

**Remarks of
Commissioner Michael O’Rielly, Federal Communications Commission
Before PCIA – The Wireless Infrastructure Association
2015 Wireless Infrastructure Show
April 28, 2015
(as delivered)**

It is a pleasure to be here with you this morning at the 2015 Wireless Infrastructure Show. Considering the location of this event, I was concerned that conference goers would opt for the beach, instead of listening to an FCC Commissioner. Frankly, not all Commissioners can be as entertaining as Jonathan Adelstein. No one will label me as the greatest harmonica playing Commissioner ever. Joking aside, Jonathan was one of the first people to reach out when I became a Commissioner a year and a half ago. He congratulated me, told me I would do a great job, and then, of course, made the obligatory request that I speak to the PCIA members. After some delay, due to scheduling conflicts, here I am.

Wireless Sector Growth

As you know, the wireless industry is experiencing an era of tremendous growth. Last year alone, U.S. mobile data traffic grew by 63 percent and a total of 401 million devices accessed the Internet.¹ It is projected that over these next five years mobile data traffic will multiply by a factor of seven and there will be over a billion mobile connected devices in this country alone.² Your infrastructure will support networks that will have to accommodate the increasing consumption of video, which is expected to increase 8.6 times between now and 2019 and will comprise 75 percent of mobile transmissions.³ Not to mention, in the same timeframe, the traffic from wearable devices and M2M modules are expected to increase 19 and 49 fold, respectively.⁴

Plans must be in place to ensure that we can keep pace with America’s insatiable demand for mobile communications. To relieve network congestion and provide capacity for next generation products, we either need more infrastructure or more spectrum, or ideally a combination of both. I saw an interesting statistic recently. If the increasing mobile traffic had to be relieved by infrastructure

¹ Cisco, *VNI Mobile Forecast Highlights, 2014-2019, United States – 2014 Year in Review*, http://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country (filter by U.S., 2014 Year in Review) (last visited Apr. 24, 2015); Cisco, *VNI Mobile Forecast Highlights, 2014-2019, United States – Network Connections*, http://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country (filter by U.S., Network Connections) (last visited Apr. 24, 2015) (“Cisco VNI Highlights – U.S. Network Connections”).

² Cisco, *VNI Mobile Forecast Highlights, 2014-2019, United States – 2019 Forecast Highlights*, http://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country (filter by U.S., 2019 Forecast Highlights) (last visited Apr. 24, 2015); Cisco *VNI Highlights – U.S. Network Connections*.

³ Cisco, *VNI Mobile Forecast Highlights, 2014-2019, United States – Mobile Applications*, http://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country (filter by U.S., Mobile Applications) (last visited Apr. 24, 2015) (stating that video comprises approximately 60% of mobile data traffic today).

⁴ Cisco *VNI Highlights – U.S. Network Connections*; Cisco, *VNI Mobile Forecast Highlights, 2014-2019, United States – Potential M2M Connections*, http://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country (filter by U.S., Device Growth/Potential M2M Connections) (last visited Apr. 24, 2015).

alone, meaning no additional spectrum or improvements to spectral efficiency, it was suggested that we would have to “go from 300,000 cell sites in the U.S. to having a need for 4.3 million.”⁵ Luckily, we are not in this dire situation due to the Commission’s efforts on the spectrum front.

The Commission is in the process of releasing more spectrum into the marketplace. We recently completed the AWS-3 auction, raising almost \$45 billion in gross revenues, demonstrating the great demand for exclusive use licenses.⁶ Similarly, we will have the broadcast incentive auction, currently scheduled for early 2016, which will reallocate broadcast spectrum to wireless use. This effort will not only provide 600 MHz spectrum for auction, but also some bandwidth for unlicensed use.⁷ Further, the Commission has freed up 100 megahertz of unlicensed spectrum in the 5 GHz band, with hopefully more to come,⁸ 150 megahertz at 3.5 GHz,⁹ and is analyzing future uses of millimeter waves above 24 GHz.¹⁰ In the near term, we will be allocating sufficient bandwidth for both licensed and unlicensed wireless services, but we must not rest on our laurels. We must start now to look for the spectrum bands of the future.

Demand for Wireless Infrastructure

Of course, you know better than anyone that the Commission can put these airwaves into the marketplace, but spectrum alone will not benefit this nation’s wireless consumers without networks and infrastructure. Without infrastructure, the latest innovations and offerings will not be available to meet the demands of American consumers. Without infrastructure, the U.S. does not maintain its position as the leader in wireless and Internet technologies. Without infrastructure, the economic growth of the wireless sector and its corresponding benefits to the U.S. economy comes to a halt.

