PCIA
The Wireless Infrastructure Association

Testimony of

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Chairman Thune, Ranking Member Nelson, and members of the Committee, thank you for holding this important hearing and for the opportunity to testify on the urgent topic of removing barriers to wireless broadband deployment. I am the President and CEO of PCIA – The Wireless Infrastructure Association (PCIA), the principal organization representing the companies that build, design, own, and manage telecommunications facilities in the U.S. and throughout the world. Our over 230 members include infrastructure providers, wireless carriers, equipment manufacturers, and professional services firms. PCIA focuses on ensuring that the infrastructure is in place to make mobile devices work. As mobile devices and applications continue to evolve, they share a common requirement of a wireless connection to a wired network—often provided through a tower. Our mission is to expand wireless broadband everywhere, helping our members provide wireless facilities that enable consumers to meet their growing mobile data needs anytime, anyplace.

The wireless broadband infrastructure industry is honored to work with this Committee and Congress on sound policies to encourage deployment of broadband for all Americans, regardless of location or economic status. The premise of this hearing demonstrates the importance of broadband deployment.

Wireless Infrastructure Enables Broadband that Creates Jobs and Economic Growth

When it comes to meeting the growing wireless data demands of Americans and consumers throughout the world, the wireless infrastructure industry plays an indispensable role. Put simply,

our industry enables wireless communication and applications. Similar to roads and bridges, which carry physical traffic, wireless infrastructure is the essential platform for digital traffic that carries innovative applications like Uber, Instagram, Twitter, and YouTube, as well as life-altering broadband services like telemedicine, distance learning, improved public safety response, mobile banking, and a host of industrial and manufacturing functions. Efficient wireless infrastructure buildout will promote innovation and solidify America's historical competitiveness in the technology sector, and virtually every other sector of the economy.

Wireless infrastructure enables the economic growth and technological innovation that accompanies wireless broadband, including the Internet of Things, the app economy, and many future efficiencies and commercial opportunities that wireless broadband enables. A PCIA study found that private investments in wireless infrastructure between 2013 and 2017 are expected to generate as much as $1.2 trillion in economic growth and create 1.3 million net new jobs – including those directly attributable to wireless infrastructure and those created by it in other American business enterprises[1]. Sustaining such investments will strengthen America's competitiveness and allow the U.S. to remain the leader in wireless innovation and thus in the global economy.

This Committee has shown great leadership for its work to eliminate a number of barriers to infrastructure deployment. Most critically, this Committee's work on Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012 has made an enormous difference in speeding the deployment of wireless infrastructure. Specifically, Section 6409(a) established a new Federal law governing state and local review of requests for modification of existing wireless towers or base stations, including collocations for additional providers of wireless services. The Federal Communications Commission's (FCC) outstanding and aggressive implementation of this law grounded Congress' work with a clear regulatory framework that we are confident the courts will find legally sound. Our members report real progress on the speed, cost, and ease of their efforts to deploy 4G networks as a direct result of this Committee's work, so we are grateful for your visionary leadership.

Regarding implementation of Section 6409(a), PCIA, along with CTIA--The Wireless Association, has worked in good faith with national organizations representing state and local governments to implement the law at the suggestion of FCC Commissioner Mignon Clyburn. Over the last several months, we have met with the National Association of Counties, the National League of Cities, and the National Association of Telecommunications Officers and Advisors. We formed a working group together that has released several educational resources

[1] WIRELESS BROADBAND INFRASTRUCTURE: A CATALYST FOR GDP AND JOB GROWTH 2013-2017 (2013), *available at* http://www.pcia.com/images/IAE_Infrastructure_and_Economy_Fall_2013.PDF

and participated on panels across the country. Together, we have produced resource materials for local governments, including (1) a checklist to streamline review processes; (2) best practices used by jurisdictions able to review and approve applications in less than 60 days; (3) webinars and contacts for education and assistance regarding application process; and (4) a model ordinance and application. Members of the working group posted these on their respective websites. It is precisely this kind of cooperation that has enabled significant progress toward fulfilling the promise of the legislation Congress enacted. I commend these organizations, and my fellow witness Mayor Gary Resnick, for their commitment to work together to expedite broadband deployment for the citizens of their communities.

