

**Remarks of
Commissioner Michael O’Rielly, Federal Communications Commission
before the Rural Wireless Association
September 11, 2015**

It is only appropriate that I start by expressing my heavy heart remembering the tragic events that occurred on this day in our nation fourteen years ago. It is an honor and privilege to be a government official on this solemn and important day.

I want to thank the Rural Wireless Association (RWA) for inviting me to speak at this summit. I also thank you all for taking the time to be here this morning given the number of tracks, seminars and partner events occurring. This being Las Vegas, I suspect that there may be some more entertaining things to do than listen to me talk about wireless deployment.

The challenges faced by urban and rural providers in meeting the explosive consumer demand for wireless communications are both similar and different. They are similar in that carriers of all sizes seek to deploy networks, attract and successfully serve customers, and make a handsome profit. At the same time, the issues carriers face may change based on their size and location. In urban markets, capacity and congestion tend to be the concern, whereas the focus in rural markets shifts towards coverage, whether there is a business case for deployment, and accessing cost-efficient equipment. This is not surprising when 81 percent of Americans live in non-rural areas covering 15.5 percent of the US geographic area, while the remaining 19 percent of the population inhabits 84.5 percent of the U.S. land mass.¹

But, nowhere is the potential of wireless more apparent than in rural America where we are on the verge of seeing its real transformative powers. From Internet access, education, agriculture, transportation, health, commerce and public safety, mobile services will increase the economic opportunities and standard of living. I’ve learned this firsthand from Sioux Falls, South Dakota to Baxter, Iowa, where I was two weeks ago learning about wireless grain and livestock monitoring. The good news for you is the vast innovation in the wireless sector is providing new opportunities and business cases. And so, I applaud rural wireless providers for the entrepreneurship and commitment to take on the challenges and opportunities to serve your communities.

It’s also a great time to be in the wireless industry. For those of you actively involved, you know well the insatiable growth projections for wireless services. In the next five years, it is expected that mobile data traffic will multiply by a factor of seven, and there will be over one million mobile connected devices in this country.² Video consumption alone is expected to increase 8.6 times between now and 2019 and will comprise 75 percent of mobile transmissions.³ And, the real game changer going forward

¹ *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, 15430 (WTB 2014) (“*Seventeenth Wireless Competition Report*”).

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 Sept. 2, 2015); Cisco, *VNI Mobile Forecast Highlights, 2014-2019, United States – U.S. 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 Sept. 2, 2015).

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.,

is expected to be the realization of the Internet of Things, the emergence of the Machine-to-Machine (M2M) age. Currently, M2M comprises approximately 13 percent of device connections, but estimates are that they will grow to almost 60 percent by 2019 and traffic from M2M will increase 49 fold in this timeframe.⁴ The stats regarding LTE-equipped connected vehicles are telling. One company had 2 million connected cars as of year-end 2014, but expects that this number will rise to 10 million by the end of 2017.⁵

All of this is not without potential pitfalls and challenges, including policies and issues before the Federal Communications Commission. If you will indulge me, I'd like to discuss a few with you today.

Spectrum and the Incentive Auction

To meet the exponential growth in demand for wireless services, the Commission has been active in releasing more spectrum – both licensed and unlicensed – into the marketplace. As you know, we recently completed the AWS-3 auction, raising almost \$45 billion in gross revenues, demonstrating the great demand for exclusive use licenses.⁶ On the unlicensed front, the Commission has freed up 100 megahertz of unlicensed spectrum in the 5 GHz band,⁷ with hopefully more to come, and 150 megahertz at 3.5 GHz,⁸ amongst other actions.⁹

But now, we look forward to the broadcast incentive auction, currently slated for early 2016. In its auction planning, the Commission took steps to facilitate the acquisition of spectrum by small and rural providers. Many of these concepts have come from – or were supported by – RWA and like-minded organizations. While we don't see eye to eye on all of these ideas, we do agree on many.

