Broadband Technologies Findings

Draft—Sept. 4, 2019

Review the feasibility of alternative technologies and providers in accelerating access to faster and more reliable broadband service for rural residents.

–Nebraska Revised Statutes 86-1102(3)(c)

Findings

- A review of broadband technologies found that several emerging technologies may be well-suited for rural areas[1]:

  - Fixed wireless technologies using mid-band spectrums could potentially provide service of 100 Mbps or greater in rural areas. Several telecommunications providers are using or planning to use mid-band fixed wireless providers to meet their Connect America Fund obligations to provide broadband to rural areas.

  - TV white space may be suited for lower bandwidth agricultural internet of things applications. With Microsoft's support, the cost of customer service equipment has been coming down. Future reductions in the prices of customer service equipment to about $100 would likely make this technology economically feasible.

  > **Key Findings**
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  > - *Several emerging technologies may be well-suited for rural areas, including fixed wireless using mid-band spectrums, TV white space, and low Earth orbit satellites. AT&T's AirGig technology may be another technology to watch.*
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  > - *Higher speed technologies like 5G will likely be deployed first in urban areas, potentially exacerbating the speed gap between rural and urban areas.*

  - Low Earth orbit satellites could potentially provide 100 Mbps or greater service with low latency by mid-2020.

  - AT&T's AirGig may be another technology to watch. AirGig uses antenna modules called eggs which are clamped on power lines to send data signals which cling to the wire. A demonstration in September 2018 showed data capacity of 90 gigabits per second. The technology will reportedly be available for commercial use in 2021.

- A number of emerging and currently technologies may provide speeds of one gigabit per second of more. It is likely that most of these technologies—particularly 5G—will be deployed first in urban areas, potentially exacerbating the speed gap between rural and urban areas.

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[1] See Appendix 5 Supplemental Information—Broadband Technologies