



1776 K STREET NW
WASHINGTON, DC 20006
PHONE 202.719.7000

www.wileyrein.com

November 10, 2017

Joshua S. Turner
202.719.4807
JTurner@wileyrein.com

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *In the Matter of Accelerating Wireless Broadband Deployment
by Removing Barriers to Infrastructure Development*, WT Docket No. 17-79
*In the Matter of Comment Sought on Streamlining Deployment of Small Cell
Infrastructure by Improving Wireless Facilities Siting Policies; Mobilitie,
LLC Petition for Declaratory Ruling*, WT Docket No. 16-421
*In the Matter of Accelerating Wireline Broadband Deployment by Removing
Barriers to Infrastructure Investment*, WC Docket No. 17-84

Dear Ms. Dortch

On November 9, 2017, Monica Gambino, and Robert Millar of Crown Castle along with the undersigned and Ari Meltzer of Wiley Rein LLP met with Louis Peraertz, Legal Advisor to Commissioner Clyburn, to discuss issues raised in the draft orders in the above-referenced proceedings related to pole replacements and strand-mounted antennas, and to talk generally about state and local barriers to deployment of next-generation broadband infrastructure.

As the country's largest independent owner and operator of shared wireless infrastructure, Crown Castle has a substantial interest in the issues raised in these proceedings. Crown Castle owns and operates 60,000 route miles of fiber, 50,000 small cell nodes on air or under development, and 40,000 towers. Crown Castle understands the importance of developing and maintaining strong relationships with the states and localities it will be working with on these projects for many years to come.

Crown Castle agrees with Commissioner Clyburn's statement in her #Solutions2020 plan that "[i]t is in the best interest of consumers for municipalities and providers to work together to ensure timely rollout of robust wireless networks throughout the country," and Crown Castle has a strong record of collaboration with municipalities that has resulted in the deployment of cutting edge broadband networks in cities around the country. For example:

Marlene H. Dortch
November 10, 2017
Page 2

- In order to meet community needs in advance of the 2012 Papal Visit, Crown Castle designed a fiber-based small cell network in Philadelphia, and worked with government and other stakeholders to get it installed. That network continues to provide upgraded wireless service in Philadelphia today. <https://www.youtube.com/watch?v=a654FBAzeis>
- Crown Castle worked with city officials and property owners to install five custom-designed wireless networks to accommodate all the tweets, texts, photos and videos when Glendale, Arizona hosted the Big Game in 2015. The stadium is part of the Glendale Sports & Entertainment District that includes five venues—each requiring its own separate, state-of-the-art wireless network with the ability to pass off to one another seamlessly. <https://www.youtube.com/watch?v=604aNgh9FuI&index=2&list=PLzwk72TdJoQFS9z19nBtr0ia9KB6yvt2C>
- During the meetings, Crown Castle provided the attached additional examples of its efforts in Central Park, Cleveland, Pittsburgh, and Palo Alto, which highlight just a fraction of Crown Castle's successful collaborations with municipalities.

For Crown Castle, working with state and local governments to reach an equitable solution is always the primary goal, and in the vast majority of cases we are able to achieve a solution that works for everyone. The circumstances that implicate federal law represent a small minority of our interactions with local governments. Yet at the same time, when these concerns do arise, it is critical to both Crown Castle *and* the local jurisdiction that disputes are resolved quickly; from our perspective, one of the worst outcomes is for Crown Castle's applications to be put into limbo, which delays wireless deployment and harms consumers overall.

On the draft order, the Crown Castle representatives expressed their appreciation for the Commission's interest in streamlining the process for replacing existing poles, but explained that the restrictions in the draft order will limit its practical application. First, because most replacement poles must be constructed adjacent to existing poles to allow providers to relocate their equipment without disruption before the existing pole is removed, an exemption that only applies to poles placed in the exact same hole as the existing pole would be of limited utility. Second, a 10% increase in height is insufficient to provide the separation that many utilities require between the power space and an antenna located at the top of the pole (which is where most utilities require small cell antennas to be installed).