For instance, I am a fervent supporter of auctioning licenses of different market sizes to provide opportunities for all interested participants. In fact, market-size variation has proven to be one of the most effective means of getting licenses into the hands of a diverse array of providers. Because of the complexity of the incentive auction, having uniform market sizes was the preferred approach. With your assistance, a compromise was reached that will result in reasonably functional license sizes for rural and small businesses.¹⁰

Mobile Applications) (last visited Sept. 2, 2015) (stating that video comprises approximately 60% of mobile data traffic today).

⁴ 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 Sept. 2, 2015).

⁵ Kelly Hill, *Content: Anywhere, Anytime, Any Device, Crafting Networks to Keep Up with Consumer Demand for Anytime, Anywhere Access*, RCR WIRELESS, at 2-3 (Jan. 2015).

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 *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).

⁸ *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, 30 FCC Rcd 3959 (2015).

⁹ *Use of Spectrum Bands above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177, Notice of Inquiry, 29 FCC Rcd 13020 (2014).

¹⁰ *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, Report and Order, 29 FCC Rcd 6567, 6597-6601 ¶¶ 71-76 (2014) (“*Incentive Auction Report & Order*”).

On that note, I will suggest that the formation of the reserve license categories¹¹ – which I did not support – should cause deep concern for rural providers. Specifically, some entities that you will be bidding against – and may outbid you – already hold spectrum in rural America but, for business reasons, have decided not to build.¹² We will see how this plays out, but attempts to engineer auctions in favor of certain entities have failed in the past and, hopefully, this will not result in a failed auction.

Designated Entities and Bidding Credits

I think everyone in this room will agree that the AWS-3 auction revealed – or maybe reconfirmed – is a better word – the many flaws in the Commission’s bidding credit program. Although the Commission recently revised its bidding credit rules,¹³ they remain far from perfect.

The rural wireless community has expressed concerns about their inability to compete against designated entities (DEs) that are fronts for large, well-capitalized companies. Although the Commission did not provide the full amount requested, it did approve a 15 percent bidding credit for rural service providers,¹⁴ raised the revenue thresholds for small businesses,¹⁵ and made other changes to the bidding credit rules that may help level the playing field. By capping the total amount that any one DE can receive for markets with a population of 500,000 at \$10 million,¹⁶ these licenses are more likely to end up in the hands of rural service providers, instead of large companies hiding behind DE shells. Additionally, rural and small businesses will also be able to utilize consortia and joint ventures to allow them to participate together in order to acquire the spectrum covering their service areas.¹⁷ Also, by denying bidding credits for two DEs, the Commission recently recommitted to taking a long, hard look at DE agreements to ensure that these taxpayer subsidies are going to the congressionally intended entities.¹⁸

The Commission, however, gravely erred when it decided to abandon the long-standing policy that DEs be facilities-based providers.¹⁹ This is the only way to ensure that the bidding credits would go to small and rural businesses that would actually build and provide service using these licenses. Instead, we are enabling DEs that act as mere “pass-throughs,” leasing or flipping their spectrum to existing wireless providers. We are allowing a select few to get rich while large communications providers – ineligible for the credit – access spectrum at a reduced cost at the expense of the American taxpayer and legitimate providers seeking to use the spectrum to provide service to their subscribers.

¹¹ *Policies Regarding Mobile Spectrum Holdings, Expanding the Economic and Innovation Opportunities of Spectrum through Incentive Auctions*, WT Docket No. 12-269, GN Docket No. 12-268, Report and Order, 29 FCC Rcd 6133 (2014).

¹² See, e.g., Diane Smith, *The Truth About Spectrum Deployment in Rural America* (Mar. 2015), <http://mobilefuture.org/newsroom/the-truth-about-spectrum-deployment-in-rural-america/>.

¹³ *Updating Part 1 Competitive Rules*, WT Docket No. 14-170, Report and Order; Order on Reconsideration of the First Report and Order; Third Order on Reconsideration of the Second Report and Order; Third Report and Order, 30 FCC Rcd 7493 (2015) (“*DE Order*”).

¹⁴ *Id.* at 7530 ¶ 88.

¹⁵ *Id.* at 7524-25 ¶ 74.

