Mobile Technology and Home Broadband 2019,” June 13, 2019, <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/> (noting 34% of African Americans and 39% of the Latinx community do not have a wired connection).
13. Miranda S. Spivack, July 9, 2020, The Crisis Magazine, “Digital Redlining.” <https://www.thecrisismagazine.com/single-post/Digital-Redlining>. Communications Workers of America and National Digital Inclusion Alliance, October 2020, “AT&T’s Digital Redlining: Leaving Communities Behind for Profit,” <https://cwa-union.org/sites/default/files/20201005attdigitalredlining.pdf> (referring to discrimination against low-income communities).
14. Sarah Karp, April 24, 2020, NPR WBEZ Chicago, “In Some Chicago Neighborhoods, Up To Half Of the Kids Can’t Get Online.” <https://www.npr.org/local/309/2020/04/24/844015491/in-some-chicago-neighborhoods-up-to-half-of-the-kids-can-t-get-online>
15. Communications Workers of America, “Verizon’s 5G Promise Rings Hollow in Sacramento,” June 2019. https://www.fair5g.org/system/files/cwa_sacramento_verizon_june_2019_1.pdf
16. U.S. Government Accountability Office, June 12, 2020, GAO 20-468, “5G Deployment: FCC Needs Comprehensive Strategy to Guide Its Efforts.” <https://www.gao.gov/products/GAO-20-468>
17. For example, in one of Syracuse’s small cell lease agreements, the City has provisions that allow for the agreement to be renegotiated should the FCC’s order be vacated. In NATOA’s guide for localities on implementing the small cell order, they recommend local governments consider ways to preserve local authority should the order be vacated or modified. NATOA, “NATOA Releases FCC Small Cell Order Implementation Guide,” https://www.natoa.org/web/site_issue/issue_detail/70, “Effective Date and Legal Authority,” pg. 3.

18. The tiered pricing system is outlined in New York City's Request for Proposals. The City of New York Department of Information Technology and Telecommunications, "Request for Proposal for Franchises," June 12, 2018, <https://www1.nyc.gov/assets/doitt/downloads/rfp/NYC-Mobile-Telecommunications-RFP-6-12-18.pdf>
19. <https://nextcity.org/daily/entry/san-jose-digital-inclusion-fund-will-be-the-largest-in-the-country>
20. Speedmatters, "Who's Building Our 5G? In new franchise agreements, NYC leads the way on worker safety and corporate transparency," <https://speedmatters.org/news/who-s-building-our-5g-new-franchise-agreements-nyc-leads-way-worker-safety-and>
21. The case is *City of Eugene, Oregon v. FCC*, Ninth Circuit, No. 19-70344. A decision is expected later in 2020.