Marlene H. Dortch
November 10, 2017
Page 3

Accordingly, Crown Castle requested that the Commission modify Paragraph 10 of the Draft Order as follows:

Pursuant to Section 800.3(a)(1) of the ACHP's rules, we conclude that in the circumstances specified below, replacement of a pole that was constructed with a sole or primary purpose other than supporting communications antennas with a pole that will support such antennas would have no potential to affect historic properties. We therefore revise our rules to provide that the construction of such replacement poles will be excluded from Section 106 review when all the following conditions are met:

(i) The original structure—

(A) Is a pole that can hold utility, communications, or related transmission lines;

(B) Was not originally erected for the sole or primary purpose of supporting antennas that operate pursuant to a spectrum license or authorization issued by the Commission; and

(C) Is not itself a historic property.

(ii) The replacement pole—

(A) Is located within a previously disturbed area, including within ~~the same ten feet of the hole as where~~ the original pole was located;

(B) Has a height that does not exceed the height of the original pole by more than ~~the greater of~~ 10 percent of the height of the original pole ~~or ten feet~~; and

(C) Has an appearance consistent with the quality and appearance of the original pole.

(iii) Construction of the replacement pole in place of the original pole entails no new ground disturbance (either laterally or in depth) outside previously disturbed areas, including disturbance associated

Marlene H. Dortch
November 10, 2017
Page 4

with temporary support of utility, communications, or related transmission lines. For purposes of this paragraph, “ground disturbance” means any activity that moves, compacts, alters, displaces, or penetrates the ground surface of previously undisturbed soils.

Expanding the exemption to include adjacent replacement poles would greatly improve the utility of the order. Moreover, it would be well within the discretion of the Commission to reach the common-sense conclusion that ground in the right of way (particularly adjacent to the existing pole) has already been disturbed, and placing a replacement pole adjacent to the new pole would therefore not have any potential impact on historic sites. It is also consistent with the ACHP Program Comment, which provides discretion for new infill structures (which certainly have a greater potential to affect historic properties than replacement poles) along an existing line. *See* Advisory Council on Historic Preservation, *Program Comment for Communications Projects on Federal Lands and Property* 10 (May 8, 2017), available at <http://www.achp.gov/docs/broadband-program-comment.pdf>. Indeed, the Commission already excludes replacement towers installed within 30 feet of the existing tower property from Section 106. *See In the Matter of Nat'l Envtl. Policy Act Compliance for Proposed Tower Registrations Effects of Commc'ns Towers on Migratory Birds*, 26 FCC Rcd. 16700 ¶ 53 (2011). The effect of a replacement pole, if any, would be less than a new pole or a replacement tower, and the exemption should apply accordingly. Even in areas where no environmental assessment was done previously, the ground adjacent to an existing pole is likely to have been disturbed during installation, meaning that installing a new pole right next to the existing pole will not result in further disturbance.

A ten-foot height extension, meanwhile, would be consistent with the FCC’s rules implementing Section 6409 of the Spectrum Act, which recognize that a ten-foot increase does not qualify as a substantial change to the existing pole. *See* 47 C.F.R. § 1.40001(b)(7); *In the Matter of Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, Report and Order, 29 FCC Rcd. 12865 ¶ 188 (2014) (finding that increases in height of up to 10% or 10 feet will not “substantially change the physical dimensions” of the existing structure); *see also Collocation Agreement; Wireless Telecommunications Bureau Announces Execution of Programmatic Agreement with Respect to Collocating Wireless Antennas on Existing Structures*, Public Notice, 16 FCC Rcd. 5574 § 1.C(1) (WTB

Marlene H. Dortch
November 10, 2017
Page 5

2001) (recognizing that mounting of an antenna is not a substantial increase if it would not protrude by twenty feet).

