

Testimony of Paul Carliner

Co-Founder of Bloosurf LLC before a Joint Hearing of the House Small Business Committee Subcommittee on Health and Technology and the Subcommittee on Agriculture, Energy and Trade

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Chairman Chabot, Ranking Member Velazquez and members of the Committee, I am Paul Carliner, co-founder and CEO of Bloosurf. Thank you for the opportunity to appear before you today.

Bloosurf is rural high-speed internet service provider located in the Salisbury, Maryland. Our company was founded in 2009 with the goal of providing affordable and sustainable high-speed internet service on the lower Eastern Shore of Maryland. We provide service to homes, businesses, schools, hospitals and even to residents living on an island in Chesapeake Bay.

The digital divide between urban and rural America is growing and getting worse. As major urban and suburban areas continue to see robust capital investment in internet infrastructure, including the rollout of new 5G mobile service later this year, rural America is struggling with providing basic internet service.

In 2010, Bloosurf was awarded \$3.2 million by the U.S. Department of Agriculture's Rural Utility Service to build a new, state of the art fixed wireless LTE network covering approximately 100,000 households across three rural Maryland counties on the lower Eastern Shore.

We built our network on time and returned over \$1 million to the government. We designed, built and now operate a state of the art last mile network covering three counties for \$2.2 million. We have validated a new low-cost model for providing high speed internet service to rural areas. As a small rural internet service provider (ISP), I'd like to share with you our experience, lessons learned and recommendations for the future.

We are grateful to the Rural Utility Service's Telecommunications Program in particular Ken Kuchno and Rick Gordon who were instrumental in helping us and so many other companies build out the rural broadband infrastructure. Their leadership and hard work has brought internet service to thousands of rural homes and businesses for the first time.

The state of Maryland and the Maryland Broadband Cooperative, in particular Pat Mitchell and Drew Van Dopp, have been critical in helping our company provide internet service to the rural communities we serve. As a state chartered cooperative, Maryland Broadband provides a public fiber network that connects to Bloosurf's wireless last mile network. It is a

national model of local public-private partnerships that combine middle mile assets with last mile solutions to serve rural communities.

First, it is abundantly clear that the only way rural America will cross the digital divide is with sustained public investment by the local, state and federal governments. Without public investment, rural high-speed internet companies will be limited in their ability to grow and sustain service over the long term. If a rural community has a high percentage of unserved households, the need for public investment is even greater.

We applaud the Federal Communications Commission (FCC) and Chairman Pai for moving forward with the Connect America Fund II Reverse Auction to allocate up to \$2 billion for rural broadband expansion this year. This auction will be a critical step in furthering the build-out of rural broadband infrastructure for many rural communities across the country.

Without public investment, the business case for private investment in rural broadband is poor. The capital expenditures are high and the revenue stream is low. The median income of many rural areas is often well below their urban and suburban counterparts, further limiting revenue. This is why large national wireless companies and cable companies do not invest in the rural market. The market structure is unfavorable to debt financing and there is a limit to the amount of equity financing that a small business can accommodate. This is why public investment is so essential.

The most effective and efficient form of public investment would be in direct capital grants to assist small rural ISPs in building the last mile infrastructure. By covering the capital costs including design and construction, it allows a small ISP to provide high speed internet service to a small subscriber and revenue base. This is one of the most effective incentives for promoting the expansion of rural high-speed internet.

Small rural internet service providers are key to building the rural broadband infrastructure. Rural ISPs know their communities, have existing relationships with local and state governments and can engineer local solutions that meet each community's unique needs in a way that large national corporations can't. When it comes to providing high speed internet service in rural communities, we know from experience that one size does not fit all. Every rural community is different. Some communities have hills and mountains, some are surrounded by water, some are completely flat and population densities vary widely. Engineering a solution that works for each community and that is affordable and sustainable for each community is what rural ISPs do best.

Each community needs a customized solution that uses the correct technology solution appropriate and sustainable for that community. In some communities, fiber to the premises may be a viable option, but in other areas, fixed wireless or satellite may be more appropriate or a combination of all three. The companies best suited to make these decisions are already working in these communities but need the support of all levels of government to help provide high speed internet service to this hard to reach market.

Second, any federal strategy to help expand rural high-speed internet service must focus on the last mile- that part of the network that actually brings internet service directly into the home and business.

Previous public investments focused heavily on the middle mile- the fiber or cable under the highway or county road. After a decade or more of public and private investment in the middle mile, the federal government should focus on how to monetize that investment by actually providing service into homes and businesses. Rural communities paid for this infrastructure through their tax dollars, now it's time they actually get service.