¹⁶ *Id.* at 7546 ¶ 127.

¹⁷ *Id.* at 7574 ¶ 190.

¹⁸ *Northstar Wireless, LLC, SNR Wireless LicenseCo, LLC, Applications for New Licenses in 1695-1710 MHz, and 1755-1780 MHz and 2155-2180 MHz Bands*, Memorandum Opinion and Order, FCC 15-104 (Aug. 18, 2015).

¹⁹ *DE Order*, 29 FCC Rcd at 7506-07 ¶¶ 26-27.

Buildout and Secondary Market

Generally, the Commission must do more to ensure that spectrum ends up in the hands of those who will deploy networks and offer services to consumers, especially in rural America. Going forward, we need to initiate a review of the Commission's wireless buildout requirements to ensure that our rules and policies continue to promote the expeditious deployment of wireless networks in both urban and rural areas. We must ensure that our current rules meet Congress's expectations contained in law. For instance, the Commission should explore whether to require entities seeking license renewals to serve an additional percentage of the population. In other words, going forward, we should explore whether the 75 percent performance threshold²⁰ applicable in the first license term should remain in perpetuity or be increased if a license is renewed for additional terms. Equally important, the Commission needs to be clear that it is ready, willing and able to enforce our existing buildout requirements. The message needs to be: except for extremely rare, unforeseen circumstances, build out or your licenses will be cancelled. It is not acceptable to allow winning bidders to sit on spectrum for years on end while they wait for some market winds to change.

Infrastructure Relief

After wireless providers acquire spectrum licenses, either at auction or in the secondary market, they need facilities, which requires acquiring land and permits to build towers, leasing space on existing facilities, or deploying small cells. Building networks is expensive, especially for rural providers, and in many cases may even be cost prohibitive. All businesses need a return on investment to justify capital investments, and this can be a challenge when serving the most rural portions of our country. Potential revenues for building and providing service in a major urban center can reach \$248,000 per square mile; whereas, in the most rural markets, a provider may only earn an average \$262 per square mile.²¹

Let me outline some additional steps that the Commission should take to relieve as many infrastructure burdens as possible in order for rural providers to properly deploy their networks. First, the Commission must follow through on its promise in its November 2014 *Infrastructure Order* to further reduce regulatory burdens on small cell deployments.²² That order was a good start, but we must expand upon the environmental and historic preservation exclusion to include small cell equipment that is installed on any structure, including those with no pre-existing antennas. Although small cells may be more associated with urban environments, they may provide a means to keep down costs in rural areas.

Second, the Commission must address the problem of "twilight towers."²³ These towers – constructed between March 2001 and March 2005 – were not specifically required to go through historic preservation review process. I know that Commission staff, industry and other stakeholders have been working together to resolve this issue, but we cannot afford to have these towers remain in regulatory

²⁰ See, e.g., *Incentive Auction Report & Order*, FCC 14-50, at 6881 ¶ 775.

²¹ Anna-Maria Kovacs, *Regulation in Financial Translation: Will the Incentive Auction Increase Mobile-Broadband Competition in Rural America?*, at 2 (2014), http://www.gcbpp.org/files/EPV/Kovacs_Spectrum_Auctions_Rural_5.1.2014.pdf?utm_source=AnnaMaria+EPV&utm_campaign=EVP+5%2F1&utm_medium=email (last visited Sept. 2, 2015).

²² *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).

²³ *Seventeenth Wireless Competition Report*, 29 FCC Rcd at 15730 ¶ 115.

purgatory any longer. This is especially costly in rural areas where providers depend on infrastructure sharing to reduce buildout costs. Providers must be allowed to legally collocate on these structures.

Third, it is time for the Commission to review its technical rules for rural America. Specifically, we should look at such requirements as antenna height and power limits to see if they can be liberalized to reduce cost and expand coverage area, benefitting Americans in rural areas unserved by broadband providers. The current arbitrary height and power limitations may not make sense in every circumstance and may harm broadband deployment. I hope that the Commission will review these rules in the near term, to the benefit of both licensed and unlicensed providers.

