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Is Pittsburgh building out 5G infrastructure fast enough? Some say no.

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While leaders from around Pittsburgh agree that investing in 5G infrastructure is a critical strategy in setting the city up for future success, some are less convinced Pittsburgh is on a quick enough track to do so and may lose its competitive edge. But a new bill being introduced to City Council, along with an effort at the state level to create a more uniform process, could change that.

Brian Kennedy, senior vice president for operations and government affairs at the Pittsburgh Technology Council, said more certainly needs to be done.

"We are still the inside baseball point of view for 5G in the country," Kennedy said. "But that is going to change super fast, and Pittsburgh is actually pretty well behind. ... You are not seeing any major investment going on here in the Pittsburgh region."

5G is designed to drastically increase the speed, connectivity and latency for not just smartphones, but also the autonomous vehicles and the Internet of Things that will define smart cities of the future. But it comes with a price – the private sector, with the coordination of cities, has to build out a physical system to support the technology made up of cell towers and "small cells" or nodes placed around the community, such as on the sides of buildings or on streetlight poles.

If a city does not pave the way for full 5G deployment fast enough, it could lose its attraction to both the tech firms who rely on it for business and the citizens who want their devices to work at the highest quality.

Matt Smith, president of the Greater Pittsburgh Chamber of Commerce, noted the importance of making progress on 5G deployment as a lifeline to the city's future. Smith said he's seen studies that suggest that over \$1 billion of investment in the private sector could come from the deployment of 5G services in Allegheny County.

"It's critical for us to send a market signal that Pittsburgh is a city that is future focused, and the key is 5G," Smith said. "We do view it as a competition and one in which the cities who are making this kind of investment are going to be magnets for investment and talent."

At a "stalemate"

Kennedy said that from a both a regulatory perspective and a private sector investment perspective, the city is at a "stalemate."

Kennedy said an inconsistent permitting process has been one roadblock for progress. He explained that in the early days of 5G, companies paid large permitting fees to build towers, but organizations stepped in to discourage monopolies and the FCC implemented limits on those fees in 2018.

The FCC order outlined "presumed safe harbor amounts" for application fees of about \$100 per antenna and annually recurring use fees of about \$270, but it did not specifically establish a fee cap.

Pittsburgh has yet to fully adopt a FCC permitting structure; however it's in the process.

Santiago Garces, innovation and performance director for the city, said that prior to the FCC order, cities were allowed to charge market rates for the right to place wireless antennas in the public way. Those rates tended to be more than \$3,000 per antenna or higher. He said the current recurring cost for usage of the right of way proposed by Pittsburgh is \$855 per year.



ANSYS

Ansyes created a rendering of simulated 5G signals being used for V2X communication that will enable next generation autonomous vehicles.

That's still well above the FCC recommendations. AT&T, which launched its 5G coverage in Pittsburgh in late 2019, expressed frustration at what it sees as Pittsburgh's lack of compliance with the FCC limits.

"Unlike many other cities nationwide, including Cleveland, Pittsburgh does not have an FCC-aligned fee structure for small cell deployment," an AT&T spokesperson said. "What's more, during this current crisis, while other cities have been issuing permits to advance deployment, Pittsburgh is refusing to comply with the FCC standard, which will result in delays and less 5G investment in the city."

The spokesperson further explained the need for agreements between cities, municipalities and private companies to move forward.

At least one other provider has excluded Pittsburgh from its first round of cities in which to expand 5G: Verizon offers its 5G network coverage in 35 U.S. cities, but Pittsburgh does not make that list, according to Chris Serico, employee communications and consumer public relations manager at Verizon. The list does, however, include Cincinnati and Cleveland. Serico did not explain why Pittsburgh was not among the first round of cities.

T-Mobile does offer its 5G network in Pittsburgh — and after a merger in April, Sprint customers also receive 5G through this network — but the company focuses mostly on a version of 5G that does not rely heavily on the distributed small cell infrastructure model.

Pittsburgh's plan

The city, however, noted that it is working to invest time and money into the development of a 5G network.

Pittsburgh has a small cell regulatory program, which plans to on June 30 to introduce a bill to the city council to formalize the process of deploying small cells. Garces said the legislation for a fee schedule compliant with FCC orders had been planned since February, but was delayed due to the disruption from Covid-19. He said Pittsburgh has been in active discussions in good faith with telecommunications companies for over a year.

"It is unfortunate that certain people misconstrue the desire to have an open and transparent public process given the disruption of the pandemic as a purposeful delay on the city's side," Garces said. "Prior to the pandemic, the city had been meeting regularly with the telecommunications providers to create a program that ensured a safe, speedy and equitable deployment of 5G for the city."

The legislation proposes a fee of \$870 annually, which the city says is in line with FCC orders and recovers costs associated with staff and activities directly involved with small cell deployment. It's the second fee structure Pittsburgh proposed, reducing it after telecommunications providers raised concerns about the first one. The program will include online permitting and dedicated employees will make the process run more uniformly.

The Department of Mobility and Infrastructure for the City of Pittsburgh has also supported strategies to test building out this needed infrastructure, including microtrenching, or the process of digging one or two inch wide and about two foot deep trenches that can hold conduits for fiber, according to Garces. However, he said private companies invest in the infrastructure for 5G, and while Pittsburgh has made investments to facilitate deployment, it's not the city's role to subsidize the private sector.

Garces said beyond employee time, Pittsburgh has invested about \$100,000 to develop a cellular communications plan that identified disparities in the current deployment of technologies, especially impacting low-income communities of color, and another \$300,000 to create an inventory of all potential locations for 5G using CycloMedia.

Searching for solutions

To stay competitive with other regions, some advocate for a more uniform process across the entire state.

The PA Partnership for 5G, which works to advocate for 5G development and deployment, has focused its efforts on House Bill 1400. Currently, each municipal jurisdiction has its own process, own fee and own timeline for how to implement 5G, [Ashley Shook](#), a spokesperson for the partnership, said. She said House Bill 1400 would create a consistent, streamlined method for permitting fees and deploying 5G infrastructure across the state.

"[The bill] talks about why ... connectivity is so important and why 5G will certainly be integral to us being able to continue to effectively work from home and learn from home and seek medical attention from home," Shook said. "All of that is tied up in our capability to remain connected and increase our connectivity capabilities."

Shook said 28 states in the country already established statewide, uniform frameworks for the deployment of 5G, and she said deployments are occurring at a much faster rate in cities where that legislation is in place, such as in Cincinnati and Cleveland.

A study conducted by OpenSignal in 2019 analyzed the experience of smartphone users with 5G in every state and the country's 50 largest cities. The study concluded that Pittsburgh's mobile download speed experience was 29.5 Mbps, ranking fifth, after Cleveland, Minneapolis, New York and Detroit. The study also concluded that Pittsburgh's latency experience was 54 milliseconds, ranking right in the middle of the countries surveyed.

"We want to make sure that Pennsylvania is on a level playing field, especially with the states surrounding us, because we have such a strong tech sector, especially in western Pennsylvania, that we want to make sure that we are able to take advantage of the innovation that 5G technology will allow," she said.

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