

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51
)	
Establishing Just and Reasonable Rates for Local Exchange Carriers)	WC Docket No. 07-135
)	
High-Cost Universal Service Support)	WC Docket No. 05-337
)	
Developing an Unified Intercarrier Compensation Regime)	WC Docket No. 01-92
)	
Federal-State Joint Board on Universal Service)	WC Docket No. 96-45
)	
Lifeline and Link-Up)	WC Docket No. 03-109
)	
Universal Service Reform – Mobility Fund)	WT Docket No. 10-208

**COMMENTS OF CONNECTED NATION, INC. ON CENTURYLINK'S
PETITION FOR WAIVER**

Sound policy decisions require sound data to support them. The successful transformation of the Commission's high-cost Universal Service Fund to support broadband service is inextricably tied to the information the Commission has on the availability of robust, scalable broadband service, both now and in the future.

Connected Nation, Inc., is the largest collector and validator of broadband inventory data to the National Broadband Map. As a nationwide non-profit, Connected Nation shares the Commission's goals of promoting the access, adoption, and use of broadband technology. Connected Nation supports the use of National Broadband Map

data to identify “unserved” areas, but in its comments to the Commission in April 2011, Connected Nation specifically recommended that before the Commission awards any subsidies on the basis of that data, it should first make sure that an “independent validation” of that data had been conducted.¹

In its Petition for Waiver, CenturyLink seeks to use Phase I funds to deploy broadband to 43 areas in 6 states that the National Broadband Map (NBM) shows as being “served” by wireless Internet service providers (WISPs). CenturyLink claims that in these 43 instances, the NBM provides “highly implausible” coverage areas that it does not believe. CenturyLink specifically asks the Commission to let it use Phase I of the Connect America Fund to subsidize broadband construction where the “community lies within a state that has not independently verified WISP coverage areas shown in the NBM, and objective indicia demonstrate that the WISP could not plausibly serve the areas that the NBM shows it to cover.”²

As part of the National Telecommunications and Information Administration’s State Broadband Initiatives (SBI) grant program, Connected Nation is currently collecting, processing, and verifying information on the availability of broadband in Alaska, Iowa, Michigan, Minnesota, Nevada, Ohio, Puerto Rico, South Carolina,

¹ Comments of Connected Nation, Inc., WC Docket No. 10-90, *et al.* (filed April 18, 2011), (available at: <http://apps.fcc.gov/ecfs/document/view?id=7021239880>) at 18.

² CenturyLink Petition for Waiver, WC Docket No. 10-90, *et al.* (filed June 26, 2012) at 5-7, Exhibit A (Copeland Decl.) at ¶¶ 2-7. CenturyLink also requests for a waiver in areas served by another list of WISPs that CenturyLink claims to have “unusually high retail prices” or “unusually stringent data caps.” CenturyLink Petition at 7-15. Connected Nation limits these Comments to the portion of CenturyLink’s petition regarding coverage areas on the National Broadband Map, listed in Exhibits C and D.

Tennessee, and Texas.³ This effort includes verifying coverage information of hundreds of WISPs. Together, Connected Nation has collected nearly 20% of the datapoints in the National Broadband Map, covering 29% of the nation's population and 37% of its surface area.

In these Comments, Connected Nation outlines the independent verification processes that it, as an SBI grantee and mapping contractor, uses to verify the broadband availability areas of WISPs in the states that it currently works. Because Connected Nation independently validates WISP coverage areas as part of its grant work and mapping contracts, in the Petition, CenturyLink does not question the coverage areas of any WISP in the states and territories that Connected Nation currently maps. However, the CenturyLink petition does bring into focus how important independent verification of broadband service coverage areas will be to the Commission's transformation of the Universal Service Fund, both now and in the future.

I. INDEPENDENTLY VERIFIED BROADBAND AVAILABILITY INFORMATION SHOULD BE USED FOR TARGETING CONNECT AMERICA FUND SUBSIDIES

The Commission today has more information on the availability of broadband service than ever before, due to the Broadband Data Improvement Act of 2008 ("BDIA").⁴ The BDIA empowered states to designate non-profit entities like Connected Nation or government agencies to collect and map broadband service availability. The

³ Connected Nation, Inc. is the "designated entity" for these NTIA SBI grants in Alaska, Iowa, Michigan, Minnesota, Nevada, South Carolina, Tennessee, and Texas. In Ohio and Puerto Rico, Connected Nation is the mapping contractor to the SBI grantees, the Ohio Office of Information Technology and the Puerto Rico Governor's Office, respectively.