This demand for infrastructure is completely understood, yet presents some real challenges. Not only do we have the continued expansion of LTE by wireless providers, but facilities will have to be installed to operate AWS-3 and 600 MHz spectrum. It appears that we are entering a period when those who work on large towers, in particular, will be in great demand. And I have been told on a few occasions that the number of crews that work on tall towers may be limited. This workforce shortage could be exacerbated if these crews also happen to work on broadcast towers, because the incentive auction repacking process will be occurring simultaneously with AWS-3 and 600 MHz buildout. If this skilled workforce is insufficient for the number of required jobs, work orders may get backed up. This may conflict with meeting the 39-month repacking deadline and create a domino effect for wireless

⁵ Joey Jackson, *Wireless Infrastructure Expected to Continue Growth Track*, RCR WIRELESS, Mar. 20, 2015, <http://www.rcrwireless.com/20150320/network-infrastructure/the-state-of-wireless-infrastructure-tag20>.

⁶ FCC, Auction 97, Advanced Wireless Services (AWS-3), http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=97 (last visited Apr. 24, 2015).

⁷ *Expanding the Economic and Innovation Opportunities of Spectrum through Incentive Auctions*, GN Docket No. 12-268, Report and Order, 29 FCC Rcd 6567 (2014).

⁸ *Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, ET Docket No. 13-49, First Report and Order, 29 FCC Rcd 4127 (2014).

⁹ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 GHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, FCC 15-47 (Apr. 21, 2015).

¹⁰ *Use of Spectrum Bands above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177, Notice of Inquiry, 29 FCC Rcd 13020 (2014).

facility construction. I recognize, however, that there are multiple companies involved in the broadcast tower construction business, so perhaps it is not a problem. Accordingly, it would be helpful if you communicated with the Commission regarding the current and estimated future demands for tower construction teams for both broadcast towers and others. We will need to take this into account as we consider the best timing for the start of the broadcast incentive auction.

Facilitation of Wireless Infrastructure Deployment

What can be done to facilitate and accelerate network deployment? First, I applaud PCIA for taking a leadership role in training the wireless infrastructure workforce of the future. PCIA's program to educate veterans, displaced workers and others on how to build and maintain wireless infrastructure, along with its efforts to create an apprenticeship program promoting workplace safety and training, should help relieve workforce shortages in the future.¹¹

The Commission's role, on the other hand, is to ensure that the correct environment exists to promote infrastructure investment and deployment by reducing regulatory burdens and increasing market certainty. Lately, the Commission's scorecard has not been bad when it comes to matters involving infrastructure, although I wish I could say the same thing as it pertains to the burdens being placed on wireless carriers through items like Net Neutrality,¹² which will have an effect on your industry. Let me suggest to you that it is in your best interest to be involved in the policy issues under consideration at the Commission – even those that may not appear to directly affect your company. Don't just sit on the sidelines and say it's not my problem, because every burden placed on your partner or potential partner means less investment in infrastructure.

In the good news category, last August, the Commission adopted an order that modified our tower lighting and marking rules.¹³ I was pleased to support an item that reduced unnecessary burdens on industry while ensuring the safety of aircraft.

Receiving greater attention is the Commission's October *Infrastructure Order* facilitating and reducing obstacles to infrastructure siting, including small cell and Distributed Antenna System (DAS) deployments.¹⁴ Although the Commission implemented many positive and important changes, let me focus on one aspect. The Commission, in response to the clear congressional directive in the 2012 Spectrum Act,¹⁵ finally put an end to some disruptive practices of states and localities impeding the placement of wireless towers. Although we thought that pre-existing law already provided a reasonable

¹¹ PCIA Press Release, PCIA CEO Says New Public-Private Job Training Initiative Will Help Create "Wireless Workforce of the Future" (Oct. 14, 2014), <http://www.pcia.com/pcia-press-releases/671-pcia-ceo-says-new-public-private-job-training-initiative-will-help-create-wireless-workforce-of-the-future>.

¹² *Protecting and Promoting the Open Internet*, GN Docket No. 14-28, Report and Order on Remand, Declaratory Ruling, and Order, FCC 15-24 (Mar. 12, 2015).

¹³ *2004 and 2006 Biennial Regulatory Reviews – Streamlining and Other Revisions of Parts 1 and 17 of the Commission's Rules Governing Construction, Marking and Lighting of Antenna Structures*, WT Docket No. 10-88, Report and Order, 29 FCC Rcd 9787 (2014).

¹⁴ *Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies; Acceleration of Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless Facilities Siting; 2012 Biennial Review of Telecommunications Regulations*, WT Docket No. 13-238, Report and Order, 29 FCC Rcd 12865 (2014) ("*Infrastructure Order*").

¹⁵ Middle Class Tax Relief and Job Creation Act of 2012 § 6409(a), 47 U.S.C. § 1455(a).

process for tower siting,¹⁶ industry still faced moratoria, delays in the decision-making process, unreasonable documentation requests and other tactics that maintained barriers to siting. Unfortunately, some localities have challenged the Commission's recent order in court. Hopefully, this litigation will conclude expeditiously and will not delay the deployment of wireless broadband infrastructure.