Federal funds should be used to encourage local and state governments to adopt comprehensive last mile strategies with local internet service providers that combine the middle mile and last mile into sustainable and affordable high-speed internet service for rural residents. Some states have already started on this path.

Delaware is one of the states leading this effort. Last year under the leadership of Gov. John Carney, the Delaware Department of Technology and Information initiated a pilot project to demonstrate the feasibility of fixed wireless technology as a cost effective last mile solution for rural areas. Bloosurf participated in this effort and the data being collected will help shape a larger statewide initiative to provide affordable and sustainable high-speed internet service to all rural residents and businesses in Delaware.

Several counties in Virginia have established broadband authorities to build last mile networks and the state of Maryland under Gov. Hogan's leadership established a rural broadband task force to explore options to expand high speed internet service to all rural parts of the state. The federal government should follow the lead of these states and focus on the last mile as the cornerstone of any new national rural broadband initiative.

Third, federal agencies must adopt policies and regulations that encourage and incentivize rural internet service providers to invest and grow in the rural marketplace. This begins with looking at ways to lower the barrier to entry in this market by making it easier for small rural ISP's to access critical federal funds.

Onerous financial requirements for accessing federal funds such as large lines of credit, arbitrary operating margins and debt to equity ratios are not the most important criteria in assessing an ISP's viability and do not offer guidance in judging future performance. Instead, these requirements, although well intentioned, simply discourage small ISP's from participating in the first place. The emphasis should be on past performance metrics and not exclusively on traditional financial metrics. Through monitoring and oversight, the federal government can protect the taxpayer interest instead of setting a financial bar so high that rural ISP's can't compete.

One option to ensure financial viability and protect taxpayer investment would be to simply require a performance or construction bond, rather than a complex set of financial requirements. This would ease the path to participate for the ISP, protect the taxpayer investment and reduce the workload on the federal government.

Access to affordable licensed spectrum for small rural ISPs is another critical element to providing affordable and sustainable broadband service in rural areas. Licensed spectrum has two important benefits to rural ISPs. For the consumer, it means greater speeds and faster service. For the ISP, it means lower operating costs and higher margins. Licensed spectrum lowers the cost for ISPs because it allows wireless service to travel much farther than unlicensed spectrum. Bloosurf uses licensed spectrum and we've seen the results. We have a business customer nineteen miles away from a tower that's getting 10 Mbps of service- more than enough to stream video and search the web.

Achieving that level of service can only be done with licensed spectrum. It only took the construction of one tower to reach that customer. If Bloosurf did not have licensed spectrum, we could not have reached the customer or we would have had to build additional towers which would have made it too expensive. The FCC must find a way to allocate licensed spectrum in rural areas to local ISPs that is affordable to those companies.

Bloosurf partnered with three public universities in our service area, Salisbury University, WorWic Community College and the University of Maryland Eastern Shore to sublease their licensed spectrum in exchange for providing high speed internet service to the university communities and sharing revenue generated from that service. We are grateful to all three universities for the leadership in their communities and for this partnership that has brought high speed internet service to rural communities in Maryland that previously had little or no access to affordable internet service.

Small rural ISPs are also laboratories of innovation for implementing new approaches and the latest technologies to provide high speed internet service. Our company uses commercial off the shelf components, open source software and partnerships with manufacturers and local and state governments to improve the quality of service while reducing costs. Technology, particularly wireless technology is changing rapidly. ISPs can adapt new technologies quickly and serve as incubators for innovation in this space.

Finally, there should also be a mechanism to share and exchange information between the federal government and rural ISPs when it comes to issues such as cybersecurity. A network is only as strong as its weakest link. Many ISPs do not have the expertise and resources to invest in the latest cybersecurity technology and are often forgotten when setting national policies or allocating federal resources. There should be a program, policy and mechanism to assist rural ISPs in meeting basic cybersecurity protocols and updating them as necessary.

Access to affordable high-speed internet service is critical for rural communities to retain and attract new jobs, improve the quality of education and provide basic services such as medical care. Rural ISPs are at the forefront of this effort and have been for some time. Unlike the large national cable and wireless network companies, we are local companies employing local residents and hiring local companies. There is a multiplier effect with a rural ISP that you simply do not get with a large national company.

I hope that sharing our experience will assist you and this Committee in its important work in helping small businesses and improving the lives of rural residents by ensuring that they have access to affordable high-speed internet service. The digital divide between urban and rural America is growing. The solution is easy. We just need the will to move forward.

Thank you.