In addition, the Crown Castle representatives encouraged the Commission to move as swiftly as possible to reaffirm its existing position that strand-mounted small cell antennas are permissible under existing the FCC's overlying rules. As the draft Further Notice of Proposed Rulemaking observes, "Commission precedent holds that 'neither the host attaching entity nor the third party overlayer must obtain additional approval from or consent of the utility for overlying other than the approval obtained for the host attachment.'" See *In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Draft Report and Order, Declaratory Rulemaking, and Further Notice of Proposed Rulemaking, WC Docket No. 17-84 ¶ 159 (rel. Oct. 26, 2017) (citing *Amendment of Commission's Rules and Policies Governing Pole Attachments*, CS Docket Nos. 97-98 and 97- 151, Consolidated Partial Order on Reconsideration, 16 FCC Rcd. 12103, 12141, para. 75 (2001) ("2001 Pole Recon Order"); *Cable Television Ass'n of Georgia, et al., Complainants, v. Georgia Power Co., Respondent*, File No. PA 01-002, Order, 18 FCC Rcd. 16333, 16340-41, para 13 (EB 2003)). Indeed, the Commission has long recognized the benefits of overlying for promoting the deployment of competitive services and broadband. See *In the Matter of Implementation of Section 703(e) of the Telecommunications Act of 1996, Amendment of the Commission's Rules and Policies Governing Pole Attachments*, Report and Order 13 FCC Rcd. 6777, 6807 ¶ 62 (1998) ("We believe overlying is important to implementing the 1996 Act as it facilitates and expedites installing infrastructure essential to providing cable and telecommunications services to American communities."); 2001 Pole Recon Order ¶ 73.

Based on this existing law, Crown Castle has already entered into agreements with dozens of utilities, has about 1,600 strand-mounted small cell antennas already in operation in California, and has a contract to deploy approximately 2,500 additional strand-mounted small cell antennas there in the next year. Although Crown Castle appreciates the FCC's desire to provide clarity on this issue, it is concerned that the notice could create ambiguity where none currently exists. Accordingly, Crown Castle encouraged the Commission to replace the sixth and seventh sentences of Paragraph 159 of the draft Further Notice ("For example, would attachments such as strand-mounted wireless small cells be considered as overlying? Or is overlying limited to new wires and cables?") with the a preliminary conclusion along the lines of the following:

Marlene H. Dortch
November 10, 2017
Page 6

The Commission preliminarily concludes that, consistent with current practice, attaching strand-mounted wireless small cells to existing wires and cables already on a utility pole is considered overloading for which no further approval from or consent of the utility is required, and we seek comment on that conclusion.

Crown Castle requested that the Commission codify any rules it intends to adopt in this area as quickly as possible to resolve any uncertainty.

Crown Castle also discussed additional actions the Commission can take to expedite deployment of next generation broadband networks, including: (i) expanding the exclusion from Section 106 review to include all deployments in the right-of-way, not just those within 50 feet of a communications tower or electric utility right-of-way; (ii) grandfathering so-called “twilight towers” that were constructed between the adoption of the Programmatic Agreement for Collocation in 2001 and the 2004 Programmatic Agreement and that are currently underutilized due to the uncertainty of their regulatory status; and (iii) clarifying that municipalities cannot attach conditions to permits for eligible facilities requests under 6409 that are unrelated to public safety and that improperly preclude future eligible facilities requests, including those related to camouflaging existing facilities. Crown Castle also encouraged the FCC to lead an education initiative to inform Americans about the benefits of next generation broadband networks and small cell technologies.

Finally, the Crown Castle representatives discussed several examples of the unreasonable delays that it is facing in a number of jurisdictions where it is seeking to deploy next generation DAS, small cell, and/or fiber networks:

- Crown Castle reached an agreement with the City of Gaithersburg, Maryland in mid-2016 to deploy a small cell network in the City. At the last minute, the City abandoned the agreement and, after a lengthy process, instead decided to adopt a new ordinance along with more than 80 pages of regulations that effectively prohibit the construction of facilities in a large percentage of the City, including residential areas.
- The City of San Francisco initially adopted a small cell ordinance in March 2011, which Crown Castle and other entities challenged in May 2011. More than six years later, the case is now on appeal before the California Supreme

Marlene H. Dortch
November 10, 2017
Page 7

Court, with oral argument unlikely before late 2018 and a decision not likely until 2019.

- Three years ago, Crown Castle sought approval from the City of Charleston, South Carolina, to deploy an advanced communications network consisting of DAS, small cells, and fiber. After Crown Castle obtained the consent of the state Department of Transportation (at Charleston's request), the City indicated that it would not issue permits to Crown Castle until it adopts an ordinance governing small cell deployment. The City still has not adopted an ordinance, however, and will not allow Crown Castle to deploy any facilities, including fiber to serve its enterprise customers.