Mobile Broadband is the Future of Broadband

As a variety of reports demonstrate, Americans are quickly moving towards mobile broadband as their primary way to access the Internet. For example, according to Cisco, last year's mobile data traffic was nearly 30 times the size of the entire global Internet in 2000. And this trend is expected to continue[2]. Cisco also reports that U.S. mobile data traffic will grow two times faster than U.S. fixed IP traffic over the next four years and traffic from wireless and mobile devices will exceed traffic from wired devices by 2019[3]. These statistics underscore the need for government policies that reflect the growing demand for mobile data and address the challenges of meeting it by efficiently deploying wireless infrastructure.

America is facing an economic and technological challenge, which I have termed the wireless data crunch. The wireless data crunch refers to the need to meet the nearly insatiable and increasing demand for wireless mobile data with the network's capacity to deliver it. The demand for wireless data will increase 700 percent over the next five years. That's on top of the explosive growth we have already witnessed in the last five years. This tremendous growth is both encouraging and sobering at the same time. The challenge for the wireless infrastructure industry, the telecommunications sector at large, and for this Committee is: how are we going to meet this demand? The projections should serve as a wake-up call that industry and government need to continue to work together to maintain the U.S.'s position as the global leader in wireless innovation, as this Committee has long recognized.

To ensure capacity meets consumer demand, we need to build and deploy all manner of wireless infrastructure including more traditional towers, small cells, distributed antenna systems, and

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[2] CISCO VISUAL NETWORKING INDEX: GLOBAL MOBILE DATA TRAFFIC FORECAST UPDATE, 2014-2019 1 (2015), *available at* http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.pdf

[3] CISCO VISUAL NETWORKING INDEX: FORECAST AND METHODOLOGY, 2014-2019 2 (2015), *available at* http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf

Wi-Fi offload. This integrated infrastructure ecosystem results in greater spectral efficiency. Using spectrum, a finite and limited resource, as efficiently as possible, allows more data to flow over existing frequencies.

Network engineers recognize three basic ways to deliver more wireless data: (1) additional spectrum, (2) increased technological efficiency, and (3) expanded wireless infrastructure. I will briefly discuss spectrum and technological efficiency. As PCIA's focus is providing the infrastructure that makes mobile devices work, I will highlight on this aspect of the delivery of wireless data.

Additional Spectrum

Clearly, more spectrum must be made available—as much as we can get as fast as we can get it. And of course, spectrum is of great value. Thanks to the excellent work by members of this Committee, the FCC was able to auction 65 MHz of AWS-3 spectrum for over $45 billion. Let me put that in context. There were already 550 MHz of spectrum in commercial cellular use. Thus, we've just increased the amount by around 12 percent. The usefulness of this spectrum is affected by the lag time between when the spectrum is auctioned and when it is ready for use. This includes the need for the spectrum to actually be allocated and cleared, antennas and other infrastructure to be upgraded, and a whole generation of handsets to be swapped out. Significant amounts of time are needed before these bands begin to offload traffic from existing frequencies, and it is not likely to be fully phased in for up to five years.

This Committee and the industry are carefully monitoring the next auction—the incentive auction for broadcast spectrum. This auction is not slated to begin until next year, and will likely take over five years to yield any significant spectral relief. Beyond that, significant additional spectrum is not yet in the pipeline. Critical efforts are underway to clear unused Federal government spectrum for commercial use, including the commitment by the Obama Administration to clear 500 MHz by 2020. Notably, Senator Rubio reintroduced the Wireless Innovation Act (S. 1618), which seeks to identify and allocate Federal spectrum to commercial use. However, as this Committee is well aware, it is extremely complicated, and expensive, to move Federal agencies off their current frequencies. Clearing and auctioning Federal spectrum is necessary, but it will not help ease the wireless data crunch in the very near future. We certainly need more spectrum, and I urge you to pursue policies to make more available for commercial use.

Technological Efficiencies

Technological efficiencies also help ease the wireless data crunch. Each new network generation brings with it new technologies, more network capacity for data per user, and the potential for better voice quality, lower latency and greater data throughput. For example, 4G is much more

efficient than 3G, allowing for more economic use of allocated spectrum, and 4G LTE Advanced is yet more efficient. But even as we build out 4G, traffic immediately diverted to these new and more efficient data channels—there's lag time here, too, with old 3G and even 2G handsets still in use. Carriers can incentivize customers to use more efficient handsets, but this also takes time. Industry plans to begin field testing 5G as early as next year, but the technology is not expected to be introduced in the U.S. until around 2020. Technological efficiencies are absolutely critical, and more is needed, both on the network layer and on the software and content layer. Again, however, technological innovation alone will not enable the wireless industry to meet growing consumer demand, even when combined with new spectrum projected to come online.