Targeting USF

In addition, the Commission has programs to help fund communications networks in rural parts of the Nation, including through the universal service high-cost program. You may have seen recent news stories about one piece of that program: the Connect America Fund Phase II or “CAF Phase II”. Earlier this year, the Commission officially offered CAF Phase II support to the largest wireline providers to build out broadband. These providers had the option to accept or decline that support, and the associated buildout obligations, on a state-by-state basis. In areas where the carriers declined, there will be a competitive bidding process to distribute the remaining funding.

Some of you may also be interested if there is going to be a corresponding fund for wireless providers, what’s previously been described as a Mobility Fund Phase II. Let me repeat what I have previously said: there is little discussion regarding a special technology specific fund for wireless providers. In fact, the Commission already proposed to reduce the scope of previous outlines for a Mobility Fund Phase II and reallocate some funding to CAF Phase II or the Remote Areas Fund, which signaled the waning interest in the program.

Instead, the prime opportunity that I think you should consider and where the Commission needs your help are those areas not selected by the incumbent price cap carriers in CAF Phase II. Approximately \$175 million per year will be available in parts of 20 states (plus DC). In addition, the Commission expects to auction additional territory that would have been part of the Remote Areas Fund or “RAF”. In total, that means that there could be at least \$175 million available per year for more than one million locations nationwide depending on the final auction rules. Over a ten year timeframe that equates to over \$1.7 billion. As rural providers, you know what it takes to serve these types of places, and wireless broadband may make the most technological sense given the terrain and costs to provide service.

Going Forward

Ultimately, the best way for the Commission to help rural broadband deployment is to ensure that it minimizes burdens on all industry participants, but especially small and rural providers that are disproportionately affected by the costs of regulation. From the various E911 proceedings and Net Neutrality to information collections, the Commission must take into account the bottom line of rural and small businesses. Not only do smaller staffs mean that regulatory burdens divert time and resources away from delivering service to consumers, but smaller businesses do not have the power to influence markets or the ability to snap their fingers to effect technology changes or acquire the latest equipment and devices.

While the Commission must do better at taking into account the difficulties faced by rural providers, I look to you for new creative and innovative ideas that make rural offerings profitable. Let’s face it, the Internet of Things has the possibility of upending the traditional business model from one focused on the number of potential subscribers in a certain area to one based on the number of

connections. Although people currently carry smartphones, tablets and laptops, everyday items will have wireless connectivity going forward. From household appliances and security systems to cars and wearables, people in both urban and rural settings are likely to have many more devices than they have now. This will provide great opportunities in rural America where farm machinery, crop and hyper-local weather monitoring devices, and even livestock will be connected to the Internet.

I recently read an article suggesting that herding animals could serve as Wi-Fi hotspots by placing access points on an animal collar.²⁴ In Northern Scandinavia, people are testing Wi-Fi enabled reindeer to bring broadband to nomads living in mountainous areas.²⁵ This would create quite an interesting mesh network. And, although this may sound far-fetched, I challenge you to think outside of the box on ways to cost effectively provide service to those that have no broadband options.

Finally, I need to ask something of you all. There's an epidemic in our nation whereby Americans, especially our youth, feel invincible with a wireless phone. They are willing to use wireless devices while they drive, ride bikes, cross streets, and many other circumstances that put their lives and those of their neighbors at risk. While wireless devices have lifesaving capabilities, they are being used, in certain instances, with incredible recklessness. We need to change that and laws don't seem to be the answer. I respectfully seek your assistance in increasing your customers' education about the dangers of improper and harmful wireless phone use. U.S. wireless providers already have taken this issue head on, but we need you to redouble your efforts to find effective messages – ones that change behavior – and get those out to our citizens. Let's make a safer wireless phone experience for everyone.

²⁴ Tove Danovich, *Internet-Connected Sheep and the New Roaming Wireless*, THE ATLANTIC, Feb. 9, 2015, <http://www.theatlantic.com/technology/archive/2015/02/internet-connected-sheep-and-the-new-roaming-wireless/385274/>.

²⁵ *Id.*