Crown Castle takes pride in its efforts to work with municipalities toward collaborative solutions that benefit both municipalities and their residents, and in many cases can reach a mutual solution that allows construction to proceed (as evidenced by the 50,000 nodes currently constructed or under construction across the country). All too frequently, though, these extensive efforts are stymied by delay and obstruction, and Crown Castle has had no choice but to resort to long and costly litigation that delays the benefits of next generation broadband networks and needlessly strains community resources that can be better spent on other purposes.

Crown Castle thus encouraged the Commission to adopt solutions that would eliminate the need to litigate in many cases, or expedite litigation where it occurs, including adoption of a deemed approved remedy under Section 332, application of a shot clock and deemed approval under Section 253, and adoption of creative methods to effectuate a deemed approved remedy, such as a presumption that an injunction is proper to obtain the permits necessary to implement an application that has been deemed granted, or modification of the post-deemed grant process to hold that a municipality that fails to bring a challenge within a set period waives its rights to claim the deemed grant is improper (while continuing to allow the grantee to enforce the deemed grant in court). Crown Castle also discussed the possibility of obtaining a declaratory ruling under Section 253 that such dilatory tactics are prohibited.

Pursuant to Section 1.1206 of the Commission's Rules, attached are informational documents that Crown Castle provided to Commission staff during the meeting.



Marlene H. Dortch
November 10, 2017
Page 8

Sincerely,

/s/ Joshua S. Turner
Joshua S. Turner

cc: Louis Peraertz (via email to louis.peraertz@fcc.gov)

Gearing up for the Big Game.

As the home of the Arizona Cardinals and the Fiesta Bowl, The University of Phoenix Stadium has been no stranger to major sporting events. But, when it was announced that they would be hosting the Big Game in 2015, they knew they had to get ready.

With fans increasingly wanting to Tweet, text, and send photos and videos from the game, wireless data demand was expected to reach unprecedented levels. The stadium is part of the Glendale Sports & Entertainment District that includes five venues—each requiring its own separate, state-of-the-art wireless network with the ability to pass off to one another seamlessly. This solution enables wireless carriers to meet demand during the game, and will serve the venue well into the future as they continue to host major events, concerts, and conferences.

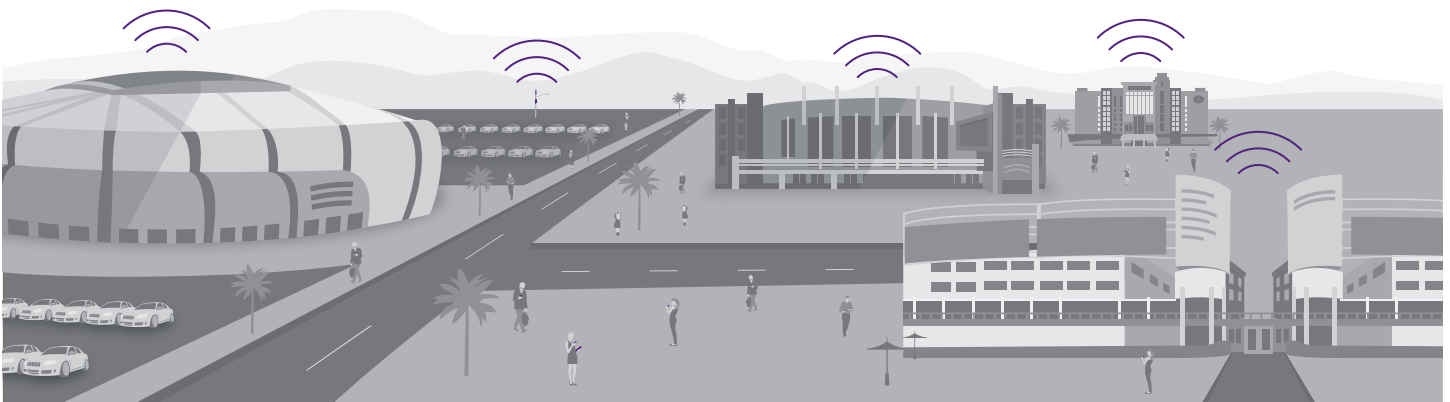
Challenges

From media to tailgaters to fans, the Glendale Sports & Entertainment District was expecting upwards of 150,000 visitors who were predicted to consume 4 terabytes of data directly before, during, and after the Big Game. Preparing for this unprecedented demand was essential, but presented several challenges:

- The Big Game is an event unlike any other in the US, with the largest concentration of wireless users outside of the Olympics.
- The complex consists of 5 distinct venues that will all be used for various needs during

the Big Game: The University of Phoenix Stadium, the massive parking lot tailgate area, Gila River Arena, Westgate Entertainment District promenade, and the Renaissance Glendale Hotel & Spa.

- The needs of each venue varied—sometimes drastically. The number of occupants, indoor vs. outdoor coverage needs, the relationship to nearby towers—each had to be considered individually.
- Concerts, conferences, regular season football and hockey games—none of these ongoing events could be disrupted for the installation.



The Solution

Due to the sheer wireless data capacity required to host an event like the Big Game, a fiber optic foundation was the only viable option. After installing the fiber network, we deployed a series of both indoor and outdoor small cell solution (SCS) networks—being careful to integrate them with the existing macro towers and rooftop installations. We placed hundreds of nodes across the stadium, arena, hotel, parking lot, and entertainment district. Each node was strategically placed to provide overlapping areas of coverage—resulting in higher bandwidth for more fans in a given area.

The Big Game was, of course, the driving motivator for the upgrade, but we built the network with the future in mind. By using a neutral host infrastructure, we made it easy for additional wireless carriers to be accommodated without having to install separate systems. And, with the nearly limitless capacity of fiber, we ensured that the stadium and surrounding venues will continue to be served well beyond the Big Game.



SCS are installed in ceilings at University of Phoenix Stadium.



SCS are mounted on parking lot streetlights outside the stadium.

WHY CROWN CASTLE?

We have nearly 15 years of experience implementing SCS in universities and other communities, including dense urban centers and residential neighborhoods.

Discreet, innovative technology

We provide shared infrastructure that enables the wireless service you have come to depend on—all while blending in with your environment.

Scalable solutions

Our SCS are connected by fiber optic cable—making upgrades easy and enabling virtually unlimited future capacity.

Long-term commitment

Our business is all about infrastructure, so you can count on us to be here for the long haul no matter how technology or carriers change.



**For more information, please contact
(866) 482-8890 or visit CrownCastle.com**

Crown Castle owns and operates approximately 40,000 cell towers and 60,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

Bringing high-speed data to Central Park.

Due to its sheer size, expanding wireless coverage in New York's Central Park is particularly challenging. The park covers 843 acres, and dense foliage prohibited rooftop antennas around the perimeter from providing adequate coverage.

Working closely with several governing bodies, we installed fiber across the park and utilized existing infrastructure to deploy a state-of-the-art small cell solutions (SCS) network. This approach provided necessary voice and data coverage while blending in and maintaining the natural beauty of the park.

Challenges

Central Park averages over 100,000 visitors a day, and on a typical Saturday, that number regularly reaches 220,000.* In addition, the park is also host to large events including concerts on the Great Lawn and the finish line of the New York City Marathon. Providing the infrastructure to ensure that all these visitors have access to the voice and data services they demand comes with several unique challenges:

- The park is considered part of the city. Residents and guests expect their smartphones to work.
- For over 150 years, people have gone to great lengths to ensure that the park remains an oasis from the fast pace and urban feel of the rest of the city. Any new infrastructure couldn't disrupt the park's beauty and restful feeling.
- The needs and interests of several different stakeholders and governing bodies had to be weighed, including the Department of Information Technology and Telecommunications (DOITT), the Department of Transportation (DOT), the Central Park Conservancy, the Landmarks Preservation Commission, and the Department of Parks and Recreation.