Infrastructure

As noted, additional spectrum and technological efficiencies are necessary tools in the effort to address the data crunch. The third critical resource is the rapid deployment of the physical network, the infrastructure that supports spectrum and any new technological upgrades. This is the primary focus of PCIA.

The physical wireless infrastructure now being deployed and upgraded offers a solution that is already carrying an immediate and heavy load to address the wireless data crunch. It consists of major investments of private capital that ushers this technology to market. With the appropriate regulatory guidance, today's wireless industry can better plan for the network of tomorrow. Too often, misunderstandings and misrepresentations about wireless infrastructure can stall the deployment of these life-changing technologies. Wireless infrastructure has the power to transform a city in economic decline into an innovation hub. It can breathe new life into aging commercial zones, and provide rural areas the ability to compete in the innovation economy.

Today, there are an abundance of choices available to network planners. The traditional tall towers effectively provide most of the coverage and capacity necessary. The industry is also deploying distributed antennas systems and small cells to fill the gaps or overlay capacity in high traffic markets. Further, the networks themselves are getting smarter. Self-optimizing networks and the combination of intelligent software and hardware design allows a network to anticipate usage and provide greater resources to areas of need in real time, providing users with responsive service. Wi-Fi continues to play an important role in this system, offloading traffic to the wired network and providing greater headroom for cellular services.

The densification of wireless infrastructure plays a critical role in meeting wireless data demand. In fact, infrastructure appears poised to play the largest role of any of the available solutions in the next five years, and perhaps more, to address the wireless data crunch. Spectrum and network densification are fungible—roughly speaking, doubling the amount of spectrum in an area could provide a similar boost to network capacity as doubling the number of cell sites. The availability of network densification as an alternative to spectrum purchases puts a cap on the cost of

spectrum—and carriers regularly weigh them against one another. The mobile carriers paid high prices for spectrum in the AWS-3 auction, which is understandable because this could be one of the only available opportunities for significant new spectrum in the near future other than the 600 MHz auction. Today's infrastructure will provide the foundation upon which the wireless industry will deliver the Internet of Things, 5G, and the applications, services, and jobs that will fuel the U.S. economy into the future.

Broadband Opportunity Council

Earlier this year, President Obama created the Broadband Opportunity Council to focus on increasing broadband investment and adoption. The Council is co-chaired by Department of Commerce Secretary Penny Pritzker, working with the National Telecommunications and Information Agency (NTIA), and Department of Agriculture Secretary Tom Vilsack, working with the Rural Utilities Service (RUS), where I was previously Administrator. It includes over twenty-five different government agencies, united around clear policy objectives, including identifying regulatory barriers impeding broadband deployment.

On September 21, the White House released a formal report that included recommendations to improve broadband across the country. The Council recommended that Federal agencies should further streamline access to Federal lands, structures and rights of way in order to help speed broadband deployment nationwide. The report also notes that there is significant room for improvement in local and state government practices. Local and state regulations, the report points out, cannot be addressed through executive action, but the Federal government can encourage best practices. The Council has also sought to create an online inventory of data on Federal assets, and maintain the points of contact tasked with overseeing broadband buildout. Faster and more efficient broadband deployment is the goal. Nevertheless, as the report notes, many of the recommendations provided by commenters require congressional action. This report provides clear recognition of the crucial role Congress plays in taking broadband deployment forward.

Congress' Role in Encouraging Broadband Deployment

Wireless infrastructure is the backbone of all wireless voice and data communications. The industry is constantly innovating with new wireless technologies. Without sound regulations and policy at the local, state, and Federal levels, the innovation and competitiveness of the wireless industry will suffer. Even with all the positive strides in broadband deployment over the past five years, there remain a number of barriers to broadband deployment for Congress to address.

We've seen how misinterpretations of congressional intent can cause delays in broadband deployment. Too often, local jurisdictions have denied siting applications without full reasoning and accountability as required by the Telecommunications Act of 1996 (Telecom Act). This left

capital tied up and broadband projects languishing or abandoned. It took action by the Supreme Court in *T-Mobile v. Roswell* to help resolve one roadblock. In January, the Supreme Court agreed with our assessment that the Telecom Act requires localities to provide clear, written reasons when applications to build wireless facilities are denied. The Court sided with industry and found that wireless providers must be informed in a clear-cut and timely manner. We were pleased with this ruling, but we should not have to petition the highest court in the land to resolve these types of delays in the name of broadband buildout and all that it enables.