Although much has been done, there is still much to do. First, as recognized in the *Infrastructure Order*, further steps must be taken to facilitate the deployment of small cell and DAS networks. The Commission committed to work with stakeholders to develop a "program alternative"¹⁷ within 18 to 24 months to expand upon the relief provided to small cell and DAS installations in October.¹⁸ Excluding certain collocations on buildings and non-tower structures that already host antenna and utility structures (*e.g.*, utility poles and electric towers) from environmental and historic preservation reviews is a good start. Now, we must expand this exclusion to include small cell and DAS equipment that is being installed on any structure, including those with no pre-existing antennas. Additionally, if facilities in historic districts cannot be fully incorporated into such an expansion, installations that are not visible from public places should fall under the exclusion.

Second, the Commission should finally address the problem of "twilight towers." These towers – constructed between March 2001 and March 2005 – were not specifically required to go through historic preservation review process.¹⁹ I know that Commission staff, industry and other stakeholders have been working together to resolve this issue that affects somewhere between 4000-7000 tower structures. Until this review is concluded, these towers remain in regulatory purgatory; no antennas can legally collocate on these structures. We need networks to be deployed; we cannot afford to have towers that are not filled to capacity. Is it really preferable to have antennas not installed or duplicative towers built while we sort out this quandary? And one final note, it would seem to make sense that this process be done collaboratively, without the need for enforcement action against these tower owners, who are trying to resolve the issue in a productive way.

Third, the Commission should also work with industry and Native Nations to increase the efficiency of the historic preservation application and review procedures. I hear that improvements can be made to provide Native Nations the information they need to protect their historic sites, while ensuring that the process allows for the prompt construction of facilities. Creating best practices or guidelines, including reasonable timeframes and fees, could help provide greater certainty and finality to this process. Both industry and Native Nations should have shared expectations as to how this process works.

Additionally, the Commission must always remain technology neutral. Although this would seem to be an obvious statement, I have concerns about the Chairman's announcement at the last Commission meeting about an upcoming public notice that will seek information on LTE-U and the

¹⁶ Telecommunications Act of 1996 § 704, 47 U.S.C. § 332(c)(7).

¹⁷ 36 C.F.R. § 800.14.

¹⁸ *Infrastructure Order*, 29 FCC Rcd at 12871, 12878, 12906 ¶¶ 13, 28, 89.

¹⁹ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 13-135, Seventeenth Report, 29 FCC Rcd 15311, 15370 ¶ 115 (WTB 2014).

current undertaking to develop standards for this technology.²⁰ For years, the standards process has successfully been conducted independently without any FCC input or interference. I appreciate that certain members of the Wi-Fi community have concerns about the effect that the deployment of this new technology will have on their pre-existing networks. As an ardent supporter of Wi-Fi, I, too, want to know more. But, these concerns need to be worked out by stakeholders through 3GPP, the standards setting body. I worry that potentially injecting ourselves and putting the government's heavy thumb on the scale of the standards process would lead us into treacherous waters. Not only must the Commission be very careful that it does not – either intentionally or unintentionally – put itself in a position where it influences or sets standards, but it also should not be taking sides with various stakeholders in the midst of the process or have any say about what technologies should or should not be deployed. As I said earlier, even though this issue does not directly pertain to the infrastructure industry, any interference from the Commission that could impede or prevent the deployment of new technologies would negatively affect your bottom lines.

These are just a few ideas. I would be interested in hearing all suggestions you might have. During my time at the Commission, I have been able to advocate for various reform measures through my blog, and some of these ideas have resulted in changes or notices of proposed rulemakings. My staff and I have an open door policy, and no idea that you may have is too small.

Looking to the Future

In conclusion, I challenge this industry to be forward looking. What will the next generation of infrastructure look like? Moving from large cell towers to small cell networks clearly has benefits. They are cheaper, quicker and easier to install and will face fewer regulatory challenges than their less-aesthetically pleasing, larger siblings. So what is next? Some people have suggested such ideas as a series of balloons, solar-powered drones, or small satellites.²¹ This may sound far-fetched to some, and other options may be more likely.

For instance, there is the idea that next-generation devices may be able to bypass cell towers and become part of the cellular network.²² This could result in a diminished reliance on cell towers, and may even make them a thing of the past. There are reports of major manufacturers working on technology that would allow mobile devices to communicate with each other up to a range of 500 meters without draining a phone's battery life. Maybe such device-to-device technology will not become commonplace or eliminate the need for towers and small cells, but we must always look to the future and plan for what is next.

I thank you again for having me here today, and I look forward to any questions.

²⁰ Statement of Chairman Tom Wheeler, FCC Releases Rules for Innovative Spectrum Sharing in 3.5 GHz Band, at 2 (Apr. 21, 2015), <http://www.fcc.gov/article/fcc-15-47a2>.

²¹ Jeff Hawn, *Generation Wireless: Next-Generation Infrastructure*, RCR WIRELESS, Dec. 31, 2014, <http://www.rcrwireless.com/20141231/opinion/generation-wireless-next-generation-infrastructure-tag15>.

²² Nyshka Chandran, *Will Cell Towers Soon Become Obsolete?*, CNBC.COM, Apr. 21, 2015, <http://www.cnbc.com/id/102603744#>.