The Solution

To meet the wireless demands of the many visitors who frequent the park, we settled on a fiber-based solution—giving us essentially unlimited capacity to build our SCS network. It is also a forward-looking solution, since future upgrades won't require installing additional cable. To preserve the park's natural beauty, we placed nodes on a variety of existing infrastructure, from streetlights to signposts—helping to maintain the park's main draw as a beautiful retreat in a bustling city. Like all the SCS networks we build, it's a neutral host solution, so all wireless carriers can take advantage of the new system without unnecessary infrastructure. With everything in place, Central Park now has the capacity to meet the voice and data needs of the many tourists and New York City residents.



SCS installation on Central Park streetlight.

WHY CROWN CASTLE?

We have nearly 15 years of experience implementing fiber and small cell solutions in communities of all kinds, from dense urban centers to residential neighborhoods.

Discreet, innovative technology

We provide shared infrastructure that gives you the wireless service you've come to depend on—all while blending in with your environment.

Scalable solutions

Our SCS are connected by fiber optic cable—making upgrades easy and enabling virtually unlimited future capacity.

Long-term commitment

Our business is all about infrastructure, and you can count on us to be here no matter how technology or carriers change.

* "Report on the Public Use of Central Park," *Central Park Conservancy*, 2011.



**For more information, please contact
(866) 482-8890 or visit [CrownCastle.com](https://www.CrownCastle.com)**

Crown Castle owns and operates approximately 40,000 cell towers and 60,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

The pathway to possible.
[CrownCastle.com](https://www.CrownCastle.com)

Expanding a city's wireless capacity—and capturing its culture.

In 2016, Cleveland was squarely in the national spotlight—the Cavaliers were on their way to an NBA championship, and the Republican National Convention (RNC) was coming to town.

This was all happening at a time when the city was revitalizing its downtown. Given this confluence of events and circumstances, we worked with a wireless carrier in the area to design and implement a network expansion that would complement their existing towers and rooftop antennas and prepare them for the anticipated demand. The project needed to be finished ahead of the RNC and in a way that contributed to the vibrancy and energy of the surrounding area.

Challenges

- With the RNC quickly approaching, we had to complete the installation in just nine months.
- We had to balance the needs and interests of the wireless carrier with the various municipal departments, including Engineering Design, Construction Inspection, the Bureau of Sidewalks, Plats & Surveys, and the Historic Landmarks Commission.
- Due to special requirements, no equipment could be placed on the streetlights except for the antennas—meaning that some equipment would need to be placed on the ground.
- The installation had to meet the highest aesthetic standards so the city could put its best foot forward during the convention.

The Solution

With several towers and rooftop antennas already in the area, a small cell solutions (SCS) network was the best option for adding coverage and capacity to the existing infrastructure—especially in key outdoor gathering spaces. Working closely with the Downtown Cleveland Alliance, we sponsored the Downtown Cleveland Art Box Series—a contest and art installation involving our ground equipment. As part of the project, local artists submitted work, and the winning entries were wrapped around our



equipment boxes, transforming them into attractive and popular conversation pieces. The new installation has contributed to the culture and vibrancy of the downtown area and, most important, was able to handle the influx of crowds that gathered for the RNC. And much to the delight of local residents, the Cavaliers won the NBA championship! As hundreds of thousands of basketball fans descended on the city for the victory parade, the network was completed ahead of schedule and ready to handle the demand.



Nine ground equipment boxes enliven downtown Cleveland.

WHY CROWN CASTLE?

We have nearly 15 years of experience implementing SCS in communities of all kinds, from dense urban centers to residential neighborhoods.

Community Outreach

Our community outreach team develops community-friendly solutions and proactively meets with residents to make sure their concerns are heard.

Collaboration

We involve residents and municipal partners in every major decision so everyone has a say in the solutions that are deployed.

Long-Term Commitment

Our business is all about infrastructure, and you can count on us to be here no matter how technology or carriers change.



For more information, please contact
(866) 482-8890 or visit CrownCastle.com

Crown Castle owns and operates approximately 40,000 cell towers and 60,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

The pathway to possible.
CrownCastle.com

A wireless network that keeps up with a booming tech city.

In the heart of Silicon Valley, tech is king. But for many, one essential part of the experience was missing—a reliable wireless signal. Everywhere you look in downtown Palo Alto, CA, tech-savvy people are using smartphones, tablets, and other mobile devices.