One suggestion for Congress to consider that would alleviate roadblocks to wireless siting at the local level would be removing requirements that a provider demonstrate "proof-of-need" or show a "gap-in-service" when siting a wireless facility. Proof-of-need is used as a barrier to building new facilities because it is simple to reject an application based on a local government's subjective evaluation that the applicant failed to sufficiently demonstrate that a facility serves a purpose. Moreover, varied judicial interpretations of Sections 332 and 253 of the Telecom Act allow a jurisdiction to deny an application on the basis that "sufficient" wireless coverage already exists in the area. The test is extremely subjective in practice, makes it more difficult to site wireless facilities, and thereby slowing broadband deployment and preventing wireless facilities from alleviating data capacity constraints. As the need to meet consumer demand moves from coverage to capacity, communities are not well positioned to second-guess costly investment decisions that are guided by experienced radio-frequency engineers to improve customer service. In many cases, such obstruction can undercut service to the very citizens local governments are elected to serve.

Another way Congress can encourage investment in broadband deployment is by maintaining an appropriate regime for the tax treatment of Real Estate Investment Trusts (REITs). Long-standing tax policies, established in the 1960s, and IRS guidance, have always held that communications towers have been considered real estate for REIT qualification purposes. Transmission tower companies lease vertical real estate—communications towers and the land beneath it—to multiple tenants. Tenants own the equipment and lease space on the towers generally over a long period of time. Transmission tower companies eliminate the need for each tenant to construct its own towers, which prevents overcrowding neighborhoods and communities with multiple towers. This model enhances competition in the wireless industry by lowering costs for mobile wireless service providers and other tenants to enter new markets. Transmission tower companies allow these competitors to operate without having to raise capital to build their own tower networks.

Today, the properties of tower companies play a critical role in broadband deployment. Continued buildout of towers is essential to meeting the demand for wireless data, and the current REIT structure promotes this necessary capital investment. As the National Association of Real Estate Investment Trust (NAREIT) stated in its April 2015 submission to the Senate

Finance Committee, "Today, investment through and by tower REITs is one way the national demand for real estate specialized to meet the needs of mobile phone providers and users is met."

Congress can also encourage broadband deployment by enacting bipartisan legislation to promote an open Internet. Only congressional action can give the certainty for broadband providers looking to invest. As Congress looks to enact open Internet legislation, it should provide the FCC the necessary legal authority to map out clear rules of the road for broadband providers while encouraging investment in broadband networks.

Another barrier to broadband deployment is the byzantine process of siting wireless broadband infrastructure on Federal lands. This Committee on a bipartisan basis has expressed interest in this issue and we appreciate your leadership. The Federal government owns or administers nearly thirty percent of all land in the U.S., as well as thousands of buildings. Broadband providers currently face significant challenges when working to secure access to Federal lands and buildings. Deploying wireless infrastructure on these properties is absolutely critical for public safety and economic development. Wireless facilities can be sited on Federal property in an environmentally responsible way that is sensitive to areas historic significance.

Predictability and consistency are vital to network planning and investment in any arena, but this need is amplified when deploying broadband on Federal property, which often requires burdensome interagency review and coordination. PCIA is actively working with agencies across the Federal government, Congress, and the White House to find ways to expedite the siting process. In 2012, Congress, with the leadership of this Committee, put forward a framework to make it easier to site communications facilities on Federal lands and properties through standard applications and agreements. Also in 2012, President Obama issued Executive Order 13616 to promote infrastructure buildout on Federal lands and created a cross-agency working group charged with meeting the mandate of speeding deployment on Federal lands and properties.

Unfortunately, even with an Executive Order and direction from Congress, the process to site wireless infrastructure on Federal lands has not sufficiently improved. Further legislation will spur agencies to work with the industry to bring broadband service to difficult-to-reach Federal lands and Federal buildings. As such, PCIA supports the Wireless Innovation Act (S. 1618) to address this very issue. By facilitating access, the Federal government can increase revenues through lease payments to the Treasury while at the same time improving broadband access for its citizens. Better access to Federal lands and property will also help increase broadband availability in rural areas. The importance of expanding rural broadband is clear. Many of the lands and properties that would benefit from streamlined siting are by definition rural. We look forward to continuing to work with both chambers on legislation to streamline and expedite the process of siting broadband infrastructure on Federal property.