⁴ Pub. L. No. 110-385, 122 Stat. 4097 (codified at 47 U.S.C. §§ 1301-04).

American Recovery and Reinvestment Act of 2009⁵ funded these programs, which now provide the data that underlies the National Broadband Map, www.broadbandmap.gov (NBM).

In its Petition for Waiver, CenturyLink highlights 43 WISP broadband service areas in 6 states on the NBM that it believes to be “highly implausible.”⁶ CenturyLink states that this claimed overstatement blocks its ability to collect Phase I subsidies to build out broadband to 29,899 living units.⁷

The NTIA requires that all State Broadband Initiative grantees verify broadband availability data through a secondary source. However, NTIA does not mandate any one particular approach, and the specific verification processes that grantees employ may vary from grant to grant.⁸

While Connected Nation is not currently the mapping grantee or mapping contractor in any of the six states that CenturyLink claims to have found “implausible” WISP service areas on the NBM, CenturyLink’s petition does highlight the need for there to be robust, reliable, accurate, and independent verification and field validation capacity in the national broadband mapping effort.

⁵ Pub. L. No. 111-5, 123 Stat. 115 (2009) (“Recovery Act”).

⁶ CenturyLink Petition, Exhibit A (Copeland Decl.) at ¶2.

⁷ CenturyLink Petition, Exhibit C.

⁸ See U.S. Department of Commerce, National Telecommunications and Information Administration, State Broadband Data and Development Grant Program, *Notice of Funds Availability and Solicitation of Applications*, 74 Fed. Reg. 32545 (July 8, 2009) at 32553 n. 27. See also U.S. Department of Commerce, National Telecommunications and Information Administration, *State Broadband Data and Development Program (Broadband Mapping Program) Frequently Asked Questions* (available at: http://www2.ntia.doc.gov/files/BTOP_BroadbandMappingFAQs.pdf) at 4 (“States may choose any number of methods to achieve a high-level of accuracy and ensure that the project meets the transparency goals as set forth in the NOFA.”).

Connected Nation has supported the Commission's proposals to use the NBM to guide its decisions, especially reform of the Universal Service Fund.⁹ Indeed, Connected Nation has recommended that before the Commission use the NBM to guide the flow of high-cost subsidies to particular areas, "independent validation" of broadband service availability "should be conducted." Connected Nation specifically stated:

It is axiomatic that if federal subsidy dollars are to be targeted towards an "unserved" area, then the Commission should make sure that those areas are, in fact truly unserved. . . . To the extent that there is not sufficient funding in the current [] grants to support those validation efforts, additional funding from the Connect America Fund could possibly be directed towards those efforts.¹⁰

Connected Nation believes that verification and validation of broadband mapping information by experienced engineers and GIS analysts is important and critical to the accuracy of the final mapping product. For this reason, Connected Nation uses a number of validation and verification processes, including field data collection, for different technology platforms.

II. CLAIMED BROADBAND AVAILABILITY INFORMATION CAN AND SHOULD BE INDEPENDENTLY VERIFIED IN AN ACCURATE AND EFFICIENT MANNER

The broadband coverage information that Connected Nation receives from a provider twice a year pursuant to the SBI mapping program is only the starting point of its broadband mapping analysis. Armed with spectrum analyzers and other tools, Connected Nation's engineers routinely verify and modify claimed coverage areas, in an accurate and efficient manner. In a June 24, 2011, *ex parte* submission, Connected

⁹ Comments of Connected Nation, Inc., WC Docket No. 10-90, *et al.* (filed April 18, 2011), (available at: <http://apps.fcc.gov/ecfs/document/view?id=7021239880>) at 17-18.

¹⁰ *Id.* at 18.

Nation provided the Commission with detail on its field validation process, including descriptions of how it tests WISP coverage areas, and provided a technical briefing.¹¹

That manual, *Engineering and Technical Services Field Validation Techniques: A Technical Brief from Connected Nation*, is attached to these comments.