The steadily increasing use of HD video, data-hungry apps, and streaming music was outpacing the existing wireless infrastructure's ability to meet the demand. Crown Castle was brought in to find an infrastructure solution that would bring much-needed coverage and capacity improvements to the downtown Palo Alto area.

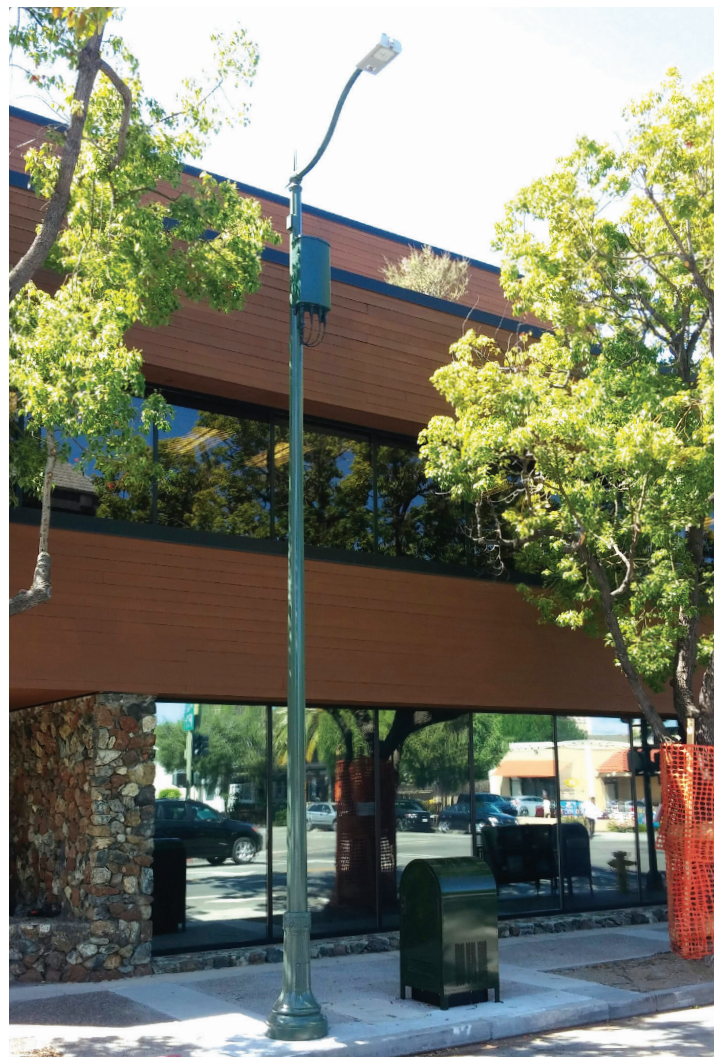
Challenges

Downtown Palo Alto is a high-tech, high-traffic area filled with outdoor spaces, restaurants, small businesses, and many popular shops. It also sits at the entrance of Stanford University. Meeting the demands of all the wireless customers that a place like this attracts came with several challenges:

- The scope and size of the project made getting approvals especially challenging and required a cooperative partnership with city officials across different departments.
- The unique mix of residents, students, families, and businesspeople required careful consideration of the various needs and interests of all parties.
- Residents and city officials wanted to ensure that the installation didn't distract from the unique character and aesthetics of the downtown area.

The Solution

In a place like Palo Alto, where both capacity and aesthetics are top concerns, a small cell solutions (SCS) network was an ideal answer. To get the necessary approvals, we collaborated with city officials and coordinated between departments that had differing and sometimes competing interests and requirements. This flexible approach allowed us to deliver a network that satisfied the needs of six different agencies and can accommodate multiple carriers through 19 small cell sites. To blend



in with the aesthetics of the area, we installed small, discreet nodes in the public right-of-way on existing streetlights. We also came up with an innovative solution to hide our ground equipment—it's disguised inside boxes that look like green service mailboxes. The new network has finally brought downtown Palo Alto's wireless service up to par with the rest of the city's technology. In fact, it's been such a success that we're already working on an expansion project nearby.



Ground equipment disguised inside boxes that look like green service mailboxes

WHY CROWN CASTLE?

We have nearly 15 years of experience implementing SCS in venues and communities, including dense urban centers and residential neighborhoods.

