In the Matter of )
Inquiry Concerning the Deployment of Advanced ) GN Docket No. 14-126
Telecommunications Capability to All Americans )
In a Reasonable and Timely Fashion, and Possible )
Steps to Accelerate Such Deployment Pursuant to )
Section 706 of the Telecommunications Act of )
1996, as Amended by the Broadband Data )
Improvement Act )

REPLY COMMENTS OF DEERE & COMPANY

Deere & Company (“Deere”), by its undersigned attorneys, submits these reply comments in response to the Notice of Inquiry on Immediate Action to Accelerate Deployment.1

Deere is a world leader in providing advanced agricultural and other equipment and services to customers that cultivate, harvest, transform, enrich and build upon the land to meet the world’s dramatic increasing need for food. Deere has delivered innovative farming equipment since 1837, and today, is pioneering state-of-the-art data and information solutions designed to greatly enhance productivity and environmental safety.

Deere shares the Commission’s commitment to accelerating the deployment of advanced services, particularly to rural areas where farming and other agricultural operations are concentrated. In the Commission’s words, all Americans, including those in rural areas, should have “access to affordable technologies that will empower them to learn, work, create and

1 Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans In a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, FCC 15-10, GN Docket No. 14-126 (rel. Feb. 4, 2015) (hereinafter referred to as “NOI”).
innovate.”  To that end, as explained in previous filings, Deere strongly supports the Commission’s efforts to provide effective funding to promote expanded broadband services in rural areas through the Connect America and Mobility Funds.  

In response to the Commission’s request for comments on any steps that could accelerate deployment of advanced telecommunications capability to all Americans, Deere recommends, as detailed herein, that the Commission specifically include in its focus the needs of populations directly engaged in, and economies driven by, the American agricultural sector. As a key part of that effort, Deere supports stable and robust funding for mobile operations including continuing funding for Mobility Fund Phase II and targeted changes to the Commission’s eligibility metrics to ensure coverage for all areas where people live, work and travel.

I. The Commission Should More Fully Address the Needs of Rural Americans by Facilitating Broadband Deployment to Support Rural Agricultural Operations

Deere encourages the Commission to more fully consider the needs of rural Americans and economies in its examination of broadband deployment, especially wireless broadband, and its decisions to provide funding to support and accelerate broadband deployment in rural areas. Americans living in rural areas disproportionately lack access to fixed broadband. Efforts are underway to support the expansion of fixed broadband infrastructure, particularly through the Connect America Fund and Rural Broadband Experiment. With respect to mobile broadband,

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2 Connect America Fund; A National Broadband Plan for Our Future; ETC Annual Reports and certifications; Establishing Just and Reasonable Rates for Local Exchange Carriers; Universal Service Reform – Mobility Fund; Developing a Unified Intercarrier Compensation Regime; Report and Order, Declaratory Ruling, Order, Memorandum Opinion and Order, Seventh Order on Reconsideration, and Further Notice of Proposed Rulemaking, 29 FCC Rcd 7051, ¶ 235 (2014) (hereinafter referred to as “FNPRM”).

3 See e.g., FNPRM Comments and Reply Comments of Deere & Company (filed Aug. 8 and Sept. 8, 2014).

4 NOI at ¶ 156.

5 Id. at ¶¶ 6, 79.

6 Id. at ¶ 155.
the Commission is taking steps to collect more reliable data through the modernized Form 477, including the minimum advertised speed offered in each coverage area, by technology offered (e.g., WiMax, LTE), and spectrum band.\(^7\)

While the Commission’s revised data collection is an improvement, the data collected still may not fully reveal all important differences between rural and urban populations and economies and will overlook important needs of rural populations in the agricultural centers. For example, it is unclear how advantageous Form 477 data will be to determine service availability on rural roads and cropland given that information is collected based on fixed and permanent customer locations.

Expediting the deployment of advanced broadband services to rural areas is a high priority for farming and other agricultural operations that currently have no access or inferior access to broadband. Agricultural producers need access to high speed broadband to communicate with customers and vendors, follow commodity markets, manage regulatory compliance, and for machine-to-machine communications from the field that make possible significant improvements in real-time productivity and cost management. Technology-equipped machine solutions enable a farmer to analyze and carefully adjust his or her farming methods based on precise, site-specific data to be the most efficient, most economical and most environmentally friendly possible and thereby improve productivity and sustainability. Such precision agriculture technology requires access to mobile broadband services.

Many of Deere’s customers are challenged by the lack of adequate cellular coverage in the fields where agricultural equipment operates. As agricultural demand increases, Deere expects data transmission completion rates to worsen in the next two to three years from about

\(^7\) Id. at ¶ 75.
70% today to about 50%. This problem cannot be resolved by relying on satellite services or even more spectrum.

Deere urges the Commission to take specific steps to promote the deployment of fixed and mobile services to this sector of Americans. The Commission should consider farm institutions as anchor institutions under the Commission’s support rules. Support should be available for the deployment of middle mile facilities and fiber backhaul, which are critical to expanding both fixed and mobile services in rural agricultural centers. While the Commission’s revised data collection is an improvement, the data collected still may not fully reveal all important differences between rural and urban populations and economies and will overlook important needs of rural populations in the agricultural centers. For example, it is unclear how advantageous Form 477 data will be to determine service availability on rural roads and cropland given that information is collected based on fixed and permanent customer locations. The Commission should count machine-to-machine mobile broadband transmissions by agricultural equipment in the field and associated operators’ mobile devices when assessing the status of mobile deployment. By counting the number of machines with modems working the 350 million acres of cropland in the United States, the Commission will have better information to more accurately assess the need for advanced broadband services in rural areas and to consider ways to strengthen funding to those rural areas of the country that need it most.