As our member John Deere has indicated in its testimony, along with work on Federal lands, it is important for the public and private sector to work together to ensure that buildout can accelerate in Rural America. One critical mechanism is the loans provided by the Rural Utilities Service for broadband buildout. These loans are repaid with a significant portion of funding from the Universal Service Fund (USF). For these funds to meet their intended purpose there must be a predictable level of support to the USF so that loan recipients can plan, borrow, and invest in infrastructure. Lastly, the Connect America Fund (CAF) is a sustainable cost-recovery mechanism for rural areas where subscriber densities are too low to motivate providers to build infrastructure and offer service. CAF's wireless component, the Mobility Fund, is targeted at the expansion of mobile broadband networks. We think these programs will go a long way to accelerate the deployment of wireless broadband in rural communities.

Similarly, more work is needed to provide connectivity to native nations so that these communities can take advantage of the benefits that broadband provides. PCIA has long worked with tribal leaders and communities to promote their access wireless broadband, including commenting in various dockets related to historic preservation and environmental protection. PCIA has also participated in the FCC's annual workshops on this topic, providing a platform for information exchange between industry and those representing native nations to better understand the cultural differences and shared experiences. In the spirit of collaboration, PCIA would urge a reexamination of certain tower siting processes at the FCC, whereby, for example, an application to site communications facilities in downtown Chicago triggers a full-day review and fees associated with a tribe many miles away. Our industry understands the critical nature of sovereignty and respects the value of protecting sensitive historic sites. Still, there must be a more efficient and rational approach that is more appropriately targeted so that we may all benefit from a stronger network.

Both state and Federal policies require pole attachment rules that promote the deployment of broadband access and the new technologies that enable it, while providing fair treatment for pole owners. Among other things, Congress added "provider[s] of telecommunications services[s]" to the category of attachers entitled to pole attachments at just and reasonable rates, terms and conditions under Section 224 of the Telecom Act. This Section has been modernized through action by the FCC, which has helped to provide greater access to poles for wireless attachers, shortened timelines for make-ready and other work, and established rates in greater harmony with other like attachments. However, many jurisdictions have been slow to adopt the FCC's standards. In these states, the telecommunications industry must re-legislate and re-litigate the efforts taken before the FCC. Greater national certainty and clarity with respect to the rights of wireless attachers in these jurisdictions would spur further broadband deployment.

Last, Members of this Committee have been working on legislation to require that broadband conduits be installed as a part of certain highway construction projects, also known as "dig once." This initiative would help facilitate broadband infrastructure deployment and reduce

duplicative Federal reviews for work at the same location. PCIA looks forward to working with the Committee on this legislation.

Conclusion

The wireless infrastructure industry faces a number of legal and regulatory hurdles that slow investment and deployment. By providing certainty and lowering some of the barriers noted above, Congress can play a constructive role in ensuring broadband to all Americans. In closing, there are number of specific steps Congress can take to encourage broadband deployment. This Committee should look to remove requirements that a provider demonstrate "proof-of-need" or show a "gap-in-service" when siting a wireless facility. Next, Congress should look to expedite and streamline the process for citing wireless broadband infrastructure on federal lands. In addition, ensuring that the current REIT structure that dates back to the 1960's is maintained is another way Congress can increase deployment. Further, harmonizing rates and providing greater national clarity on pole attachments would promote deployment as well. And finally, installing broadband conduits as a part of certain highway construction projects would reduce duplicative federal reviews for broadband deployment.

Wireless broadband helps drive America's innovation economy and fuels the nation's economic future. The U.S. has always been the global leader in wireless broadband innovation, and private investment in wireless infrastructure is a big the reason why. Continuing to upgrade America's wireless infrastructure is a necessary component of connecting more Americans with broadband.

The mobile broadband revolution holds incredible promise for economic growth, job creation, public safety, education, healthcare and many other benefits. At the same time, there are warning signs on the road ahead. Our industry is determined to meet consumer demand, even as it rises swiftly. That is capital intensive, costly and operationally demanding. We need policies that allow that allow us to invest that capital efficiently, and to target areas that need additional coverage and capacity. To maximize the promise of wireless broadband for economic growth, job creation and technological innovation, infrastructure builders need the capital to invest—and we need regulators and Congress to help, as this Committee has long realized and as the purpose of this hearing recognizes. We are deeply grateful for the bipartisan recognition of the importance of infrastructure by this Committee, by Congress, by the FCC and the Administration. All have implemented policies to promote wireless broadband deployment, and all are working to build on recent successes.

Thank you again Chairman Thune and Ranking Member Nelson for holding this hearing and inviting me to testify. I look forward to continuing to work with you and the rest of the Committee to continue to make progress on these very important issues.