After Connected Nation receives data from providers in various formats, it translates this information into a service territory map that conforms to NTIA mapping program guidelines. For fixed wireless providers that do not submit their footprint in a spatial format, Connected Nation tries to collect information about the wireless network and the individual towers to create wireless propagation maps. Connected Nation's engineers attempt to gather information such as tower location, tower height, transmit frequency, azimuth, transmit antenna gain, foliage cover, etc. from providers to serve as inputs into a propagation model. When this information is available, the resulting product depicts a graphical illustration of the theoretical propagation characteristics of a selected frequency range, based on the defined variables.

Connected Nation also uses statistical data verification methods to validate the data, and it also uses its consumer survey data to contrast estimates of broadband availability across rural and non-rural households in a particular area.

Connected Nation then releases these initial, granular (yet preliminary) maps to the public in an interactive "beta" form. Its mapping platform, My ConnectView, gives consumers, businesses, community leaders, and other stakeholders the ability to provide

¹¹ Letter from Raquel Noriega, Connected Nation, to Marlene H. Dortch, Secretary, Federal Communications Commission, in WC Docket No. 10-90, *et al.* (filed June 24, 2011).

direct feedback on the accuracy and comprehensiveness of the map.¹² This process allows for a real-world comparison of the broadband landscape to the information initially received from service providers. Connected Nation actively promotes and pursues input regarding this comparison from all interested parties. This approach leverages the interest of consumers, local planning agents (such as county officials or regional economic agents) and the provider community to garner tactical information about the strengths and weaknesses of the “beta” broadband inventory collected to date. Through this process, Connected Nation routinely receives and processes inquiries from these preliminary maps and utilizes this feedback to identify and investigate areas in which the initial data may need to be improved.

An important by-product of this crowd-sourcing approach is to facilitate communication between unserved communities and service providers. An example of how this process can succeed occurred in a rural community of Leelanau County in Northern Michigan. A small business dependent upon dial-up learned of Connected Nation’s Connect Michigan initiative and used Connect Michigan’s mapping feedback tool. Within a week, the small business was receiving service from a local wireless Internet service provider that was looking to expand to that rural area of the state.¹³

Particularly with regard to wireless ISPs, Connected Nation also uses extensive field testing to verify availability data independently. Connected Nation’s on-the-ground

¹² For an example, *see* Connected Tennessee, Interactive Map (Beta Version), available at: http://www.connectedtn.org/mapping/interactive_map_interface/?q=map; Connected Tennessee, “Connected Tennessee Seeks Input from Tennessee Communities to Ensure Accuracy of Tennessee Broadband Map,” (Sep. 7, 2010), available at: <http://www.connectedtennessee.com/documents/BroadbandInquiryPR.pdf>.

¹³ *See* CBS Detroit, “Nonprofit Helps Fast Internet Reach Rural Leelanau” Aug. 24, 2010, available at: <http://wwj.cbslocal.com/2010/08/24/nonprofit-helps-fast-internet-reach-rural-leelanau/>.

field teams of network engineers proactively seek to confirm the existence (or lack thereof) of broadband availability throughout the state. Connected Nation engineers will test wireless signal strengths, drive to locations to see if infrastructure (such as a towers or remote terminals) is physically present where it has been claimed to be, confirm the coordinates of broadband facilities, cross-reference and verify grades or elevations, and survey and test actual downstream and upstream throughput speeds.

As described in the attached Technical Brief, Connected Nation has deployed field teams to estimate service territories of providers that have not voluntarily participated in the mapping program,

All of these processes do not occur in a “black box” – service providers and the public are given the opportunity to review coverage areas, including through the My ConnectView state map, and provide feedback. Connected Nation has gone through five such iterations since the start of the NTIA grant program in 2010, and each such iteration has contained more complete datasets and more accurate, independently verified data.

III. CONCLUSION

In these Comments, Connected Nation shows how it performs independent verification and validation of National Broadband Map service areas in nine states and Puerto Rico. CenturyLink’s petition highlights the need for a robust, reliable, accurate, and independent verification process – including field validation capacity – in every broadband mapping effort. Connected Nation has strongly supported the use of the National Broadband Map to guide policy decisions, especially reform of the Universal Service Fund. However, in using the National Broadband Map to guide the flow of high-

cost subsidies to particular areas, the Commission should work to ensure that broadband service area claims have been independently verified and validated.

Respectfully submitted,

[submitted electronically]

Thomas M. Koutsky
Connected Nation, Inc.
P.O. Box 43586
Washington, DC 20010
(202) 674-8409

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Attachment (Field Validation)