Given the importance of agricultural operations as a key economic driver in many rural areas, the Commission cannot fully achieve its stated goal to accelerate broadband deployment if the rules do not fully address the needs for rural Americans in the agricultural sector. Deere therefore recommends that the Commission expand its examination of broadband deployment trends in rural areas to more fully and accurately discern current needs of rural Americans.
II. The Commission Should Maintain Funding for Mobility Phase II and Consider Targeted Changes to Eligibility Metrics

While adopting a single speed benchmark to analyze whether advanced service (i.e., 25 Mbps/3 Mbps) is being deployed may be expedient,\(^8\) the Commission should not overlook differences between fixed and mobile services – which include speed, latency and usage allowances – as it considers ways to accelerate deployment. The Commission notes that “there is very little, if any, mobile service that meets the 25 Mbps/3 Mbps speed” and the fastest speed for which there is a significant amount of data is 10 Mbps/768 kbps.\(^9\) Yet, the NOI only asks about actions to facilitate offerings of 25 Mbps/3 Mbps.\(^10\) It is essential that the Commission take steps that will increase the deployment of advanced mobile services in addition to fixed services.

Wireless service – both fixed and mobile – will be the superior technology choice to achieve cost-effective coverage for many rural areas including farm-intensive areas with significant tracts of cropland. Fixed broadband brings many benefits to rural communities containing farm buildings but additional wireless facilities are needed in America’s rural areas, including croplands, to meet the growing demand for mobile broadband. As the Commission acknowledges, mobile service has gone form a luxury to “an absolutely central part of Americans’ daily lives.”\(^11\) Without a greater focus on promoting advanced mobile services in addition to fixed services, rural areas will continue to be disadvantaged by a lack of cellular coverage and a lack of advanced mobile broadband services.

\(^{8}\) NOI at ¶ 23.

\(^{9}\) Id. at ¶ 72.

\(^{10}\) Id. at ¶ 159.

\(^{11}\) Id. at ¶ 114.
The Commission has proposed a reduction in the amount of Mobility Fund Phase II support and a reallocation to Connect America Fund Phase II and/or the Remote Areas Fund.\textsuperscript{12} These proposals have met with strong opposition because a reduction will have dire consequences to rural areas.\textsuperscript{13} It is critical that funding support for mobile services be maintained or even increased to address the growing demand for mobile services and accelerate deployment. Mobile service coverage has expanded in rural areas in the past several years but large and important areas remain without access to 3G or 4G services.\textsuperscript{14} As described above, mobile broadband demands are growing and data transmission completion rates are expected to worsen without additional infrastructure deployment. It is therefore imperative that the Mobility Fund Phase II budget be maintained to enable the deployment of advanced mobile broadband networks throughout rural American and to support the growing demands for mobile services.

As the Commission develops Mobility Fund Phase II, it can and should consider additional metrics such as “cropland.” The “road miles” metric used in Phase I recognized that there are some user segments with more of a geographic-based need for mobile broadband coverage as compared with a population-based need. The Commission specifically decided to use six different road mile categories in Phase I to provide a better representation of where people live, work and travel and to cover approximately 98% of the total road miles in eligible blocks in every state and territory.\textsuperscript{15} This was an important first-step but it does not adequately

\textsuperscript{12} FNPRM at ¶ 243, 246. It is noteworthy that Commissioner Michael O’Rielly does not believe that the Commission still intends to implement Mobility Fund Phase II Mobility Fund. See http://www.fcc.gov/blog/usf-high-cost-program-best-and-realistic-timelines.

\textsuperscript{13} See e.g., FNPRM Reply Comments of Rural Wireless Carriers Reply Comments (filed Sep. 8, 2014); FNPRM Comments of Competitive Carriers Association (filed Aug. 8, 2014); FNPRM Comments of CTIA-The Wireless Association® (filed Aug. 8, 2014); FNPRM Comments of Cellular South Licenses, LLC d/b/a C Spire (filed Aug. 8, 2014).

\textsuperscript{14} FNPRM at n. 436.

cover significant areas of agricultural operations, including state-of-the art machine-to-machine operations on the modern farm. Given the Commission’s willingness to consider the use of other factors for Phase I, it should consider including additional non-road alternatives, such as “cropland” for Phase II. Such a step would be consistent with state government efforts like the Iowa Governor’s “Connect Every Acre” initiative. Deere urges the Commission to recognize the need for broadband services on cropland and adopt metrics that will improve upon the Phase I representation of where people live, work and travel to accelerate broadband deployment.

III. Conclusion

Deere appreciates the Commission’s efforts to accelerate deployment of broadband services and encourages consideration of the steps described in these reply comments.

Respectfully submitted,

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18 See http://branstadreynolds.com/connecteveryacre/. Among other steps, the Governor proposed Cropland/Broadband Development Zones to focus state and local support for broadband deployment.