Discreet, innovative technology

We provide shared infrastructure that gives you the wireless service you've come to depend on—all while blending in with your environment.

Long-term commitment

Our business is all about infrastructure, so you can count on us to be here for the long haul no matter how technology or carriers change.

Scalable solutions

Because we design, build, and maintain shared infrastructure, we can seamlessly increase data capacity.



For more information, please contact
(866) 482-8890 or visit [CrownCastle.com](https://www.CrownCastle.com)

Crown Castle owns and operates approximately 40,000 cell towers and 60,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

The pathway to possible.
[CrownCastle.com](https://www.CrownCastle.com)

A faster network for a fast-paced neighborhood.

Imagine 56,000 university students and staff. Add thousands of doctors, nurses, and other medical professionals, and put them all into an area less than 1/10th of a square mile—all using their smartphones.

It's hard to think of a more data-hungry scenario than this, but it's exactly what you'll find when you go to the Oakland neighborhood in Pittsburgh, PA. It's an education, healthcare, and cultural hub, and residents here demand high-speed wireless data to study, work, and live their lives. But as smartphones became more prevalent, and data usage increased, the existing infrastructure couldn't keep up with the growth of demand. Crown Castle was brought in to find a solution that met the needs of the community, without disrupting their lives and while improving the aesthetics of the neighborhood.

Challenges

The Oakland neighborhood is densely populated, with lots of pedestrian traffic. This created several challenges that had to be addressed:

- The solution had to be a targeted one, but also provide adequate capacity. Existing infrastructure provided sufficient coverage, but couldn't handle the wireless demand.
- In order to keep roads and walkways clear, no new equipment could be installed in the public right-of-way.
- The solution would have to fit into and preserve the current aesthetics of the neighborhood—taking advantage of underground infrastructure to deploy fiber.
- Any work needed to go through several layers of approval.
- Wireless carriers required a scalable turnkey solution.

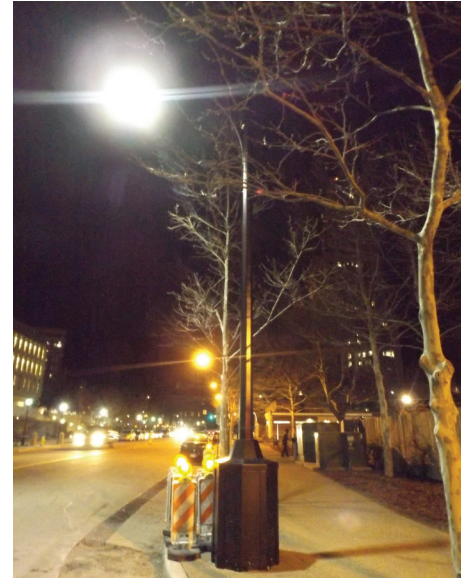


The Solution

To meet the high, concentrated data demands of the neighborhood, we installed a fiber-fed small cell solutions (SCS) network. We connected the network to a hub at an existing macro site in the neighborhood—eliminating the need to install new equipment. New streetlights allowed us to hide the nodes from public view and add to the aesthetics of the neighborhood. This was especially important near historical sites, where it was necessary to win the approval of the City's Public Works Department and Arts Commission. The entire project was completed at night and during off-peak hours in order to minimize disruption to the neighborhood. In the end, the only thing residents noticed was the attractive new streetlights—and, of course, their improved wireless service.



Workers in action, installing fiber to connect to SCS.



SCS installed on a streetlight.

WHY CROWN CASTLE?

We have nearly 15 years of experience implementing SCS in communities, including dense urban centers and residential neighborhoods.

Discreet, innovative technology

We provide shared infrastructure that gives you the wireless service you've come to depend on—all while blending in with your environment.

Scalable solutions

Because we design, build, and maintain shared infrastructure, we can seamlessly increase data capacity.

Collaboration

We involve municipal partners in every major decision so everyone has a say in the solutions that are deployed.



**For more information, please contact
(866) 482-8890 or visit [CrownCastle.com](https://www.CrownCastle.com)**

Crown Castle owns and operates approximately 40,000 cell towers and 60,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.

The pathway to possible.
CrownCastle.com